

# Dies Used in Making Fishing Reels

By E. A. Dixie

Through the courtesy of Meiselbach Brothers of, Newark, N. J., I am able to show some very interesting press tools used in their factory for the production of one type of their fishing reels. Fig. 1 at J shows the finished reel, which will no doubt be recognized by the readers of this article. It is an improvement on the reel shown at K as it contains but 32 parts all told, while the other is made up of over 55 separate pieces and as the two ends are fastened together by small screws with distance pieces or posts between, the reel is liable to shake loose and fall apart under stress of use, which is impossible with the reel shown at J,

*Tools used to make a complete fishing-reel body and seat in one piece, thus reducing the number of parts for this piece from eleven or more to one.*

*Tools for making reel-body ends and novel method of driving them in the lathe.*

on the end of the horn A. The blank similar to C, Fig. 1, is pushed by the oper-

ator over the horn until it comes against the stop J, no locating sidewise being necessary for the first stroke. The press then descends and punches out the first large opening, the piece is then turned until the stop I comes in contact with one edge of the opening which has just been punched. This indexes the piece for the next stroke which punches out the second large opening. These operations are repeated on the whole lot. The dies are then changed and using H as a stop the small openings shown at the back in D, Fig. 1, are punched out in the same way. D, Fig. 1, is then taken to the punch and die shown in Fig. 3, in this the two ends

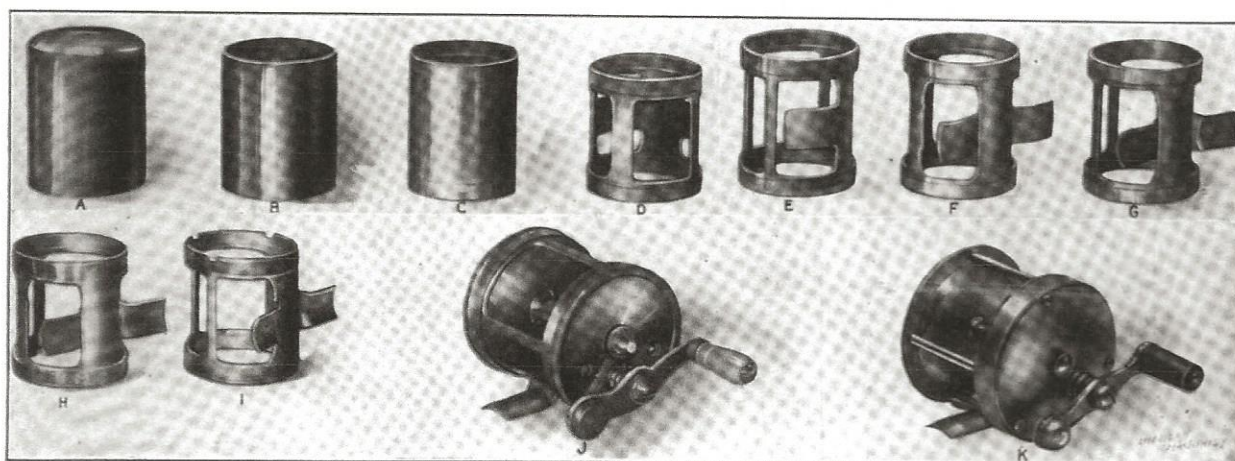


FIG. 1. THE REEL IN VARIOUS STAGES

Fig. 1. The drawing operations which produced the sample shown at A, Fig. 1, are so well known that it will not be necessary to go over them here. A is a brass cup which is drawn up in the usual way; the top is cut off to produce B. The two ends are then enlarged as shown at C. This is done by a sectional die which holds the body while a punch above and below expands the two ends. The piece C is then perforated as shown at D. This is done in a self-contained sub-press die and punch shown in Fig. 2. The horn A carrying the punch is secured to the slide B. Underneath the sub-press is shown a similar horn A and die C with its attached stripper D. The stripper can also be seen in the die mounted on the sub-press and marked with the same letter. As the horn A is considerably overhung, it is impossible to apply sufficient pressure to do the perforating without springing it. To overcome this tendency to spring a pressure piece E is held in the ram of the press, the flat G of which comes in contact with the top of the slide B, while the adjustable pin F on the end comes in contact with the flat

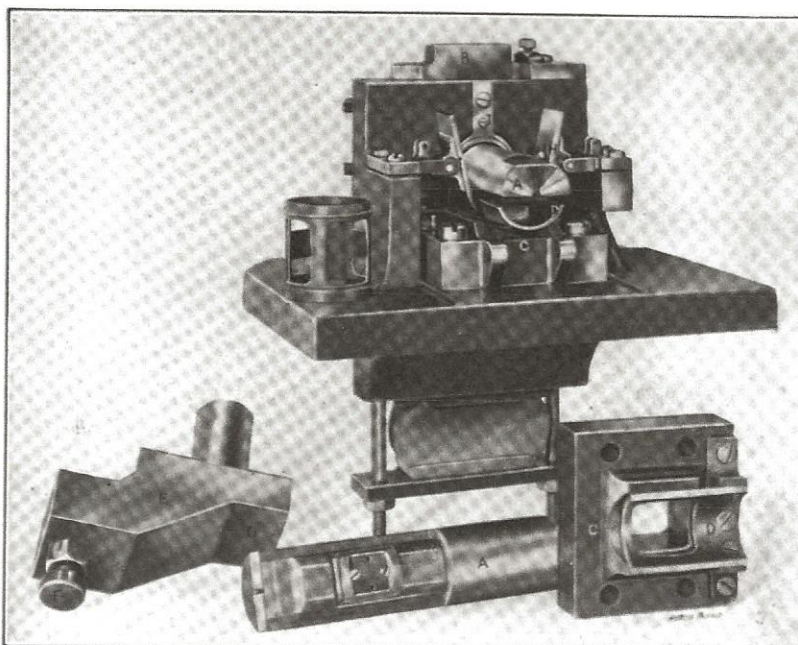


FIG. 2. PUNCHES AND DIES FOR THE OPENINGS



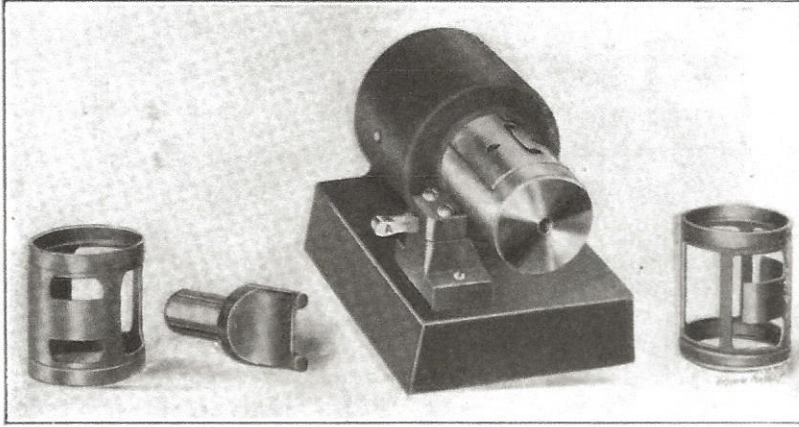


FIG. 3. PUNCH AND DIE FOR RELEASING THE REEL SEAT

of the piece which fits the reel seat in the completed reel are released from the body of the cylinder, and after this operation the piece is as shown to the right in Fig. 3. To the left the blank is shown. *A* is the stop which locates the blank by the center post. The piece then goes to the punch shown in Fig. 4 which expands the two wings *A* of the blank shown to the left. The punches *B* and *C* pivot on the pins *D* and *E* and are swung out by the wedge-shaped piece *F* as the ram of the press descends, taking with them the wings *A*. The handle *G* controls the wedge *H* at the back, which clamps the blank in position by means of the wedge-shaped piece *F* while it is being operated on. *I* is the stop to locate the work central. Fig. 4 shows the piece in place in the die.

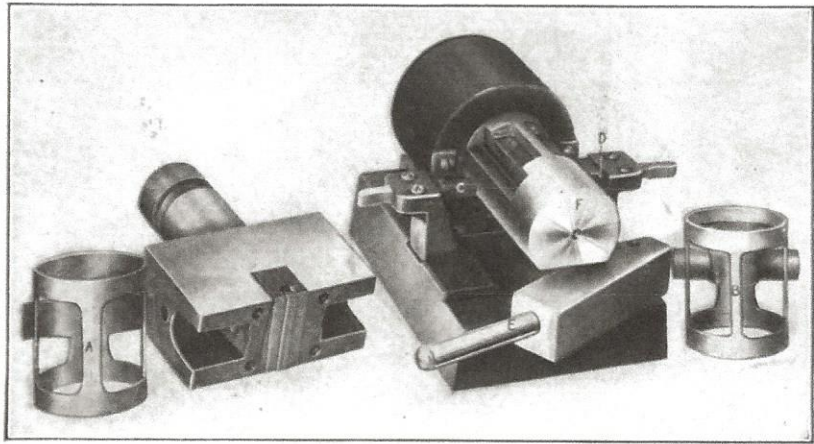


FIG. 5. TRIMMING THE POSTS

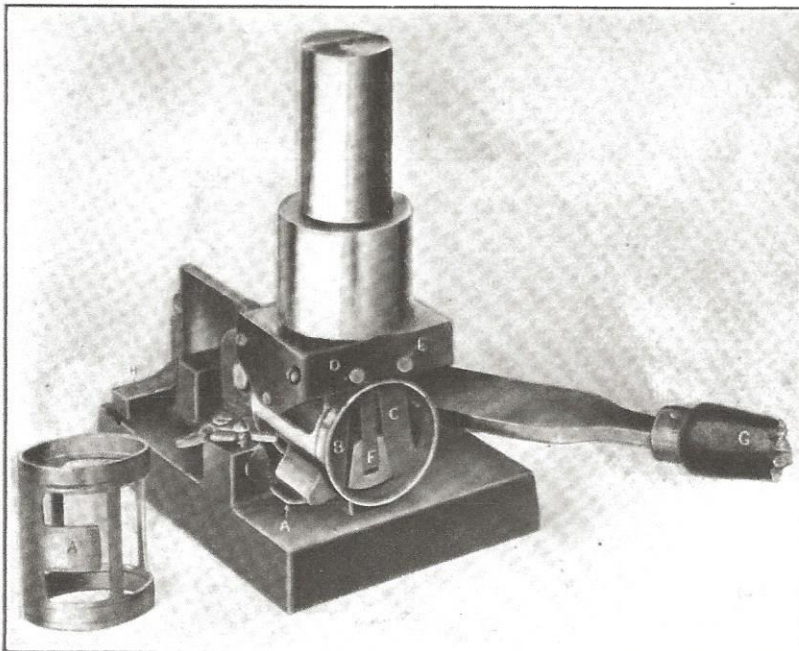


FIG. 4. EXPANDING THE WINGS OF THE REEL SEAT

The dies in Fig. 2 are so made as to allow for a trimming operation on the posts. This trimming operation is performed by the punch and die shown in Fig. 5. In this case the punch is underneath while the die straddles on top. To the left in this illustration is shown the blank with the wide post *A*, which is shown trimmed to size on the right at *B*. *C* and *D* are stops which index upon the edges of the holes. The lever *E* holds the blank up against the rear stops and supports the horn.

Fig. 6 shows the forming punch and die used for forming the wings to correct shape. The slot *A* accommodates the center post at the top of the reel body *C* and also locates it so as to be in alignment for the punch. The lower forming die *B* slides through the two openings in

the body of the reel and is located by the set screw *D* at the left. The punch *E* is simple and needs no explanation. The blank has then reached the stage shown by *G*, Fig. 1. The threading shown at *H* Fig. 1, is done on a Fox lathe. At *I*, Fig. 1, the notches shown are made by a simple punch and die. They are for altering the position of the crank handle of the finished reel, which can be at will set in any one of four positions. Fig. 7 shows the operations on the reel ends. The plain cup *A* is beaded on top as shown at *B* in the sub-press die shown in Fig. 8. In this die there are two knockouts *A* and *B*, which are shown separated slightly for clearness. The piece *A*, Fig. 7, is placed over *A* and *B*, Fig. 8, and is forced by the plain punch *C* down into an annular groove in the die. This annular groove is of such depth that the edge of the blank *X* seats on the bottom of it. Any further pressure on the punch *C* compels the metal on the top to flow outward and form the bead. The two operations are shown at the right and left. The blank *D* for this operation is about 0.050 inch thick. After trimming it is 0.517 inch high and at *E* after beading it

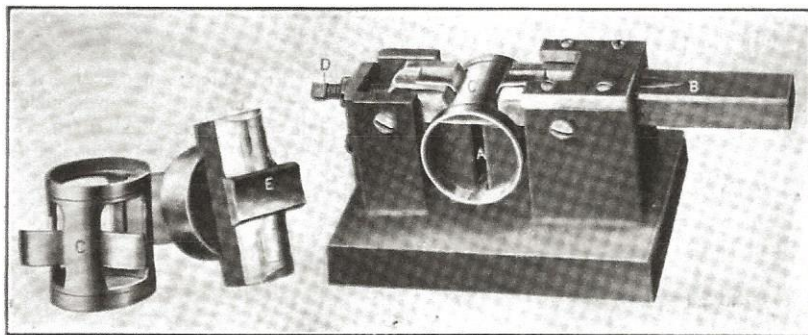


FIG. 6. FORMING THE REEL SEAT

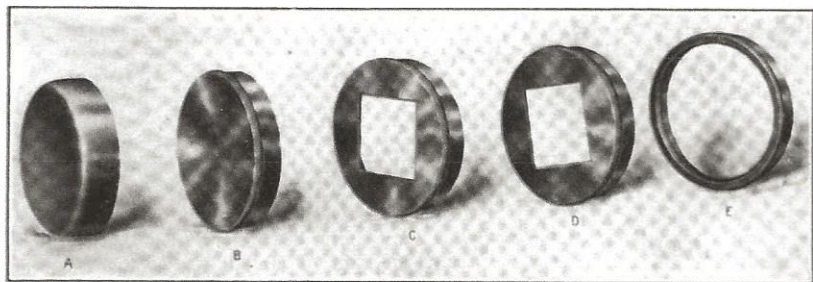


FIG. 7. THE OPERATIONS ON THE REEL ENDS

is 0.390 inch high. This beading leaves a slight groove on the inside of the piece which comes in handy as a starting place for the threading tool in the Fox lathe,

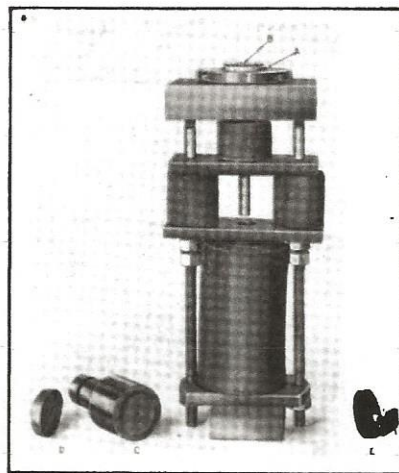


FIG. 8. THE BEADING DIE

the thread being cut from the inside outward. After beading the square hole is punched in the blank, this square hole being used as a driver, the chuck in the Fox lathe merely centering the piece lightly so as to avoid distorting it. After the threading and nurling operations the center is trimmed out in the lathe, leaving the completed end as shown at E, Fig. 7.