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Von Platen et al.

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[54] **STANDS FOR PRESSES**

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Related U.S. Application Data

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[52] **U.S. Cl.** **100/214**

[51] **Int. Cl.** **B30b 1/00**

[58] **Field of Search** 100/214; 72/455

[56] **References Cited**

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FOREIGN PATENTS OR APPLICATIONS

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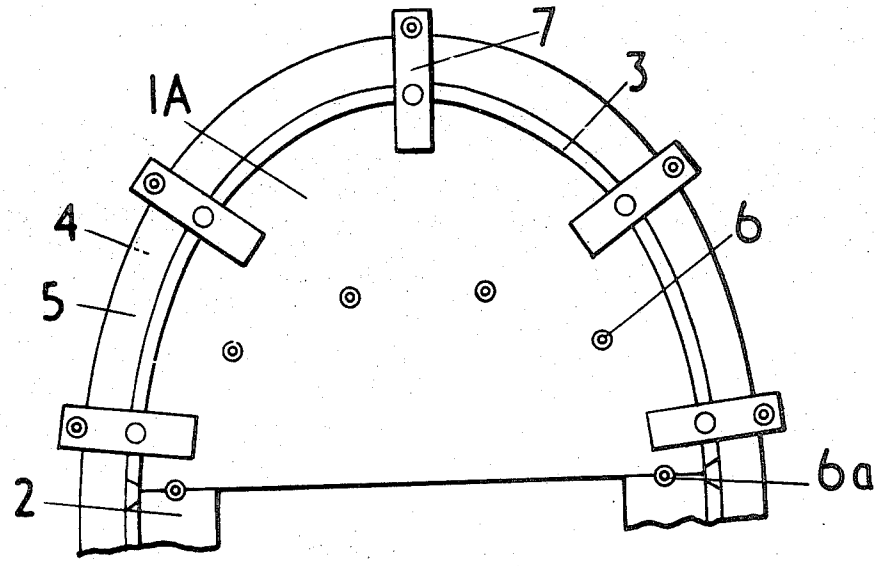
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[57] **ABSTRACT**

This invention relates to stands for high pressure presses. Such presses are often of a type including a pair of yokes, separated by a pair of uprights and surrounded by a girdle built up from prestressed steel strip. In order to reduce the piece weight and increase the strength of such presses, it is now proposed to build up the yokes, and preferably also the uprights, from sections arranged in face to face relationship. Each section is similar in shape to its fellows and the sections may be bolted together in closely packed or spaced face to face relationship.

3 Claims, 3 Drawing Figures



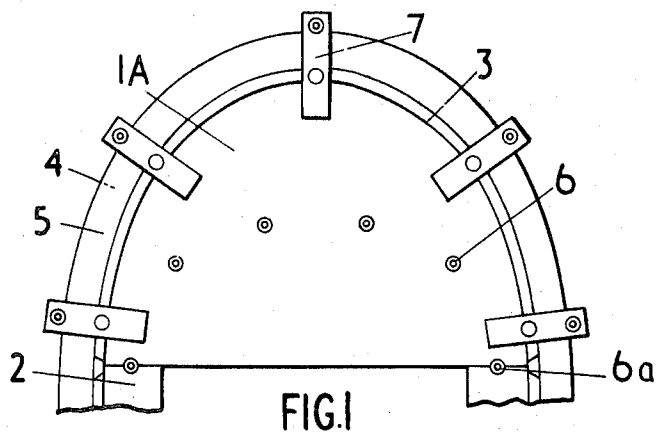


FIG.1

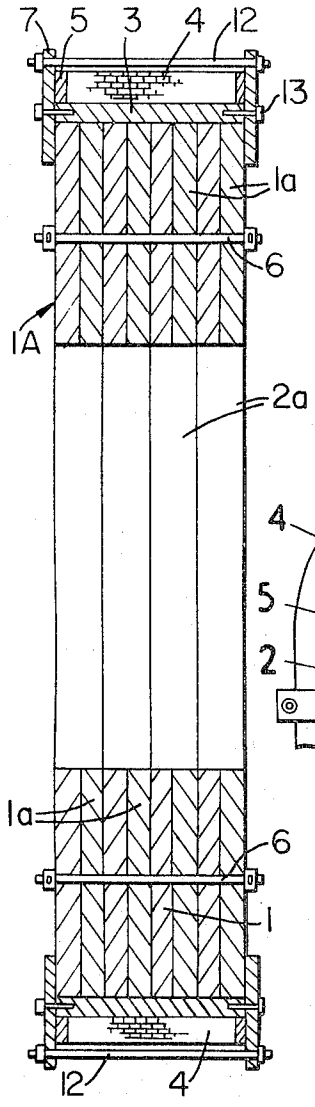


FIG.3

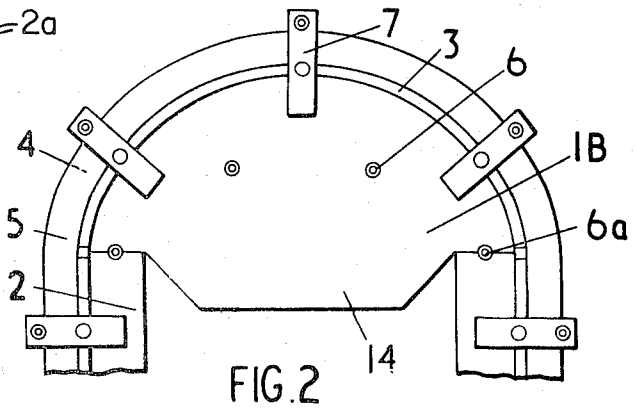


FIG.2

STANDS FOR PRESSES

This is a division of application Ser. No. 72,358, filed Sept. 15, 1970.

The present invention relates to stands for high pressure presses, the stands of which have to absorb very high forces or stresses.

It is known, for instance from the Swedish Pat. specification No. 186 278 or German Pat. specification No. 1055958, to construct such stands from two substantially semi-cylindrical prismatic yokes, separated by two preferably orthogonal or parallellipipedal uprights. The yokes and uprights, which are made of high-quality steel, are held together by a girdle built up of prestressed steel strip. Stands of the type described here can absorb very high forces, and it is possible to calculate with adequate accuracy the forces acting upon and in the different parts of the stand.

It is, nevertheless, inevitable that such stands should have certain drawbacks, which come increasingly to the fore as the size of the stand increases.

The size of the conventional stand is limited by the piece weight of the steel parts that can be produced by steel manufacturers. The fit between the constituent parts, especially the yokes and uprights, is of such a close nature that the parts have to be machine finished. Owing to this the size of the stand is limited not only by the piece weight of the constituent parts, but also by the possibility of machining these parts.

Another essential drawback of the known stands is that if, for example, a crack occurs in a constituent part, as may happen with the high stresses involved, the crack tends to spread through the whole part. This leads to complete destruction, which involves great economic and material loss, as well as considerable physical danger to personnel and other equipment in the vicinity.

According to the present invention, these disadvantages are overcome in a suprisingly simple way, in that the yokes are built up from sections arranged in face to face relationship.

The uprights may also be built up from sections in face to face relationship.

Yokes and uprights built up from smaller sections eliminate the disadvantages presented by the conventional stands for high-power presses as detailed above.

Stands according to the invention can be made several times larger than has hitherto been possible, as the piece weight now limits only the size of the constituent sections of yokes and uprights, but not the total size of the assembled yokes and uprights.

It is, further, possible to attain a sufficient degree of precision in a simpler way, and the necessary machine finishing of the sections can be carried out in smaller machines. It will also be seen that a stand according to the invention is easier to erect, and smaller lifting and auxiliary apparatus can be used owing to the comparatively low piece weight of the constituent parts.

An essential advantage as compared with the conventional stands is that if e.g. a crack develops in a constituent part this part alone is damaged.

Finally, a decisive advantage is that the invention ensures considerably higher values of mechanical strength for the stand as a whole through the yokes and uprights being composed of sections which can be given higher mechanical strength than an undivided upright or an undivided yoke. In this respect it is known that the specific strength of steel material decreases with growing dimensions and conversely increases with declining dimensions.

The invention will be further described with reference to the accompanying drawings which show various embodiments of the invention, and in which:

FIG. 1 is a fragmentary view in front elevation of one form of press stand, the lower part being broken away;

FIG. 2 is a view similar to that of FIG. 1, showing a modified yoke configuration of a stand otherwise the same as that of FIG. 1; and

FIG. 3 is a cross sectional view in side elevation showing the laminated construction of the press stands of FIGS. 1 and 2.

In the parent application referred to above of which this is a division, embodiments of the invention are disclosed wherein the yoke members of the press stands are of semicircular configuration as seen in front elevation. It may, however, be desirable from the point of view of mechanical strength to increase the height of the yokes in relation to their structural length or lengths between points of support. This can be effected within the broader scope of the invention by forming the yokes with a somewhat modified configuration from that previously disclosed.

Referring first to FIGS. 1 and 3, a stand for a high-power press is constructed of two semi-eliptical yokes 1A, separated by two orthogonal uprights 2. In each yoke a saddle 3 is provided along the outward curved surface of the yoke, and each upright is provided on the outside with a corresponding spacing plate 3*a*.

Round the outside of the stand formed by the yokes 1A and uprights 2 a girdle 4 is provided along the saddles 3 and spacing plates 3*a*. The girdle is composed of steel strips wound round the yokes and uprights and prestressed as described in the Swedish and German patent specifications mentioned above. The girdle is laterally bounded and supported by bracket plates 5, which are supported by pairs of posts 7. The posts 7 are in their turn secured in position, on the one hand, by screws 13, screwed into the saddles 3 and the spacing plates 3*a*, and, on the other, by bolts 12 with nuts, which bolts interconnect the posts 7 of a pair.

Each yoke 1A is composed of sections 1*a* (see FIG. 3), formed as semicircular plates having two flat opposite faces in parallel planes. In a similar way each upright 2 is composed of sections 2*a*, formed as rectangular plates having at least two opposite plane sides parallel to each other.

The yoke sections 1*a*, which build up to the yoke 1, (see FIG. 3) are held together by a plurality of bolts 6 with corresponding nuts, the bolts being passed through aligned holes formed in the yoke sections 1*a*. A groove is formed in the inward flat face of the yokes 1, and a corresponding groove is also formed in the adjacent face of the upright. The groove in the yoke combines with the corresponding groove in the upright to form a recess, which can receive a bolt 6*a*. Each bolt 6*a* is provided with nuts, and the guiding and assembling of the yoke and upright is effect by the cooperation between the bolts 6*a*, their nuts and the corresponding recesses. In addition, the bolts 6*a* and the corresponding nuts have the effect of holding the yokes and the uprights together.

A useful variant of a yoke is shown in FIG. 2. The yoke 1B is here composed of semicircular discs or plates identically arranged as in the embodiment of FIG. 1, except that in this case the configuration of the

individual yoke plates provides an increase in the height of the yokes relatively to their structural length by having an extension or flap shaped part **14** projecting beyond the joint plane between the yoke and uprights.

In each of the modifications, however, it is an essential characteristic of the press stands of this invention that the yokes and uprights each comprise a plurality of separate sections arranged in face-to-face relationship and that more than one of the yoke sections in any press stand is supported by or upon one upright section. This is exemplified in FIG. **3** wherein two sections **1***a* of yoke **1A** are supported on each upright section **2***a*. The same relationship applies with respect to the embodiment of FIG. **2**, in that more than one section of yoke **1B** is supported by each section of uprights **2**.

We claim:

1. In a stand for a press, the stand comprising a pair of opposed yokes and a pair of uprights interconnecting and supporting the yokes, and a girdle surrounding the yokes and uprights: the improvement that the yokes and uprights each comprise a plurality of separate sections arranged in face-to-face relationship and that more than one of said yoke sections is supported by the same upright section, in which the sections are in the form of semi-elliptical discs.

2. A stand as claimed in claim **1**, in which each yoke meets the upright on a joint plane and are in the form of discs each having an extension projecting beyond the joint plane between the yoke and the uprights.

3. In a stand for a press, the stand comprising a pair of opposed yokes, a pair of uprights interconnecting and supporting the yokes, and a girdle surrounding the yokes and uprights: the improvement that the yokes and uprights each comprise a plurality of separate sections arranged in face to face relationship and that more than one of said yoke sections is supported by the same upright section, in which each yoke meets the upright on a joint plane and are in the form of discs each having an extension projecting beyond the joint plane between the yoke and uprights.

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