BAKER
LOCOMOTIVE
VALVE GEAR

SPARE PARTS

The Baker

Valve Gear

BAKER

Locomotive

Valve Gears

Manufactured by

THE PILLIOD COMPANY

30 Church St., New York Railway Exchange, Chicago

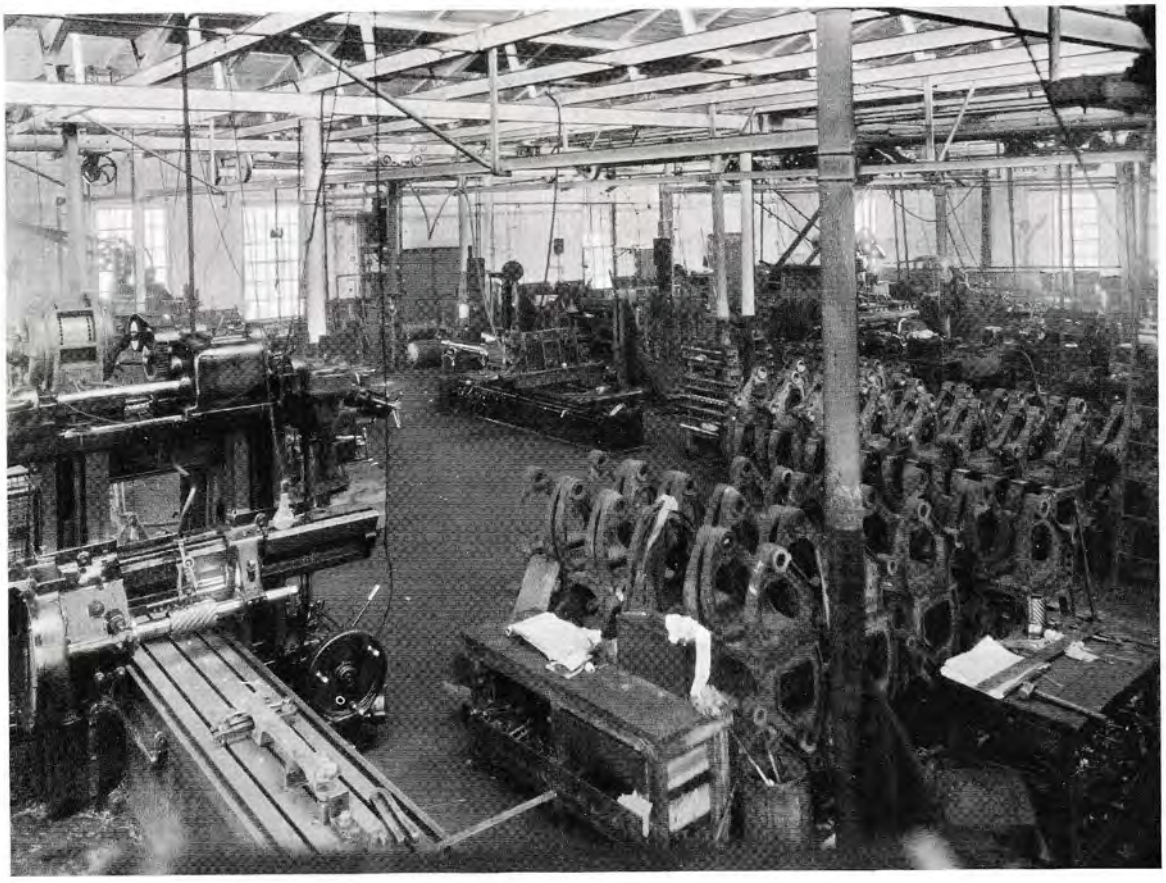
WORKS: SWANTON, OHIO

THE LOCOMOTIVE VALVE GEAR, governing as it does the distribution of steam to the cylinders, performs one of the most important functions of the locomotive machinery. It should be well designed, manufactured with mechanical precision, and, *last but not least* it must be *maintained* in every day service. Maintenance, as we understand it, means first, proper and ample lubrication, inspection and adjustment and lastly, replacement of worn parts.

Considering that a force of some five thousand pounds is put in operation to move a locomotive valve and that this force momentum changes its direction twice with each revolution of the drivers, it must be evident even to those not experienced in locomotive operation that a wearing process is taking place in the valve gear parts.

When this wear develops into lost motion between parts, the efficiency of the valve gear is impaired and the locomotive loses its tractive power, consumes more coal and water, and eventually fails because of broken parts, resulting in train delays and other expensive operating difficulties.

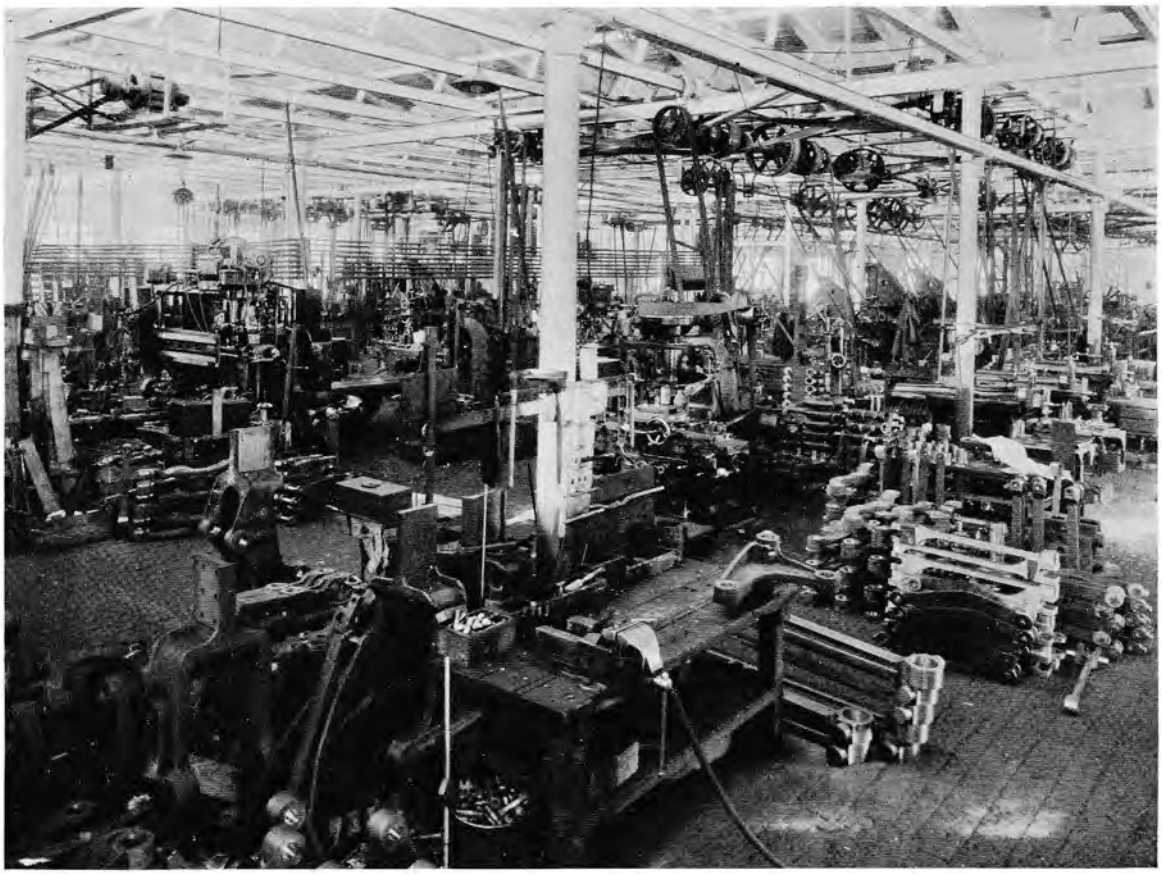
THE BAKER VALVE GEAR has been designed through many years of experience, first, to give efficient service and second, to provide easy and inexpensive maintenance; it is manufactured as nearly perfect as any machinery can be. Our manufacturing plant located on the New York Central Lines at Swanton, Ohio, just west of Toledo, is engaged exclusively in building locomotive valve gears and parts and is the only plant in this country, perhaps in the world, devoted to this one line. It has been doubled in capacity in the past two



THE PILLIOD COMPANY'S PLANT—MILLING AND BORING MACHINES

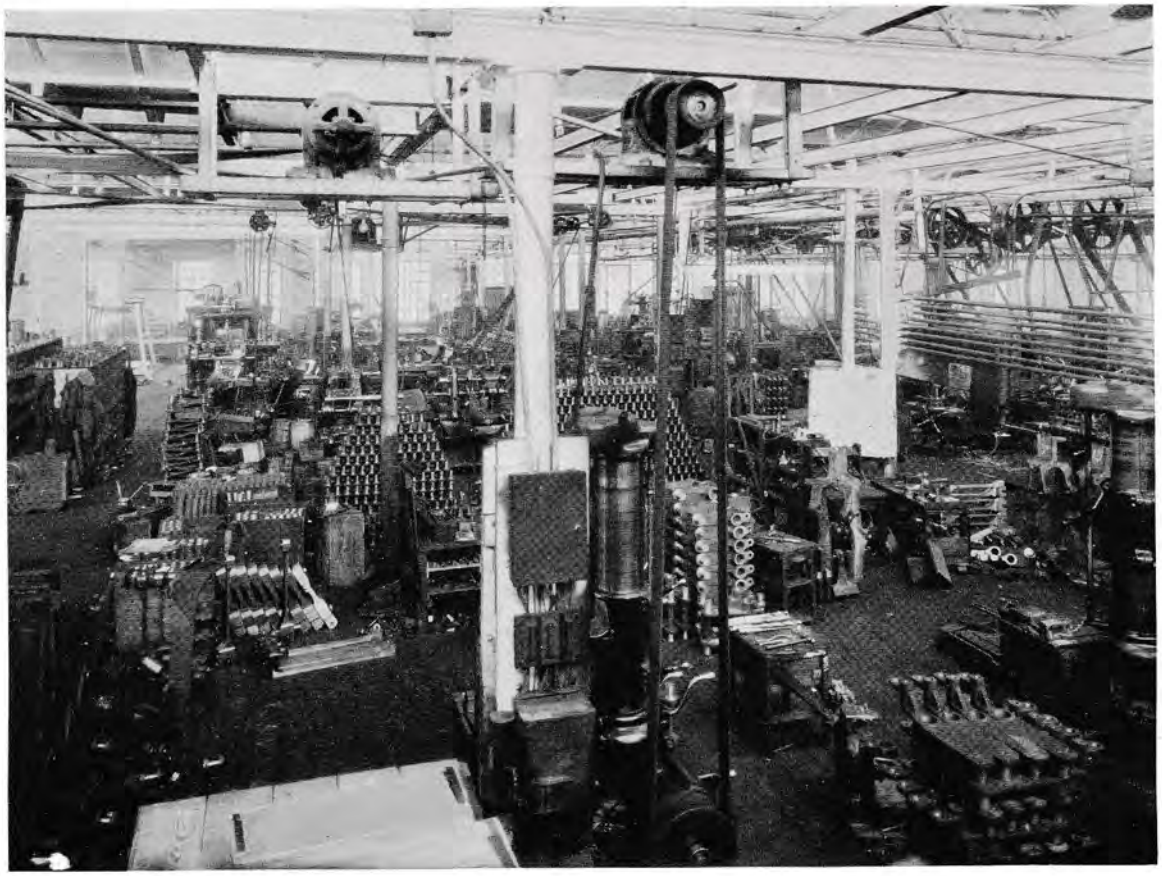
years, is well laid out for economical operation and is completely equipped with the most modern automatic machinery, special dies, jigs, tools and templets and manned by workmen who have spent years in this service and who take personal pride in the company and its product. All materials used are made to our specifications and under our supervision, and must meet the required tests.

Our organization can design, manufacture and supervise the application of Baker Valve Gears to your locomotives,



THE PILLIOD COMPANY'S PLANT—SHAPERS, DRILL PRESSES AND RADIAL MILLING MACHINES

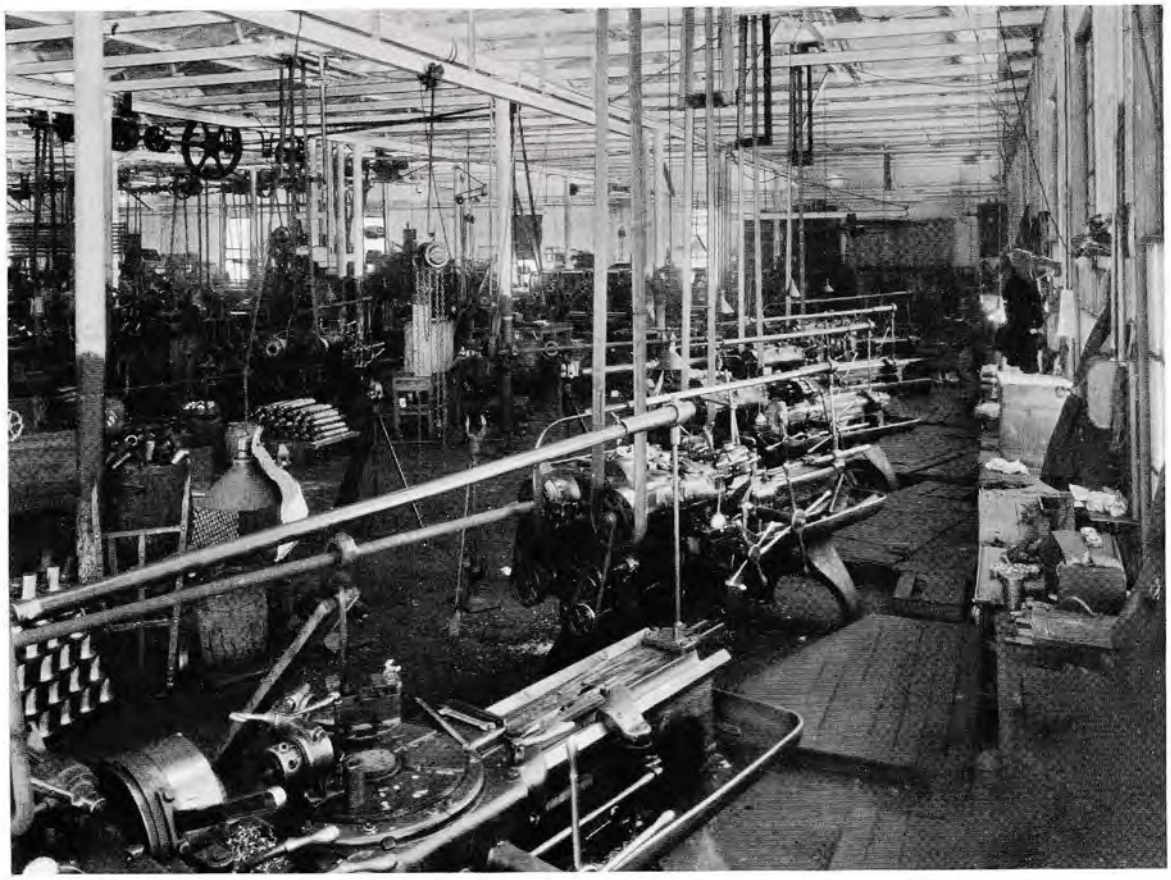
but, of course, the important matter of maintenance is in the hands of your railroad men. The only thing we can do in this direction is to offer the co-operation of our service staff; our Service Engineers, expert Valve Setters, and experienced Mechanics have assigned territories and travel about continuously over the various railroads helping and advising the men who are held responsible for valve gear maintenance. We are further putting into operation our desire to serve our customers by organizing a *Parts Department* and this Parts



THE PILLIOD COMPANY'S PLANT—RADIAL DRILL PRESSES AND STOCK IN PROCESS

Catalog will enable you to take advantage of this service. It is our aim to ship standard parts within twenty-four hours from receipt of order at our plant, and you can help us to do this by furnishing the information required by our manufacturing department.

Baker Valve Gears are of two principal types of design: that used with inside admission valves and that used with outside admission valves. A locomotive set of Baker valve Gear complete from crank to crosshead, consists of two main



THE PILLIOD COMPANY'S PLANT—BATTERY OF TURRET LATHES

groups of parts; *first*, the gear frame and contained parts, all carefully made to jigs and templets to insure their interchangeability, designated as *standard, Valve Gear Parts;* and *second*, the eccentric cranks, eccentric rods, valve rods, combination levers, union links, reach rods, etc., known as application parts and usually designed for each class of locomotives.

Our Engineering Department has a detailed record of every application of Baker Valve Gear, there now being ten

THE PILLIOD COMPANY'S PLANT—GRINDING MACHINES FOR FINISHING PINS AND BUSHINGS

thousand (10,000) locomotives so equipped. Therefore, any part of all of these valve gears can be furnished by giving us the engine class and type and if right or left is required. We are also able to make parts used with any other type of valve gear, either forgings or castings, and will be glad to quote prices upon receipt of blueprints.

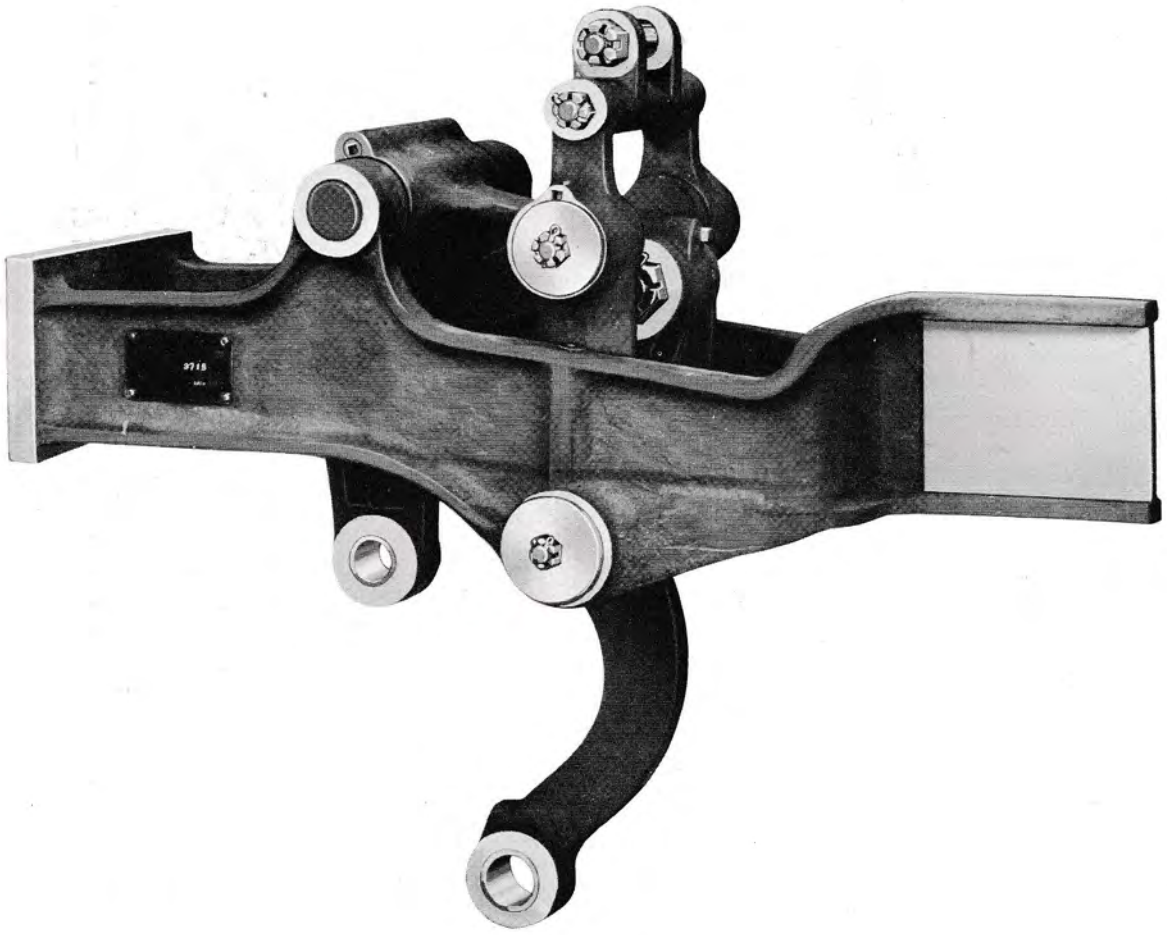
This Parts Catalog has been compiled to enable you to help us serve you well, and it is recommended that it be preserved for future reference.

Index

Spare Part List

Long-Travel Valve Gear

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted



Baker Inside Admission Gear, Style 1

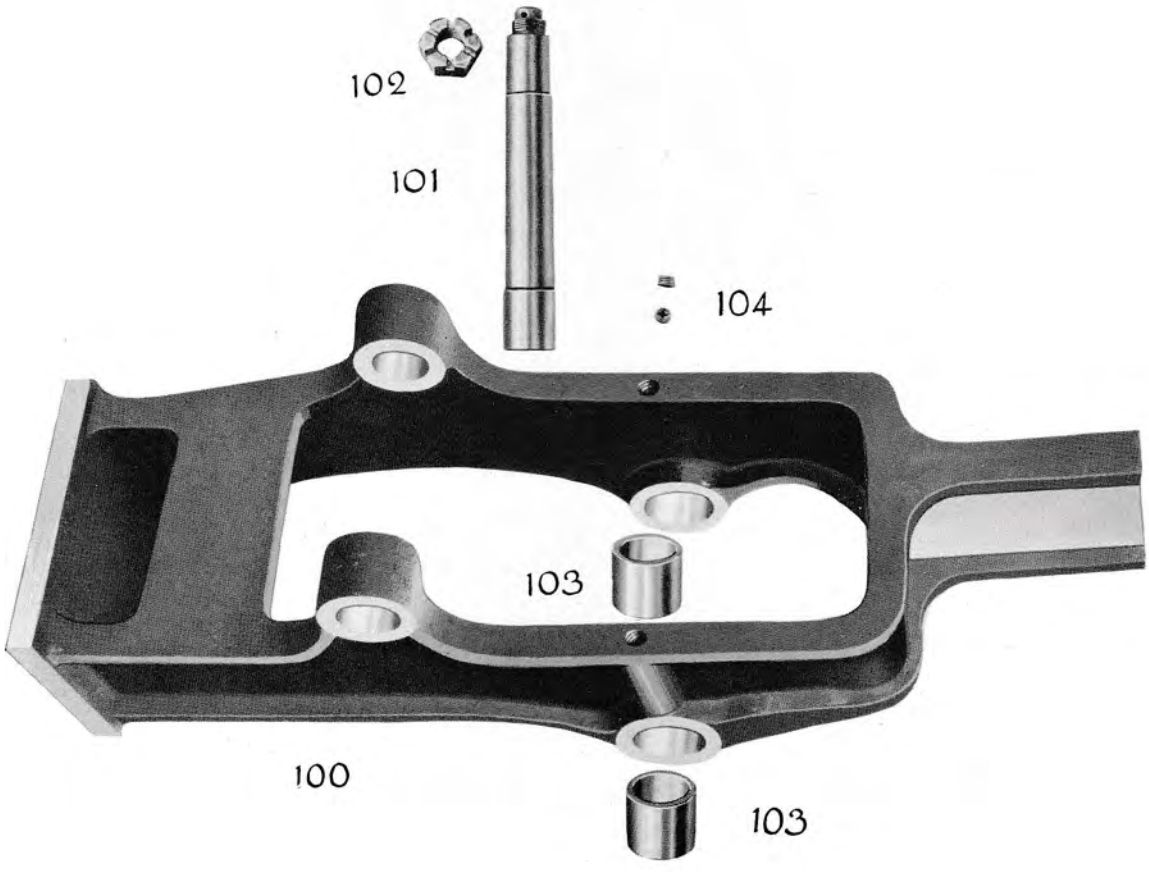
(ASSEMBLED)

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

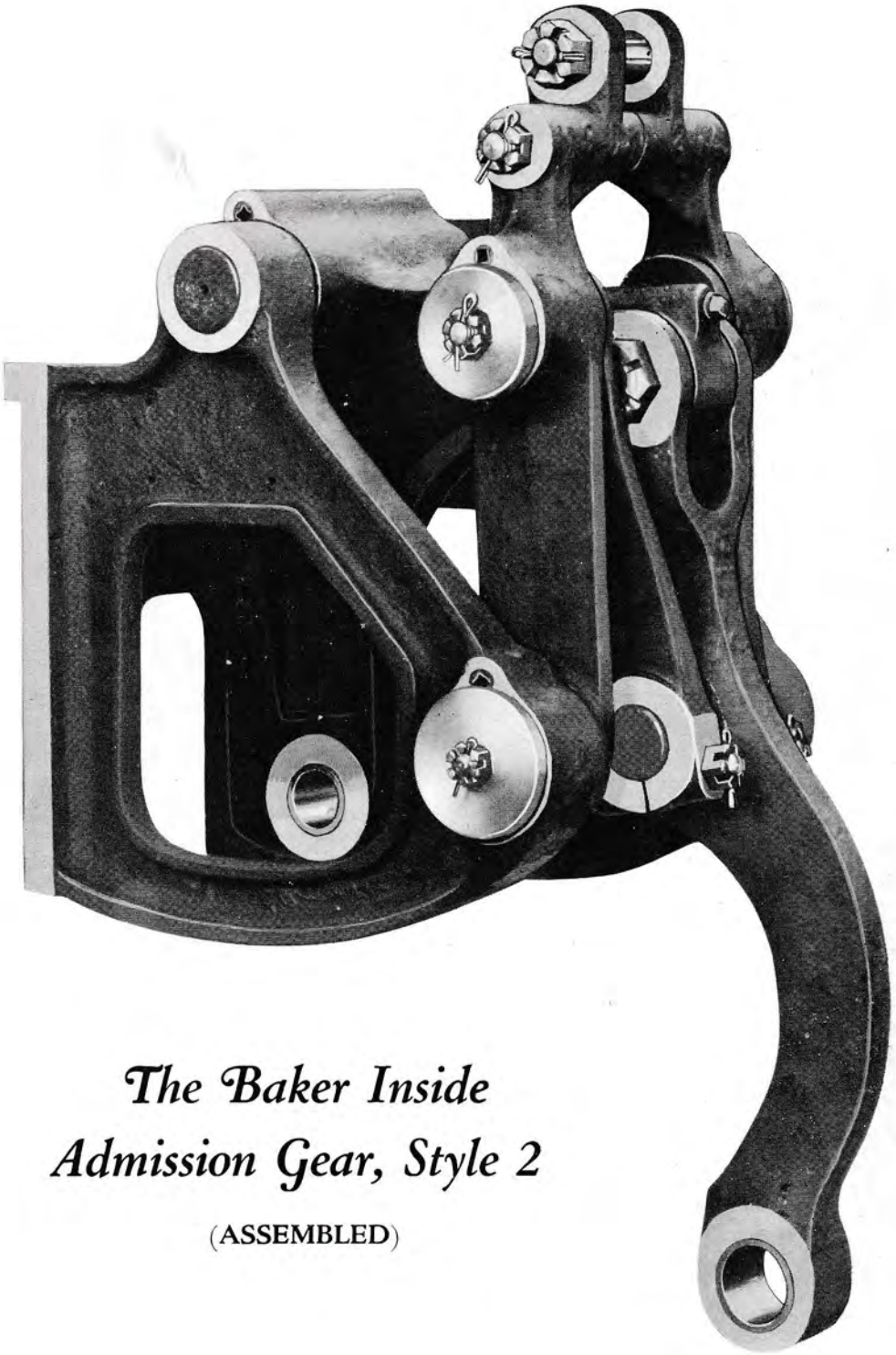
Inside Admission Gear Frame, Style 1

Inside admission gear frame Style No. 1 is made of cast steel. Will be furnished complete with pins, nuts, bushings and pipe plug, or each of these may be purchased separately.

100. Gear Frame
101. Gear Frame Pin
102. Nut for Gear Frame Pin
103. Bushings for Gear Frame
104. Three-quarter-inch Female Pipe Plugs



IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted



The Baker Inside Admission Gear, Style 2

(ASSEMBLED)

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

Inside Admission Gear Frame, Style 2

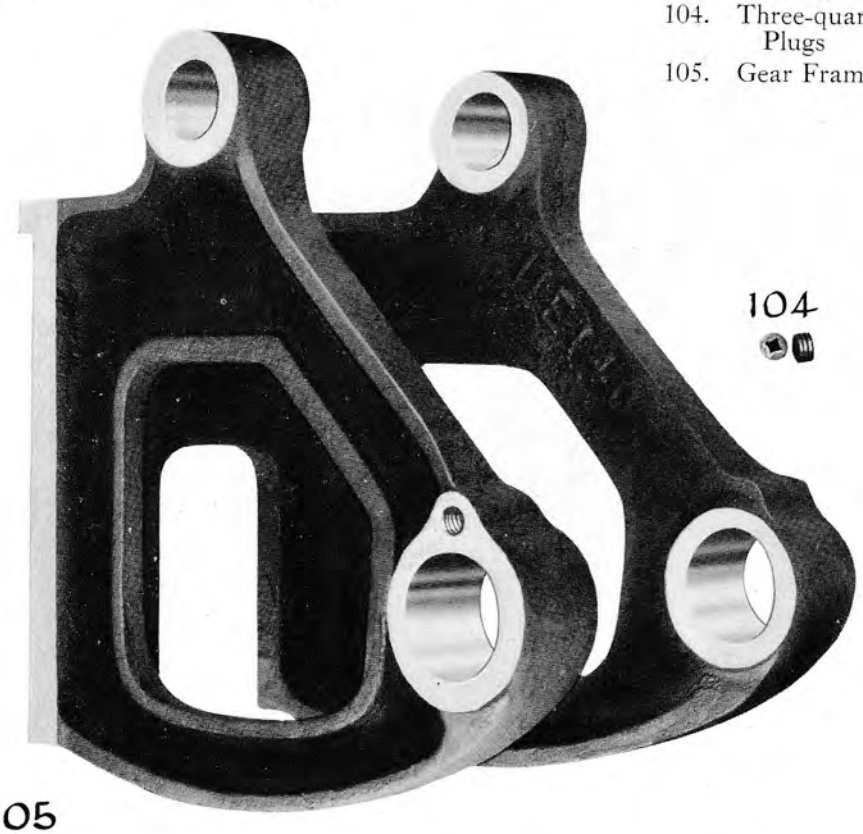
Style No. 2 Gear Frame is made of cast steel. Will be furnished complete with pins, nuts, bushings and pipe plug, or each of these parts may be purchased separately.

102

101

The Parts

101. Gear Frame Pin
102. Nut for Gear Frame Pin
103. Bushings for Gear Frame
104. Three-quarter-inch Female Pipe Plugs
105. Gear Frame



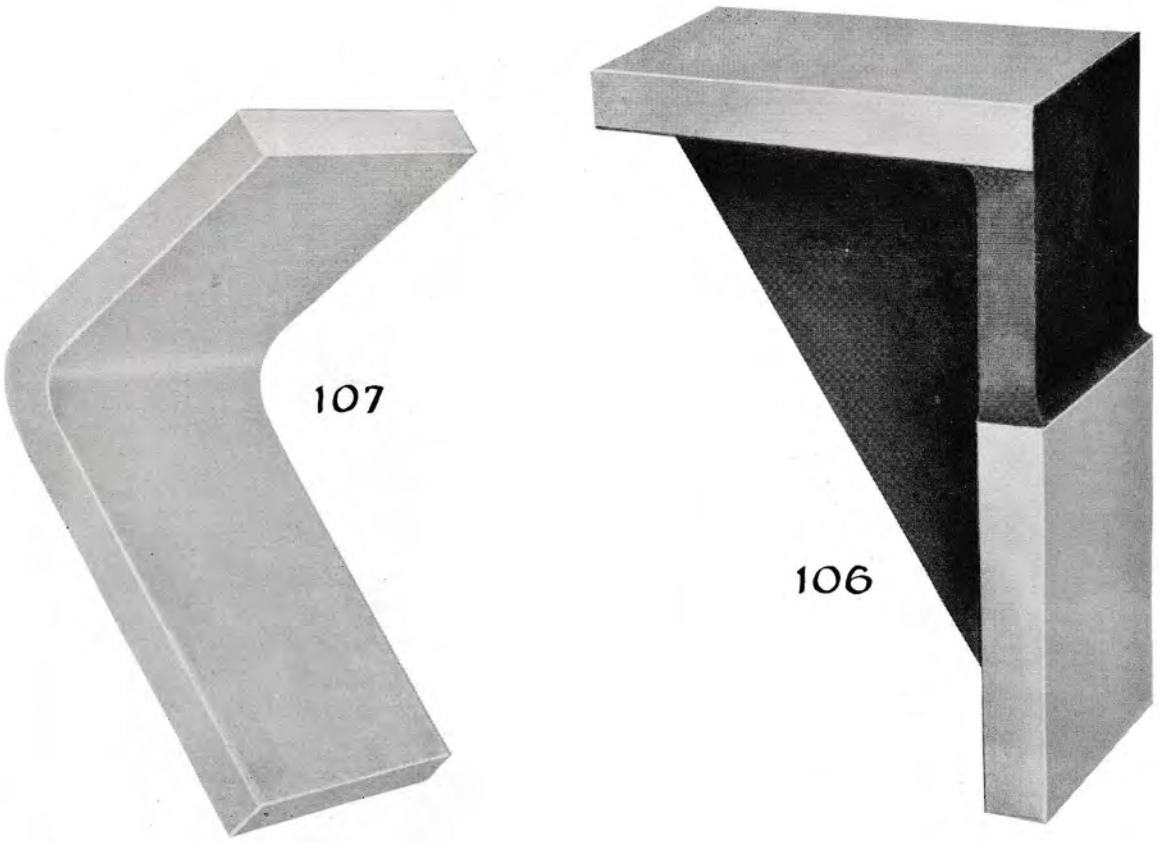
104

105

103

103

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

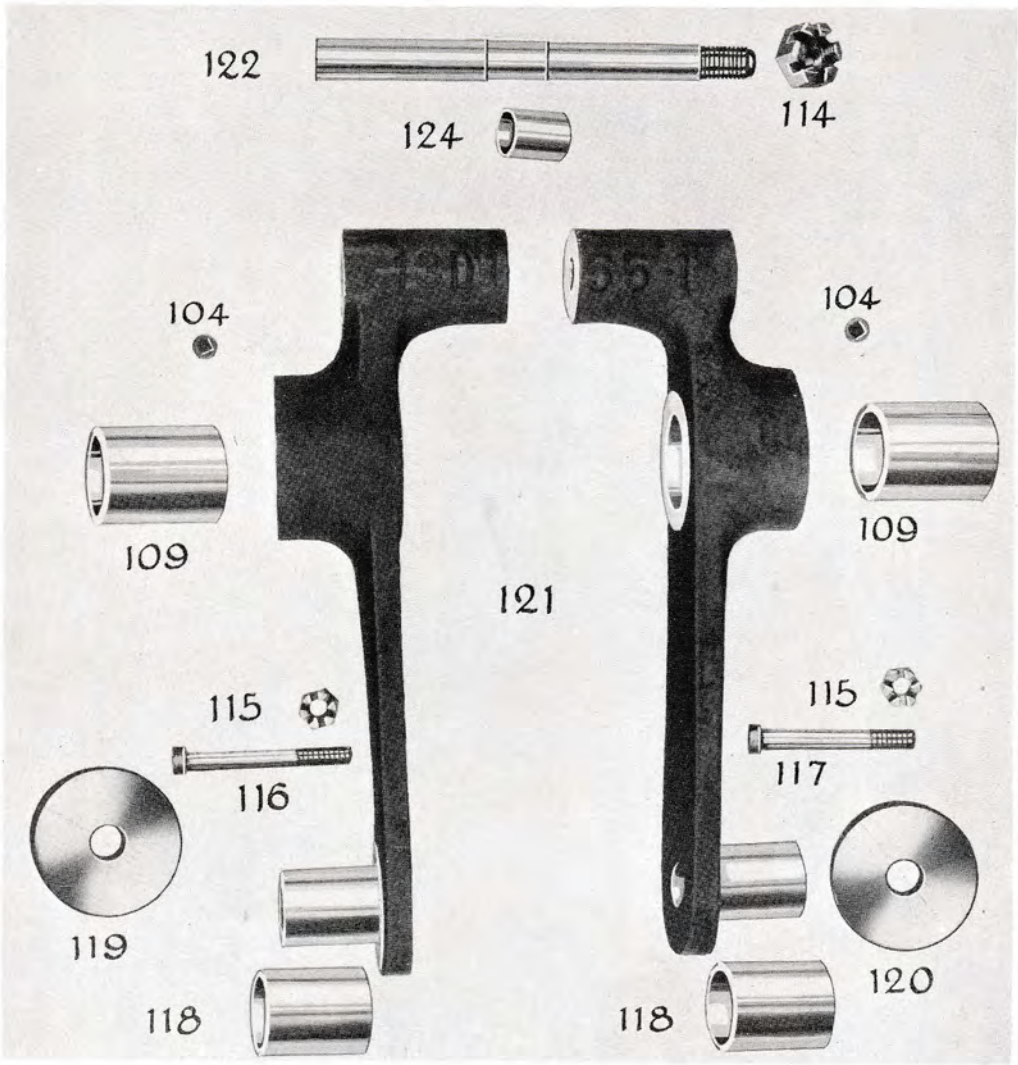


Gear Frame Extensions

Gear Frame Extensions shown above are used with inside admission style No. 1 gear frame and also outside admission gear frame style No. 3. These are made to suit the application of the gear, and therefore are made in various shapes and sizes to suit conditions. These are made of both forgings and cast steel.

106. Cast Steel Extension

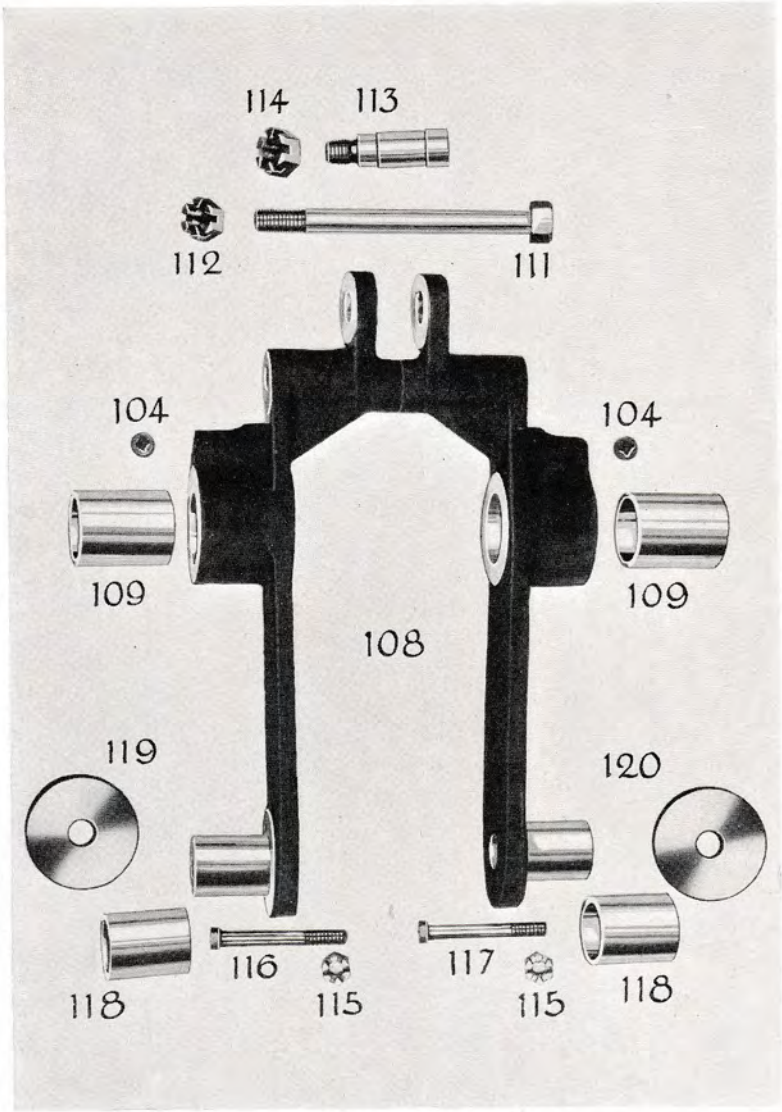
107. Forged Extension



Reverse Yoke, made of either vanadium cast steel or drop-forged, is used with either inside or outside admission gears. The long pin which goes through the top of the yoke is longer for the drop-forged yoke than it is with the vanadium cast steel, otherwise they are interchangeable. With inside admission, the inside collar bolt is applied with a nut between the arms of the yoke, thus making the collar bolts of different lengths. Also the inside collar is countersunk for the head of the bolt. With outside admission, both collar bolts have the nut out and both bolts are the same length, and the collars are both alike. These yokes are machined in pairs. Therefore we cannot furnish one-half yoke and guarantee interchangeability. Will be furnished complete and assembled, or each part can be ordered separately.

109. Bronze Bushings
104. Three-quarter-inch Female Pipe Plugs
115. Nuts for Collar Bolts
116. Inside Collar Bolts
117. Outside Collar Bolts
118. Hardened Sleeves for Trunnion
119. Inside Collar
120. Outside Collar
121. Reverse Yoke
122. Reverse Yoke and Reach Rod Pin
114. Nut for Reverse Yoke and Reach Rod Pin
124. Hardened Spreader Bushing

Reverse Yoke

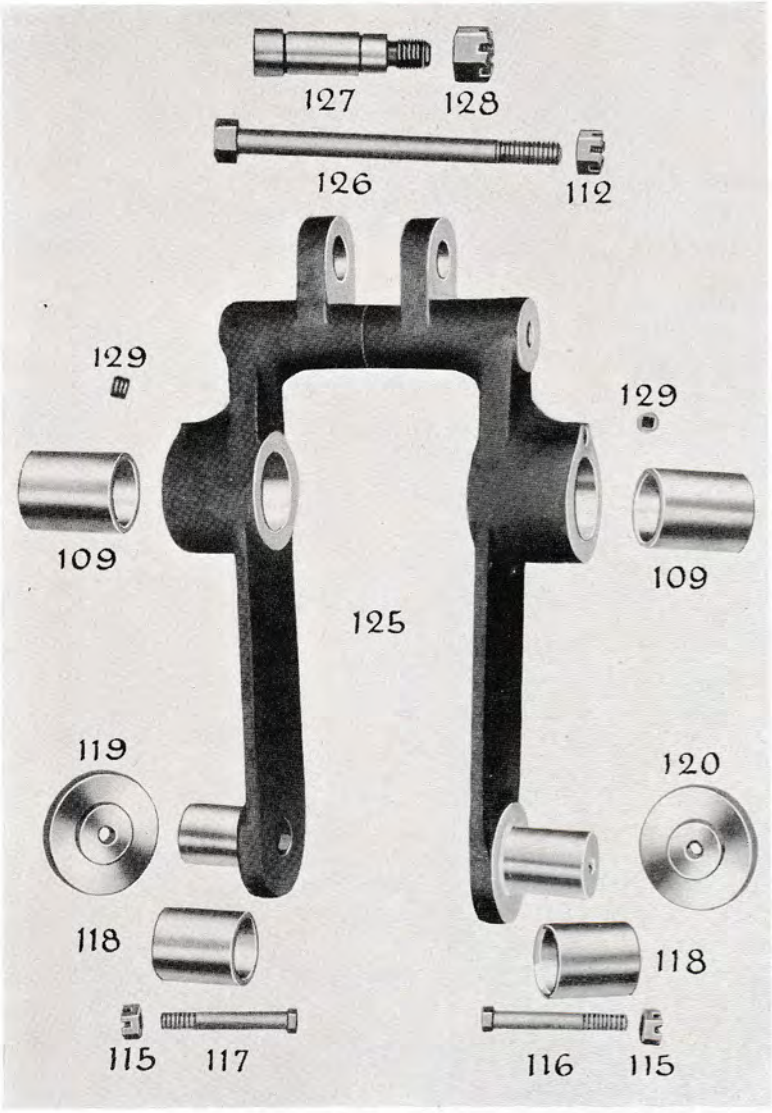


The Parts

108. Reverse Yoke
109. Bronze Bushings
104. Three-quarter-inch Female Pipe Plugs
111. Tie Bolt joining the two halves of the Yoke together
112. Nut for Tie Bolt
113. Pin for Reverse Yoke and Reach Rod
114. Nut for Reach Rod and Reverse Yoke Pin
115. Nuts for Collar Bolts
116. Inside Collar Bolt
117. Outside Collar Bolt
118. Hardened Sleeves for Trunnion
119. Inside Collar
120. Outside Collar

Reverse Yoke shown above, made of vanadium cast steel, is used with either inside or outside admission gears. The only difference is, with inside admission the inside collar bolt is applied with a nut between the arms of the yoke, thus making the collar bolts of different lengths, also the inside collar is countersunk for the head of the bolt. With outside admission both collar bolts have the nut out and both bolts are the same length, and the collars are both alike. These yokes are machined in pairs. Therefore we cannot furnish one-half yoke and guarantee interchangeability. Will be furnished complete and assembled, or each part can be ordered separately.

Reverse Yoke

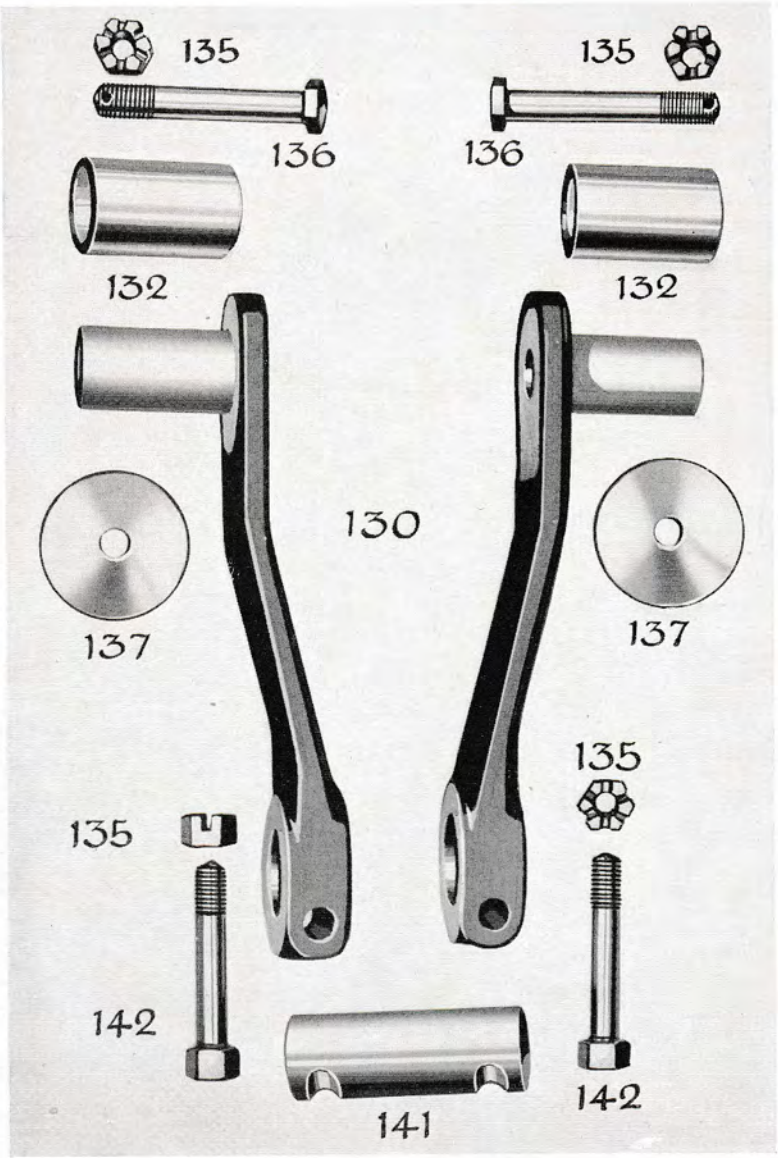


The Parts

109. Bronze Bushings
112. Nut for Reverse Yoke Tie Bolt
115. Nuts for Collar Bolts
116. Inside Collar Bolt
117. Outside Collar Bolt
118. Hardened Sleeves for Trunnion
119. Inside Collar
120. Outside Collar
126. Tie Bolt joining the two halves of the Yoke together
127. Reverse Yoke and Reach Rod Pin
128. Nut for Reverse Yoke and Reach Rod Pin
129. One-half-inch Female Pipe Plugs

Reverse Yoke shown above is made of either vanadium cast steel or drop-forged. It differs from yoke 108, shown on opposite page, as the connection for the reach rod is $3\frac{1}{32}''$ between the jaws, against $2\frac{1}{32}''$ between the jaws on yoke 108. The reach rod pin is $1\frac{3}{4}''$ in diameter, against $1\frac{1}{2}''$ on yoke 108. These yokes are used with both inside or outside admission gears. With inside admission gears, the inside collar bolt is applied with a nut between the arms of the yoke, thus making these bolts of different lengths. The inside collar is countersunk for the head of the bolt. With outside admission, both collars and bolts are the same. As these yokes are machined in pairs we cannot guarantee interchangeability if one-half yoke is ordered. Will be furnished complete and assembled, or each part can be ordered separately.

Radius Bar

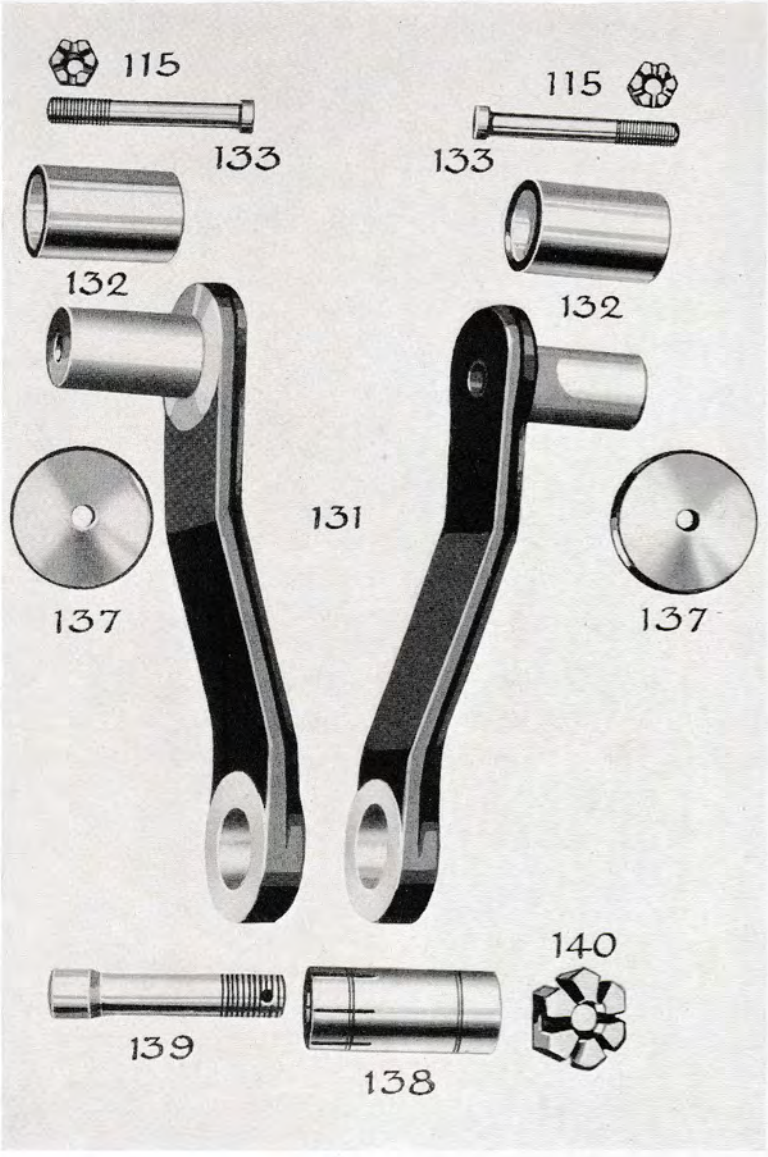


The Parts

130. Radius Bar
132. Hardened Sleeves for Trunnion
135. Nuts for Collar Bolts and Clamp Bolts
136. Collar Bolt
137. Collars
141. Radius Bar and Connecting Rod Pins
142. Clamp Bolts

Radius Bar shown above is made of a drop-forging and can be used on inside admission gears only. The two halves of this bar are machined alike. Therefore, one-half bar can be furnished when ordered. These will be furnished complete with pins, bolts and collars, or each part can be ordered separately.

Radius Bar

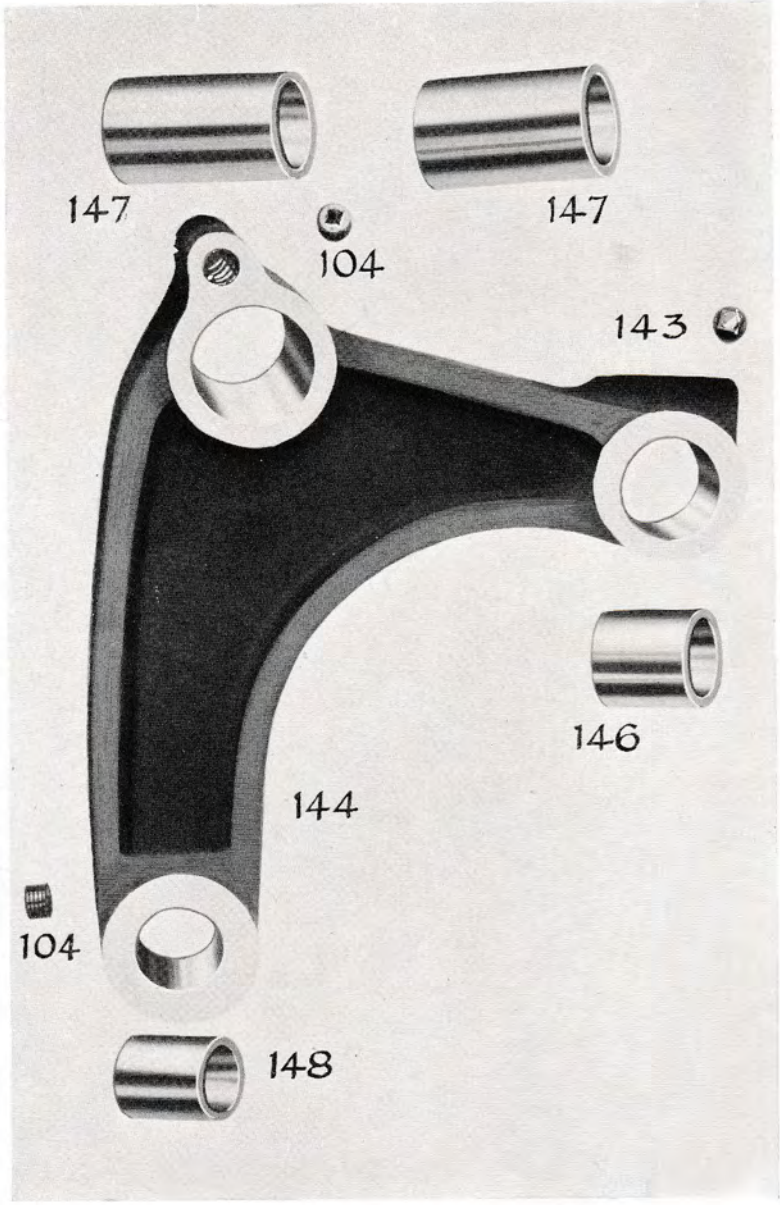


The Parts

131. Radius Bar
132. Hardened Sleeves for Trunnion
133. Collar Bolts
115. Nuts for Collar Bolts
137. Collars
138. Hardened Sleeve for Radius Bar and Connecting Rod Pin
139. Mandrel for Radius Bar and Connecting Rod Pin
140. Nut for Mandrel

The above Radius Bar, which is drop-forged, was formerly used on both inside and outside admission gears, but due to the superior construction of bar 130 this bar is now used on outside admission gears only, and as bar 130 will not give clearance on valve rod for outside admission gears it cannot be used. When ordered this will be assembled with all parts shown above, or each part can be ordered separately.

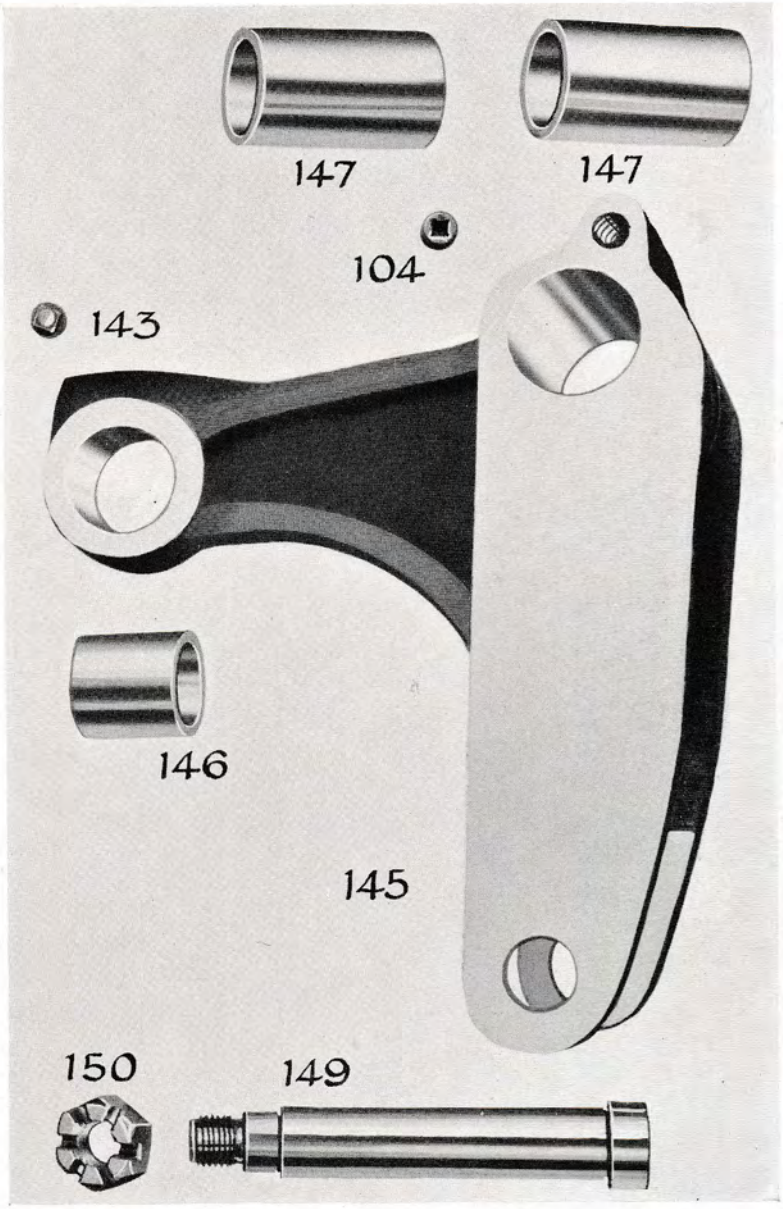
Inside Admission Bell Crank



The Parts

144. Inside Admission Bell Crank
104. Three-quarter-inch Female Pipe Plugs
143. Three-quarter-inch Male Pipe Plug
146. Bronze Bushing
147. Bronze Bushing for Bell Crank and Frame—two of these required for Crank
148. Bronze or Case Hardened Bushing

Inside Admission Bell Crank is made of vanadium cast steel. These cranks are symmetrical and therefore can be used on either side of the locomotive. These are furnished complete with bushings and pipe plugs, or each part may be ordered separately.



Inside Admission Bell Crank

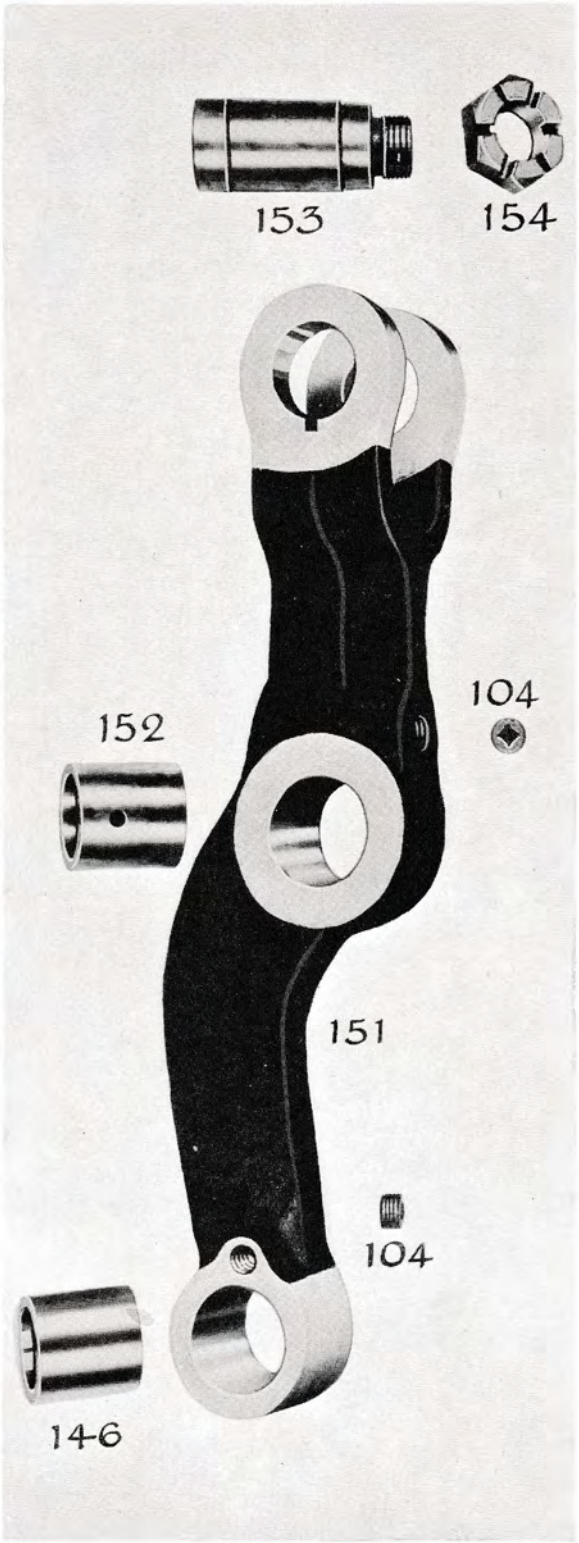
The Parts

145. Bell Crank
143. Three-quarter-inch Male Pipe Plug
104. Three-quarter-inch Female Pipe Plug
146. Bronze Bushing
147. Bronze Bushing—two of these required for Crank
149. Pin for Bell Crank and Valve Rod or Combination Lever
150. Nut for Bell Crank Pin

Inside Admission Bell Crank shown is of the double-arm type, and is cast from vanadium steel. Although these are symmetrical the boring and reaming for the pins make them right or left. These are furnished complete with all the parts shown above, or each piece may be ordered separately.

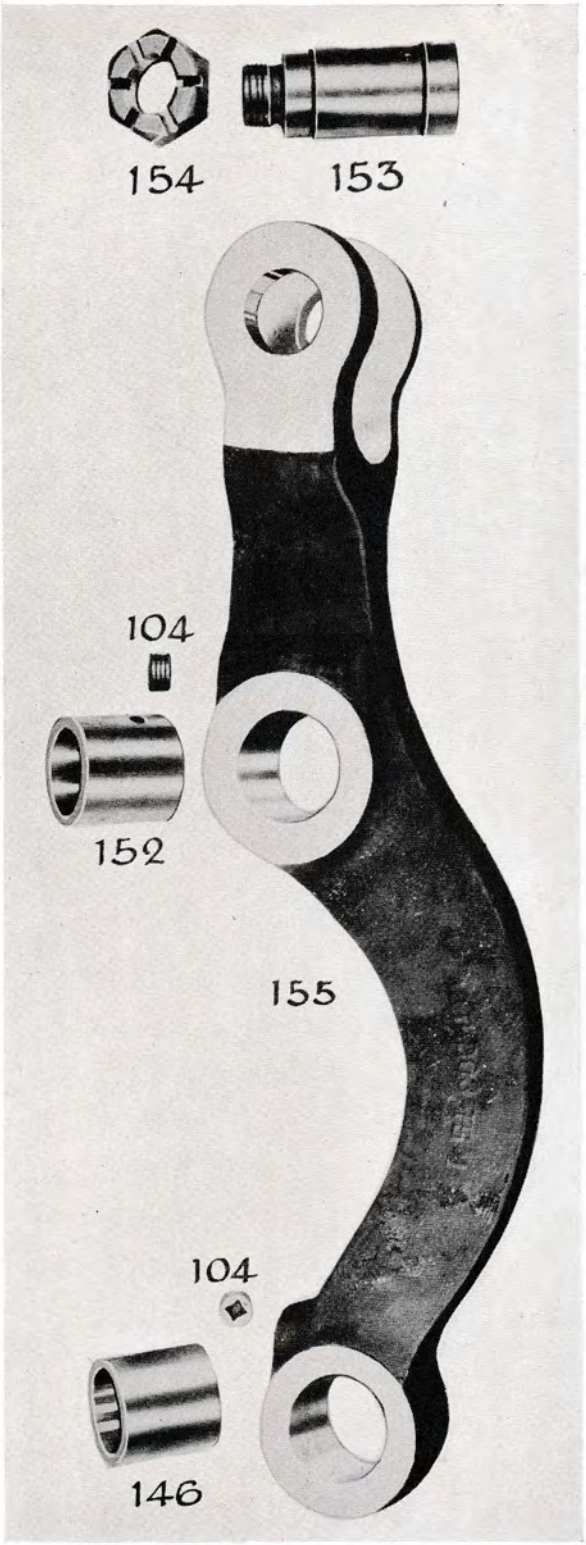
Inside Admission Connecting Rod

Inside Admission Connecting Rod here shown is of vanadium cast steel. The lower half is 14″ long with 2″ backset. The boring and reaming for the pins make them right and left. Therefore, specify side of the locomotive for which these are wanted. Will be furnished complete with parts shown, or each part can be purchased separately.



The Parts

151. Inside Admission Connecting Rod
104. Three-quarter-inch Female Pipe Plugs
146. Bronze Bushing
152. Case Hardened Bushing
153. Connecting Rod Pin
154. Nut for Connecting Rod Pin

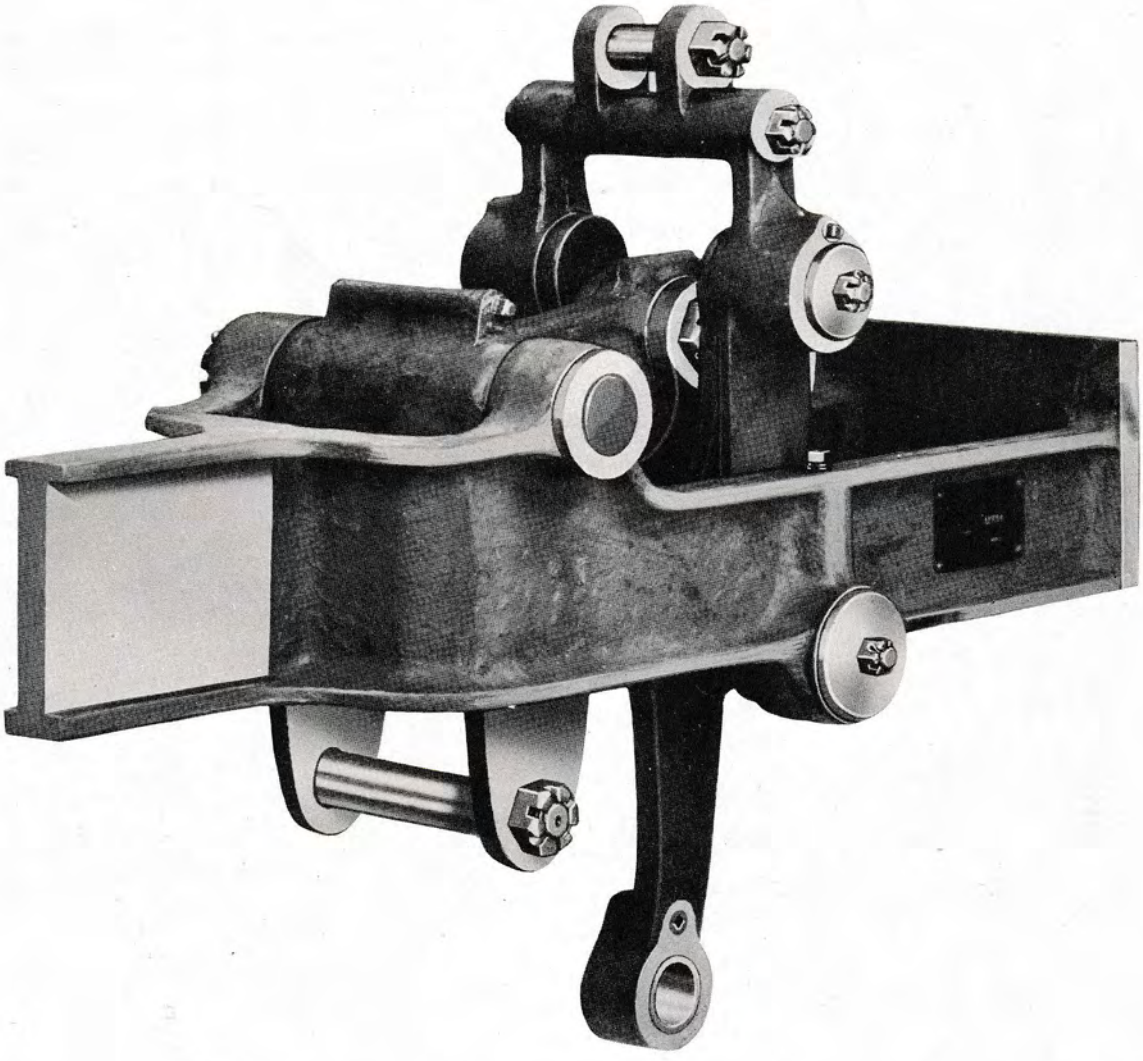


Inside Admission Connecting Rod

Inside Admission Connecting Rod here shown is made of both vanadium cast steel and drop-forged. Boring and reaming for pins make them right or left. The lower half of this rod is 18″ long with 2″ backset. Will be furnished complete or each part may be ordered separately. State in your order whether vanadium cast steel or drop-forged is wanted.

The Parts

155. Connecting Rod
104. Three-quarter-inch Female Pipe Plugs
146. Bronze Bushing
152. Case Hardened Bushing
153. Pins for Connecting Rod
154. Nut for Connecting Rod Pin



Outside Admission Gear, Style 3

(ASSEMBLED)

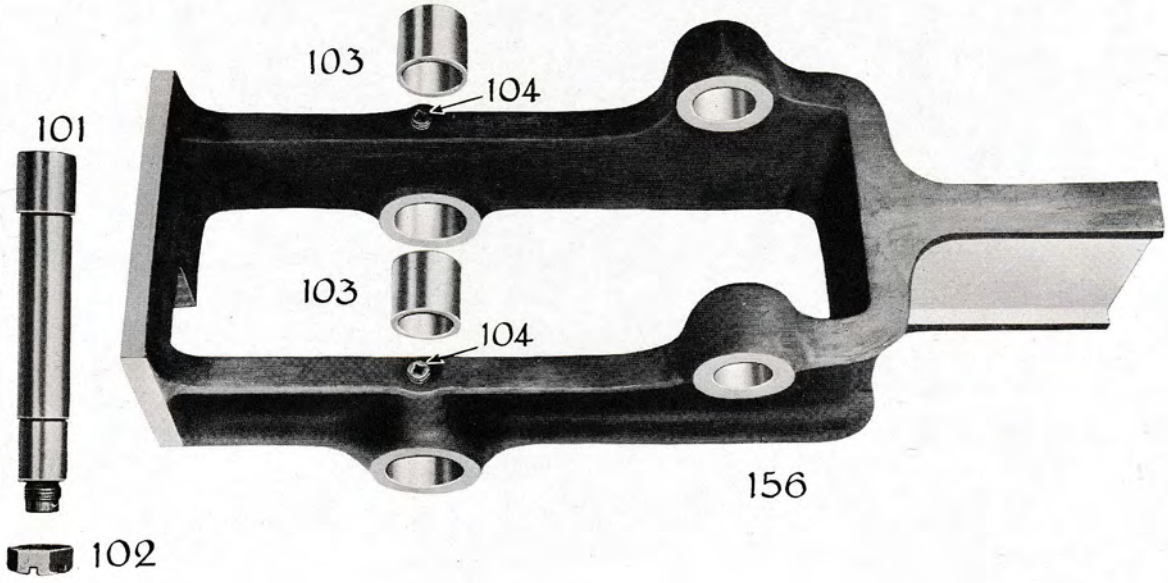
IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

Outside Admisson Gear Frame, Style 3

Outside Admission Gear Frame Style No. 3 is made of cast steel. We use two different lengths of these to suit the construction of the locomotive. We also have two different lengths in a wider frame which are used to some extent. By stating on your order the type and class of locomotive for which these frames are wanted, you will enable us to furnish the proper material.

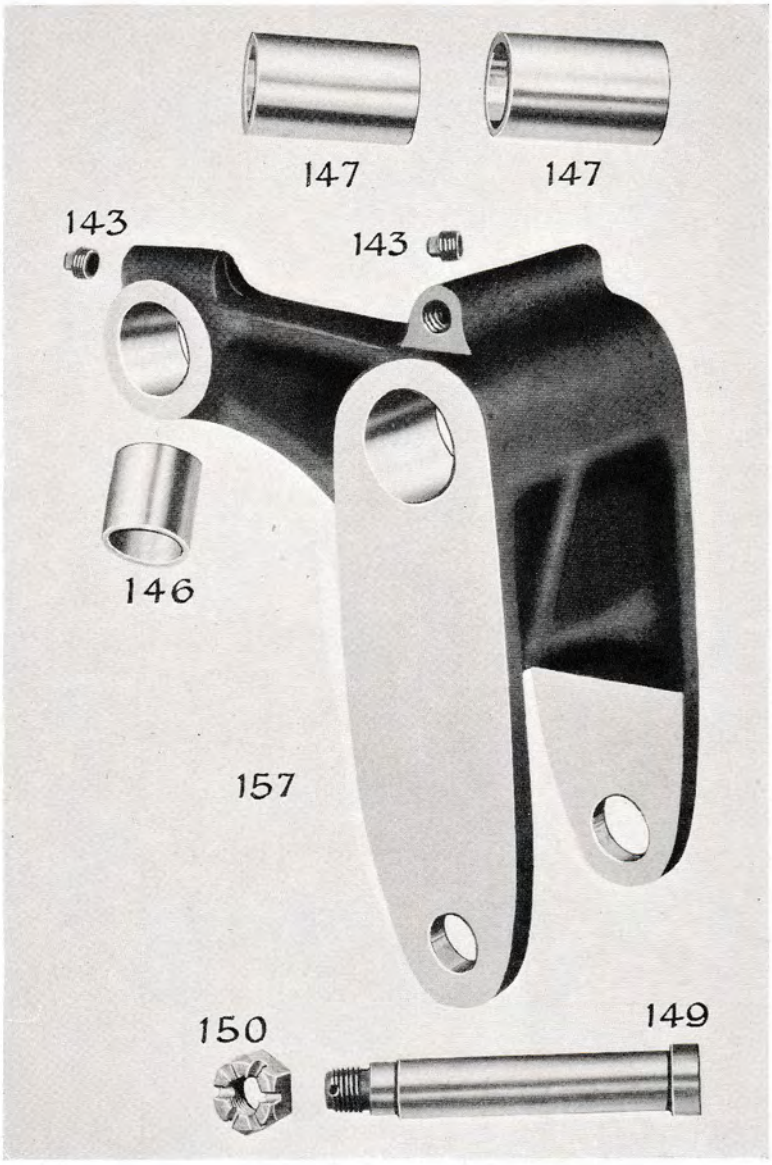
The Parts

156. Outside Admission Gear Frame
101. Pin for Gear Frame
102. Nut for Gear Frame Pin
103. Cast Iron or Bronze Bushing
104. Three-quarter-inch Female Pipe Plugs



IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

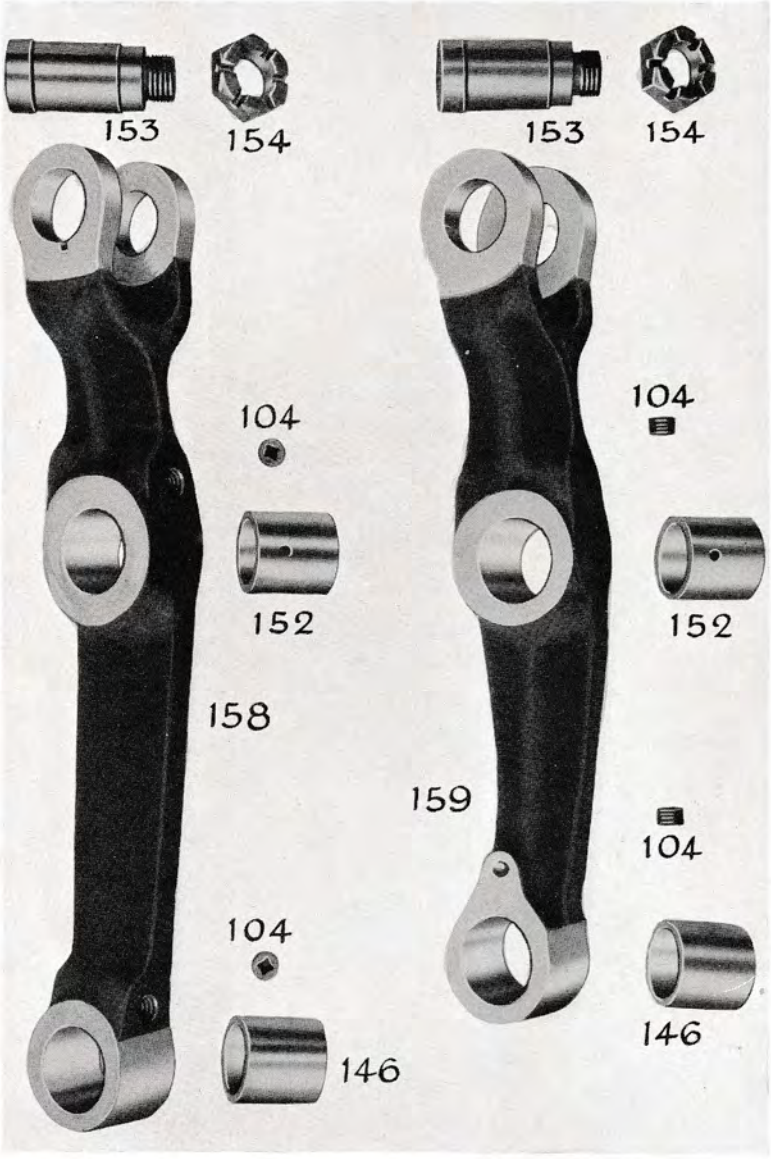
Outside Admission Bell Crank



The Parts

157. Outside Admission Bell Crank
143. Three-quarter-inch Male Pipe Plugs
146. Bronze Bushing
147. Bronze Bushings for Long Bearing —two required per Crank
149. Pin for Bell Crank
150. Nut for Bell Crank Pin

Outside Admission Bell Crank shown above is made in two widths to suit the gear frames covered in the preceding paragraph. These are made of vanadium cast steel. Although these are symmetrical the boring and reaming for the pin make them right and left. Therefore, the order should state for which side of locomotive the material is wanted.

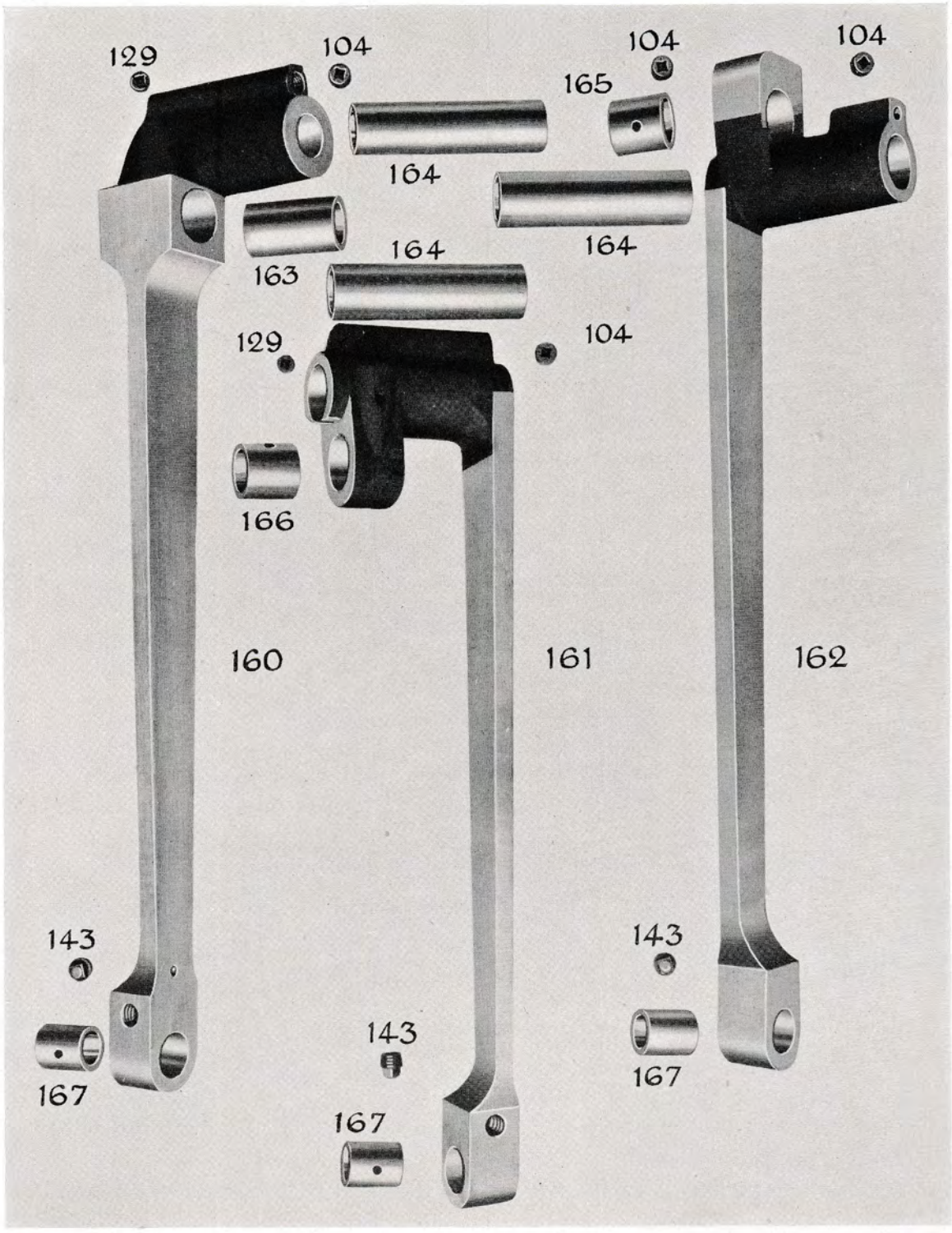


Outside Admission Connecting Rods

The Parts

158. Outside Admission 18″ Connecting Rod
159. Outside Admission 14″ Connecting Rod
104. Three-quarter-inch Female Pipe Plugs
153. Connecting Rod Pin
154. Nut for Connecting Rod Pin
146. Bronze Bushing
152. Case Hardened Bushing

The two Outside Admission Connecting Rods shown are of vanadium cast steel. On No. 158 the lower half is 18″ long and has been used mostly on Mallet locomotives. On No. 159 the lower half is 14″ long. This has been used on nearly all applications of outside admission gears except those used on Mallet type. These are right and left, therefore, specify for which side of locomotive material is wanted. These will be furnished either complete and assembled, or each part may be purchased separately.



Combination Levers

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

Combination Levers

On account of the many different styles of Combination Levers, we have shown only a few of the most common types used. However we are in a position to give delivery on all styles and types, of which we have a complete record.

On the opposite page is a group of combination levers which are suspended from the bell crank. The tops of these levers are drop-forged with enough stock left on the billets to draw out the body and form the bottom end, eliminating welds. Each lever is furnished either assembled complete with bushings and pipe plugs, or each part can be purchased separately. As these are right and left it will be necessary to specify which is wanted.

The Parts

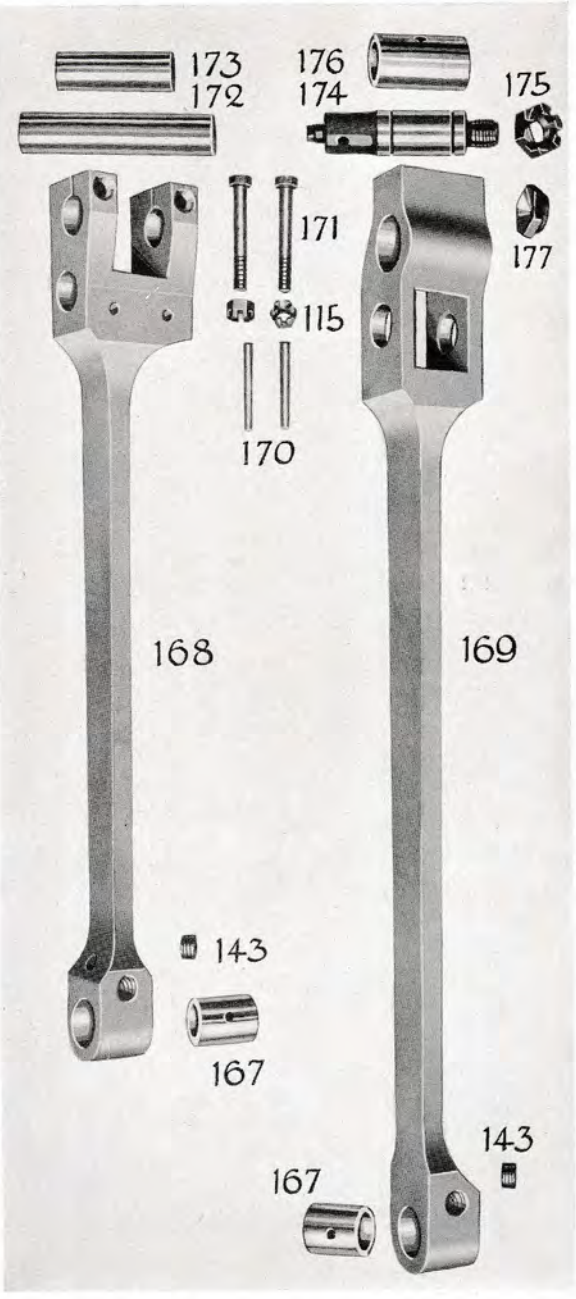
160. Inside Admission Combination Lever
104. Three-quarter-inch Female Pipe Plugs
143. Three-quarter-inch Male Pipe Plugs
163. Case Hardened Bushings
164. Bronze Bushings
167. Case Hardened Bushings
161. Inside Admission Combination Lever
166. Case Hardened Bushing. Other material same as for Lever No. 160
162. Outside Admission Combination Lever. The Long Hub at top is made in two lengths, 9″ and 10⅞″ to suit the Bell Cranks mentioned on Page 28
165. Case Hardened Bushing. Other material like Lever No. 160

Combination Lever

Combination Lever No. 168 is for inside admission valve and is suspended from a valve stem crosshead. These are hand-forged and made in various lengths and shapes to suit conditions. By stating on your order the type and class of power for which these are wanted, you will enable us to furnish proper material. These are furnished either complete with all parts shown, or each part can be furnished separately. If pins are ordered the bearings are hardened and ground; and when drilling is required for clamp bolts and dowels that portion of the pin will be left soft so that the pin after being properly located in place can be drilled and reamed.

The Parts

168. Inside Admission Combination Lever
167. Case Hardened Bushing
143. Three-quarter-inch Male Pipe Plug
170. Half-inch Taper Dowel
171. Clamp Bolts
115. Nuts for Clamp Bolts
172. Combination Lever and Valve Stem Crosshead Pin
173. Combination Lever and Valve Rod Pin

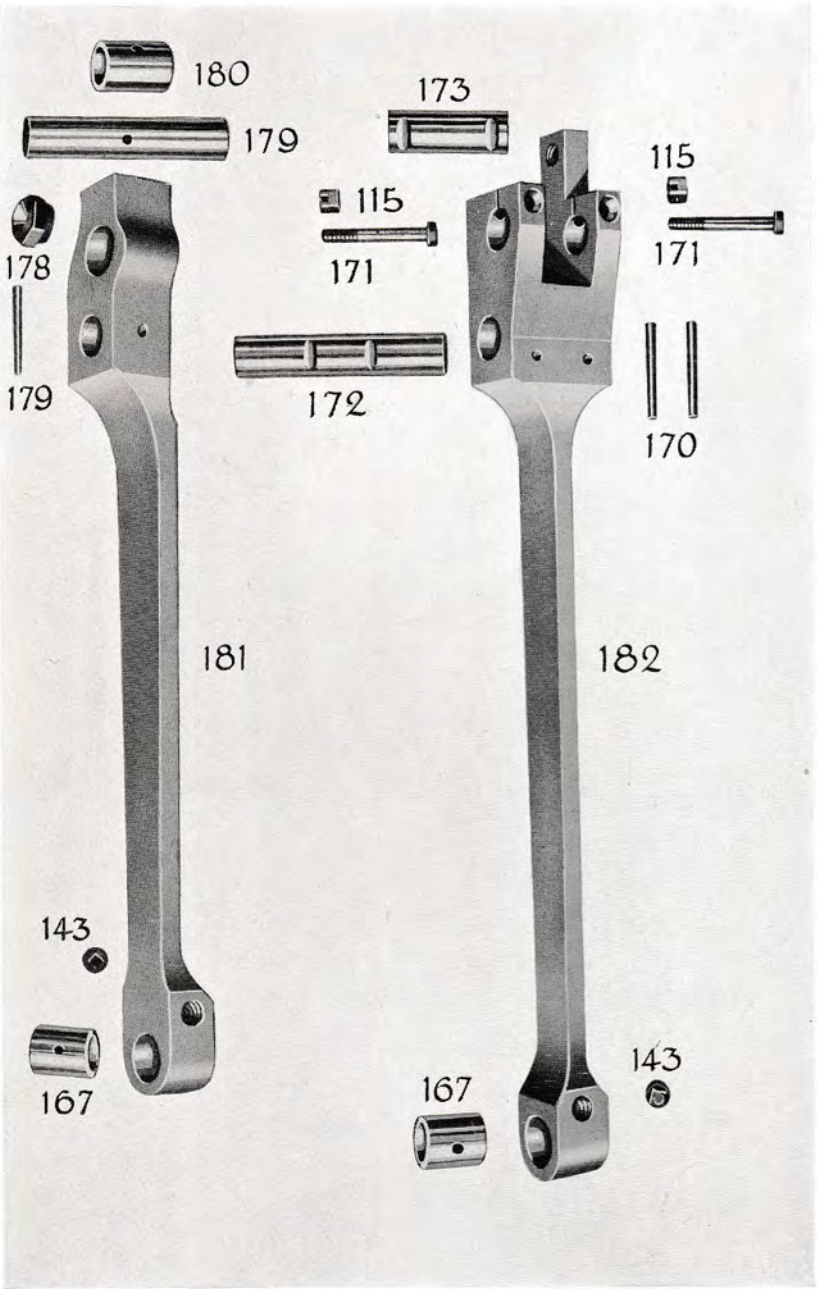


Combination Lever

Combination Lever No. 169 is for outside admission valve and is suspended from a rocker arm. These are made in various lengths and with offset to suit the construction of locomotive. These are furnished either complete and assembled, or each part may be ordered separately.

169. Outside Admission Combination Lever
167. Case Hardened Bushing
143. Three-quarter-inch Male Pipe Plug
174. Combination Lever and Valve Rod Pin
175. Nut for Combination Lever and Valve Rod Pin
176. Bronze or Case Hardened Bushing — Case Hardened preferred
177. Oil Cup

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

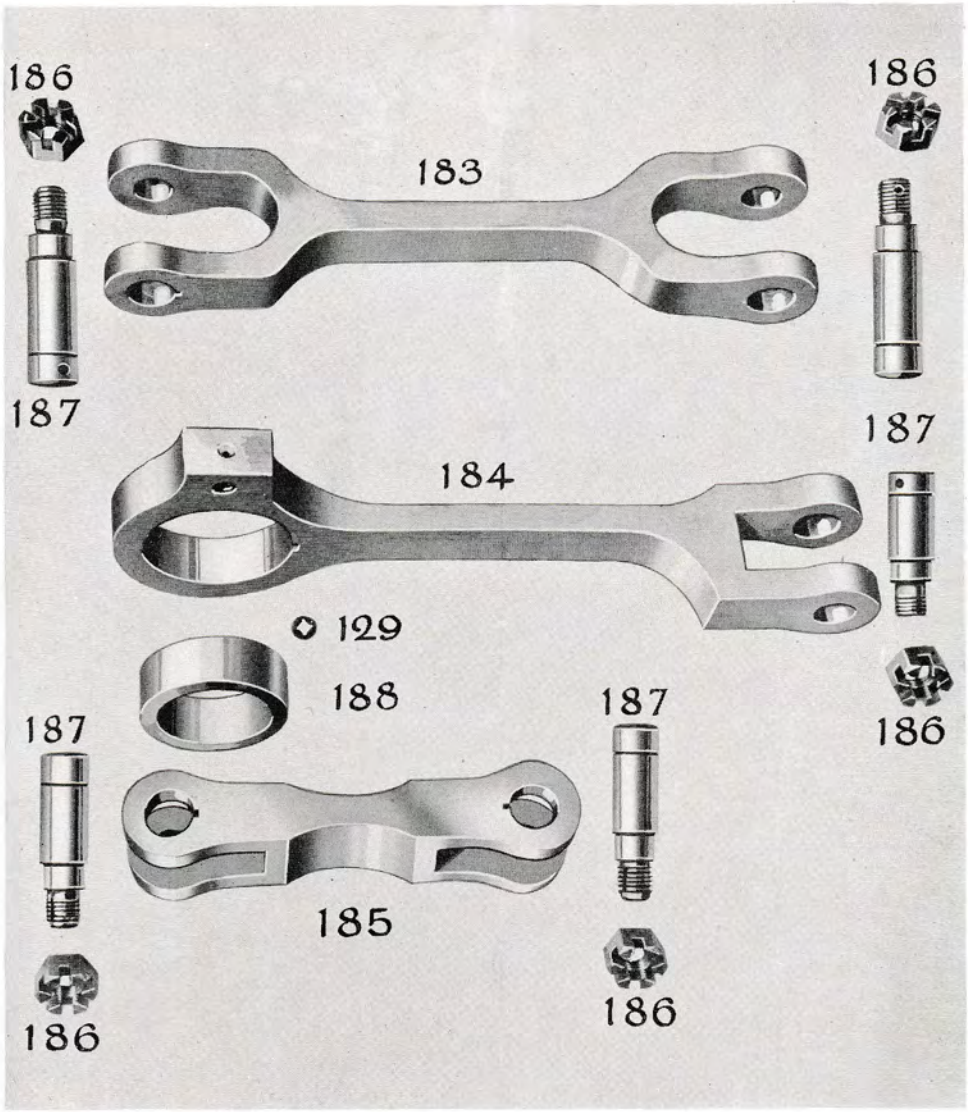


Combination Levers

Both of these Combination Levers are for piston valves and are suspended from a valve stem crosshead. They are hand-forged and furnished complete with pins, bushings, dowels, clamp bolts, pipe plugs and oil cup, or each of these parts may be purchased separately. If pins are required they will not be drilled for dowels or clamp bolts. That part of pin requiring work after being put in place will be left soft with balance hardened and ground.

181. Combination Lever
143. Three-quarter-inch Male Pipe Plug
167. Case Hardened Bushing
170. Half-inch Taper Dowel
178. Oil Cup
179. Combination Lever and Valve Stem Crosshead Pin
180. Bushings, Bronze or Case Hardened—Case Hardened preferred

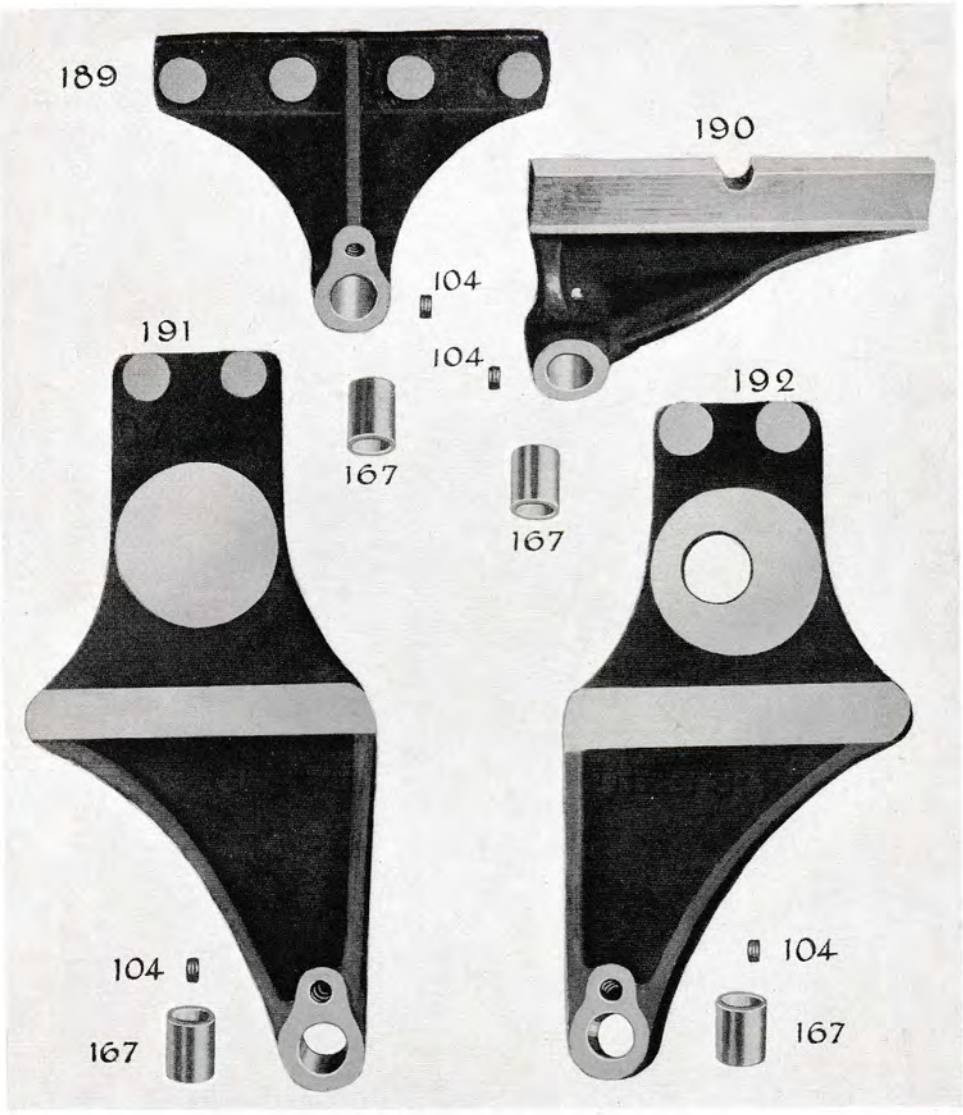
182. Combination Lever with attachment for driving Mechanical Lubricator
143. Three-quarter-inch Male Pipe Plug
167. Case Hardened Bushing
170. Half-inch Taper Dowels
171. Clamp Bolts
115. Three-quarter-inch Nuts for Clamp Bolt
172. Combination Lever and Valve Stem Crosshead Pin
173. Combination Lever and Valve Rod Pin



Union Links

The above illustrates a number of Union Links which are made in various shapes to suit conditions. Nos. 183 and 185 are used with crosshead arm; No. 184 with wrist pin drive. The eye on this is made in several different sizes to suit crosshead wrist pin and security crosshead.

183-184-185. Union Links
186. Nuts for Union Link Pin
187. Union Link Pins
188. Bronze Bushing
129. Half-inch Female Pipe Plug



Crosshead Arms

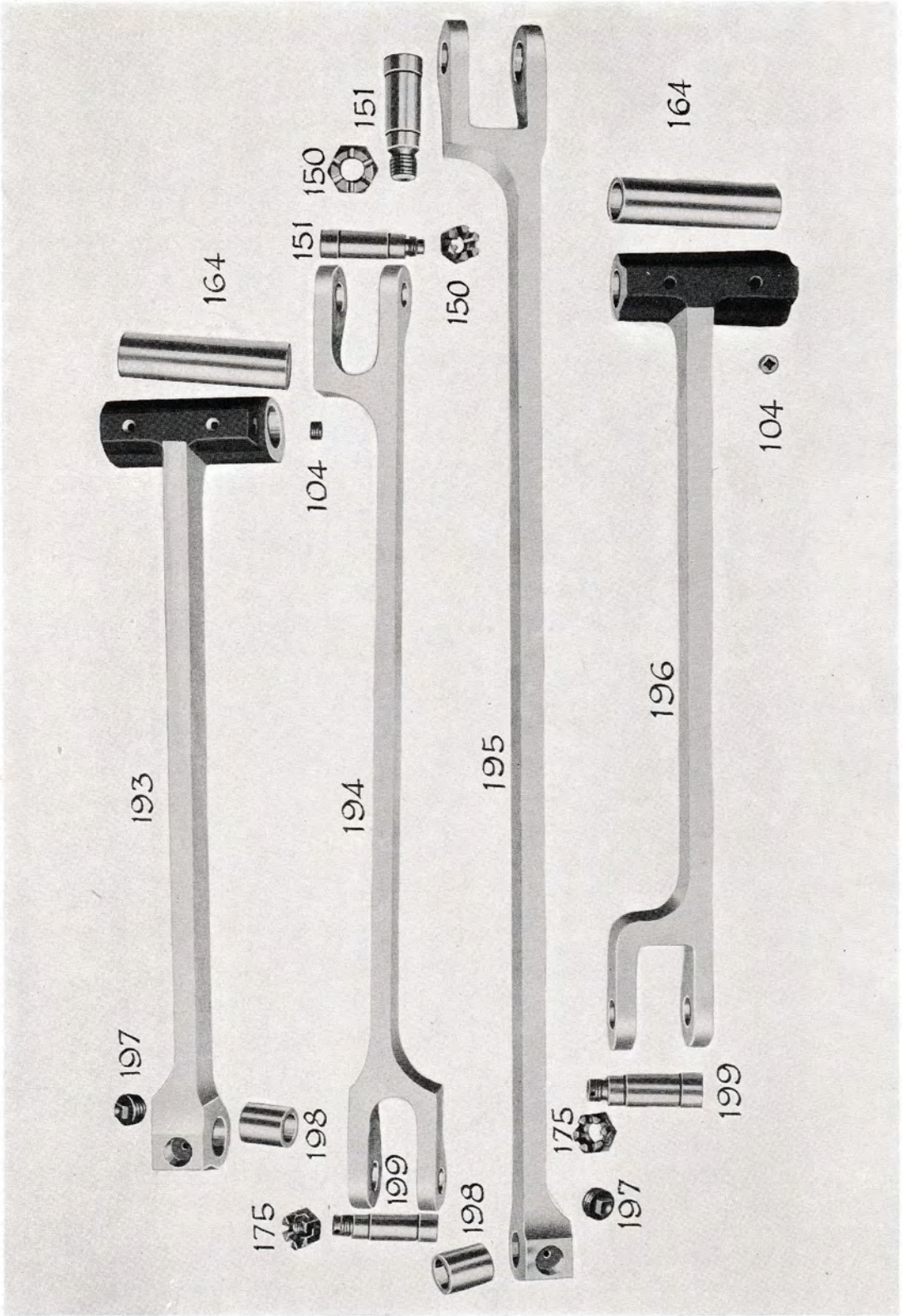
Shown above are a few Crosshead Arms; these are designed to suit the crosshead and the valve gear. It generally requires different arms for different classes and types of locomotives. As we have a record of each application of valve gear we will furnish the proper material if the order states type and class and for which arm desired. These arms are not drilled for crosshead bolts and not generally bored for the crosshead wrist pin.

104. Three-quarter-inch Female Pipe Plugs

189-190-191-192. Crosshead Arms

167. Case Hardened Bushings

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted



Valve Rods

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

Valve Rods

On account of the many different styles of Valve Rods, we have shown only a few of the most common types used. However we are in a position to give delivery on all styles and types of which we have a complete record.

The illustration on the opposite page shows valve rods which in the past have been used when applying Baker Gear. No. 193 is used with a double arm bell crank and jawed combination lever; No. 194, single arm bell crank and straight combination lever; No. 195, single arm bell crank and jawed combination lever; No. 196, double arm bell crank and straight combination lever. These are hand-forged and are made in lengths and with offsets which suit conditions. Will be furnished either complete, or each part may be ordered separately.

The Parts

193-194-195-196. Valve Rods

151. Valve Rod and Bell Crank Pins

150. Nuts for Valve Rod and Bell Crank Pin

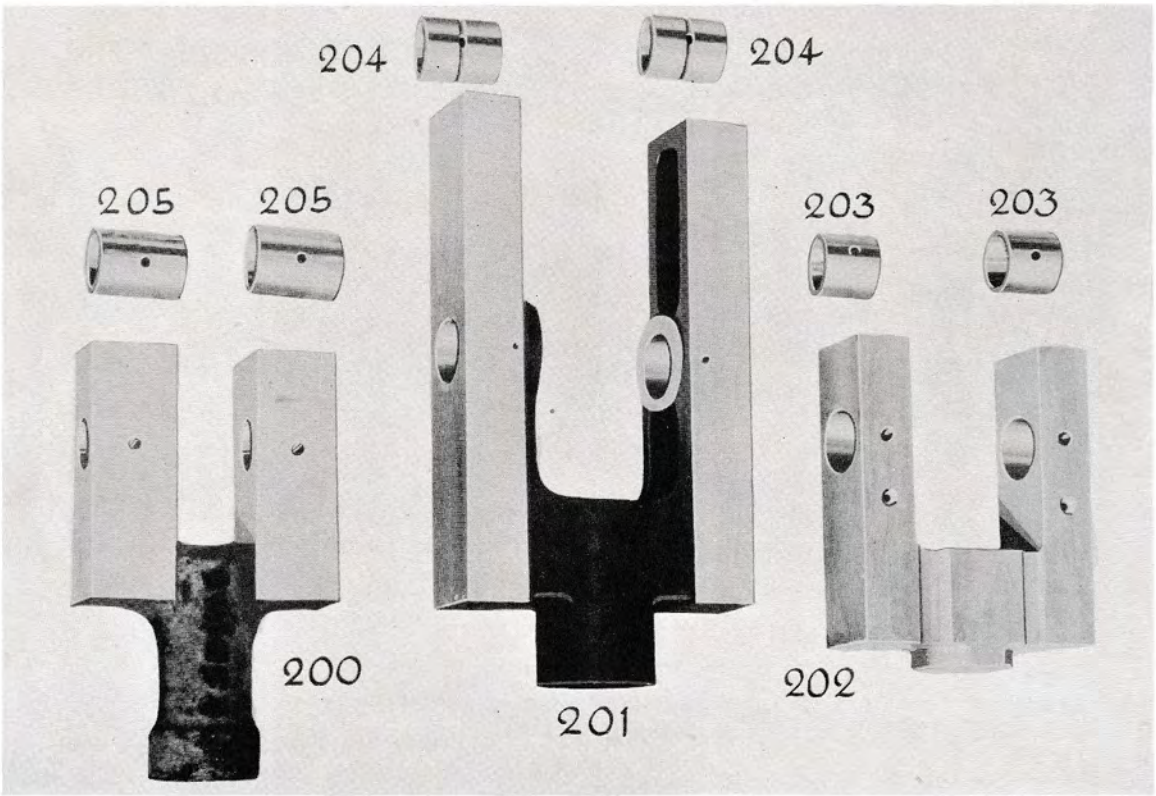
164. Bronze Bushings

199. Valve Rod and Combination Lever Pins

175. Nut for Valve Rod and Combination Lever Pins

197. 1¼-inch Male Pipe Plug

198. Case Hardened Bushings

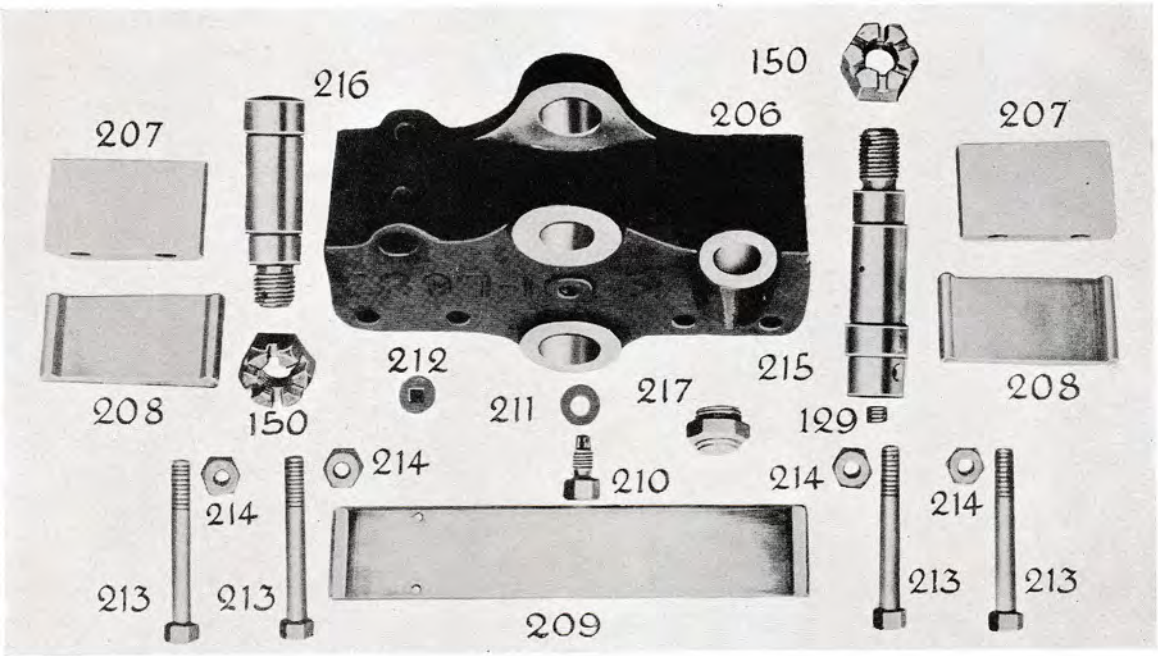


Valve Stem Crossheads

Valve Stem Crossheads are made in various shapes and sizes to suit the practice followed by different railroads. The above shows a few of these which are made from cast steel and forged. These will be furnished complete with bushings, but not bored and reamed for valve stem.

200. Valve Stem Crosshead
205. Case Hardened Bushings
201. Valve Stem Crosshead
204. Case Hardened Bushings
202. Valve Stem Crosshead
203. Case Hardened Bushings

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

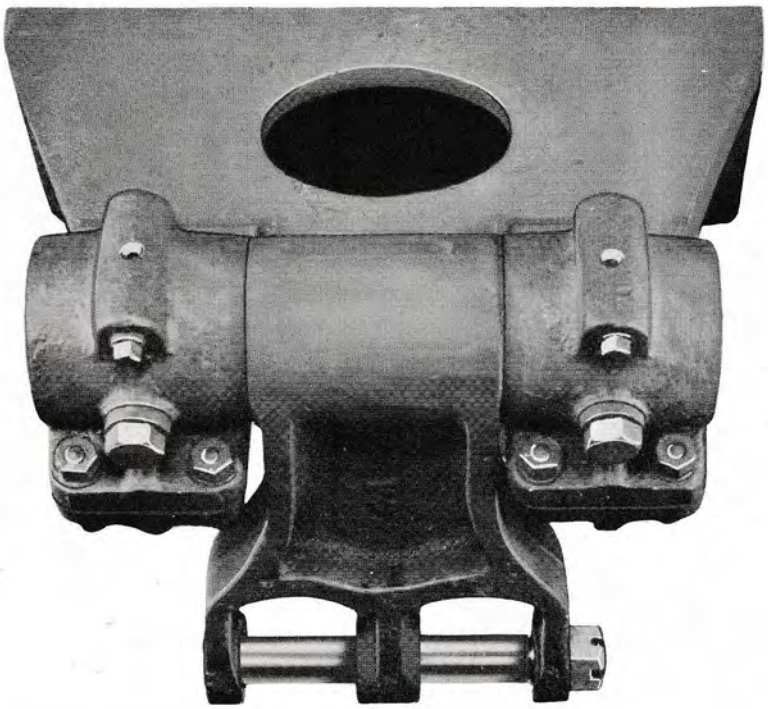


Valve Stem Crosshead

The Valve Stem Crosshead shown above slides on a guide bar. These are made from cast steel and are right and left. The sides are lined with hard babbitt, held in place with anchors. The top and bottom gibs are bronze. The bottom gibs are held in place by two cast iron blocks which can be removed to apply liners under the gibs to take up wear. These crossheads are provided with a tap bolt and ferrule to clamp the crosshead to bar when covering ports in case of failure. The bottom pin is provided with an oiling arrangement. These will be furnished assembled complete with all the parts shown, or each part can be ordered separately.

260. Valve Stem Crosshead
207. Cast Iron Blocks
208. Bottom Bronze Gibs
209. Top Bronze Gib
210. Tap Bolt
211. Ferrule for Tap Bolt
212. One-inch Pipe Plug
213. Tie Bolts
214. Nuts for Tie Bolts
215. Bottom Pin
129. Half-inch Female Pipe Plug for Pin 215
216. Top Pin
150. 1½-inch Castle Nuts for Pins 215 and 216
217. Oil Cup

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

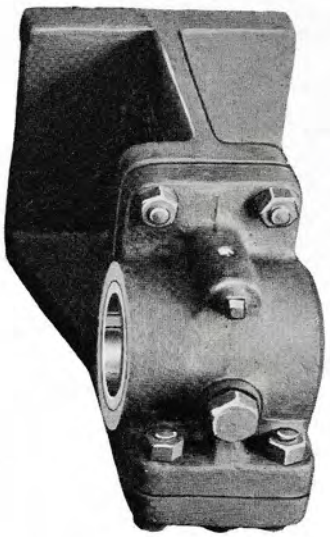


Rocker Assembly

Assembly or Rocker Arrangement which is generally used with slide valves on old power when valves are 2½″ to 4″ inside center line of cylinder. Note the sturdy construction and how easily the boxes can be removed for rebushing without taking the bracket down.

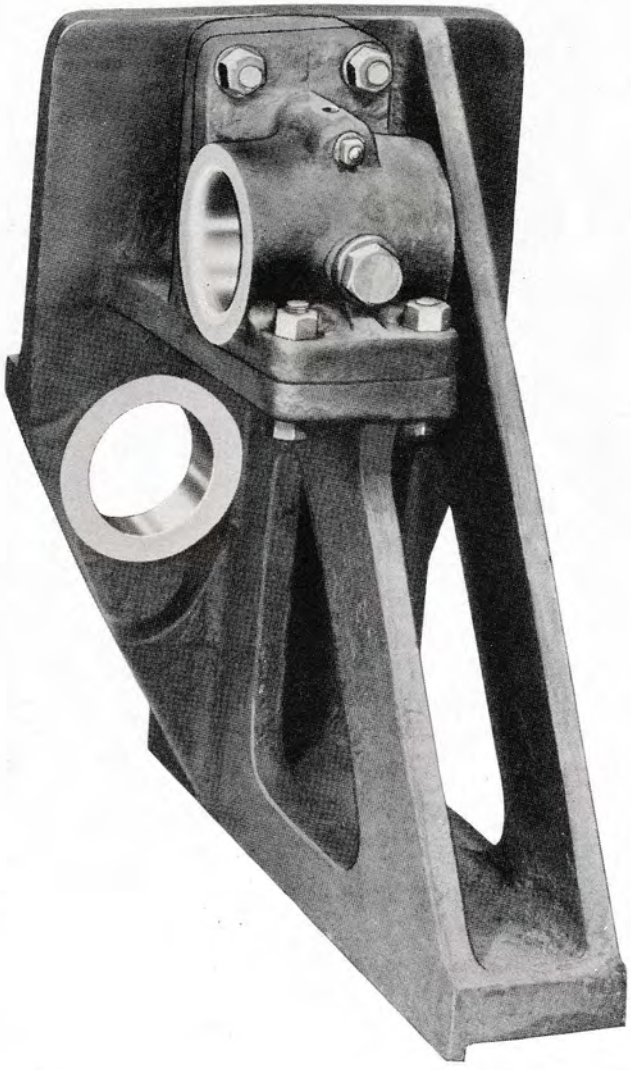
Rocker Box and Rocker Box Bracket

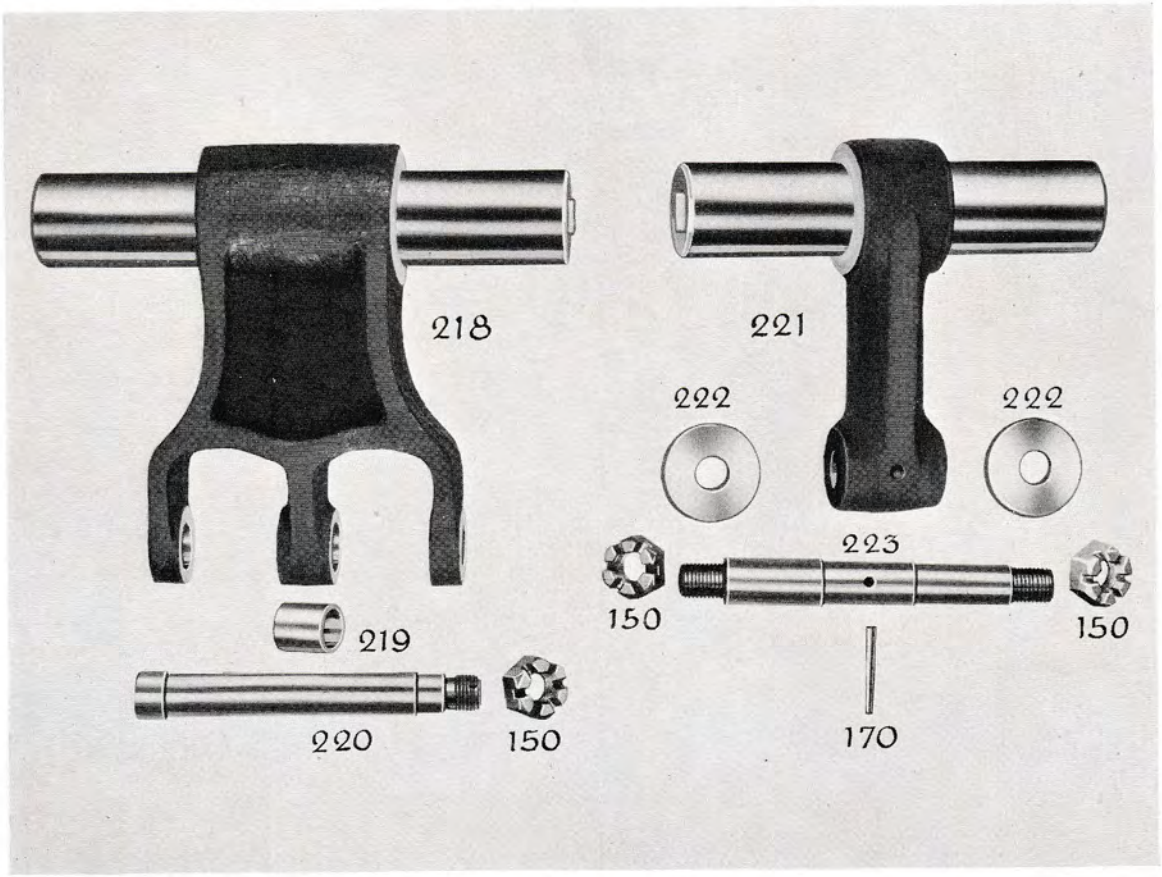
The Rocker Box and Rocker Box Bracket assembled are generally used with piston valve cylinders when valve is from five to eighteen inches inside of cylinder.



Combined Rocker Box and Guide Yoke Knee

Note the sturdy construction of the Combined Rocker Box and Guide Yoke Knee, as in the two preceding designs. It will be noticed that by removing four bolts the rocker box can be removed for rebushing.

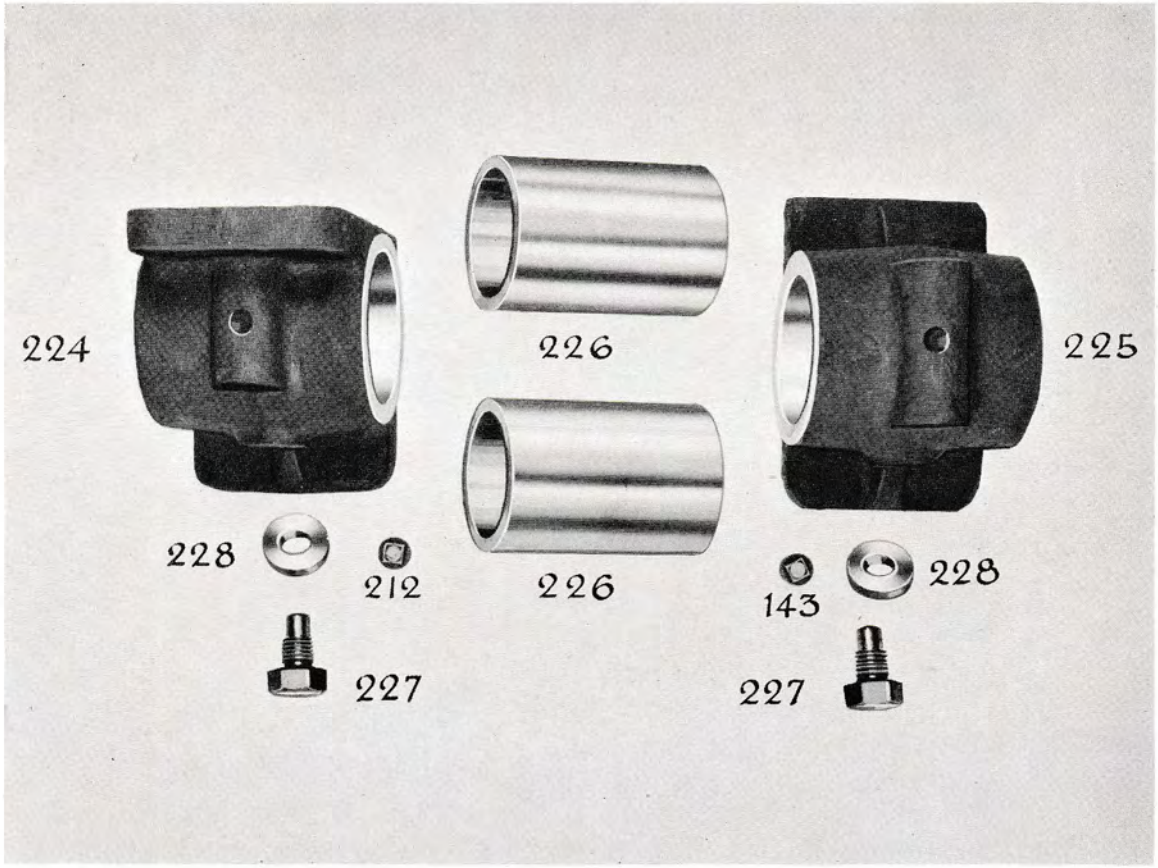




Rocker Arms

The above shows two types of Rocker Arms which have been used to a great extent, especially on old power with slide valve cylinder. They are made of cast steel, with trunnions, which are cored to reduce the weight to a minimum, cast integral with the body.

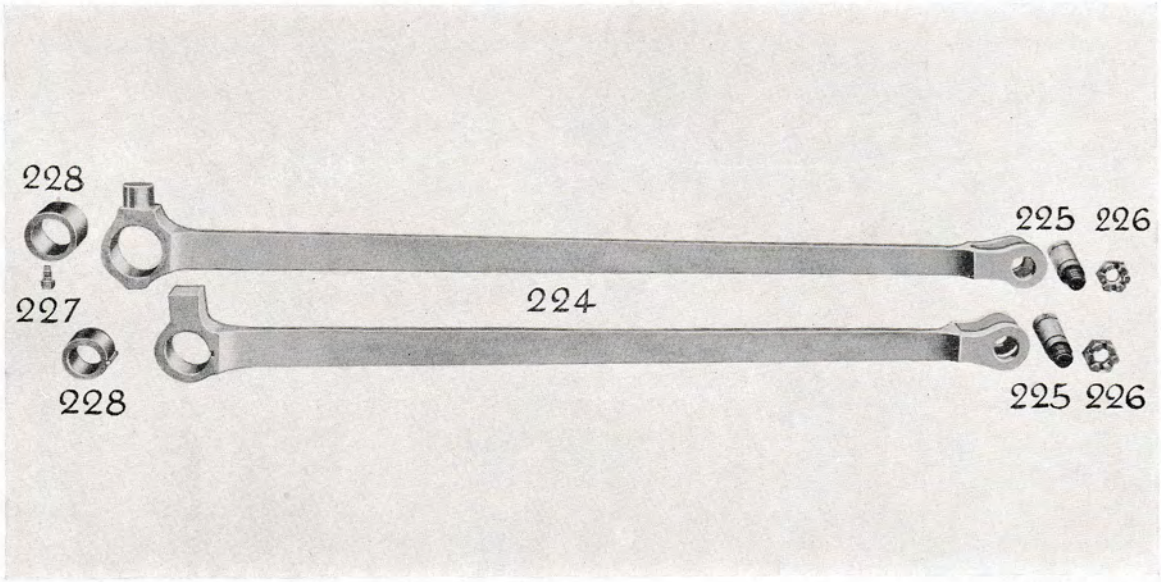
218. Rocker Arm
219. Bushing for Rocker Arm
220. Rocker Arm Pin
150. 1½-inch Nut for Rocker Arm Pin
221. Rocker Arm
222. Collars for Rocker Arm Pin
223. Rocker Arm Pin
150. 1½-inch Nuts for Rocker Arm Pin
170. Half-inch Taper Dowels



Rocker Boxes

Rocker Boxes shown herewith are cast steel bushed with cast iron which has a steel content. (This material is commonly called semi-steel.) The bushings can also be furnished in bronze. These boxes have large oil reservoirs and tap bolts with a ferrule for holding bushings. The ferrule can be removed and the tap bolt screwed in to hold the rocker arm when it is necessary to cover ports with valves. These are furnished complete, or each part may be ordered separately.

224. Rocker Box
225. Rocker Box
226. Bronze or Semi-Steel Bushing
227. Tap Bolts
228. Ferrules
212. One-inch Pipe Plug
143. Three-quarter-inch Male Pipe Plug

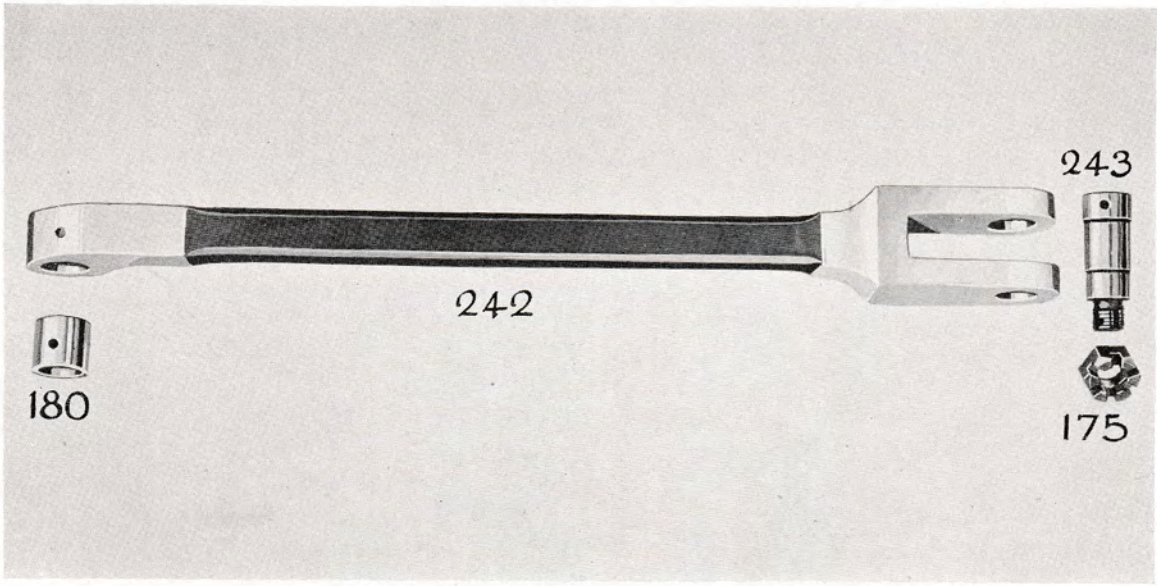


Eccentric Rods

The above illustrates Eccentric Rods which are of a length and have offsets to suit application of gear. These will be furnished with pins, bushings and tap bolts, but they are not drilled and tapped for oil cups.

The Parts

224. Eccentric Rods
225. Eccentric Rod Pins
226. 1¾-inch Nuts for Eccentric Rod Pin
227. Tap Bolts
228. Bronze Bushings



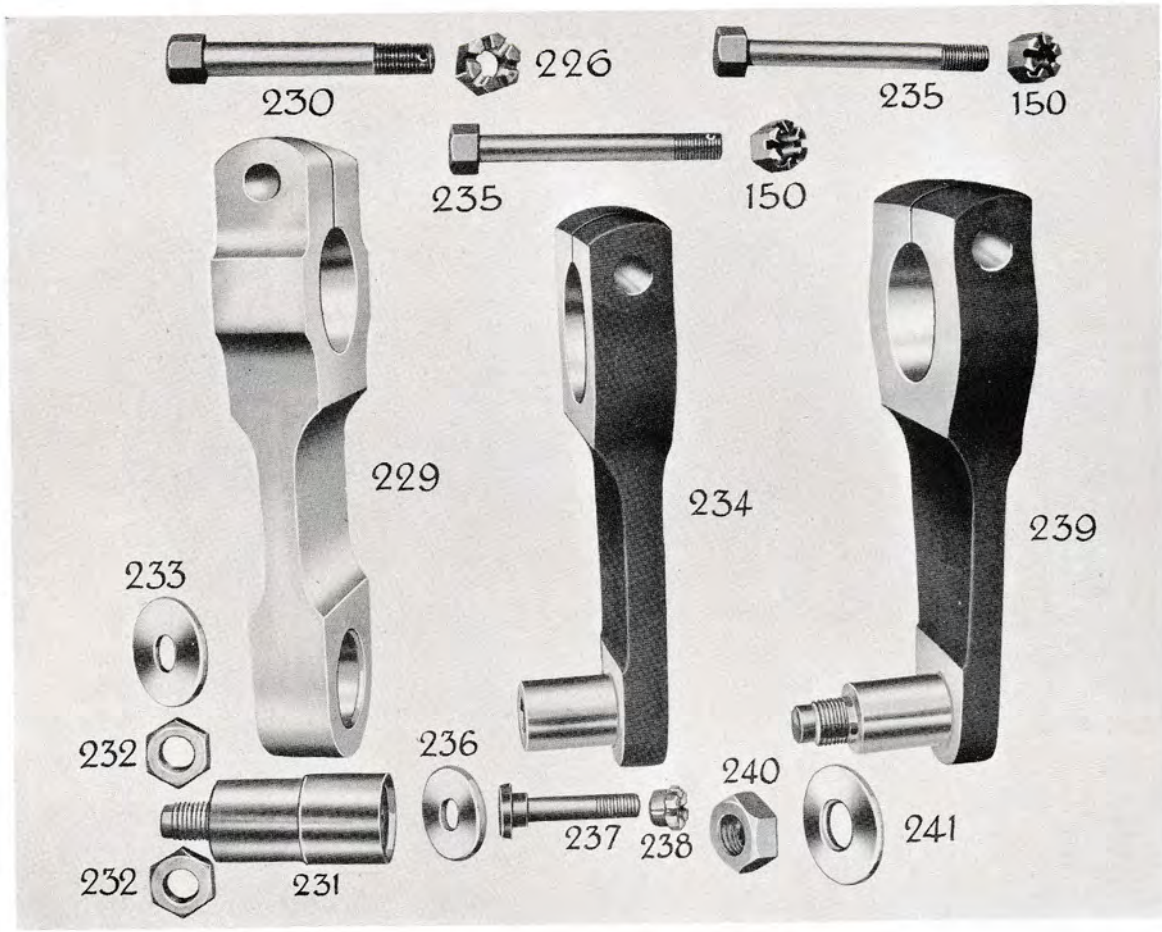
Gear Reach Rod

The Gear Reach Rod shown above is hand-forged and made in lengths and with offsets to suit the application of the gear. The eye end of these has been made in two widths; namely, two and three inches to suit the reverse yokes. Some have the eye set down as shown, to be used with the short yoke shown on Page 17. By stating on your order the type and class of power, we will furnish the proper material, consisting of reach rod with pins and bushings.

The Parts

242. Reach Rod
180. Case Hardened Bushing
243. Reach Rod Pin
175. 1¼-inch Nut for Reach Rod Pin

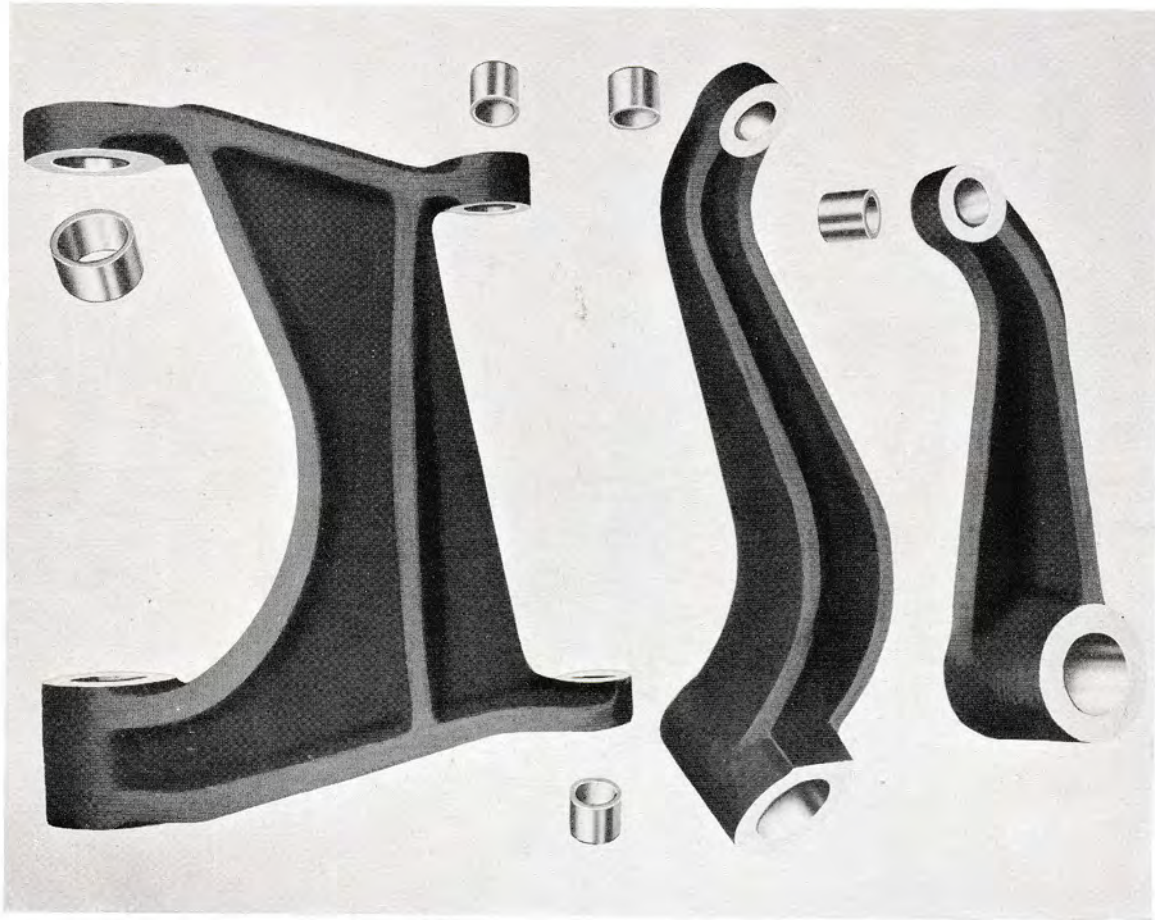
IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted



Eccentric Cranks

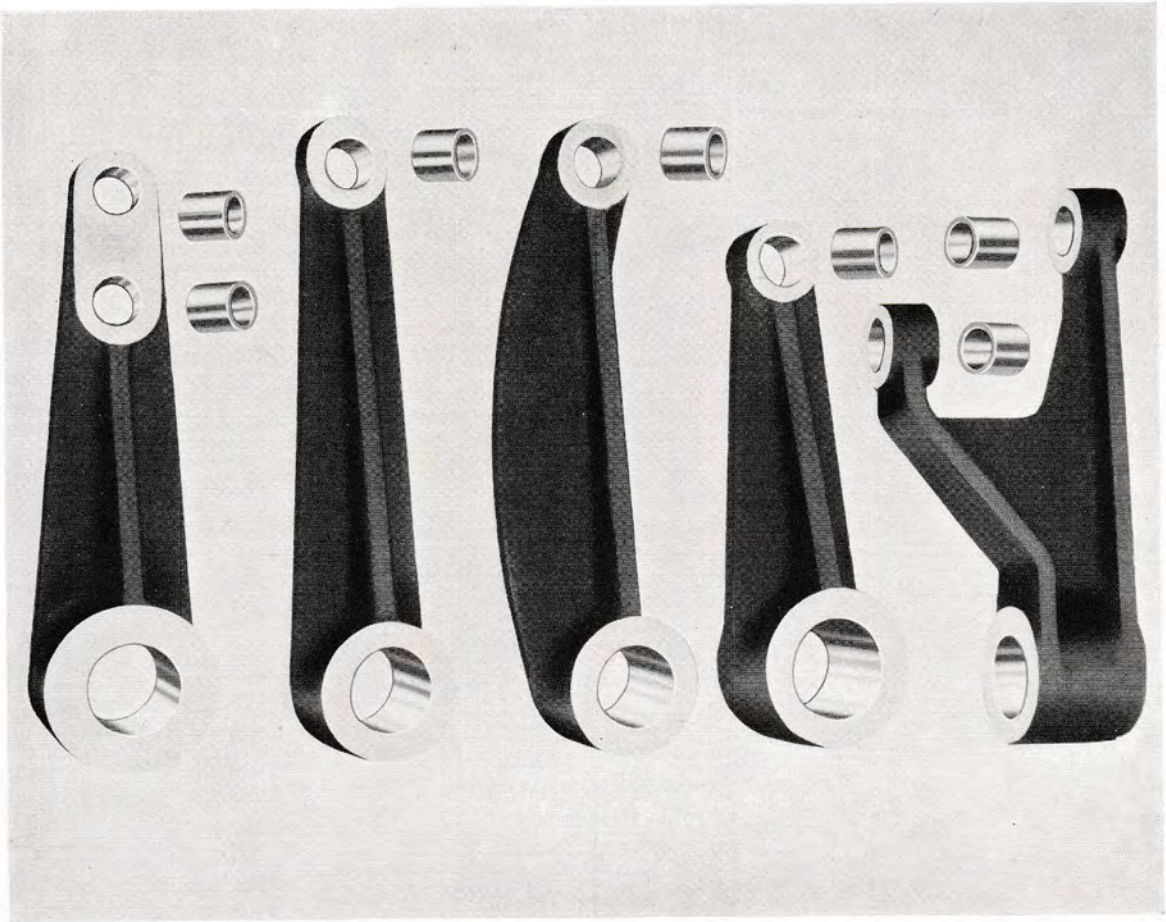
Eccentric Cranks are generally made to railroad companies' designs. Some of these are cast steel, others forged. Some have a trunnion cast integral with the crank for driving eccentric rod, others have a pin pressed in and riveted over. Where trunnions are cast integral with crank there is a hardened sleeve pressed over them to insure a smooth bearing. No. 229 is a forged crank into which the eccentric crank pin No. 231 will be pressed. No. 234, the trunnion is cast integral with a hole drilled through for clamp bolt No. 237 which holds collar No. 236 in place. Crank No. 239 has a threaded trunnion cast integral.

229. Forged Crank
230. Clamp Bolt
226. 1¾-inch Nut for Clamp Bolt
231. Eccentric Crank Pin
232. Nuts for Eccentric Crank Pin
233. Collars for Eccentric Crank Pin
234. Cast Steel Eccentric Crank
235. Clamp Bolts
150. 1½-inch Nut for Clamp Bolts
236. Collar
237. Collar Bolt
238. Nut for Collar Bolt
239. Cast Steel Eccentric Crank
240. Nut for Eccentric Crank Trunnion
241. Collar for Eccentric Crank Trunnion



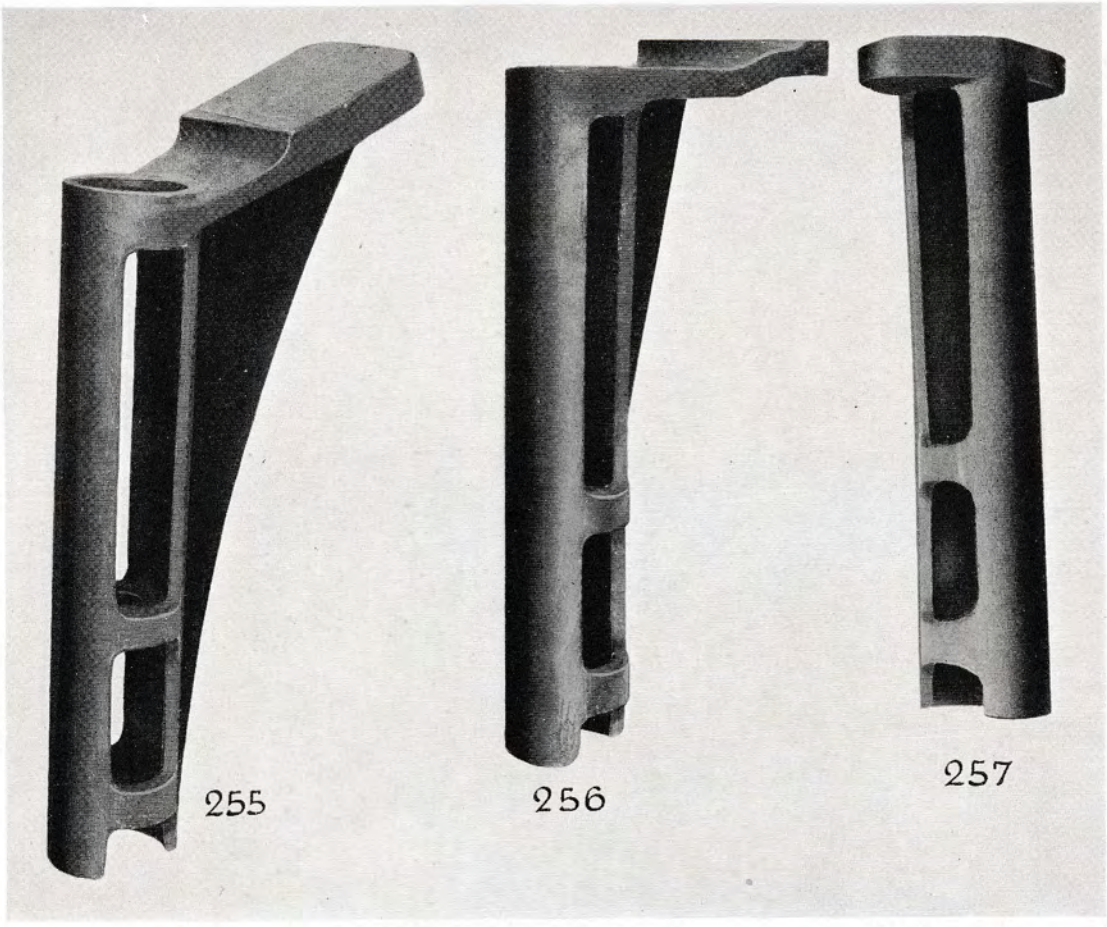
Reverse Arms

The above represents a few Reverse Arms which are used on Mallet type locomotives, in connection with Baker Gear. As their design is dependent on the construction of the locomotive no standard can be strictly adhered to. The above is shown to illustrate the sturdy construction. When placing requisition for reverse arms on Mallet locomotives, be careful to state whether they are wanted for high or low pressure units and which arm is required, as there are generally three arms on the shaft. These will be furnished with bushings where required, or bushings may be ordered separately.



Reverse Arms

Above is shown a number of Reverse Arms which are generally used with Baker Gear. The design of these arms is dependent on the location and throw of the reverse lever, or power reverse. There are times when it is necessary to use three arms on a reverse shaft to eliminate offsets in the reach rod. These arms will be bushed when furnished, or bushings may be ordered separately.



Counter-balance Spring Cases

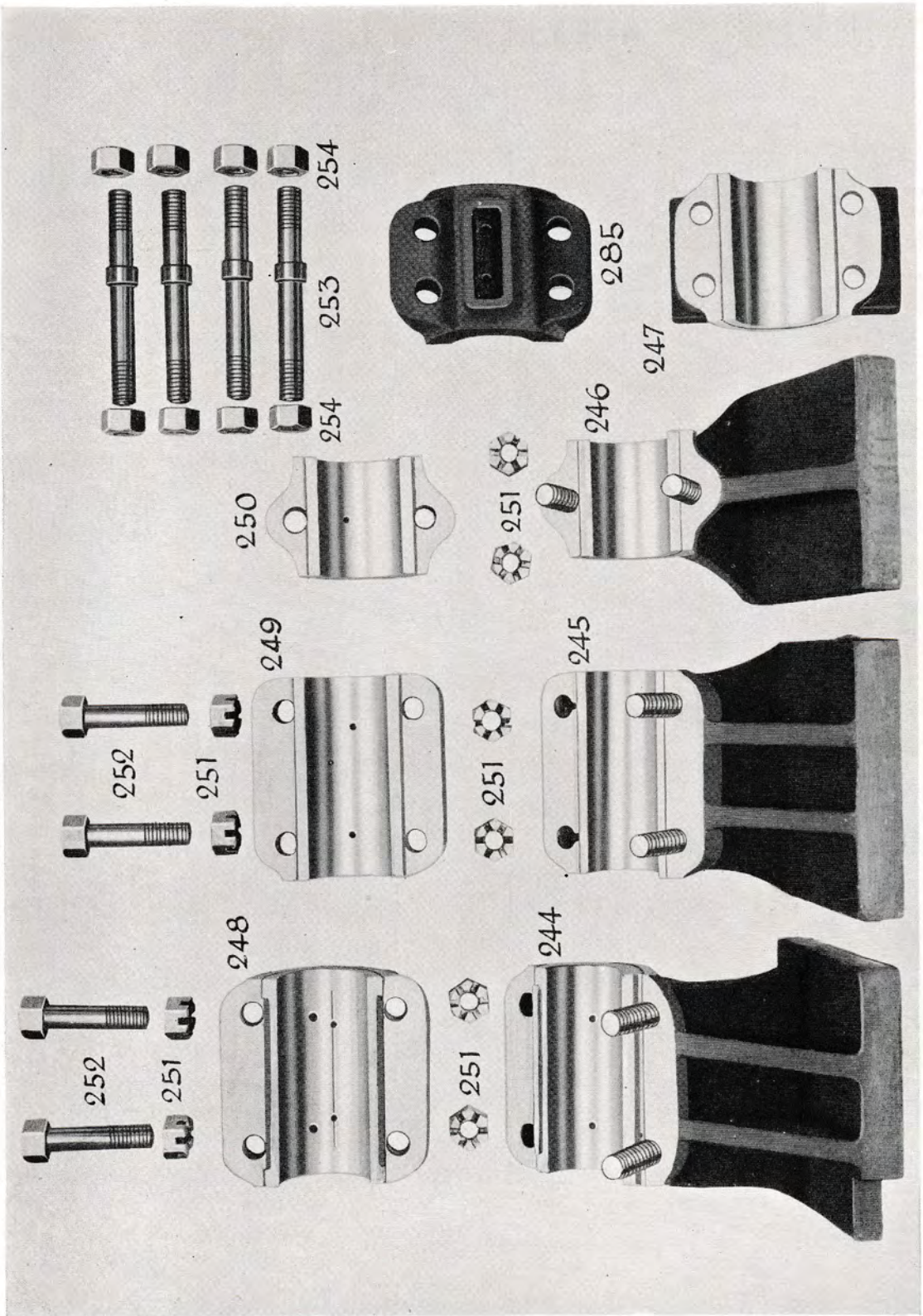
Counter-balance Spring Cases are generally made of cast iron, although cast steel is sometimes used.

The Parts

255. Commonly used on Mallet Type Locomotives

256. Used on a great many U. S. R. A. Locomotives

257. Our Common Standard



Reverse Shaft Bearings

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

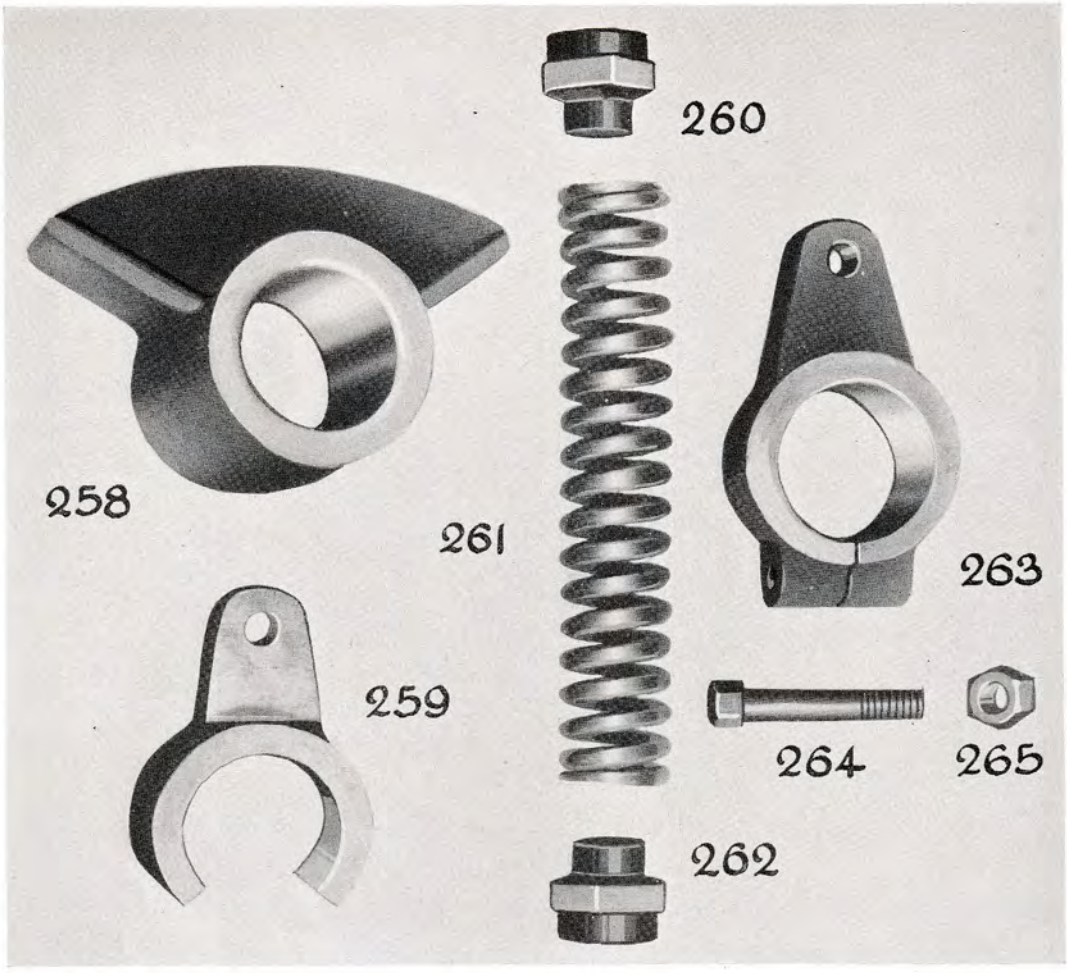
Reverse Shaft Bearings

Reverse Shaft Bearings illustrated on opposite page are made of cast iron as a standard. Some roads prefer cast steel. When this is used it is necessary to bush the bearing with bronze, and as it is necessary to use a split bushing, each half is anchored to the cap and box with brass dowels. This construction is illustrated on box No. 244, and cap No. 248.

Bearings and caps are assembled for boring. Therefore, if a bearing or cap is ordered separate, it cannot be bored or drilled for bolts and studs. The shoulder bolts No. 253 which are used with bearing No. 247 and cap No. 285 is not furnished with the repairs. All bearings when ordered will be furnished complete and assembled ready to apply, or each part may be ordered separately.

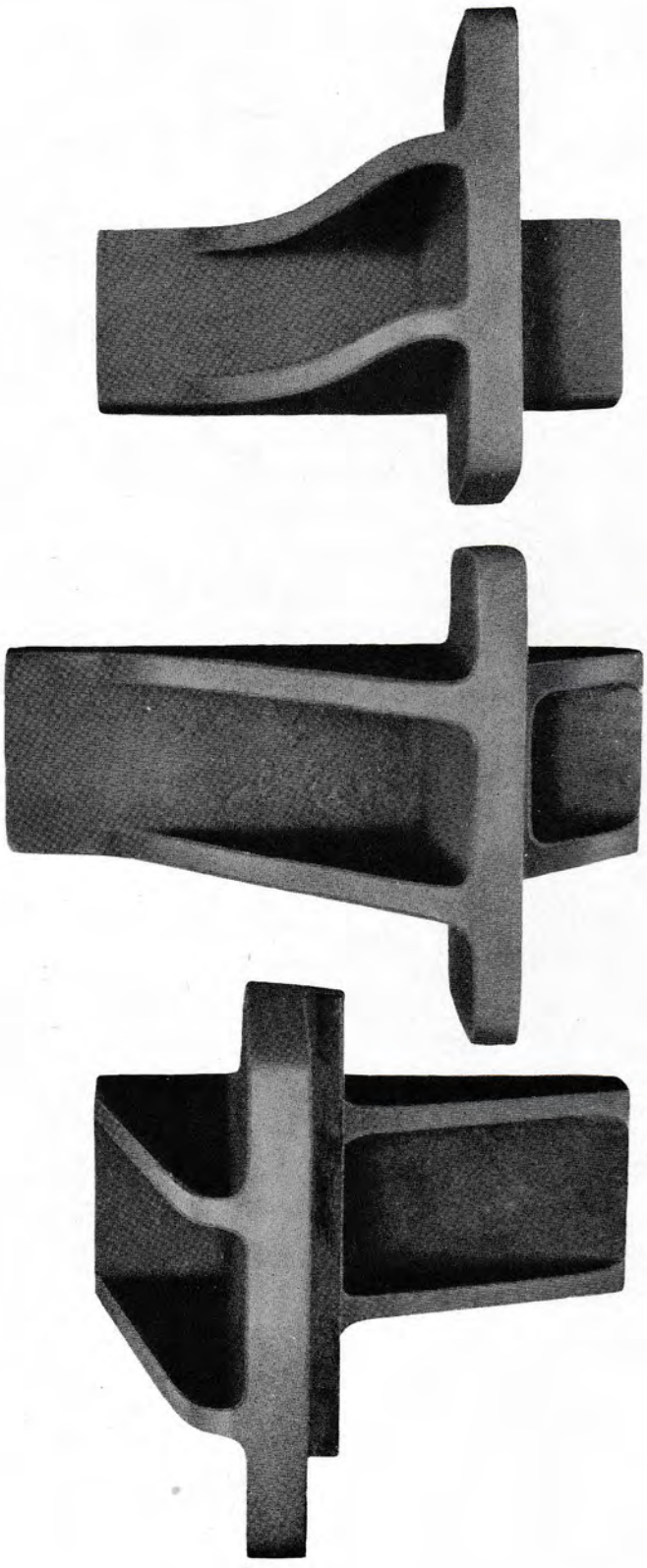
The Parts

244. Cast Steel Bearing with Bronze Bushing
248. Cast Steel Cap for Bronze Bushing
251. One-inch Castle Nuts for Bolts and Studs
252. One-inch Bolt
245. Cast Iron Bearing
249. Cast Iron Cap
246. Cast Iron Bearing
250. Cast Iron Cap for same
247. Cast Iron Bearing used with a Frame Cross-tie
285. Cast Iron Cap for same
253. Shoulder Bolts
254. Nuts for Shoulder Bolts



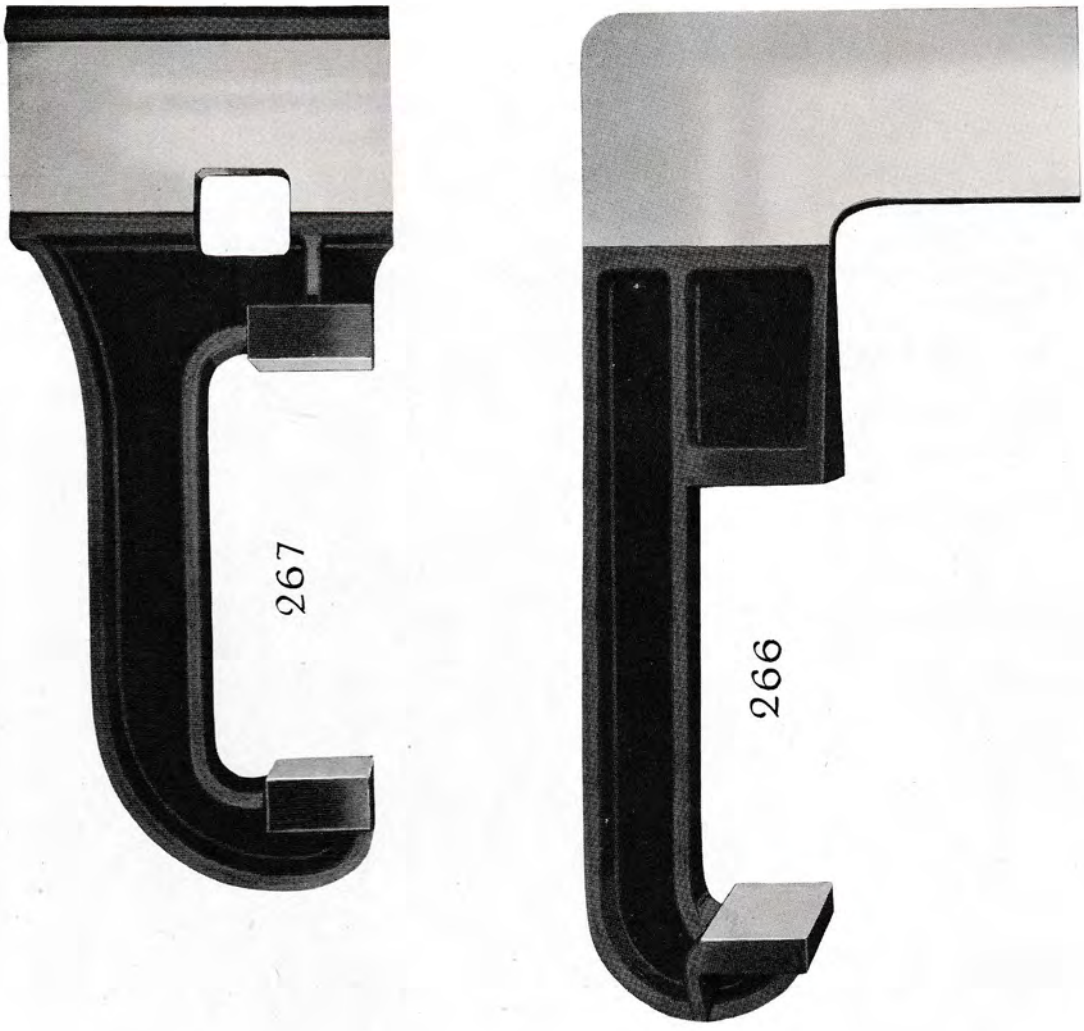
Reverse Shaft Details

The above material is used in connection with the reversing arrangement of a locomotive. No. 258 is a reverse shaft stop which is used only in connection with a power reverse. Its object is to come in contact with stops applied to a frame cross-tie to prevent the valve gear from being thrown into excessive valve travel. Nos. 259 and 263 are two styles of counter-balance lugs which eliminate the lug formerly forged integral with shaft. No. 259 is keyed to the shaft with a clamp bolt (not shown) going through the center of the shaft. No. 263 is keyed to the shaft with clamp bolt No. 264 inserted in the bottom boss, thereby causing the lug to grip the shaft. Nos. 260 and 262 are counter-balance spring washers which are applied to a counter-balance operating rod (not shown) and which are used to adjust the tension on the spring. No. 260 is tapped 1⅛″, seven threads per inch. No. 262 is tapped 1⅜″, six threads per inch. Two No. 261 counter-balance springs are required for locomotive. These are made of 15/32″ steel wire, are 2⅞″ outside diameter with 18½″ coils, and 15″ free length.



Guide Yoke Knees

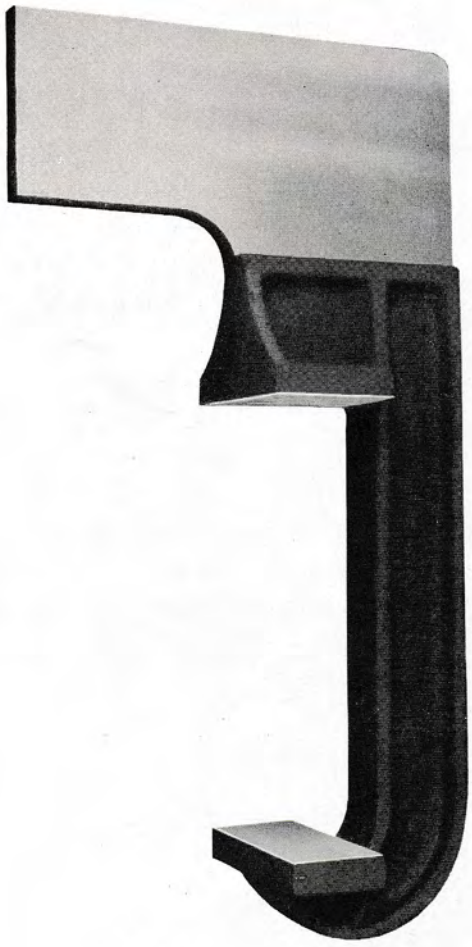
The cut illustrates three of our Guide Yoke Knees or gear frame support cross-tie knees. These are made in several shapes and sizes to suit the locomotive and application of gear. These can be supplied if proper information is furnished with order in regard to type and class; also state whether it is a guide yoke knee or gear frame support cross-tie knee.



Guide Yoke Ends

Above is shown two types of Guide Yoke Ends. No. 266 has the leg down the inside of the guide; No. 267 has the leg down the outside. As the design of guide yoke ends is governed by the location of the valve gear and the construction of the locomotive, each application of the gear requires differently designed guide yoke ends for different types and classes of locomotives. These can be furnished by stating in order the type and class of locomotive for which they are wanted.

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

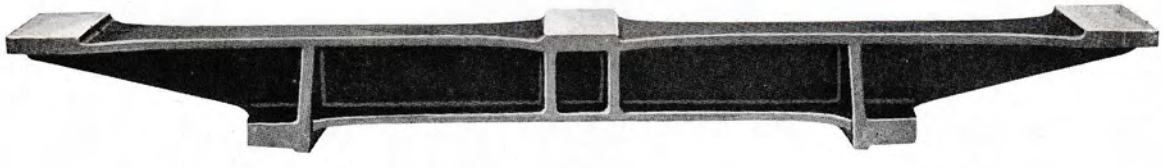


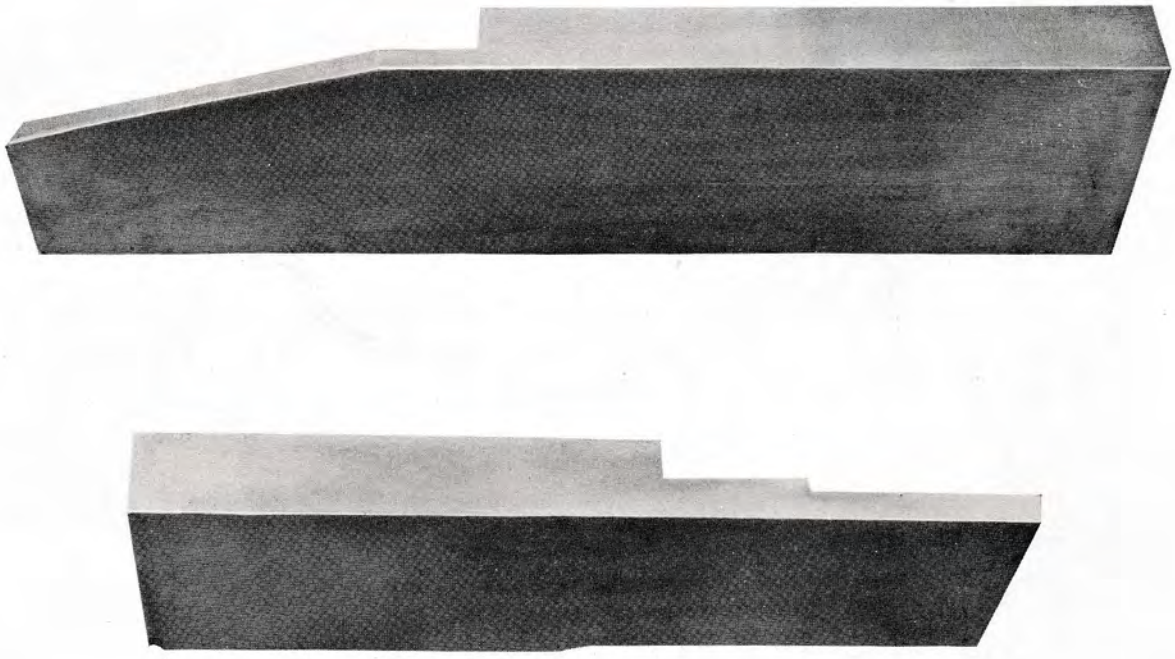
Guide Yoke

The Guide Yoke end is made of cast steel with a leg down the inside of the guide and used with style No. 1 gear frame.

Frame Cross-ties

Below is shown one of a number of frame cross-ties at the reverse shaft. These are made of cast steel. Some of them are so constructed as to allow the bolting of a waste plate to them.





Guide Yoke Frame Supports

On most applications of outside gears to locomotives it is possible to use the guide yoke end, when forged in one piece, by using some kind of a Guide Yoke Frame Support, such as shown above. Where there is a rocker arrangement used with the gears, it is necessary for this support to go around the outside of the guide yoke end and flush with it, to provide a bolting face for the rocker box bracket. The thickest portion of these supports is cored to reduce the weight. As these are usually right and left, kindly state on your order which is wanted, also type and class of locomotive for which they are required.

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

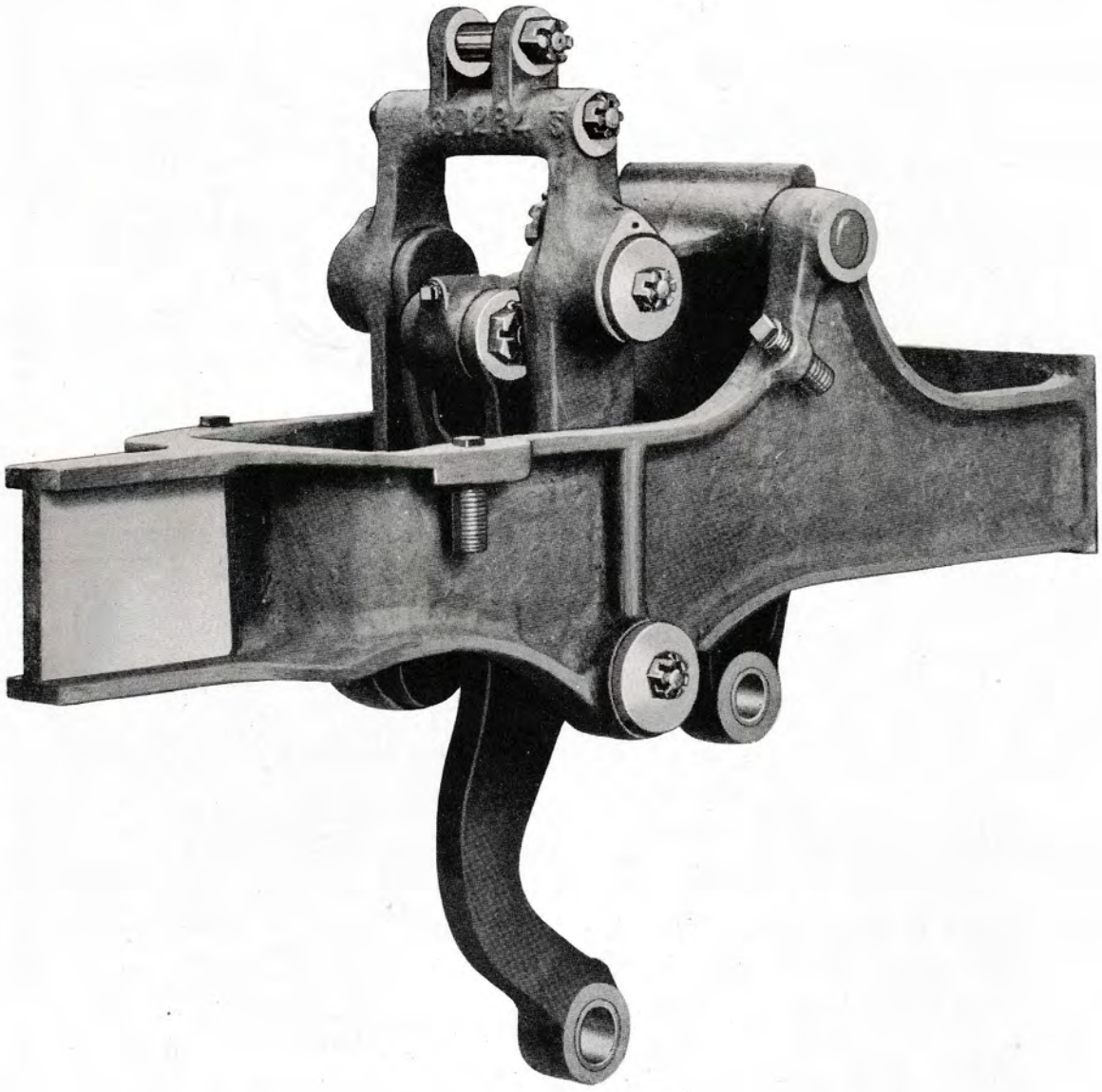
BAKER

Long-Travel

Valve Gears

We are prepared to furnish a Long-Travel Valve Gear in cases where the service of the locomotive requires it. There are several hundred locomotives in service today so equipped which are giving great satisfaction. Information on this subject is available from our Engineering Department.

The Long-Travel Valve Gear does not vary basically from our Standard Gear excepting in proportions of certain parts and it therefore has the same advantages of interchangeability as our Standard Gear on engines so equipped.



Baker Long Travel Valve Gear with Style 4 Frame

(ASSEMBLED)

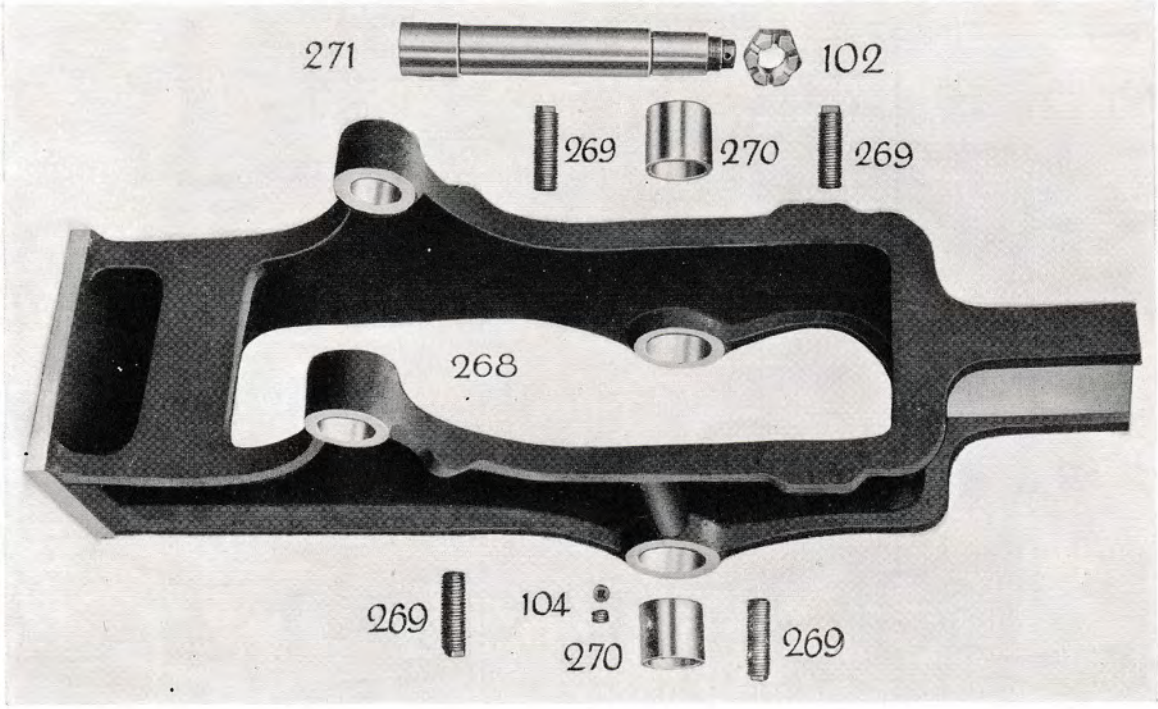
IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

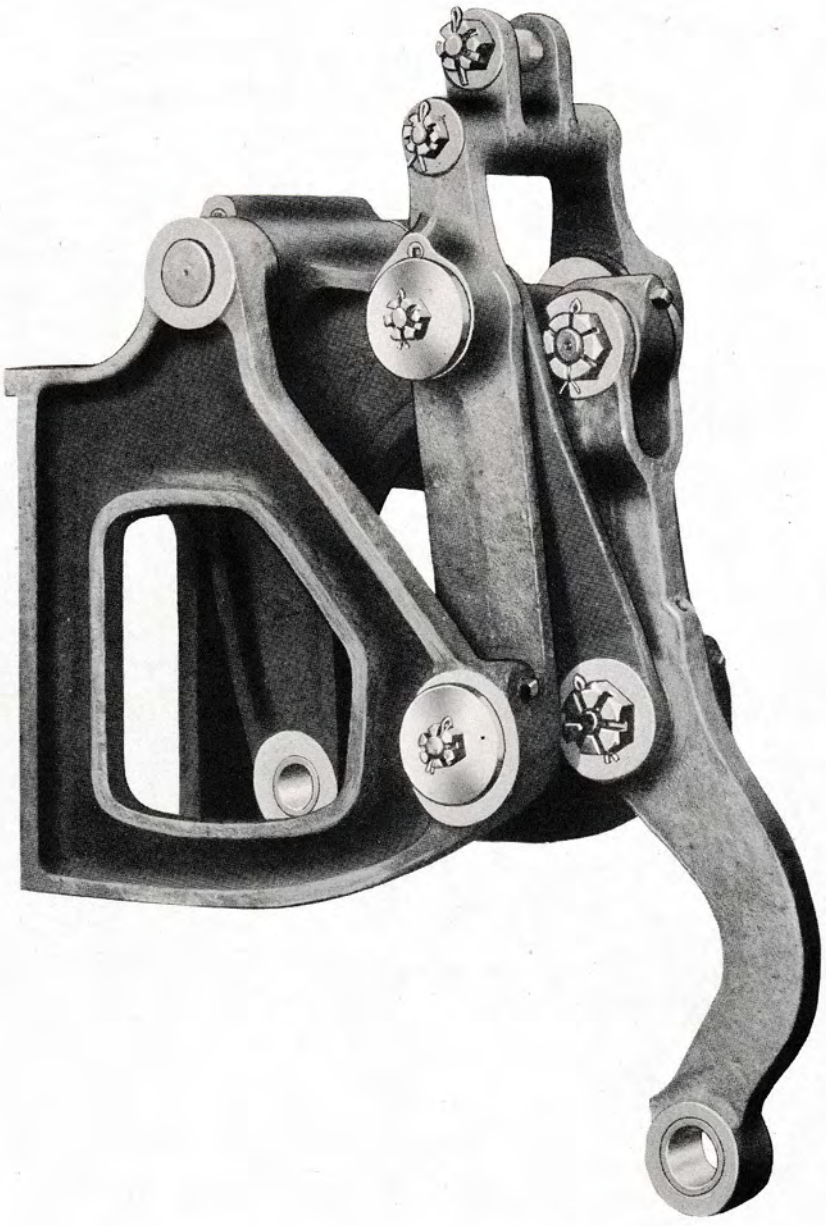
Gear Frame, Style 4

Gear Frame Style No. 4 is cast steel. This frame is provided with large oil cavities and also adjustable stop bolts for the reverse yoke to rest against to limit its throw. Will be furnished complete and assembled, or each part may be ordered separately.

The Parts

268. Style No. 4 Cast Steel Frame
269. Reverse Yoke Stop Bolts—four required per Frame
270. Cast Iron Bushings—two required per Frame
271. Gear Frame Pin
102. Two-inch nut for Gear Frame Pin
104. Three-quarter-inch Female Pipe Plugs





Baker Long-Travel Valve Gear With Style 5 Frame

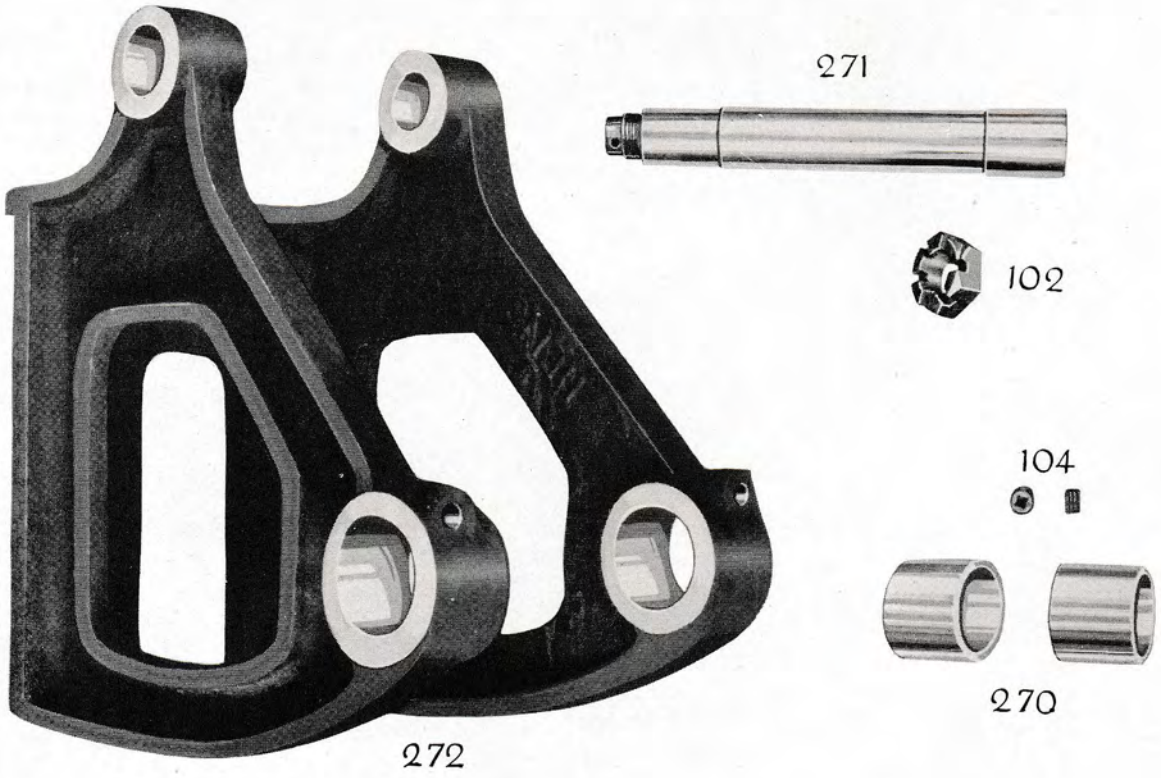
(ASSEMBLED)

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

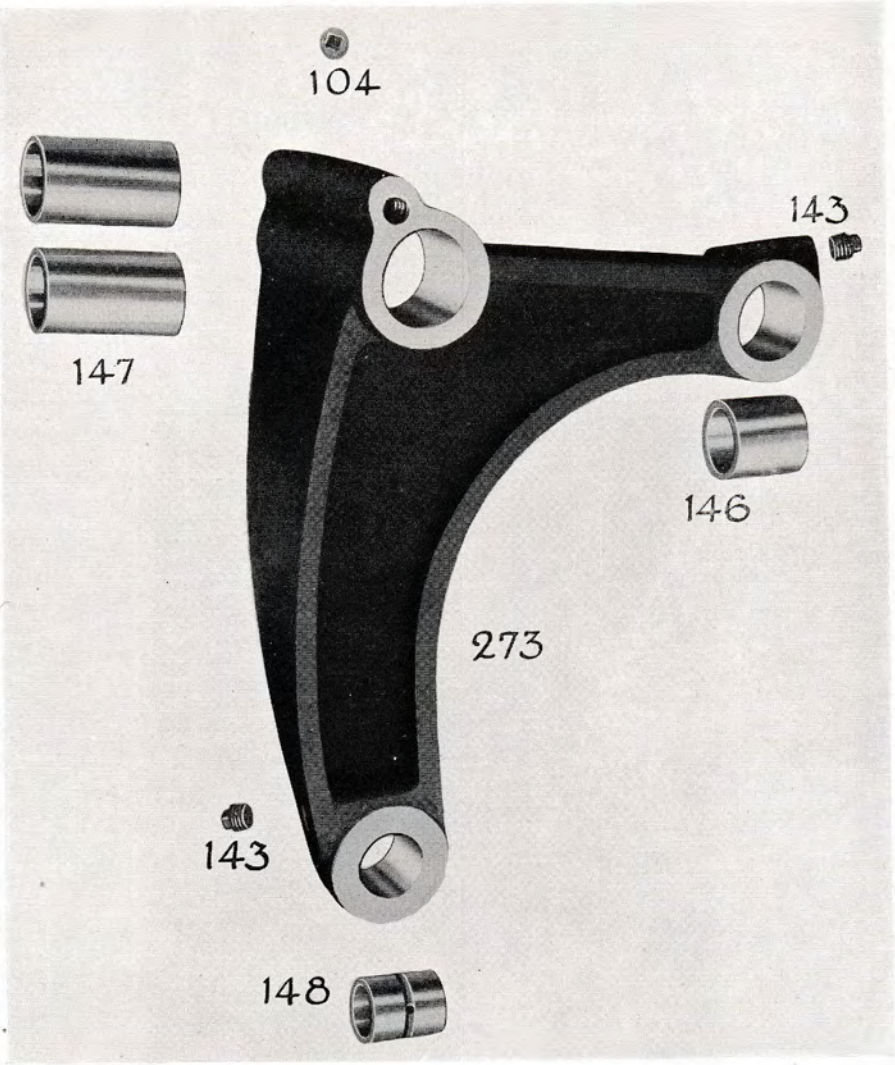
Gear Frame, Style 5

Style No. 5 Frame is made of cast steel. This frame is provided with large oil cavities and heavily ribbed. Will be furnished complete with all parts shown, or each part may be ordered separately.

272. Style No. 5 Cast Steel Frame
104. Three-quarter-inch Female Pipe Plug
270. Cast Iron Bushings—two required per Frame
271. Gear Frame Pin
102. Two-inch Nut for Gear Frame Pin



IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

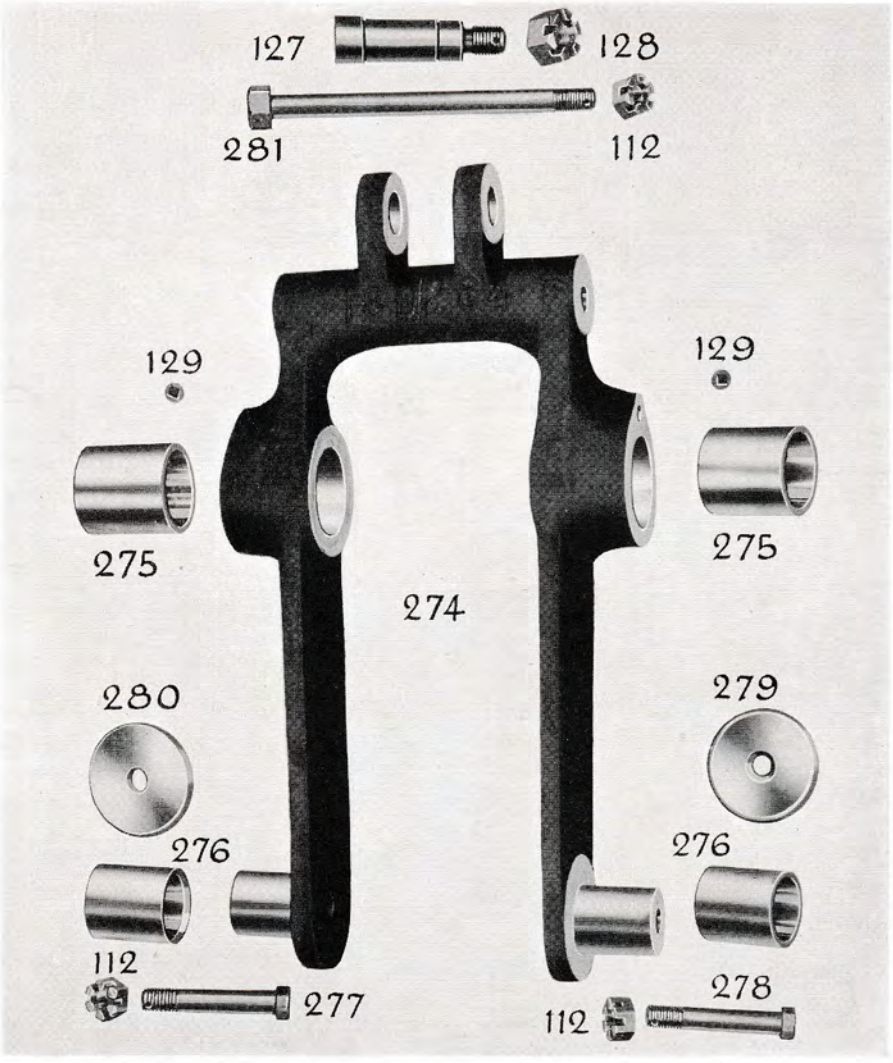


Bell Crank

Bell Crank shown above is cast from vanadium steel. As these are symmetrical they can be used right and left. Will be furnished complete with bushings and pipe plugs shown above, or each part may be ordered separately.

273. Vanadium Cast Steel Bell Crank
104. Three-quarter-inch Female Pipe Plug
143. Three-quarter-inch Male Pipe Plug
146. Bronze Bushing
147. Bronze Bushing—two required per Crank
148 Bronze or Case Hardened Bushing —Case Hardened preferred

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

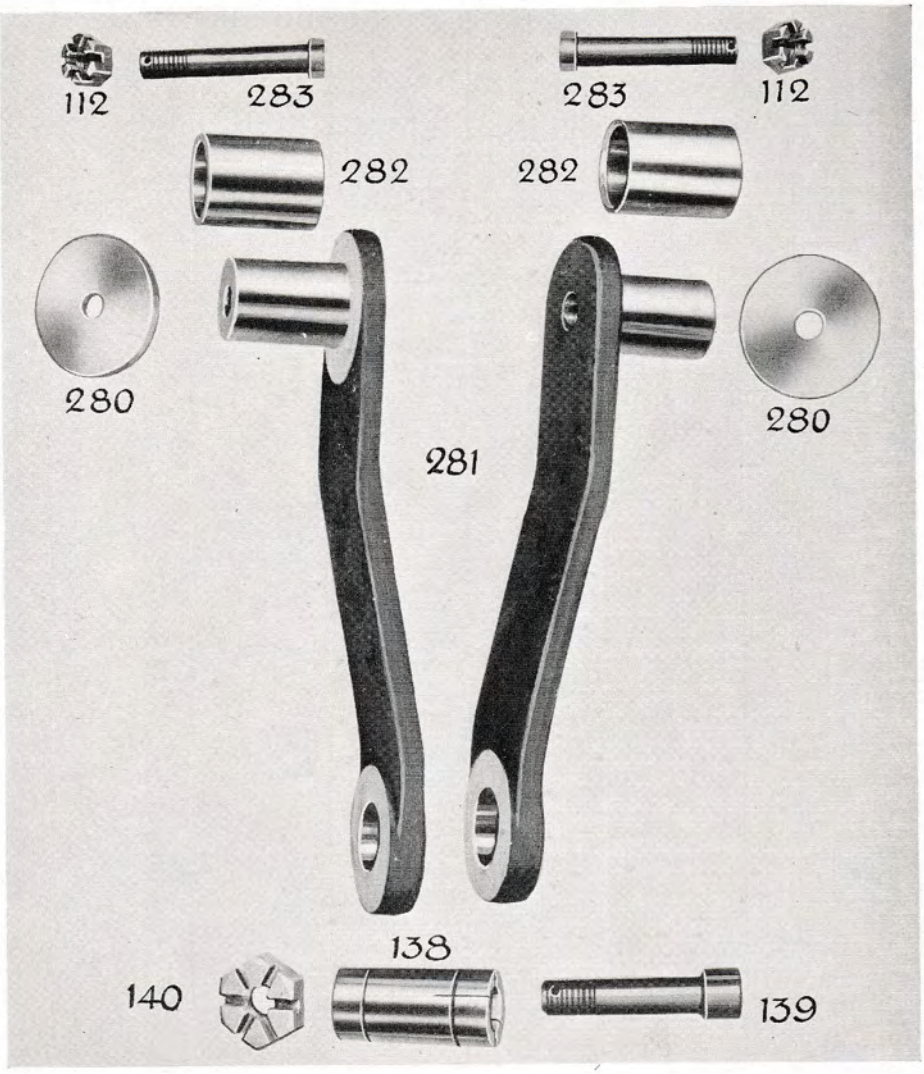


Reverse Yoke

Reverse Yoke shown above is made of vanadium cast steel. These can be used either right or left by applying the yoke with the nuts on the pins out. These will be furnished either complete and assembled with all the parts shown above, or each part may be ordered separately.

274. Reverse Yoke
127. Reverse Yoke and Reach Rod Pin
128. Nut for Reverse Yoke and Reach Rod Pin
281. Tie Bolt joining the two halves of the Yoke together
112. Nut for Tie Bolt
129. Half-inch Female Pipe Plugs
275. Bronze Bushings
276. Case Hardened Sleeves
277. Outside Collar Bolt
278. Inside Collar Bolt
112. Nuts for Collar Bolt
279. Inside Collar
280. Outside Collar

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

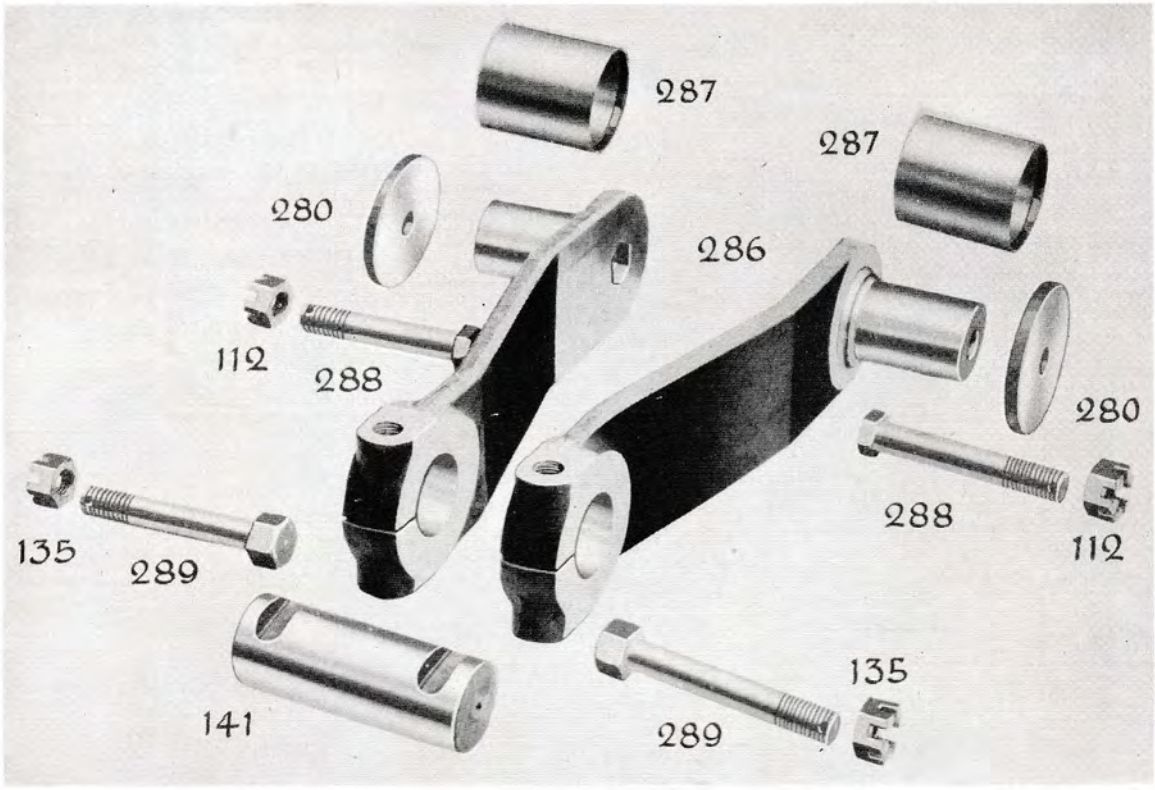


Radius Bars

The above Radius Bars are drop-forged from normalized carbon vanadium steel. These bars are machined in pairs. Therefore we cannot furnish one-half bar and guarantee its interchangeability. These are furnished either assembled complete with all the parts shown above, or each part can be furnished separately.

281. Radius Bars
280. Collars
282. Case Hardened Sleeve
283. One-inch Collar Bolts
112. One-inch Nuts for Collar Bolt
138. Split Bushing for Radius Bar Pin
139. Mandrel for Radius Bar Pin
140. Nut for Mandrel

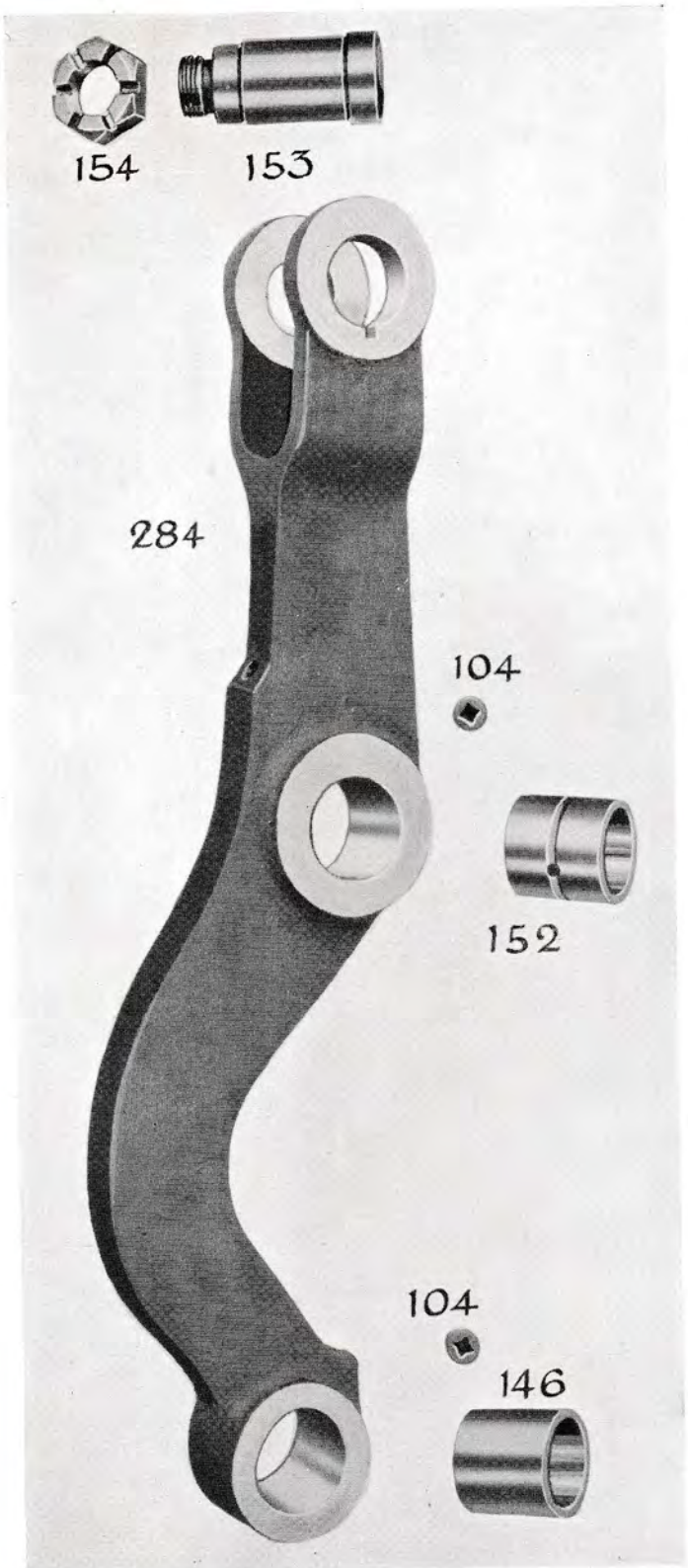
IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted



Radius Bars

Radius bars shown are drop-forged from normalized carbon vanadium steel. As both halves are alike one half can be furnished when ordered. This bar supersedes, and will interchange with, radius bars shown on opposite page and will be furnished for repairs when a complete bar is ordered. These are assembled with all parts shown or each part may be ordered separately.

286. Radius Bars
280. Collars
287. Case Hardened Sleeves
288. One-inch Collar Bolts
289. Seven-eighths Clamp Bolts
112. One-inch Castle nuts for Collar bolts
135. Seven-eighths Castle nuts for Clamp Bolts
141. Radius Bar Pin



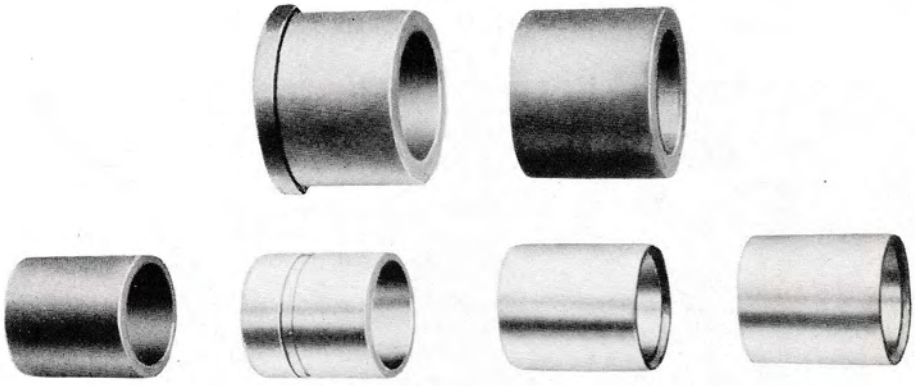
Connecting Rod

The Gear Connecting Rod shown is made of both vanadium cast steel and drop-forged. Although these are symmetrical, the boring and reaming for pins make them right and left. Will be furnished either complete with parts shown, or each part may be ordered separately. Specify on your order whether drop-forged or vanadium cast steel is wanted.

The Parts

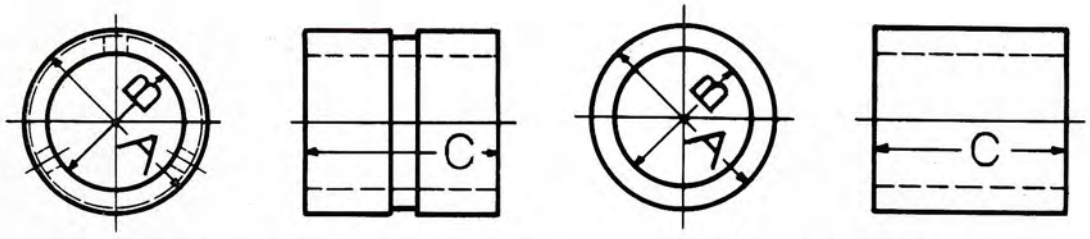
284. Gear Connecting Rod
104. Three-quarter-inch Female Pipe Plugs
146. Bronze Bushing
152. Case Hardened Bushing
153. Connecting Rod Pin
154. Nut for Connecting Rod Pin

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted



Bushings

The bushings used throughout the Baker Gears are of the best material and workmanship. The case hardened bushings and sleeves are ground inside and outside with a proper allowance to insure a perfect fit. Bronze bushings are cast to our formula; drillings are taken from several pieces of each shipment and analyzed for a check which insures their being made to our specifications. All bronze bushings are bored outside, and bored and reamed inside to insure perfect fit.



STYLE Nº 1 STYLE Nº 2

BAKER LONG TRAVEL VALVE GEAR

A	B	C	CARD	PATT.	STYLE	MATERIAL	WHERE USED
4 "	3¼"	3½"	12D286-2	12D282	1	Cast Iron	Gear Frame & Reverse Yoke, No. 4 Frame
4	3¼	3½	12D286-4	12D282	1	Cast Iron	Gear Frame & Reverse Yoke, No. 5 Frame
3¼	2¾	5⅜	13D292	D201-1	1	Bronze	Bell Crank & Frame
3	2½	3	13D280-4	D580-1	1	Bronze	Bell Crank & Connecting Rod
3	2½	3	13D280-4	D580-1	1	Bronze	Connecting Rod & Eccentric Rod
2½	2	3	13D280-7		1	Case Hardened	Bell Crank & Valve Rod
3¾	3¼	4	13D292-1	13D282	1	Bronze	Reverse Yoke & Radius Bar
3	2½	3	13D287-7		1	Case Hardened	Connecting Rod & Radius Bar
3¼	2¾	3 17/32	13D241-5		2	Case Hardened	Sleeves, Reverse Trunnions
3¼	2¾	3 25/32	13D241-7		2	Case Hardened	Sleeves, Radius Bar Trunnions

BAKER VALVE GEAR STANDARD

A	B	C	CARD	PATT.	STYLE	MATERIAL	WHERE USED
3 11/16"	2 15/16"	3½"	12D238-3	E403-1	1	Cast Iron	Gear Frame & Reverse Yoke, Nos. 1, 2 and 3 Frames
3¼	2¾	5⅜	13D280-1	D201-1	1	Bronze	Bell Crank & Frame
3	2½	3	13D280-4	D580-1	1	Bronze	Bell Crank & Connecting Rod
3	2½	3	13D280-4	D580-1	1	Bronze	Connecting Rod & Eccentric Rod
2½	2	3	13D280-3	13D201-2	1	Bronze	Bell Crank & Valve Rod
3¼	2¾	4	13D280-5	D200-1	1	Bronze	Reverse Yoke & Radius Bar
3	2½	3	13D280-6		1	Case Hardened	Connecting Rod & Radius Bar
2 15/16	2½	3 17/32	13D241		2	Case Hardened	Sleeves, Reverse Yoke Trunnions
2⅞	2¼	4 1/32	13D241-1		2	Case Hardened	Sleeves, Radius Bar Trunnions

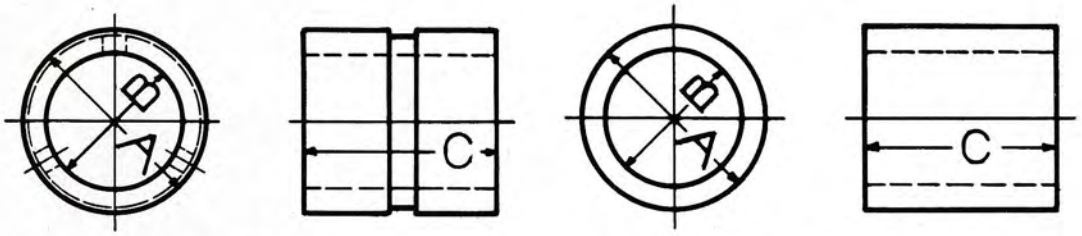
CROSSHEAD ARM BUSHINGS

A	B	C	CARD	PATTERN	MATERIAL	STYLE
2⅛"	1⅝"	2½"	16D228		Case Hardened	2
2	1¾	2½	16D228-1		Case Hardened	2
1⅞	1½	3	16D228-2		Case Hardened	2
1⅞	1½	2½	16D228-3		Case Hardened	1
2	1½	2½	16D228-5		Case Hardened	2
1⅞	1½	2	16D228-7		Case Hardened	2

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

COMBINATION LEVER BUSHINGS

A	B	C	CARD	PATT.	STYLE	MATERIAL	WHERE USED
2 "	1½"	2 "	14D196		2	Case Hardened	Combination Lever & Union Link
2½	2	4¼	14D196-1	14D110	2	Bronze	Combination Lever & Valve Rod
2⅜	1⅞	9	14D196-2	D1379	2	Bronze	Combination Lever & Bell Crank
2	1½	2½	14D196-3	D782-1	2	Bronze	Combination Lever & Union Link
2½	2	8	14D196-4	D1706-1	2	Bronze	Combination Lever & Bell Crank
1⅞	1½	2½	14D196-5	D782-1	2	Bronze	Combination Lever & Union Link
2¼	1¾	4	14D196-7		2	Case Hardened	Combination Lever & Valve Rod
2½	2	3¼	14D196-8	14D106-1	1	Bronze	Combination Lever & Valve Rod
2½	2	4	14D197		1	Case Hardened	Combination Lever & Valve Rod
2⅛	1¾	3¾	14D197-1		2	Case Hardened	Combination Lever & Valve Rod
2¼	1¾	5	14D197-2	14D243	2	Bronze	Combination Lever & Valve Rod
2½	2	2½	14D197-3		1	Case Hardened	Combination Lever & Union Link
2⅛	1¾	5	14D197-4		2	Case Hardened	Combination Lever & Valve Rod
1⅞	1½	2½	14D197-5		1	Case Hardened	Combination Lever & Union Link
2⅛	1⅝	3	14D197-6	14D106-2	2	Bronze	Combination Lever & Valve Rod
2¼	1¾	5¾	14D197-7		2	Case Hardened	Combination Lever & Valve Rod
2¼	1¾	3¾	14D197-8		2	Case Hardened	Combination Lever & Valve Rod
1⅞	1½	2½	14D198		2	Case Hardened	Combination Lever & Union Link
2	1½	3	14D198-1		2	Case Hardened	Combination Lever & Valve Rod
2 3/16	1 13/16	3	14D198-2		2	Case Hardened	Combination Lever & Valve Rod
2	1⅝	2½	14D198-3		2	Case Hardened	Combination Lever & Union Link
2½	2	9	14D198-4	D1706	2	Bronze	Combination Lever & Bell Crank
2⅜	1⅞	10⅞	14D198-5	14D154	2	Bronze	Combination Lever & Bell Crank
2¼	1¾	3½	14D198-6		2	Case Hardened	Combination Lever & Valve Rod
2½	2	10⅞	14D198-7	14D140	2	Bronze	Combination Lever & Bell Crank
2½	2	3½	14D198-8		1	Case Hardened	Combination Lever & Valve Rod
2	1½	2½	14D199		2	Case Hardened	Combination Lever & Union Link
2¼	1¾	2	14D199-1		2	Case Hardened	Combination Lever & Union Link
1⅞	1½	2¼	14D199-2		2	Case Hardened	Combination Lever & Union Link
2½	2	2½	14D199-3		2	Case Hardened	Combination Lever & Union Link
2¼	1¾	3	14D199-5	14D156	2	Bronze	Combination Lever & Valve Rod
2	1½	2	14D199-6	D1310-3	2	Bronze	Combination Lever & Union Link
2¼	1¾	3	14D199-7		2	Case Hardened	Combination Lever & Valve Rod
2⅛	1¾	3	14D199-8		2	Case Hardened	Combination Lever & Valve Rod
2½	2	4¼	14D209		2	Case Hardened	Combination Lever & Valve Rod
2⅛"	1¾"	6½"	14D209-2		2	Case Hardened	Combination Lever & Valve Rod
2⅛	1¾	3	14D209-3	14D155	2	Bronze	Combination Lever & Valve Rod
2½	2	3¼	14D209-4		1	Case Hardened	Combination Lever & Valve Rod
2⅜	1⅞	9	14D209-5	D1706	2	Bronze	Combination Lever & Bell Crank
2	1½	2½	14D209-6		1	Case Hardened	Combination Lever & Union Link
2⅜	1¾	2	14D209-7		2	Case Hardened	Combination Lever & Union Link
2½	2	2½	14D233	13D201-1	1	Bronze	Combination Lever & Union Link
2	1½	2½	14D233-5	D782-1	1	Bronze	Combination Lever & Union Link
2¼	1¾	3½	14D233-6		2	Case Hardened	Combination Lever & Valve Rod
2¼	1¾	4	14D233-7	14D243-1	2	Bronze	Combination Lever & Valve Rod
2½	2	7⅛	14D258	D1706	2	Bronze	Combination Lever & Valve Rod
2¼	1¾	3½	14D258-1		1	Case Hardened	Combination Lever & Valve Rod
2⅛	1¾	3	14D258-2		1	Case Hardened	Combination Lever & Valve Rod
2	1⅝	5	14D258-3		2	Case Hardened	Combination Lever & Valve Stem Crosshead
2½	2	2½	14D258-4	13D201-1	2	Bronze	Combination Lever & Union Link
1⅞	1½	2¼	14D273		1	Case Hardened	Combination Lever & Union Link
1⅞	1½	2¼	14D273-1	D782-10	2	Bronze	Combination Lever & Union Link
2½	2	4½	14D273-3		2	Case Hardened	Combination Lever & Valve Rod
2¼	1¾	5¾	14D273-4		1	Case Hardened	Combination Lever & Valve Rod
2¼	1¾	3¾	14D273-5		1	Case Hardened	Combination Lever & Valve Rod



STYLE № 1 STYLE № 2

VALVE STEM CROSSHEAD BUSHINGS

A	B	C	CARD	PATTERN	STYLE	MATERIAL
2 1/8"	1 3/4"	2 27/64"	23D169	23D103-1	2	Bronze
2 1/8	1 3/4	2 27/64	23D169-1		2	Case Hardened
2 1/8	1 3/4	1 15/16	23D169-3		2	Case Hardened
2 1/8	1 3/4	2 7/16	23D169-4		2	Case Hardened
2 1/8	1 3/4	1 11/16	23D169-6		2	Case Hardened
2 1/8	1 3/4	2 9/16	23D169-7		2	Case Hardened
2 1/8	1 3/4	1 5/8	23D169-8		2	Case Hardened
2 1/8	1 3/4	1 39/64	23D170		2	Case Hardened
2 1/8	1 3/4	1 43/64	23D170-1	23D123-1	2	Bronze
2 1/8	1 3/4	2 63/64	23D170-2	14D155	2	Bronze
2 1/8	1 3/4	3	23D170-3		2	Case Hardened
2 1/8	1 3/4	2 15/32	23D170-4		2	Case Hardened
2 1/8	1 3/4	2 43/64	23D170-5		2	Case Hardened
1 5/8	1 1/4	2 15/64	23D170-6		2	Case Hardened
2 1/8	1 3/4	3 27/64	23D170-7		2	Case Hardened
2 1/2	2	4 1/8	23D171		2	Case Hardened
2 1/4	1 3/4	2 59/64	23D171-1		2	Case Hardened
2 1/8	1 7/8	2 1/2	23D171-2		2	Case Hardened
2 1/8	1 3/4	4 1/2	23D171-3		2	Case Hardened
2 1/8	1 3/4	1 31/64	23D171-4		1	Case Hardened
2 1/2	2	5	23D171-5	23E104	2	Bronze
2 1/2	2	5	23D171-6		2	Case Hardened
1 5/8	1 1/4	2 11/64	23D171-7		2	Case Hardened
2 1/8	1 5/8	1 5/8	23D191-2		2	Case Hardened
2 1/8	1 3/4	2 43/64	23D191-3		1	Case Hardened
2 1/2	2	5 3/4	23D191-4		2	Case Hardened
2 1/8	1 25/32	1 27/64	23D191-5		1	Case Hardened
2 1/8	1 3/4	1 7/16	23D191-6		2	Case Hardened
2 1/8	1 3/4	1 7/8	23D191-7		2	Case Hardened
2 1/8	1 3/4	1 59/64	23D246		2	Case Hardened
2 1/8	1 3/4	2 27/64	23D246-1	23D241	1	Bronze
2 1/8	1 3/4	4 1/2	23D246-2		2	Case Hardened
2 1/2	2	4 5/8	23D246-3	23E104	2	Bronze
2 1/8	1 3/4	1 63/64	23D246-5		2	Case Hardened
2 1/8	1 3/4	2 1/2	23D246-6		2	Case Hardened
2 1/2	2	3	23D246-7		2	Case Hardened
2 1/8	1 3/4	1 7/8	23D268		2	Case Hardened
2"	1 5/8"	1 5/8"	23D268-1		2	Case Hardened
1 7/8	1 1/2	3	23D268-2		2	Case Hardened
2 1/8	1 3/4	1 37/64	23D268-3		2	Case Hardened
2 3/8	2	1 1/2	23D268-4		1	Case Hardened
2 1/8	1 3/4	3 11/64	23D268-5		2	Case Hardened
2 1/8	1 3/4	1 43/64	23D268-6		2	Case Hardened
2 1/4	1 7/8	1 43/64	23D268-7		2	Case Hardened

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

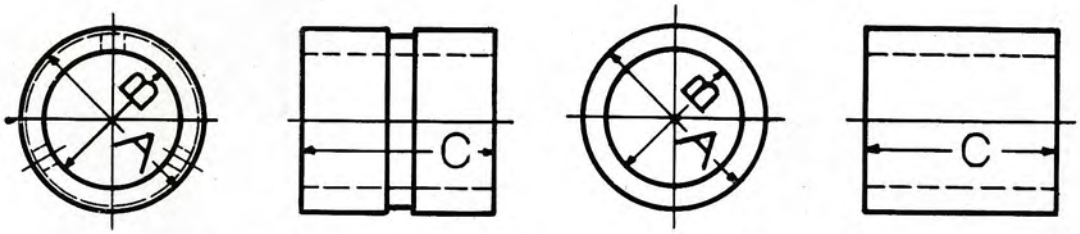
UNION LINK BUSHINGS

A	B	C	CARD	PATTERN	MATERIAL	STYLE
5 3/4"	4 3/4"	1 3/4"	15D196	15D163	Bronze	2
3 3/8	2 7/8	1 3/4	15D196-1	15D248	Bronze	2
5 1/4	4 1/4	1 3/4	15D196-2	15D130	Bronze	2
4	3	1 3/4	15D196-3	15D248-1	Bronze	2
4 3/4	3 3/4	1 3/4	15D196-4	15D125	Bronze	2
8 7/8	7 5/8	1 3/4	15D196-5	15D248-2	Bronze	2
4 3/4	3 3/4	1 3/4	15D196-6	15D165	Bronze	2
4 5/8	3 3/4	1 3/4	15D196-7	15D125	Magnus	2
4 5/8	3 3/4	1 3/4	15D196-8	15D125	Bronze	2
2 3/8	1 3/4	2 1/4	15D197		Case Hardened	2
2 7/16	1 15/16	2 1/2	15D197-1		Case Hardened	2
2 1/2	2	2 1/2	15D197-2		Case Hardened	2
3	2 1/2	2	15D197-3		Case Hardened	2
2 3/8	1 3/4	2 1/2	15D197-4		Case Hardened	2
2 1/4	1 3/4	2 1/2	15D197-5		Case Hardened	2
4 3/4	3 49/64	1 3/4	15D209	15D125	Bronze	2
2 1/2	2	3	15D209-1		Case Hardened	2
4 1/2	3 1/2	1 3/4	15D209-2	15D248-3	Bronze	2
11	10	1 3/4	15D209-3	15D248-4	Bronze	2
4 3/4	3 3/4	2 1/2	15D209-5	15D248-5	Bronze	2
4 7/8	4 1/8	2 1/2	15D209-6		Case Hardened	1
4 3/4	4	1 3/4	15D209-7	15D125	Bronze	2
4 3/4	3 3/4	1 3/4	15D280		Case Hardened	2
11	10	1 7/8	15D280-1	15D248-6	Bronze	2
6 1/4	5 1/4	1 3/4	15D280-2		Bronze	2
3 7/8	3	1 3/4	15D280-5	15D248-1	Bronze	2
4 3/4	3 3/4	1 3/4	15D280-6		Case Hardened	2
5 1/2	4 1/2	1 3/4	15D280-7	15D248-7	Bronze	2

GEAR REACH ROD BUSHINGS

A	B	C	CARD	PATTERN	STYLE	MATERIAL
2 1/8"	1 3/4"	3 "	28D201		2	Case Hardened
2 1/8	1 3/4	4	28D201-1		2	Case Hardened
2 1/4	1 3/4	3	28D201-2		2	Case Hardened
2 1/4	1 3/4	2	28D201-3		2	Case Hardened
2 1/4	1 7/8	2	28D201-4		2	Case Hardened
2 1/4	1 7/8	2	28D201-5		1	Case Hardened
1 7/8	1 1/2	1 3/4	28D201-6		2	Case Hardened
2	1 1/2	2	28D201-7		2	Case Hardened
1 7/8	1 1/2	2	28D201-8		2	Case Hardened
2	1 5/8	2	28D202	D1310-3	2	Magnus
2	1 5/8	2	28D202-1		2	Case Hardened
2 7/16	1 15/16	1 63/64	28D202-2		2	Case Hardened
2 1/8	1 3/4	2	28D202-5		2	Case Hardened
2 1/8	1 3/4	3	28D202-6	14D155	2	Magnus
2 1/8	1 3/4	3	28D202-7		1	Case Hardened
2 1/4	1 3/4	3	28D234	14D156	2	Bronze
2	1 5/8	2	28D234-1	D1310-3	2	Bronze
2 3/8	2	3	28D234-2		1	Case Hardened
2 1/8	1 7/8	2	28D234-3		2	Case Hardened
2	1 1/2	1 3/4	28D234-4		2	Case Hardened
2	1 5/8	2	28D234-5		1	Case Hardened
2 1/4	1 3/4	4	28D234-6		2	Case Hardened
2	1 5/8	3	28D234-7		2	Case Hardened
2	1 1/2	2	28D276-2	D1310-3	2	Bronze

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted



STYLE № 1 STYLE № 2

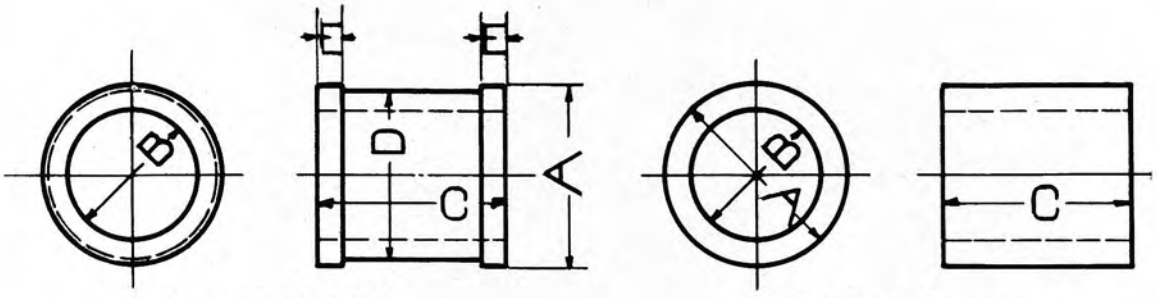
VALVE ROD BUSHINGS

A	B	C	CARD	PATTERN	STYLE	MATERIAL
2¼"	1¾"	4 "	17D266		2	Case Hardened
2¼	1¾	3	17D266-1		2	Case Hardened
2¼	1¾	2½	17D266-2		2	Case Hardened
2⅛	1¾	4	17D266-3		2	Case Hardened
2⅛	1¾	3	17D266-4		2	Case Hardened
2⅛	1¾	2¾	17D266-5		2	Case Hardened
2⅛	1¾	2½	17D266-6		2	Case Hardened
2⅜	1¾	4½	17D266-7		2	Case Hardened
2	1¾	4	17D266-8		2	Case Hardened
2⅛	1¾	4½	17D267		2	Case Hardened
2⅛	1¾	4	17D267-2	17D281	2	Bronze
2¼	1¾	4 23/32	17D267-3	17D315	2	Bronze
2¼	1¾	4¾	17D267-4		2	Case Hardened
2	1¾	3½	17D267-5		2	Case Hardened
2¼	1¾	3⅛	17D267-6		2	Case Hardened
2½	1¾	4	17D267-7		2	Case Hardened
2	1½	3½	17D268		2	Case Hardened
2	1½	6¾	17D268-1		2	Case Hardened
2	1½	3	17D268-2	14D106-2	2	Bronze
1⅞	1½	2	17D268-3		2	Case Hardened
1⅞	1½	3½	17D268-4		2	Case Hardened
1¾	1½	3	17D268-5		2	Case Hardened
2	1½	3	17D268-6		2	Case Hardened
2⅜	1⅞	4	17D268-7		2	Case Hardened
1⅝	1¼	1¾	17D268-8		2	Case Hardened
2½	2	10⅞	17D269	14D140	2	Bronze
2½	2	10⅞	17D269-2		2	Case Hardened
2½	2	9	17D269-3	D1706	2	Bronze
2½	2	9	17D269-4		2	Case Hardened
2⅜	1⅞	9	17D269-5	D1379	2	Bronze
2½	2	3½	17D269-6		2	Case Hardened
2½	2	8	17D269-7	D1706	2	Bronze
2½	2	4	17D269-8		2	Case Hardened
3	2½	4	14D270		2	Case Hardened
2 7/16	1 15/16	3¼	17D270-1		2	Case Hardened
2½	2	3 7/32	17D270-2		2	Case Hardened
2⅝	2¼	4	17D270-3		2	Case Hardened
2⅜	2	4	17D270-4		2	Case Hardened

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

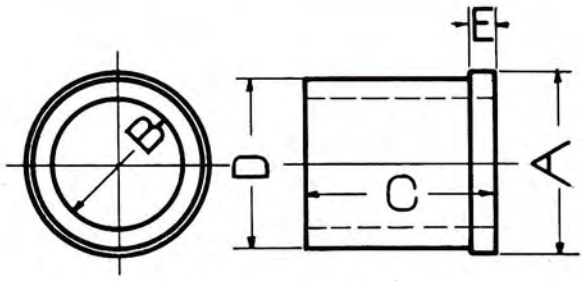
VALVE ROD BUSHINGS (Continued)

A	B	C	CARD	PATTERN	STYLE	MATERIAL
2 7/16"	1 15/16"	4 "	17D270-5		2	Case Hardened
2 1/2	2	3 1/2	17D270-6	24D102-1	2	Bronze
2 1/2	2	3 1/4	17D270-7		2	Case Hardened
2 1/2	2	3	17D270-8		2	Case Hardened
2 3/8	2	3 7/32	17D281		2	Case Hardened
2	1 1/2	2	17D281-1		2	Case Hardened
2	1 5/8	1 3/4	17D281-2		2	Case Hardened
2 5/8	2	3 7/32	17D281-3		2	Case Hardened
2 1/8	1 3/4	2 1/2	17D281-4		1	Case Hardened
2 1/4	1 3/4	4	17D281-5	17D281	2	Bronze
2 1/4	1 3/4	2 1/2	17D281-6	17D281-1	2	Bronze
2 1/4	1 3/4	3	17D281-7	14D156	2	Bronze
2 1/8	1 3/4	1 1/2	17D314		2	Case Hardened
2 1/4	1 3/4	4 1/2	17D314-1		2	Case Hardened
2 1/8	1 3/4	2 3/4	17D314-2		1	Case Hardened
2 1/8	1 3/4	2 3/4	17D314-3	17D315-1	2	Bronze
2 1/8	1 3/4	2 1/2	17D314-4	17D281-1	2	Bronze
2 1/4	1 3/4	2 31/32	17D336-5		2	Case Hardened
2 1/2	2	3 1/4	17D336-6	14D106-1	2	Bronze
1 7/8	1 1/2	3	17D376		2	Case Hardened
2 1/2	2 1/8	2	19D189		2	Case Hardened
2 1/8	1 3/4	2 1/32	19D189-1		2	Case Hardened

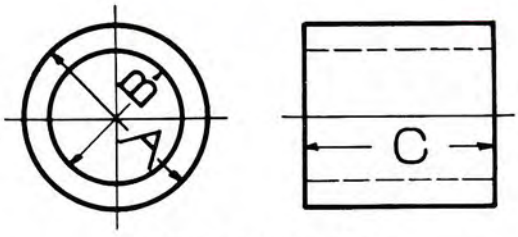


REVERSE SHAFT BEARING BUSHINGS

A	B	C	D	E	CARD	PATTERN	STYLE	MATERIAL
5 1/4"	3 3/4"	5 1/2"	4 3/8"	1/4"	31D167	31D189-4	1	Bronze
4 1/8	3 3/4	5 1/2			31D167-1	31D189	2	Bronze
4 1/4	3 3/4	5 1/2			31D167-2	31D189	2	Bronze
2 1/4	1 3/4	3			31D167-3	14D156	2	Cast Iron
4 1/8	3 1/2	8 1/2			31D167-4	31D189-1	2	Bronze
5	3 3/4	5 1/2	4 1/2	3/4	31D167-5	31D117-2	1	Bronze
4	3 1/2	7			31D167-6	31D189-2	2	Bronze
5	3 3/4	8 1/2	4 1/2	3/4	31D170	31D189-5	1	Bronze
4 1/4	3 1/2	7			31D170-2	31D189-3	2	Bronze
4 1/2	3 5/8	8 1/2	4 1/4	1/4	31D170-4	31D189-6	1	Bronze
4 3/4	3 3/4	5 1/2			31D170-5	31D189-7	2	Bronze
5	3 3/4	6	4 1/2	3/4	31D170-6	31D189-8	1	Bronze



STYLE Nº 1



STYLE Nº 2

ECCENTRIC ROD BUSHINGS—BRONZE

A	B	C	D	E	CARD	PATTERN	STYLE
4½"	3 "	3⅜"			26D199	26D250	2
4	3	3 31/32			26D199-2	26D151	2
4¼	3¼	3			26D199-3	26D100	2
4½	3¼	3			26D199-4	E271	2
4¼	3¼	3 7/32			26D199-5	26D100	2
4¼	3¼	3½			26D199-7	26D100	2
4¼	3¼	3⅜			26D200-3	26D250	2
5¼	4	4			26D200-4	26D250-1	2
3¼	2¼	2			26D200-6	26D250-2	2
4¼	3	4			26D200-7	26D151	2
3⅜	2½	2 15/32			26D200-8	26D250-3	2
5	3¾	4			26D201	26D118	2
4¼	3	3⅜			26D201-3	26D100	2
3½	2½	2½			26D201-6	26D250-3	2
4	3	3			26D201-8	26D185	2
4⅝	3	3⅜	4½"	7/16"	26D202	26D226	1
4⅜	3	3⅜	4¼	7/16	26D202-2	D832	1
4⅜	3	3 11/32	4¼	27/64	26D202-3	D832	1
5	3¾	3 31/32			26D202-6	26D118	2
5	3¾	4	5	¼	26D212-7	26D251	1
5 1/64	3 49/64	3 31/32			26D230-1	26D118	2
5	3 49/64	4			26D230-2	26D118	2
5	3 49/64	4	4¾	⅜	26D230-3	26D251-1	1
4⅝	3	3 11/32	4½	19/64	26D230-7	26D226	1
4¼	3 1/64	2 31/32			26D257-1	26D250-4	2
4	3 1/64	3			26D257-5	26D185	2
4⅛	3¼	3			26D257-7	26D100	2
3¼	2½	2½			26D281-4	26D250-3	2
4½	3 17/64	3			26D281-7	E271	2
4¼	3¼	4			26D290-1	26D151	2
4¼	3¼	3 31/32			26D190-2	26D151	2
4¼	3¼	2 31/32			26D290-3	26D100	2
4	3	2 31/32			26D290-7	26D185	2
3¾	2¾	3			26D334-5		2

VALVE STEM GUIDE BUSHINGS

A	B	C	D	E	CARD	PATTERN	STYLE	MATERIAL
3 "	2½"	5 "			21D121	D859-1	2	Bronze
3	2½	5½			21D121-1	D859-1	2	Bronze
3	2½	6			21D121-2	D859-1	2	Bronze
4	3½	3			21D121-3		2	Case Hardened
2¾	2	7⅛	2½"	¼"	21D121-4	21D128	1	Bronze
3 3/16	2¾	3¼	3⅛	⅛	21D121-5	25D115-3	1	Bronze
3	2½	5⅜			21D121-6	D851-1	2	Bronze
3	2½	7½			21D121-7	21D128-1	2	Bronze
3	2½	7			21D125		2	Bronze
2½	2	6			21D125-2	21D128-2	2	Bronze

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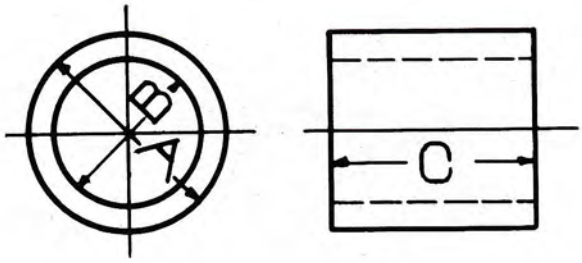

ROCKER ARM BUSHINGS

A	B	C	CARD	PATTERN	MATERIAL
2¼"	1¾"	1 63/64"	24D126		Case Hardened
2¼	1¾	3	24D126-1		Case Hardened
4¾	4	5½	24D126-2	24D141	Bronze
2½	2	3½	24D126-3		Case Hardened
2½	2	4	24D123-4		Case Hardened
4¾	4	5	24D123-5	24D141	Bronze
2½	2	3½	24D123-6	24D102-1	Bronze
2⅛	1¾	2 3/16	24D123-7		Case Hardened
2½	2	4	24D123-8	24D141-1	Bronze
2	1½	2	24D132		Case Hardened
2½	2	2½	24D137		Case Hardened
2⅛	1¾	6 7/16	24D137-1		Case Hardened
2½	2	3	24D137-2		Case Hardened
2¼	1¾	1 63/64	24D137-3	30D319	Bronze
2¼	1¾	3	24D137-4	14D156	Bronze
2⅛	1¾	5 1/16	24D137-5		Case Hardened

ROCKER BOX BUSHINGS

A	B	C	CARD	PATTERN	MATERIAL
4¾"	4 "	6¾"	25D204	D853-1	Cast Iron
4¾	4	6¾	25D204-1	D853-1	Bronze
3	2½	3	25D204-3	D580-1	Bronze
4¾	4	6¾	25D204-6		Hunt Spiller Gun Iron
4¾	4	5½	25D204-7	D853-1	Bronze
5¾	5	8	25D250		Cast Iron
5¾	5	5	25D250-1		Cast Iron

SLEEVES, ECCENTRIC CRANK TRUNNIONS—CASE HARDENED

A	B	C	CARD
3 "	2½"	3 13/32"	27D137
3	2½	3⅜	27D137-1
2¾	2¼	4	27D137-2
3	2½	4 1/32	27D137-3
2½	2	3	27D137-4
3¼	2⅝	3 1/32	27D137-5
3¼	2¾	3 1/32	27D137-6
3¾	3⅛	4	27D137-7
3¾	3	4 1/32	27D137-8
3¾	3¼	4 1/32	27D174-1
3	2½	4	27D174-2
3	2⅜	3	27D174-3
3	2½	3 1/32	27D174-4
3¼	2⅝	4	27D174-5
3¾	3⅛	3 25/32	27D174-6

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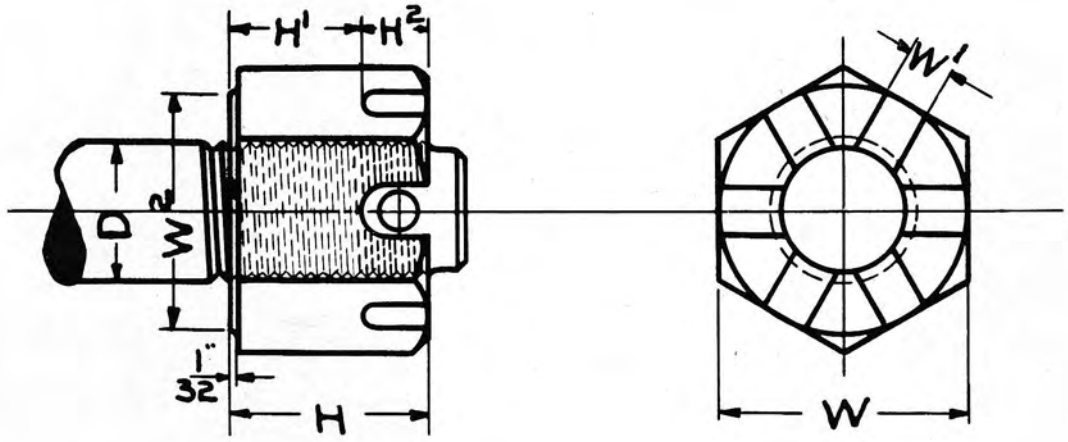

Castle Nuts

USED WITH BAKER VALVE GEAR

Castle Nuts shown above are those which are most commonly used with Baker Valve Gears. In addition to showing the size and stating whether they are tapped special or not, it shows where they are used. In addition to the above we can furnish nuts in any size by stating on your order the size required.

D	H	H^1	H^2	W	W^1	W^2	Size of Cotter	Threads per 1"	Special or Not	No. per Loco.	Where Used
$\frac{5}{8}$"	$\frac{13}{16}$"	$\frac{7}{16}$"	$\frac{3}{8}$"	$1\frac{1}{16}$"	$\frac{1}{4}$"	1 "	$\frac{3}{16}$"	11"	No	4	Combination Lever Clamp Bolts
$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{4}$	$\frac{1}{4}$	$1\frac{3}{16}$	$\frac{3}{16}$	10	No	4	Radius Bar Washer Bolts
										4	Reverse Yoke Washer Bolts
1	1	$\frac{9}{16}$	$\frac{7}{16}$	$1\frac{5}{8}$	$\frac{5}{16}$	$1\frac{9}{16}$	$\frac{1}{4}$	8	No	2	Reverse Yoke Tie Bolts
$1\frac{1}{8}$	$1\frac{1}{16}$	$\frac{9}{16}$	$\frac{1}{2}$	$1\frac{13}{16}$	$\frac{3}{8}$	$1\frac{3}{4}$	$\frac{5}{16}$	7	No	2 or 4	Union Link
$1\frac{1}{8}$	$1\frac{1}{8}$	$\frac{5}{8}$	$\frac{1}{2}$	$1\frac{13}{16}$	$\frac{3}{8}$	$1\frac{3}{4}$	$\frac{5}{16}$	7	No	2	Eccentric Crank Washer Bolts
$1\frac{1}{4}$	$1\frac{1}{8}$	$\frac{5}{8}$	$\frac{1}{2}$	2	$\frac{3}{8}$	$1\frac{15}{16}$	$\frac{5}{16}$	7	No	2	Reach Rod & Reverse Arms
										2	Combination Lever & Valve Rod
$1\frac{1}{4}$	$1\frac{1}{2}$	1	$\frac{1}{2}$	2	$\frac{3}{8}$	$1\frac{15}{16}$	$\frac{5}{16}$	7	No	2	Reverse Yoke & Reach Rod
$1\frac{1}{4}$	$1\frac{1}{8}$	$\frac{5}{8}$	$\frac{1}{2}$	$2\frac{3}{4}$	$\frac{3}{8}$	$2\frac{11}{16}$	$\frac{5}{16}$	7	Yes	2	Radius Bar & Connecting Rod
										2	Bell Crank & Valve Rod
$1\frac{1}{2}$	$1\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	$2\frac{3}{8}$	$\frac{3}{8}$	$2\frac{5}{16}$	$\frac{5}{16}$	6	No	2	Rocker Arm & Combination Lever
										2	Valve Rod & Bell Crank
$1\frac{3}{4}$	1	$\frac{9}{16}$	$\frac{7}{16}$	$2\frac{3}{4}$	$\frac{5}{16}$	$2\frac{11}{16}$	$\frac{1}{4}$	8	Yes	2	Connecting Rod & Bell Crank
$1\frac{3}{4}$	$1\frac{5}{16}$	$\frac{3}{4}$	$\frac{9}{16}$	$2\frac{3}{4}$	$\frac{7}{16}$	$2\frac{11}{16}$	$\frac{3}{8}$	5	No	2	Eccentric Rod & Connecting Rod
2	$1\frac{3}{8}$	$\frac{13}{16}$	$\frac{9}{16}$	$3\frac{1}{8}$	$\frac{7}{16}$	$3\frac{1}{16}$	$\frac{3}{8}$	8	Yes	2	Gear Frame & Bell Crank

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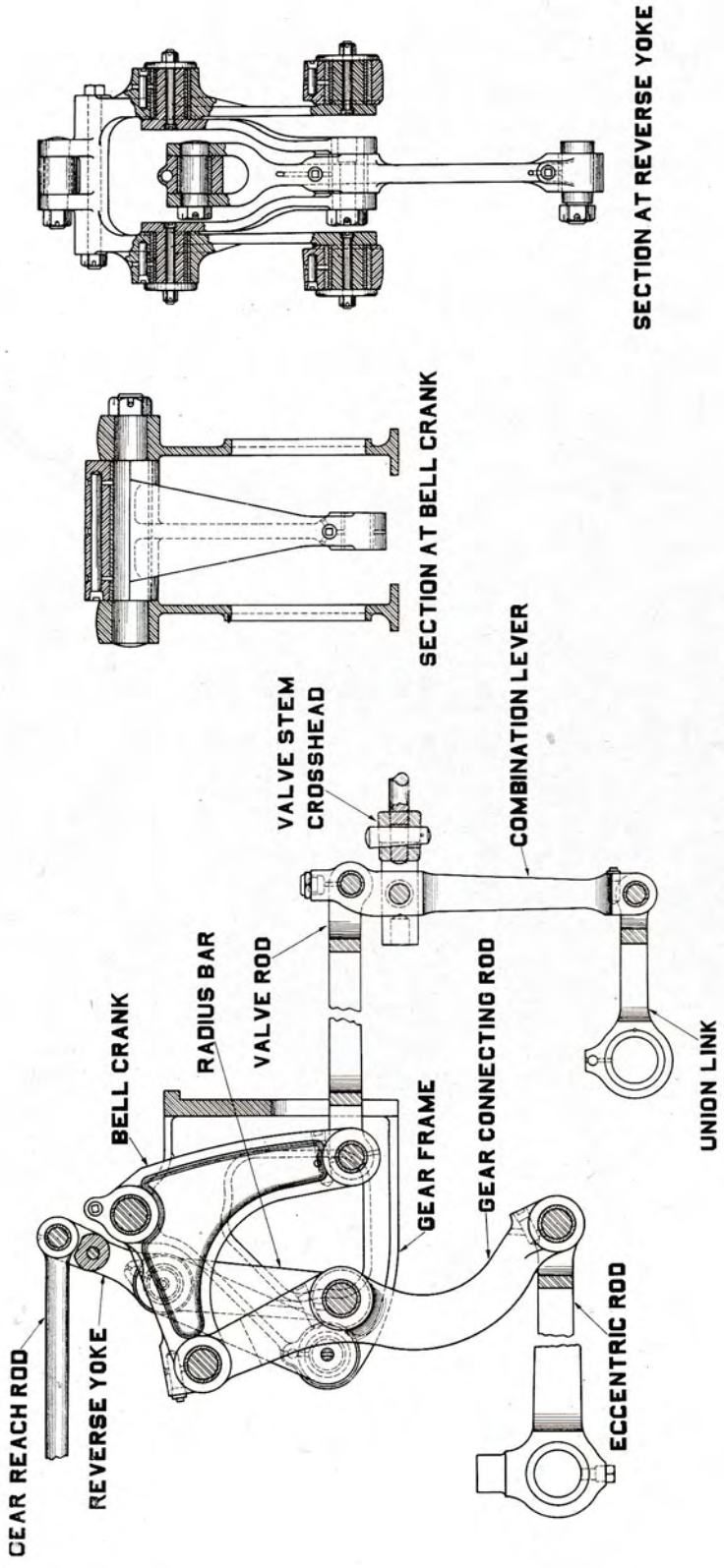

IDENTIFICATION SHEET

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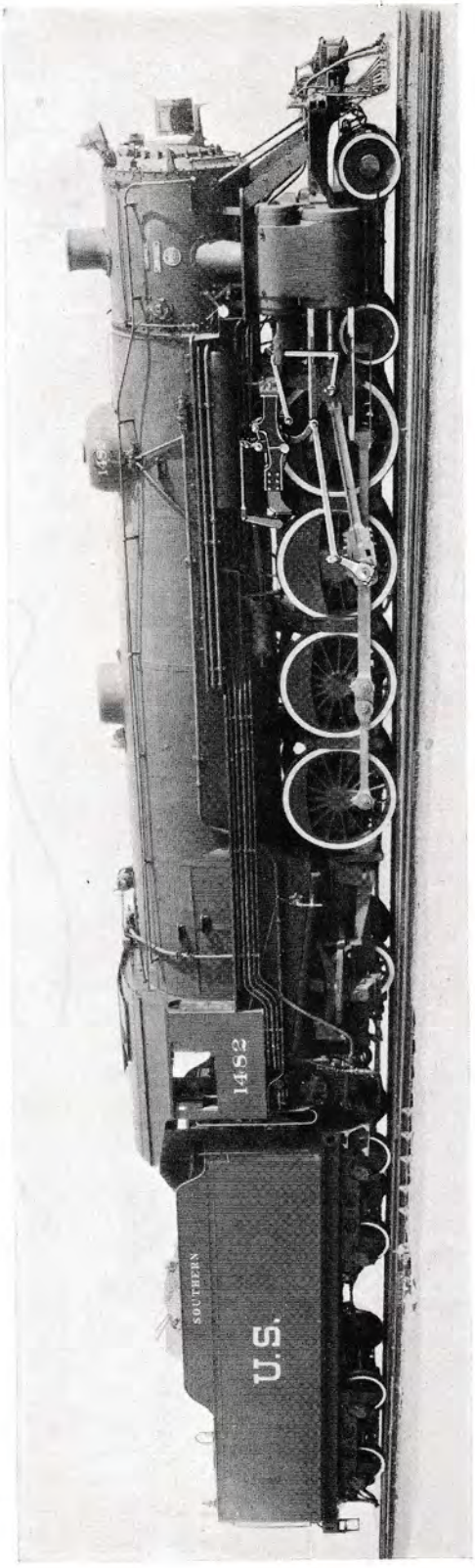
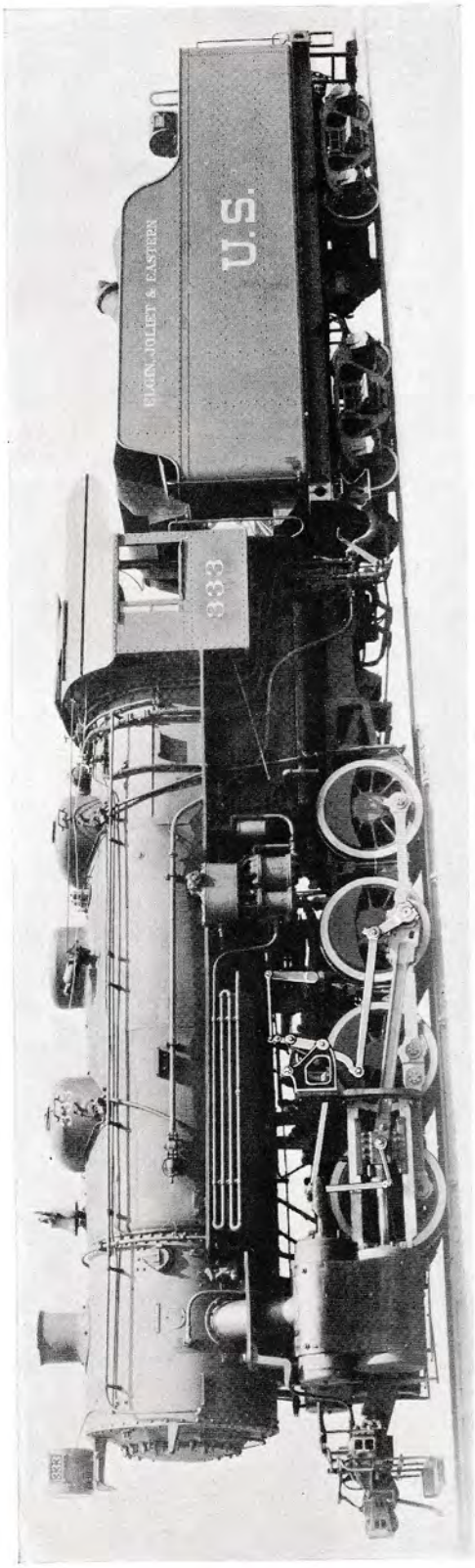


LOCOMOTIVE EQUIPPED WITH TYPE 1 GEAR FRAME



LOCOMOTIVE EQUIPPED WITH TYPE 2 GEAR FRAME

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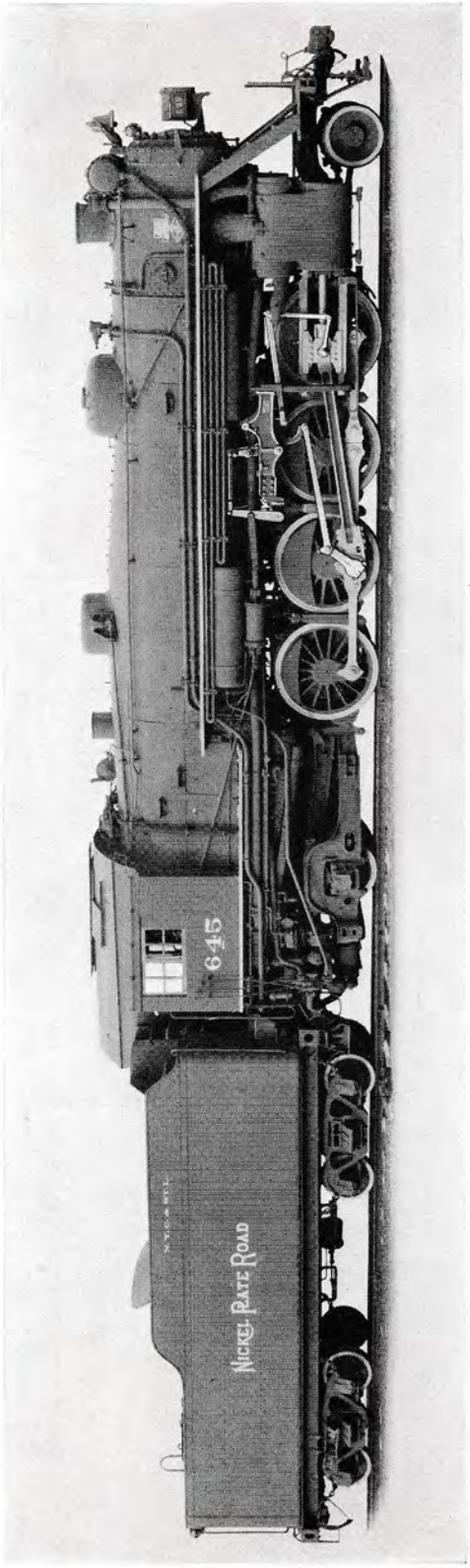
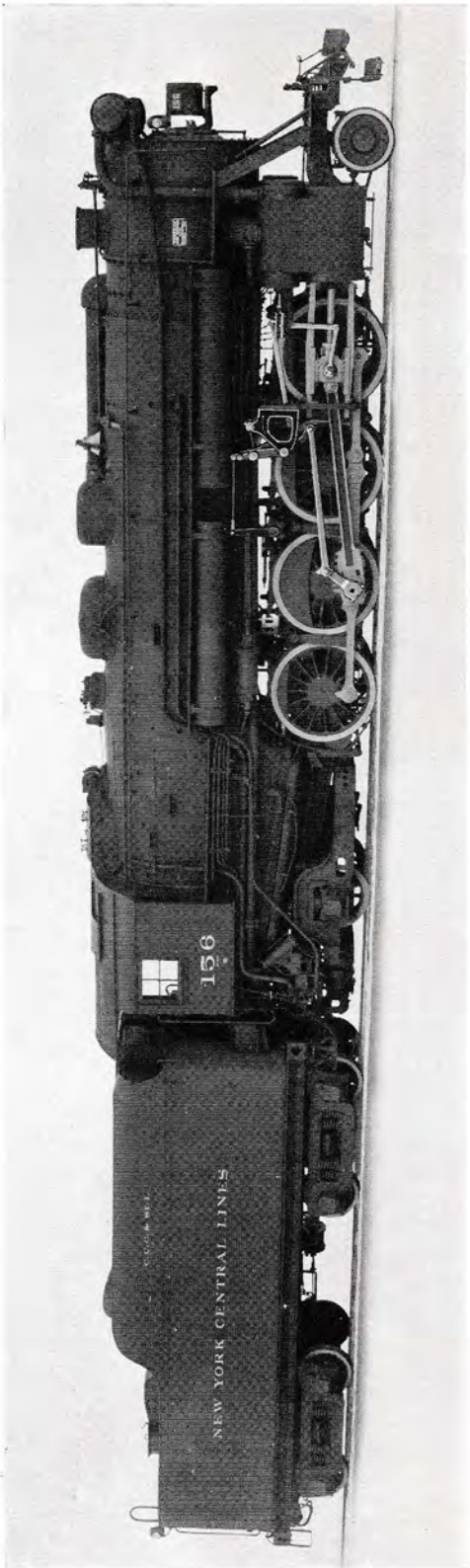


LOCOMOTIVE EQUIPPED WITH STYLE 4 GEAR FRAME



LOCOMOTIVE EQUIPPED WITH STYLE 5 GEAR FRAME

IMPORTANT—When placing order be sure to give type, class and for which side of locomotive material is wanted

THE CASLON COMPANY
TOLEDO, OHIO