May 24, 1932. O. SCHLENSTEDT 1,859,990

METAL EXTRUSION PRESS

Filed July 19, 1930

Fig. 4

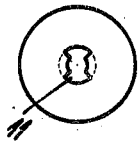


Fig. 3.

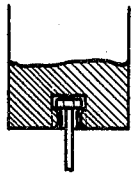


Fig. 1

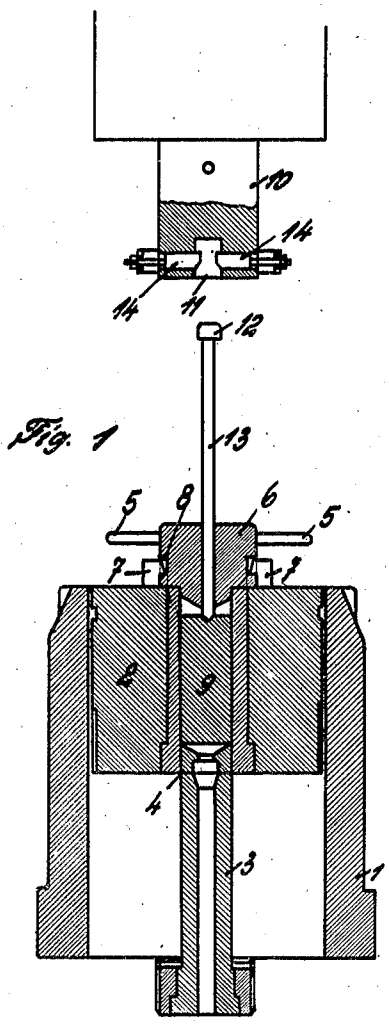
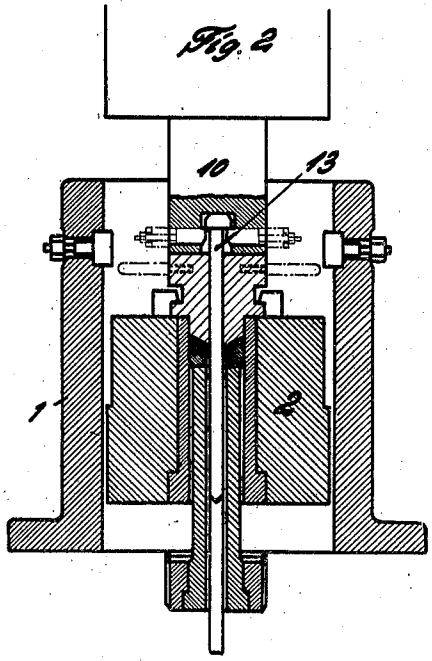


Fig. 2



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Patented May 24, 1932 1,859,990

UNITED STATES PATENT OFFICE

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METAL EXTRUSION PRESS

Application filed July 19, 1930, Serial No. 469,082, and in Germany August 24, 1929.

This invention relates to a tube extrusion press with a container which is movable relatively to a stationary hollow ram and in which the preliminary perforation of the block is effected by means of a mandrel passed through a closure member of the press pot. Such presses are known. According to a particular known construction of such a press the block is perforated and then the closure member of the press pot is connected to the press piston which carries the mandrel. The tube having been pressed, the closure member is then carried along with the perforating mandrel, so that a fresh block can be thereupon brought into the press pot and the cycle of operations repeated in the manner described. In this known construction of press the fact has not been taken into account that the cooling tube shrinks and in shrinking firmly engages around the mandrel, so that it is withdrawn from the press with the mandrel. Considerable difficulties thus ensue in stripping the tube from the mandrel. These difficulties could be overcome partially by making the perforating mandrel conical in shape, but if this be done there is risk of the perforation not being central, which would result in the thickness of the walls of the pressed tubes not being uniform.

The present invention overcomes this disadvantage and does so by detachably connecting to the press pot the closure member of the press pot which acts as a guide for the perforating mandrel. By this connection of the closure member to the press pot, the closure member acts as a stripper for the pressed tube when the mandrel is withdrawn from the press pot.

A construction example of the invention is diagrammatically illustrated in the accompanying drawings in which

Figure 1 shows the press before the commencement of the perforation of the block.

Figure 2 shows the position of the various parts of the press after the pressing of the tube has been carried out.

Figures 3 and 4 show details.

In the accompanying drawings 1 denotes the guide casing for the press pot 2, which in the present case can be moved up and down or to and fro, and into which extends the hollow stationary press ram 3, with the die 4 mounted upon it. The open side of the press pot remote from the press ram 3 is closed by the cylindrical part or closure member 6 provided with handles 5. The closure member 6 is secured to the container by a bayonet joint formed of the angular extensions 7 on the container 2 and of the grooves 8 on the closure part 6. After the former has been rotated through a certain angle it can be lifted off the press pot 2 for the purpose of inserting a block 9. The press piston 10 is provided at its end with a recess 11 into which the head 12 of the perforating mandrel 13 can be inserted. Bolts 14 projecting radially into the recess and diverging outwards serve to engage under the head 12 of the mandrel. Instead of the construction shown, the recess 11 may be non-circular (see Figures 3 and 4) so that if the head of the mandrel be correspondingly shaped, this head after it has been inserted into the recess 11 will be carried along when the press piston 10 recedes, and can be detached again by turning it.

The operation of the apparatus is as follows:—

After the imperforate block 9 has been placed on the press ram 3, the closure member 6 having been lifted off, the closure member with the mandrel advantageously inserted therein may be again applied in position and by turning, it is connected to the press pot, whereupon commences the operative movement of the press piston 10. This brings the head 12 of the mandrel 13 into the recess 11 in the press piston. At the same time the bolts 14 which at first when the head 12 entered are splayed apart engage under this latter. The press piston 10 as it moves onward now forces the mandrel through the block 9, until its front end penetrates the die 4. The press piston 10 as it moves onward is now carried along with the press pot also, whereby the press ram 3 penetrates the press pot and the formation of the tube proceeds. The tube being formed passes as it is formed through the press ram 3 and out of it.

In Figure 2 the positions of the press pis-

ton, the ram and the press pot for the block, are shown in the end position after the pressing operation has been completed. The piston 10 is now again drawn back and the mandrel 13 is carried with it and thus withdrawn from the tube formed. The work itself is supported by its waste end against the inner end of the closure member 6 and this latter acts therefore as a stripper of the tube from the mandrel 13. Thereupon the closure member 6 can be lifted off the press pot by turning it through a certain angle and the mandrel 13 removed, so that a fresh block can be inserted and the cycle of operations can take place again in the manner described.

I claim:

A tube extrusion press comprising a press pot, a hollow press ram co-axial with said press pot, the press pot and ram being relatively movable, a die supported by the ram, a press piston co-axially movable in relation to the ram, a co-axial mandrel supported by the said press piston and serving for the preliminary perforation of a block of work contained in the press pot, a closure member for said press pot which acts as a guide for the mandrel and which closure member is detachably connected to the said press pot, and means for engaging said closure member with said press pot.

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