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W. B. SORRELLS

HYDRAULIC PRESS PLUNGER GUARD

Filed July 18, 1923

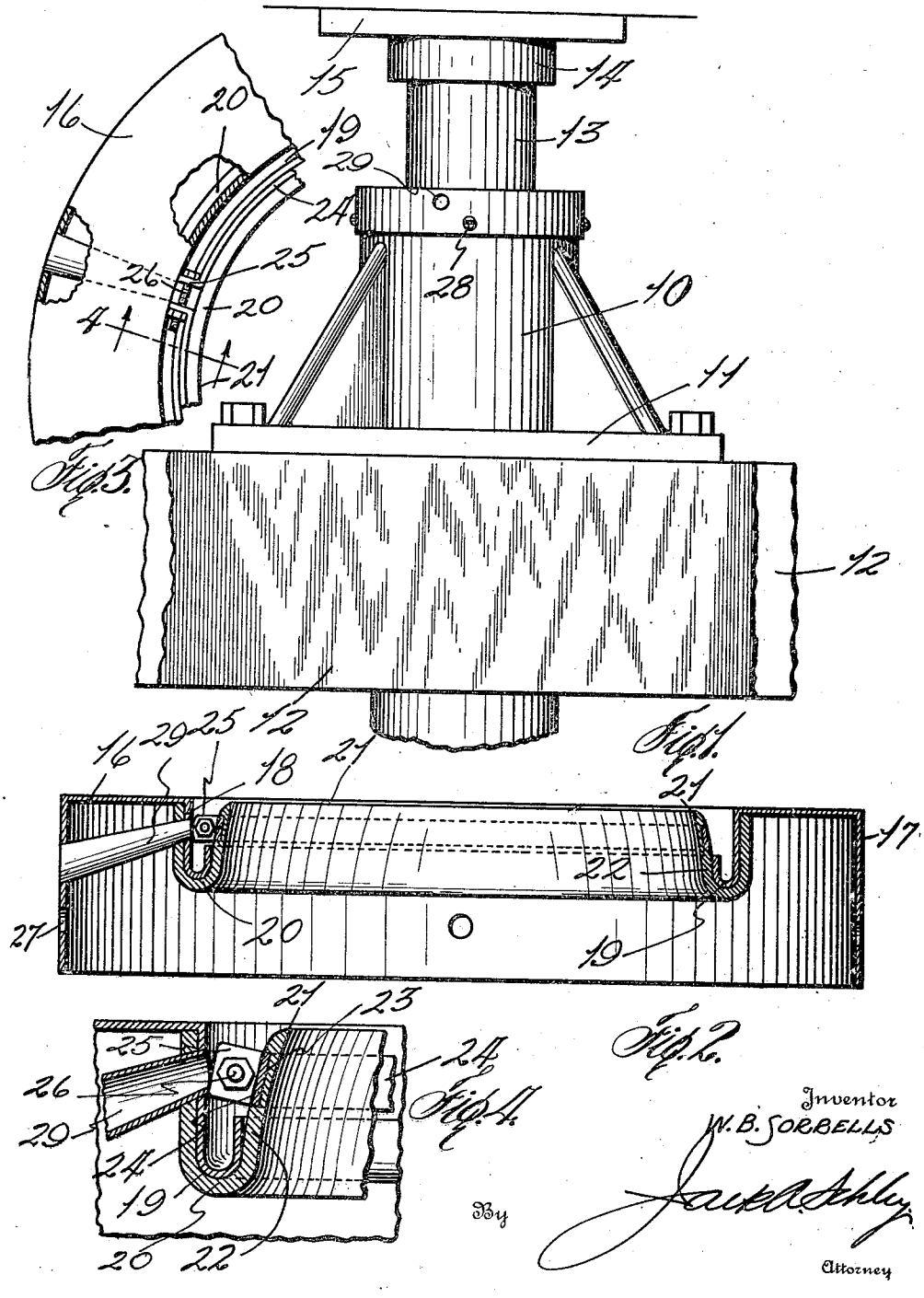


Fig. 3.

Fig. 1.

Fig. 2.

Fig. 4.

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UNITED STATES PATENT OFFICE.

WALTER B. SORRELLS, OF WACO, TEXAS.

HYDRAULIC-PRESS-PLUNGER GUARD.

Application filed July 18, 1923. Serial No. 652,370.

To all whom it may concern:

Be it known that I, WALTER B. SORRELLS, a citizen of the United States of America, residing at Waco, in the county of McLennan and State of Texas, have invented certain new and useful Improvements in Hydraulic-Press-Plunger Guards, of which the following is a specification.

This invention relates to new and useful improvements in hydraulic press plunger guards.

In certain uses, as under cotton presses, the plunger of a hydraulic press is frequently scored by foreign substances such as bits of rock, sand, nails, screws and the like falling on the stuffing box at the top of the cylinder. Scoring of the cylindrical plunger causes a leak and impairs the efficiency of the press.

The object of my invention is to provide a guard fitting over the upper end of the cylinder and snugly embracing the plunger, whereby falling bodies and particles are prevented from lodging in the stuffing box around the plunger which latter is wiped free of adhering matter.

A further object is to provide a flexible element for embracing and wiping the plunger, circumferentially, together with means for constricting said element to increase its pressure against the plunger.

A construction designed to carry out the invention will be hereinafter described together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings, in which an example of the invention is shown, and wherein:

Fig. 1 is an elevation of the upper portion of a hydraulic press equipped with a guard constructed in accordance with my invention,

Fig. 2 is an enlarged cross-sectional view of the guard,

Fig. 3 is a fragmentary plan view of the same, and

Fig. 4 is an enlarged cross-section taken on the line 4—4 of Fig. 3.

In the drawings the numeral 10 designates the vertical cylinder of a hydraulic press and 11 the head flange by which the cylinder is supported between the beams 12. A cylindrical plunger 13 slides vertically in the cylinder. The upper end of the plunger is fitted in a collar 14 depending from the under side of a plunger head plate 15. These elements form part of a press now in common use and the invention resides in a guard to be used therewith.

The guard includes an annular plate 16 from the outer edge of which a vertical apron 17, descends. The plate is of such diameter as to permit the flange to fit snugly around the upper end of the cylinder 10. From the inner edge of the plate an inner flange 18 depends, but is considerably shorter than the apron 17. The flange 18 is bent inwardly upon itself at its lower end to form an annular trough 19. The bend of the trough is on a full semi-circle so as to avoid a sharp under edge.

A flexible collar 20, U-shape in cross-section snugly embraces the outer face of the flange 18 and receives the trough 19 in its fold. This collar may be formed of leather or any other suitable material. The inner annular edge of the collar is reduced to a substantial knife edge 21, by rounding, rather than by bevelling said edge (Fig. 4). The collar is preferably pressed into shape before being placed around the flange 18, and in this operation the inner member 22 is given an inward inclination, whereby the edge 21 is presented inwardly of the collar member.

An annular groove 23 may be formed in the outer face of the member immediately below the edge 21. A flat split constriction ring 24 is embedded in the groove so that its face and particularly its upper edge are flush with the face of the member so that falling bodies will not catch thereon. The ring has out-turned ears 25 connected by a bolt 26. If the member 22 should not contact with the plunger of the press the ring can be used.

In applying the guard, the plate 15 and collar 14 are disconnected and the guard slipped over the plunger 13 and moved down onto the cylinder 10. The apron 17 surrounds the cylinder and has spaced holes 27 through which screws 28 may be passed to fasten the guard in place. The edge 21 will closely embrace the plunger, having a normal inner diameter less than the diameter of said plunger. The collar 20 will fit above the packing gland of the stuffing box (not shown) and the plate 16 will cover the top of the cylinder.

If the edge 21 should not fit snugly against the plunger or after it wears, the

ring 24 will function and by tightening the same, a close contact between the edge and the plunger may be effected. As the plunger reciprocates it is wiped clean by the collar 20. If a bit of rock or wood, a nail, screw or nut or any other foreign body should be on top of the cylinder it will be caught by the plate 16 or in the trough 19 and the plunger will not be scored or injured.

For the purpose of draining the trough so as to prevent an accumulation of oil overflowing onto the plunger, and carrying the trash therewith, I provide a plurality of inclined drain tubes 29 connected to the trough and inserted through the collar 20 and apron 17.

Various changes in the size and shape of the different elements as well as modifications and alterations may be made within the scope of the appended claims.

What I claim, is:

1. A guard for a hydraulic press comprising a member for mounting on the upper end of a press cylinder, and a constriction collar carried by the member, and mounted thereon for embracing a press plunger.

2. A guard for a hydraulic press comprising a member for mounting on the upper end of a press cylinder, a flexible collar carried by the member and mounted for embracing a press plunger and means for constricting said collar to cause it to more snugly embrace a press plunger.

3. A guard for a hydraulic press comprising a supporting member, an annular trough within the member, and a flexible collar contiguous to the trough.

4. A guard for a hydraulic press comprising a supporting member, an annular trough within the member, and means for attaching the member to a press cylinder.

5. A guard for hydraulic press comprising a supporting member, an annular trough within the member, means for attaching the member to a press cylinder, a flexible collar contiguous to the trough and means for constricting the collar.

6. A guard for a hydraulic press comprising a member for mounting on the upper end of a press cylinder, a flexible collar carried by the member and mounted thereon for embracing a press cylinder, and a drain for liquids accumulating around the collar.

7. A guard for a hydraulic press comprising a supporting member, an annular trough within the member, a flexible collar contiguous to the trough, a drain for said trough.

In testimony whereof I, affix my signature.

WALTER B. SORRELLS.