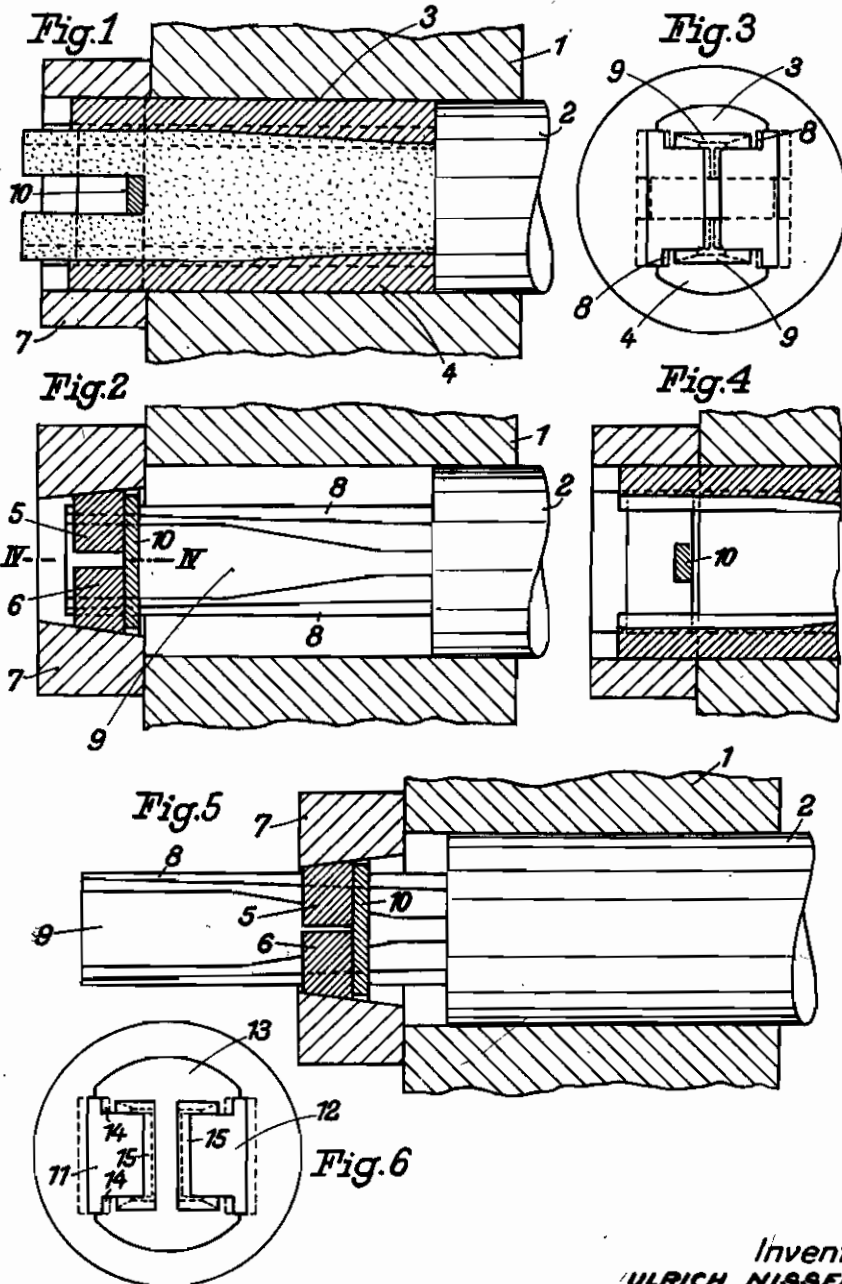


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PRESSES FOR MAKING WORK-PIECES CONICALLY
TAPERING IN LONGITUDINAL DIRECTION
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ALIEN PROPERTY CUSTODIAN

PRESSES FOR MAKING WORK-PIECES CONI- CALLY TAPERING IN LONGITUDINAL DIRECTION

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This invention relates to Presses and more particularly to so-called extrusion presses serving for the production of work-pieces having a profile conically tapering in longitudinal direction.

It is known to produce work-pieces having a profile conically tapering in longitudinal direction by means of presses of the aforementioned kind including conical mandrils that are connected with the press-plunger, said mandrils moving during the operation of pressing through a fixed die of uniform cross-section. Although with known presses of this kind there may be produced work-pieces having angular profiles with the parts thereof varying both in thickness as well as in length, it is not possible to make work-pieces of a T-, I-, U- or similar profile of varying length in addition to varying thickness of the web and of the flanges.

My invention, now, has for its general object to devise a press permitting to produce work-pieces having profiles varying to a far greater extent than had been possible to produce with known presses.

According to my invention I propose to equip the press with a two-part die and to provide guide means for the two halves of said die on the exterior surfaces thereof, said guide means being of the form of a holder or support tapering in the direction of pressing, while the distance between the two halves of the die is defined by the aforesaid conical mandrils that are connected with the press-plunger, said mandrils tapering in direction towards the latter, in order to properly guide the two halves of the die. By this the two halves of the die will gradually approach each other during the operation of pressing and simultaneously move in said holder or support in direction of the operation of pressing in accordance with the approaching of said two halves of the die. In addition to the conically tapering guides for the two halves of the die, the said mandrils are further provided with recesses tapering in direction towards the press-plunger to produce the aforesaid conically tapering profiles. Moreover, these recesses in the mandrils may be tapering towards the press-plunger both in direction of their height as well as in direction of their width.

According to my invention, furthermore, there may be provided bridge-like members guided in front of the two halves of the die and bridging the gap between these in order to subdivide the conically tapering profiles of the work-piece to be made by the press.

In the accompanying drawing I have repre-

5 sented an example of a press constructed in accordance with my present invention. In the drawing, Fig. 1 is a vertical longitudinal section through my new press in condition shortly after the beginning of the operation of pressing, Fig. 2 a horizontal longitudinal section of the press represented in Fig. 1 without the work-piece, Fig. 3 a view of the press shown in Fig. 1 and 2, as seen in direction opposite to the operation of pressing, Fig. 4 a section along line IV—IV of Fig. 2, Fig. 5 a horizontal longitudinal section of the press shown in Fig. 2 without the work-piece in condition shortly before completion of pressing, Fig. 6 a view of a press constructed in accordance with Fig. 3 for the production of U-shaped work-pieces having a conically tapering profile.

Referring more particularly to the drawing, the receptacle of the press is designated by the reference numeral 1, the press-plunger by the numeral 2, the press-mandrils connected with the press-plunger by the numerals 3 and 4 and the two halves of the die by the numerals 5 and 6. The two halves of the die are exteriorly guided by means of a conical holder or support 7, while the distance between said halves of the die is defined by guide-ribs 8 provided on the mandrils 3 and 4. As may be seen from Fig. 2, the guide surfaces of the ribs 8 for the two halves of the die are conically tapering in direction towards the press-plunger, so that during the operation of pressing the distance between the two halves 5 and 6 of the die will be diminished, which is due to the fact that by action of the operating pressure the two halves of the die will be displaced in direction of pressing in the conical guide surface of the member 7, until they abut against the guide surfaces of the ribs 8. In this manner the thickness of the web of the profile defined by the distance between the two halves of the die will be of progressively and uniformly tapering conformation. The mandrils 3 and 4 are further provided with recesses 9 which are likewise tapering towards the press-plunger in direction of their height as well as in direction of their depth, as indicated in the drawing. In the construction shown in the drawing the two flanges of the I- or the two T-profiles will be defined by said recesses 9. The produced profile may conveniently be subdivided by means of the bridge-like members bridging the gap between the two halves 5 and 6 of the die, as may be seen from Fig. 4, and being guided by recesses in the two halves 5 and 6, with the result that instead of the I-profile there may be obtained two T-profiles.

As a matter of course, my new press may also

be used for the production of profiles other than those mentioned, for instance for the production of U-profiles. A construction of the press modified for this purpose is shown in Fig. 6 in accordance with Fig. 3 for the production of two U-profiles conically tapering in longitudinal direction. In this case 11 and 12 represent the two halves of the die, 13 is the mandril con-

nected with the press-plunger, 14 are the guide-ribs for the two halves of the die and 15 the recesses in the mandril 13, said recesses 15 defining the dimensions of the two arms of the U-profile to be produced, the same as the recesses 9 in the construction shown in Figs. 1 to 5, and in addition the thickness of the webs.

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