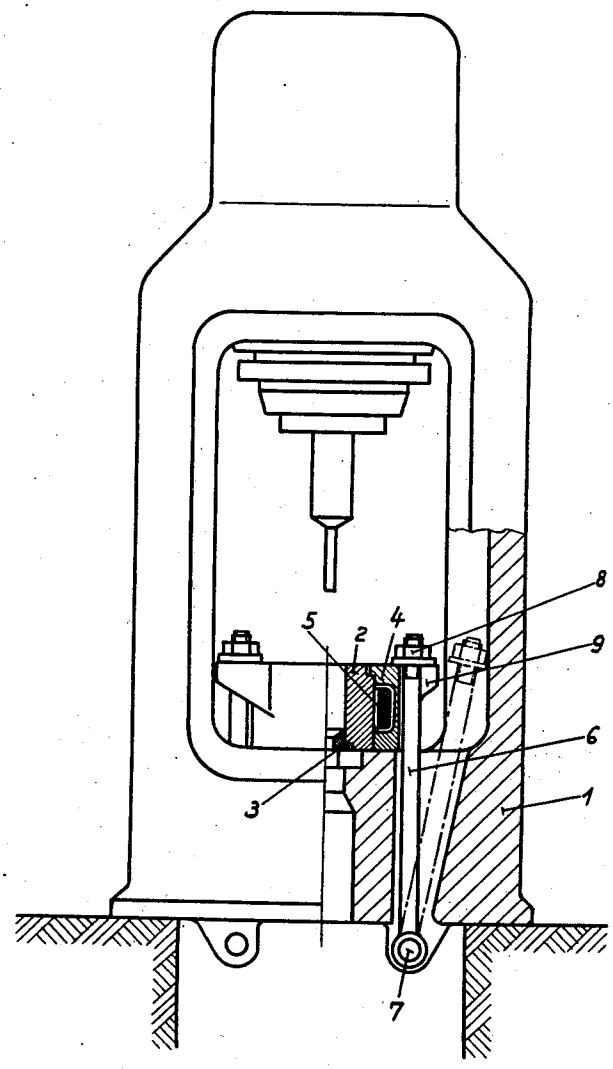
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HYDRAULIC PRESS FOR EXTRUDING METAL RODS OR TUBES

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HYDRAULIC PRESS FOR EXTRUDING METAL RODS OR TUBES

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2 Claims. (Cl. 207—16)

My invention relates to a hydraulic press for extruding metal rods or tubes and particularly to the means for removably fastening the billet container of such a press to its frame.

In old presses of this type, the container is generally fastened to the frame of the press by means of screw bolts. When the press is operated, heated billets are continuously introduced into the container, so that the latter assumes a very high temperature and so do also the bolts at their ends which are attached to the container, whereas the bolt ends attached to the frame remain relatively cool. Under these conditions, there exists a great difference of temperature between both ends of each bolt, which in view of the rigid connection, at these ends, causes very heavy bending and tensioning stresses in the bolts and leads to their jamming, warping or even breaking. This is the case particularly with such containers which are provided with special heating means.

It is an object of the present invention to provide a press of the above kind in which the fastening bolts for the billet container are not subjected to undue stresses on account of differences in temperature at their two ends. I attain this object by providing a pivotable mounting at one end of the bolts, preferably at that attached to the press frame, whereas the other end may be rigidly but removably connected to the container, e. g. by nuts or any other suitable means, the parts of the bolts between said ends not engaging the container or the frame. When the pivots of the bolts are suitably arranged with respect to the container, the bolts will freely follow all forces exerted on them caused by the heat of the container by rocking about their pivots so that any jamming, warping or breaking of the bolts will be prevented, even when said forces are excessive.

For removing the container from the press frame, it is only necessary to loosen its connection with the bolts, whereafter the latter can be swung aside about their pivoted ends, whereas the other ends of the bolts, which are connected to the press frame can be left untouched. I can therefore extend the bolts down below the press frame and arrange the pivoted mounting there without interfering with the ready removal of the container, whereby the length of the bolts can be substantially increased and the stresses to which they are subjected by the heat from the container are still further decreased.

I will now describe my invention more fully in detail, with reference to the annexed drawing which is a side view, partly in section, of a press embodying my novel fastening means for the billet container.

In the drawing, 1 designates the frame of a vertical hydraulic press for the extrusion of metal rods or tubes, 2 designates the inner part of the billet container proper with the die 3 inserted at its bottom, while 4 designates the outer part or jacket. A heating coil 5 is provided in a space between the container 3 and its jacket 4.

For removably fastening the container to the press frame, I provide bolts 6 which are pivoted at 7 to the base of frame 1 and are secured by nuts 8 to slotted lugs 9 on the jacket 4. For removing the container, it is only necessary to loosen the nuts 8 and then to swing the bolts 6 aside about their pivots 7 into the position shown in broken lines in the drawing. It will be apparent that the bolts are stopped in their swinging movement by abutting against the inner walls of the frame 1.

During operation, the top ends of the bolts 6 will assume a temperature which is much higher than that of the bottom ends, since only the former are exposed to the heat of the container. The bolts 6 will therefore tend to elongate. The pivotable mounting of the bottom ends of the bolts makes it possible for them to freely follow such tendency, as it allows for an outward movement of the bolts. Undue stresses in the bolts with resulting jamming, warping or breaking are thus prevented.

It will be further seen that the bolts 6 are of considerable length whereby any stresses due to excessive heating are further decreased. In some cases, it may be desirable, to curve the supporting surfaces of the nuts 8 on the lugs 9 about the axes of the pivots 7 as centers, but this will be generally not necessary in view of the considerable distance of these surfaces from the pivots.

I claim as my invention:

1. In a hydraulic extrusion press, the combination with the press-frame, of a billet container comprising a billet receiving inner part and a jacket surrounding the same, heating means located in a space between said inner part and said jacket, and elongated bolts having their one ends pivotally mounted on the lower part of said frame at a point remote from said container, the other ends of said bolts being adapted to engage said jacket at a point away from the lower part of said frame, the intermediate portions of said bolts being out of engagement with said container and said frame.

2. In a hydraulic extrusion press, the combination with the press-frame, of a billet container comprising a billet receiving inner part, and a jacket surrounding the same, heating means located in a space between said jacket and said inner part, elongated bolts having their one ends pivotally mounted on the lower part of said frame at a point remote from said container, the other ends of said bolts being adapted to engage in slotted lugs on said jacket at a point away from the lower part of said frame, the intermediate portions of said bolts being out of engagement with said container and said frame, and means for securing said other ends of the bolts in said lugs.

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