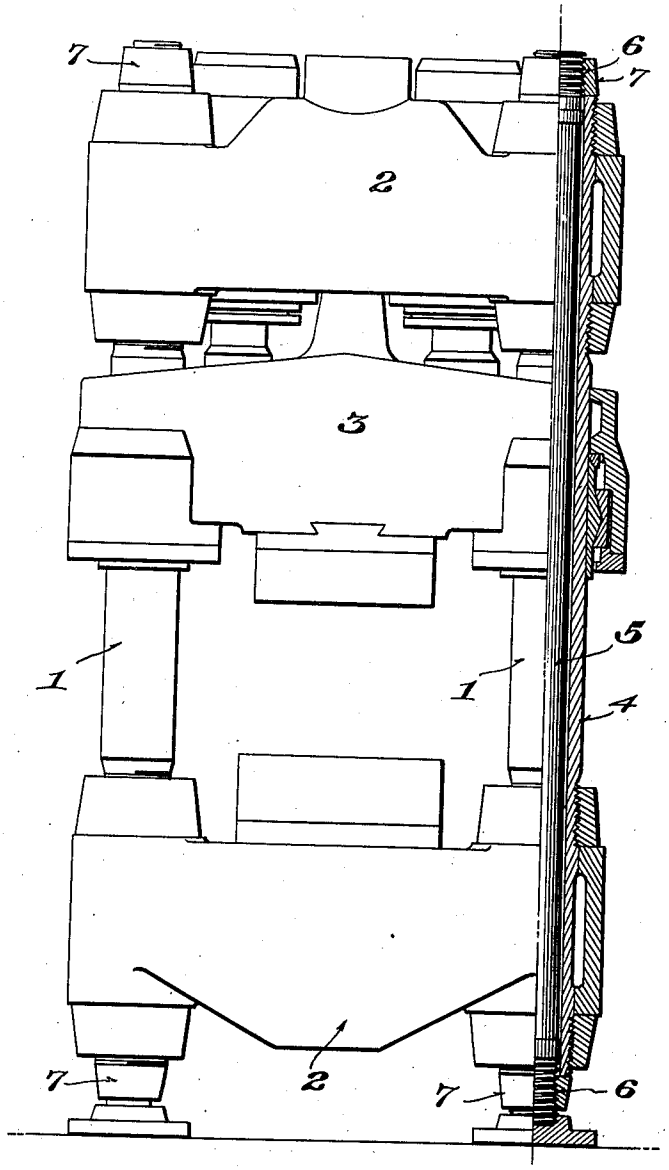
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HEAVY DUTY PRESS

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## HEAVY DUTY PRESS

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2 Claims. (Cl. 113—38)

This invention relates to power presses of the heavy duty type, and more particularly to an improved manner of constructing the columns which connect the head and the base of the machine, and on which the movable part of the press slides.

Due to the increasingly large size of power presses, difficulty is experienced in constructing the columns or pillars, in one piece, for the reason that the largest size billets when rolled in one piece, do not produce columns of sufficient length. In other words, the largest billets or blocks of metal are far too small to be worked or rolled into columns. Moreover, even if this could be accomplished from a practical rolling mill standpoint, the resulting column would be of such tremendous weight that its transportation and assembling would be attended with difficulty, not only on account of the extra labor required, but also because of the added expense and attendant risks of shipping and installing the columns in the completed press.

Accordingly, the present invention has particularly in view the elimination of the difficulties set forth and proposes to construct the columns in two or more pieces or parts which are lighter than the single column and which preferably are slidably interfitted or telescoped and secured in fixed relationship to each other at the site on which the press is to be erected. At the same time, the present invention provides a construction wherein the several parts constituting the column or pillar after once assembled in the press, jointly and efficiently absorb the resultant strains and stresses thereby rendering the column adequately strong for the purpose, while, at the same time, facilitating its handling and erection.

A preferred and practical embodiment of the invention is shown in the accompanying drawing, in which:

The figure is an elevation of the press embodying the present invention, part of said figure being in vertical section to more clearly illustrate the features involved.

According to the drawing, it will be observed, that the press consists essentially of the novel columns or pillars 1 and the usual head and base pieces 2 with the intermediate movable cross piece 3 adapted to be guided along the columns 1. As will be seen from the sectional part of the figure, the said columns 1 preferably consist of a hollow tubular outer member 4 and a massive cylindrical one-piece inner bar or core 5. The outer hollow member sleeve or casing 4 has the head and base pieces 2 welded or otherwise secured to the outer sides thereof, at appropriate points, while the movable press head 3 slides on the outer faces of the hollow member 4 between the head and base pieces 2—2. Instead of the head and base pieces 2 and 3 being welded to the casings 4, the latter may be provided with upper and lower pairs of spaced threads to receive the clamping abutments or nuts which rigidly connect said head and base pieces directly to the casings. The central bar or core 5 is preferably made longer than the casing or shell 4 so as to project beyond the opposite ends of the latter and is preferably threaded as indicated at 6. These threads receive nuts 7 which rigidly clamp or secure the parts 4 and 5 together to provide a rigid ensemble so that all of the strains and stresses, particularly the tensile strains, are distributed between the two members constituting the column or pillar.

It will, of course, be understood that the cross-sectional shape of the outer hollow tubular member 4 and the core 5 is not material, because these members may be of round or other cross-sectional shape as desired to perform the intended functions. Moreover, although the core and the outer or surrounding tubular member are shown as being clamped together by means of the thread and nut connections 6—7, nevertheless, an equivalent form of connection may be used, providing, of course, that the members are rigidly connected in such a way that all of the strains and stresses are jointly absorbed thereby.

From the foregoing it will be understood that the present invention aims to provide a composite column for presses which overcomes the practical difficulty in making a single column large enough for the purpose, while at the same time having the requisite strength.

I claim:

1. In a heavy duty press, the combination including, a pair of columns forming guides for a movable press head and each consisting of an outer continuous tubular casing and a solid cylindrical core of greater length than the casing and provided with threads at the ends which project beyond the casing, said casing having upper and lower spaced pairs of external threads, head and base members sleeved on the casings respectively between said upper and lower spaced pairs of threads, nuts on said spaced pairs of threads working in opposite directions against the top and bottom sides of the head and base members rigidly to clamp the same to the casings, and nuts on the threaded ends of the core members

and abutting the ends of the casings rigidly to connect the casings and cores.

2. In a heavy duty press, the combination including, a pair of composite columns forming guides for a movable press head and each consisting of an outer continuous tubular casing and a solid cylindrical core of greater length than the casing to project beyond the ends thereof, head and base members sleeved over the outer casings, abutment rings secured to the said outer casings at the top and bottom sides of the head and base members for rigidly holding the said head and base members on the casings in spaced relation, and abutment rings secured to the projecting ends of the cores and directly engaging the upper and lower ends of the continuous casing to rigidly unite the cores and casings and absorb tensile stresses.

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