

drill bushings held in the jig plate. Subsequent to this, the carrying plate is swung around an amount sufficient to bring the jig holes for drilling the babbitt recesses into a level position, this position being obtained by placing a level on the drill bushing in each position as it is required to be levelled up. In this position the revolving plate is clamped, and a shallow hole drilled, this being followed by a recessing tool so designed as to have the cutting edges spread at the ends after entering the hole, recessing the hole to form a retaining collar all around for the babbitt later poured into these spots. Both halves of the strap

shape shown, has a pin projecting inward from the downwardly projecting end. This pin, rounded on its inner end, forms a stop against which the jig block is drawn. In this position the holes are drilled, the holes being exactly located with regard to the finished interior of the strap. With the jig used in this manner, the time of laying out the holes is saved, and at the same time, the holes are drilled absolutely accurately.

THE ECCENTRIC ROD is a wrought iron forging, with the forked end solid. The first operation consists of milling the surfaces all over, on the completion of which the pin hole through the jaw end

of the block B, (the same block as that shown at A in fig. 3). These plates project down from the sides and end over the sides and end of the butt, thereby locating it centrally and true with the locating end. Clamped in that position the bolt holes are drilled. As in its former use, it is reversible for drilling either right or left hand butt ends by merely turning over, the side and end plates projecting above and below the surfaces of the gauge.

THE RADIUS LINK as it reaches the machine shop, is a solid forging roughly shaped to size. In the first place, it is surfaced off on both faces on the planer

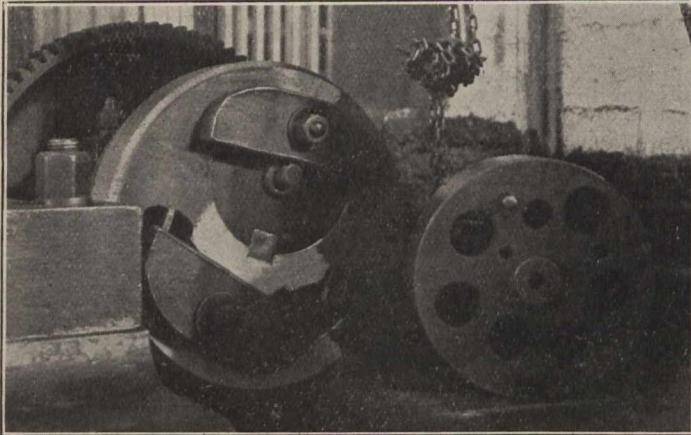


Fig. 2. Turning an Eccentric Sheave on Special Mandrels.

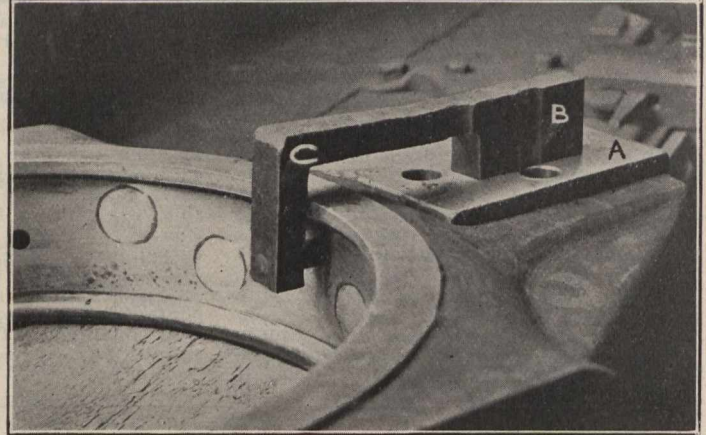


Fig. 3. Jig for Drilling Holes for Eccentric Rod Butt.

are drilled with the same jig and tool. Following this, the cupped holes are poured with babbitt. These babbitt spots are shown in fig. 3.

Next in order comes the bolting together of the sections prior to the boring; this is the operation immediately following, and is performed in a usual manner by chucking in a lathe.

Machining the recess for the eccentric rod butt follows. The cast opening in the projecting butt lug, is relieved at the inner end by a cast channel so that the cutting tool relieves itself at the end of the cut and is not forced up against a

is drilled with a centralizing jig. With this drilled hole as a central guide, the jaw is milled around the circular end by mounting on a milling table, with the rod so clamped to a stud screwed into the centre of the table, as to have the hole directly over the centre of rotation. Following this, the sides of the butt end are milled to gauge and likewise the end, milling the latter to a gauge which determines the length from the centre of the jaw pin hole, so that all rods are equal in length.

A hole is next drilled in the jaw end to form the relief for a slotting tool

to the required thickness, and then passed on to the drill press, where holes for the eccentric rod pins and saddle bolts are drilled to gauge, and at the same time rough holes are drilled at the end of the radius slot of the link. The clearance holes at the end of the slot are next scribed on the surface, position being taken from the eccentric rod holes, following which the slotter removes the clearance metal.

The next operation consists in milling all the edges, both inside and outside, on a vertical miller, by the use of the attachment shown in fig. 5. They are

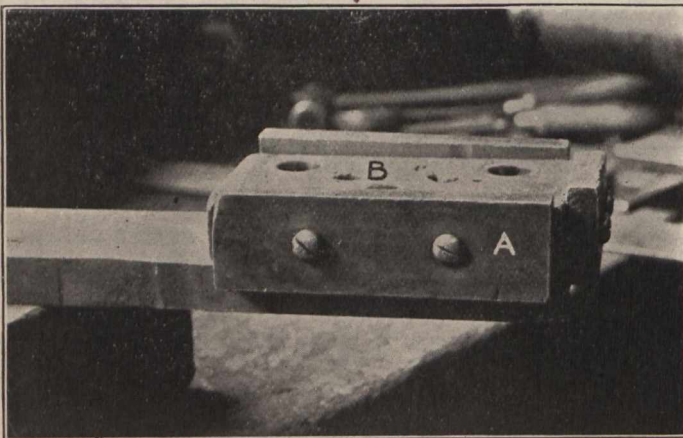


Fig. 4. Jig for Drilling Holes in Eccentric Rod Butt.

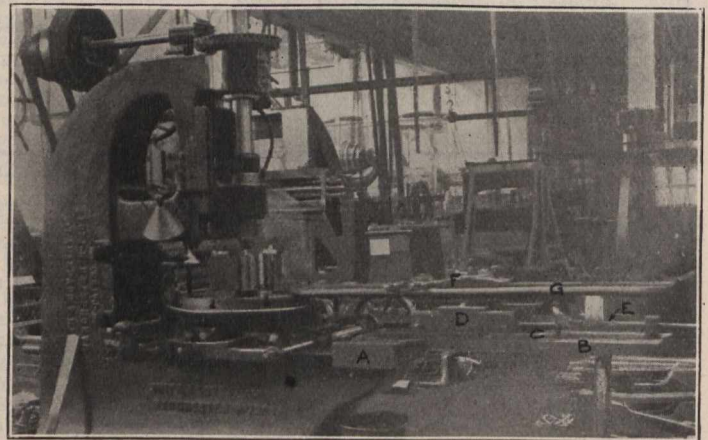


Fig. 5. Vertical Miller Attachment for Milling Radius Link.

shoulder. This machining is performed in a planer or shaper.

Drilling the bolt holes for attaching the eccentric rod butt is accomplished in the manner indicated in fig. 3, a rather novel jig being used for the purpose. A block of steel, A, containing bushed drill holes of the correct size and in the proper location, fits snugly into the machined recess for the eccentric rod butt. The jig is reversible, for the bushes are chamfered for the entry of the drill from either side. Through this block, there are two 1/2 in. holes, into which pins projecting from the lower surface of the block B fit snugly. The arm, C, of this block, formed to the

which removes the block of wrought iron between the forked jaws in a slotter, finishing the inner faces to gauge. This completes the rod, with the exception of drilling the bolt holes in the butt ends as shown in fig. 4. The extreme end of the butt having been previously machined to a given length, as mentioned earlier, this end may be used as the determining point to which a drilling gauge may be set for this operation.

Reference to fig. 4, will show that the drill jig is the same one as that used for drilling the eccentric strap butt, so that the bolt holes are certain to match up correctly. Thin plates, A, as shown, are attached to the sides and one to the end

machined in pairs. The construction of the attachment is very simple. On the end of the platen guides, there is attached an extension bracket A, centrally located and in line with the platen guides. On the bed, B, of this bracket, there is a plate, C, the upper surface of which has guiding ways for the carriage, D, adjustable lengthwise by means of the screw attached to the end of rod E with a handle at the outer end of the attachment. The carriage D, has a pin projecting from its upper surface carrying the clamp block F. This clamp block secures a slotted rod, G, which is rigidly attached at its inner end to the miller platen. In operation, the outward and