

R. O'DONNELL.

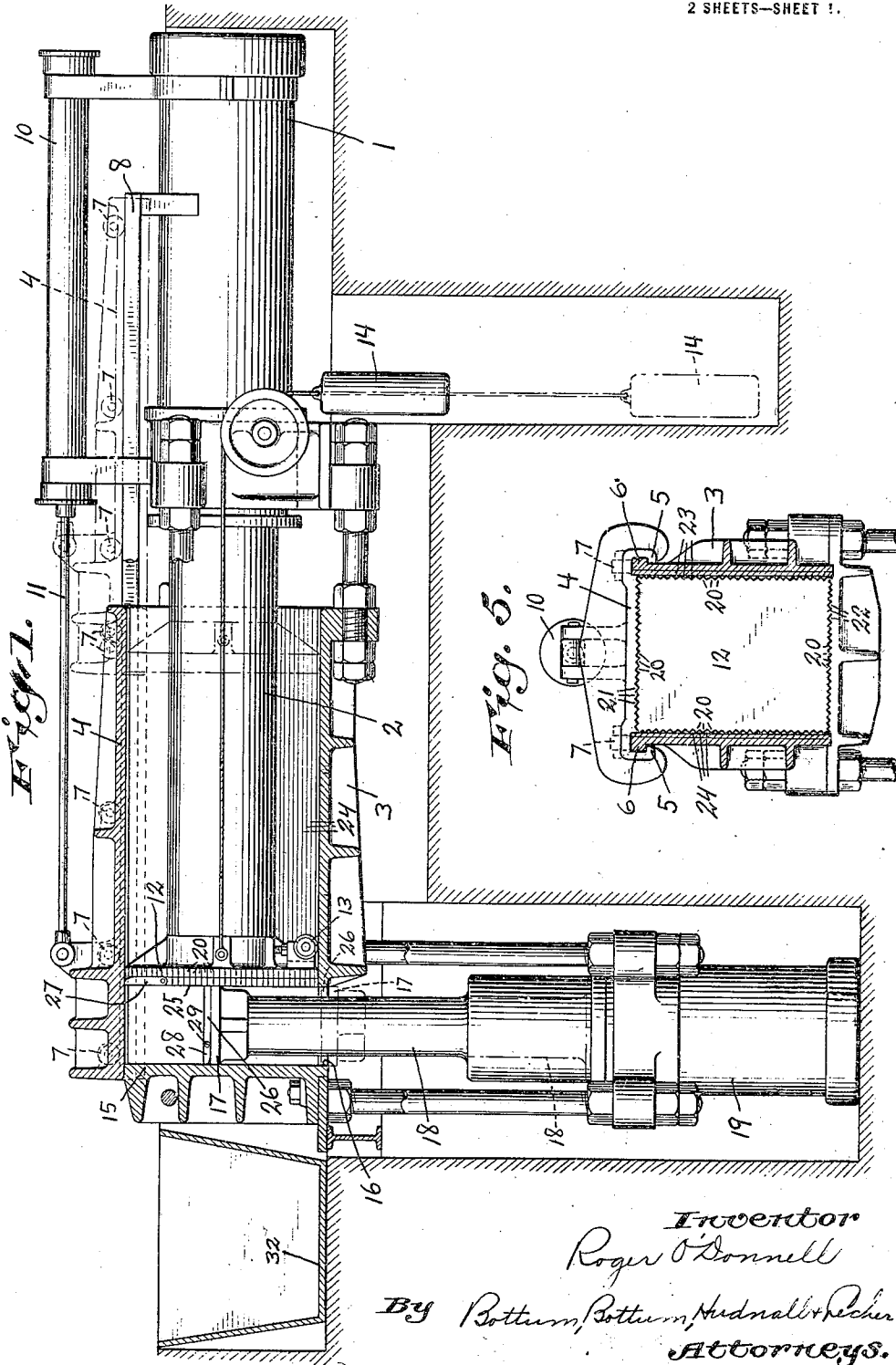
BALING PRESS.

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1,284,756.

Patented Nov. 12, 1918.

2 SHEETS—SHEET 1.



Inventor
Roger O'Donnell
By Bottum, Bottum, Hudson & Fisher
Attorneys.

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2 SHEETS—SHEET 2.

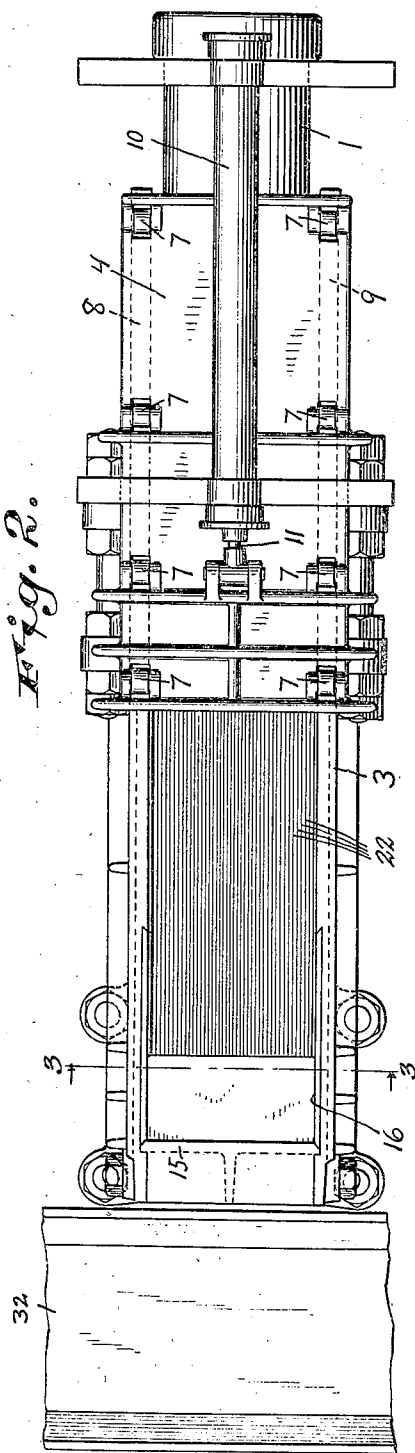


Fig. 4.

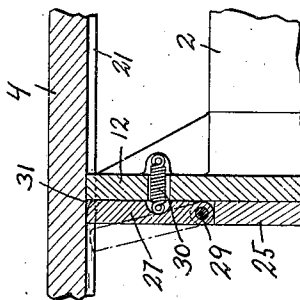
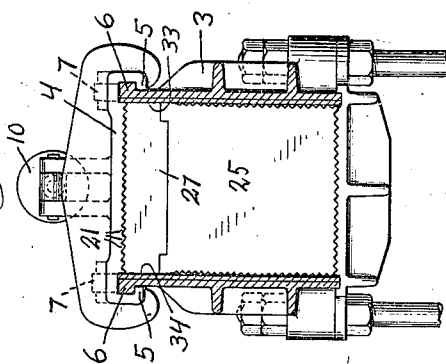


Fig. 3.



Inventor
Roger O'Donnell

By Bottum, Bottum, Hurdnall & Decker
Attorneys.

UNITED STATES PATENT OFFICE.

ROGER O'DONNELL, OF MILWAUKEE, WISCONSIN.

BALING-PRESS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROGER O'DONNELL, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates to baling presses for scrap metal and similar materials and the object of the invention is to improve the construction of baling presses in the manner to be hereinafter described and claimed.

Referring to the drawings which accompany this specification and form a part hereof, which drawings illustrate an embodiment of this invention, and on which drawings the same reference characters are used to designate the same parts wherever they may appear in each of the several views, Figure 1 is a vertical, longitudinal section of the press, parts being broken away and parts being shown in section; Fig. 2 is a plan view of the press with the cover drawn back; Fig. 3 is a vertical section taken on the line 3-3 on Fig. 2, looking in the direction indicated by the arrows; Fig. 4 is a partial sectional view on an enlarged scale and illustrates details of construction; and Fig. 5 is a view similar to Fig. 3 but illustrating a different construction.

Referring to the drawings, the reference numeral 1 designates a cylinder and 2 a plunger of a ram which is preferably a hydraulic ram. The plunger 2 is adapted to be moved forward and back in a box 3 which is provided with a movable cover 4. The cover 4 is held securely to the top of the box 3 in any suitable manner as, for example, by projections 5 on the cover engaging projections 6 on the box. The cover is preferably provided with antifriction devices, such as rollers 7, which can run on the tops of the sides of the box and on rails 8 and 9. A cylinder 10 and piston rod 11, which is connected to the cover 4, are power mechanism for moving the cover 4 forward and back by power. The plunger 2 is preferably enlarged by a head 12 at its outer end and supported by antifriction devices 13 and, when placed horizontally as shown, may be pulled back or retracted by a weight 14. The box 3 has one end open and the other end closed. Adjacent the closed end 15 of the

box and opposite the cover 4 is an aperture 16 through which can pass the enlarged head 17 of the plunger 18 which works in the cylinder 19. The plunger 18 and the cylinder 19 form a ram which is preferably a hydraulic ram.

The head 12 of the plunger 2 is provided with corrugations or V's 20 and the cover 4 is provided with matching corrugations or V's 21 which extend the full length of the stroke of the plunger 2 and to the extreme front end of the cover. The bottom and sides of the box 3 are also provided with corrugations or V's 22, 23 and 24, which match the corrugations or V's of the bottom and sides of the head 12 of the plunger 2, but which extend only the length of the stroke of the plunger 2 and terminate at the edge of the aperture 16. The corrugated construction of the plunger, the cover and the bottom and sides of the box is to prevent pieces of metal from being caught and wedging between the head 12 of the plunger 2 and the cover 4 or the bottom or sides of the box 3 when the plunger is being moved or when the cover is being moved.

The head 17 of the plunger 18 may also be provided with corrugations or V's in the same manner as the head 12 of the plunger 2 and the front face of the head 12 of the plunger 2 and the end and sides of the box 3 engaged with the head 17 may be provided with matching corrugations or V's extending in the direction of movement of the plunger 18, but, for the sake of simplicity, these parts are illustrated by the drawings as smooth or plane surfaces.

Face plates 25 and 26 may be applied to the heads 12 and 17 of the plungers 2 and 18 and will be shaped to conform to the surfaces with which they engage. The face plates may be provided at their edges with yieldable flaps 27 and 28, which are shown by the drawings as applied to only one edge of a face plate. Such yieldable flaps may be hinged to the face plates by hinge pins 29 and normally held against a plunger head by one or more springs 30. The flaps may have their rear edges rounded or beveled at 31 to provide clearance.

The reference numeral 32 designates a conveyer trough in which any suitable conveying mechanism (not shown) may move the bales to any desired point.

When yieldable flaps are used at an edge of a face plate, the corrugations or V's must

be omitted from the box adjacent the ends of a flap, as designated by the reference numerals 33 and 34 on Fig. 3 of the drawings, to permit the flap to turn on its hinge pin. The object of the yieldable flaps is to enable the flaps to yield or turn on the backward movement of a plunger and release any sliver or pieces which might have become jammed or wedged between a flap and the cover or a part of the box.

The operation of the press is as follows. The plunger 18 is lowered until its head 17, or the face plate 26, lies in the aperture 16 thus providing a bottom for the box at this point. The plunger 2 and the cover 4 are pulled back and the scrap is dumped into the box. The open end of the box is, of course, closed by the head 12 of the plunger 2. The cover 4 is then pushed forward to close the top of the box. The scrap is then compressed by moving the plunger 2 forward. A bale is thus formed. This bale is further compressed by then moving the plunger 18 up. After the bale has thus been completely formed, the cover 4 is pulled back from over the top of the bale and the bale is then forced out of the box by moving the plunger 18 up so that its head 17, or the face plate 26, is substantially flush with the top of the box. The cover 4 is then moved forward to push the bale off from plunger 18 into the conveyer trough 32.

No hooks or magnets are required to remove a bale from the press and the match-

ing corrugations or V's prevent pieces of scrap from being caught between a plunger and an adjacent surface. If fine slivers should be caught and wedge between a yieldable flap and an adjacent surface, a backward movement of a plunger would cause a flap to turn and disengage or free itself.

All pipe connections and parts not necessary to a complete understanding of the invention have been omitted from the drawings.

What is claimed is:

1. In a baling press, the combination with a plunger provided with corrugations or V's of a box provided with matching corrugations or V's.

2. In a baling press, the combination of a box, a plunger and a movable cover for the box, the cover and the plunger being provided with matching corrugations or V's.

3. In a baling press, the combination with a box and a plunger movable therein of a face plate for said plunger provided with a yieldable flap at an edge thereof.

4. In a baling press, the combination with a box and a plunger movable therein of a face plate for said plunger provided with a yieldable flap at an edge thereof, and a spring for normally holding the flap against the plunger.

In witness whereof I hereto affix my signature.

ROGER O'DONNELL.