

Feb. 9, 1926.

S. E. STEPHENSON

1,572,822

HYDRAULIC RAM

Filed Dec. 17, 1924

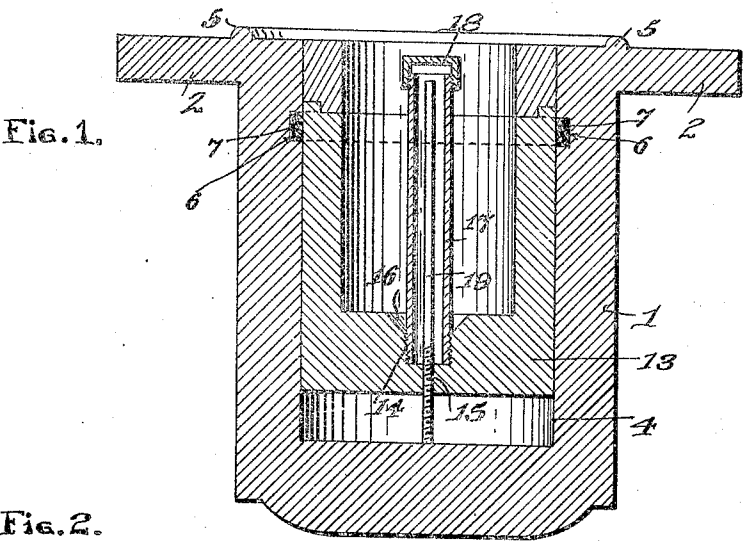


Fig. 2.

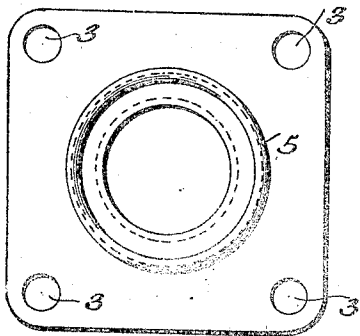


Fig. 3.

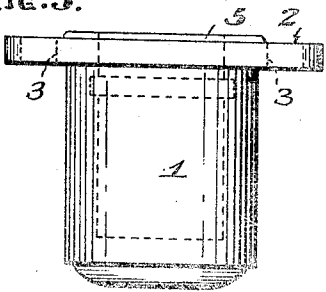


Fig. 4.

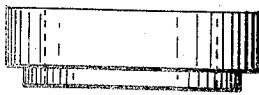
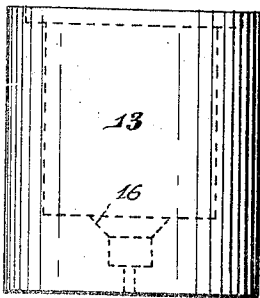


Fig. 5.



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UNITED STATES PATENT OFFICE.

SAMUAL E. STEPHENSON, OF ATLANTA, GEORGIA.

HYDRAULIC RAM.

Application filed December 17, 1924. Serial No. 756,500.

To all whom it may concern:

Be it known that I, SAMUAL E. STEPHENSON, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Hydraulic Rams, of which the following is a specification.

This invention relates to hydraulic rams, and has for its object to provide, in a manner as hereinafter set forth, a ram of such class with means to overcome the disadvantages present when replacing worn packings for rams of the solid type, as well as to prevent the tearing out and shortening of the life of the packing, for the cut type construction of ram, as is the case at present.

As is well known, the disadvantage present in replacing worn packing for solid rams is such, that it requires the removal of five or six press boxes and the entire ram requiring the labor of at least four men for several hours. Whereas, with the cut type of ram one man can accomplish the work in a very short time without the removal of any press boxes from the press. However, the cut type form of ram of the construction now used embodies a serious objection, and which is that the joint, where the ram is cut, at the bottom of the packing groove works up each time the press goes up and often catches the packing, tear it out, or, if not caught, works as a file on the packing and shortens the life thereof, causing replacing of packing crimps, and to overcome the foregoing objections is the aim of a cut-type construction of ram in accordance with this invention.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a ram of the cut type, which is simple in its construction and arrangement, strong, durable, thoroughly efficient in its use, readily installed and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts, as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is a vertical sectional view of a hydraulic ram in accordance with this invention.

Figure 2 is a top and Figure 3 a side elevation of the cylinder.

Figures 4 and 5 are side elevations respectively of the top and bottom sections of the ram.

Referring to the drawings in detail, 1 denotes the cylinder provided at its top with a lateral flange 2, having openings 3, for the passage of hold-fast devices, not shown, to fixedly secure the cylinder 1 in position. The cylinder 1, at its top, a substantial distance from its inner wall 4, has formed integral therewith an annular rib 5. The inner wall 4, in proximity to the top thereof, is provided with an annular groove 6, having a packing 7 seated therein. The foregoing elements are of known construction.

A ram in accordance with this invention is of the cut type and comprises an annular top section 8 and a cup-shaped bottom section 9 of materially greater height than the former. The section 8 has its lower portion rabbeted to form a shoulder 10 and a part of smaller outer diameter, indicated at 11. The section 9 has its top edge mortised to provide a seat 12 for that part of smaller outer diameter 11 of the section 8.

The bottom of the section 9 is tapped, approximately half through thereof, as at 14, and further tapped as at 15. The tapped portion 14 is of greater diameter than the tapped portion 15 and opens at the upper face of the bottom 13. The tapped portion 15 opens at the lower face of the bottom 13. A part of the tapped portion 14 is flared, as at 16 and the remaining part is cylindrical and threaded. The tapped portion 15 is threaded throughout and disposed centrally with respect to the tapped portion 14, as well as centrally of the bottom 13.

Threadedly engaging with the threaded part of the tapped portion 14 is a vertically disposed hydraulic collecting pipe 17 of a height, when the two sections of the ram are mounted in superposed relation, to extend into the section 8, but not above the latter. The upper end of the pipe 17 is closed by a detachable cap 18.

Extending through the bottom 13 and arranged in the pipe 17, is an adjustable stop

bar 19 having threaded engagement with the threads of the tapped portion 15.

The capped pipe 17 is provided to stop any fluid that might go up through the tapped portion 15.

When it is desired to renew the packing, the press is run up enough to enable the removal of the section 8. The press boxes are blocked up at opposite corners. The section 8 is then removed, as well as the cap 18. The bar 19 is then adjusted until the section 9 settles down below the packing groove, the packing is then renewed. The bar 19 is then adjusted to raise the section 9 to a point just above the packing groove, the pipe 17 is then closed by the cap 18, ram section 8 replaced and the press is in condition for service as though one had a solid ram.

It is thought that the many advantages of a ram, in accordance with this invention, can be readily understood, particularly in view of the fact that the cut joint will be prevented from working against the packing and further in the elimination of the joint cutting or wearing the packing, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:—

1. A hydraulic ram of the sectional or cut type provided with means for maintaining the joint thereof above the packing in the cylinder for the ram.

2. A hydraulic ram of the sectional or cut type provided with adjustable means for maintaining the joint thereof above the packing in the cylinder for the ram.

3. A hydraulic ram of the sectional or cut type having its lower section provided with means for maintaining the joint of the ram above the packing in the cylinder for the ram.

4. A hydraulic ram of the sectional or

cut type having its lower section provided with adjustable means for maintaining the joint in the ram above the packing in the cylinder for the ram.

5. A hydraulic ram of the sectional or cut type provided with means for maintaining the joint thereof above the packing in the cylinder for the ram, and a normally closed collecting pipe within the ram and having said means extending therein.

6. A hydraulic ram of the sectional or cut type provided with adjustable means for maintaining the joint thereof above the packing in the cylinder for the ram, and a normally closed collecting pipe within the ram and having said means extending therein.

7. A hydraulic ram of the sectional or cut type having its lower section provided with means for maintaining the joint of the ram above the packing in the cylinder for the ram, and a normally closed collecting pipe carried by said section and having said means extending therein.

8. A hydraulic ram of the sectional or cut type having its lower section provided with adjustable means for maintaining the joint in the ram above the packing in the cylinder for the ram, and a normally closed collecting pipe carried by said section and having said means extending therein.

9. A hydraulic ram of the sectional or cut type provided with an adjustable means extending from the lower end thereof for maintaining the joint of the ram above the packing in the ram cylinder.

10. A hydraulic ram of the sectional or cut type having its lower section provided with means extending from the lower face thereof and further adjustably engaging therewith for maintaining the joint of the ram above the packing in the ram cylinder.

In testimony whereof, I affix my signature hereto.

SAMUAL E. STEPHENSON.