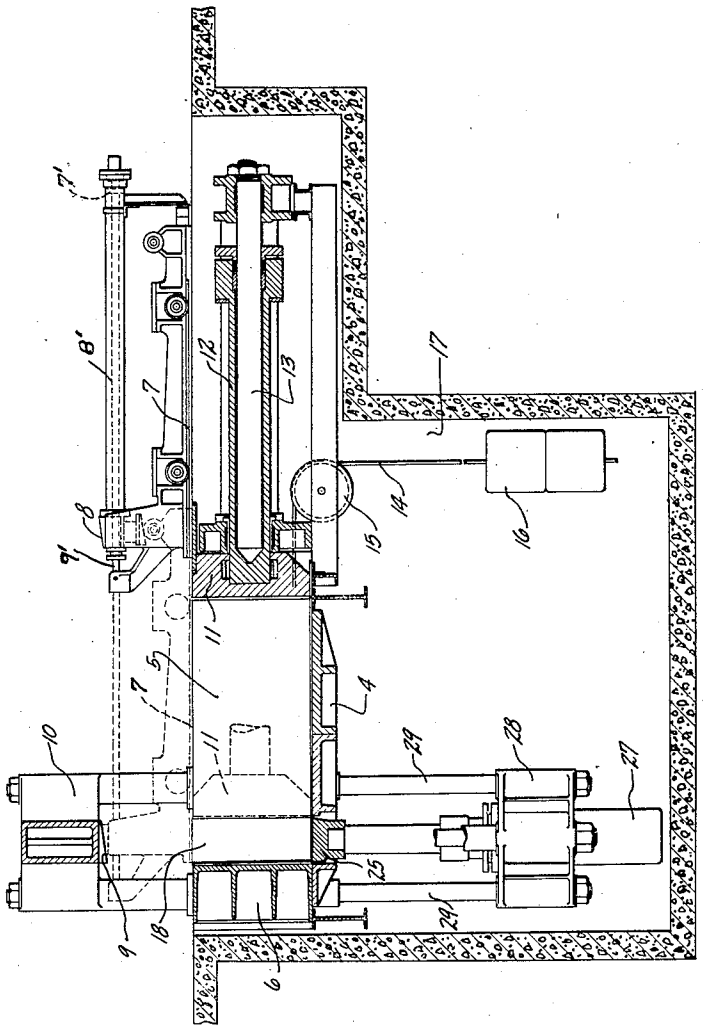
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BALING PRESS

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Fig. 1.



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Fig. 3.

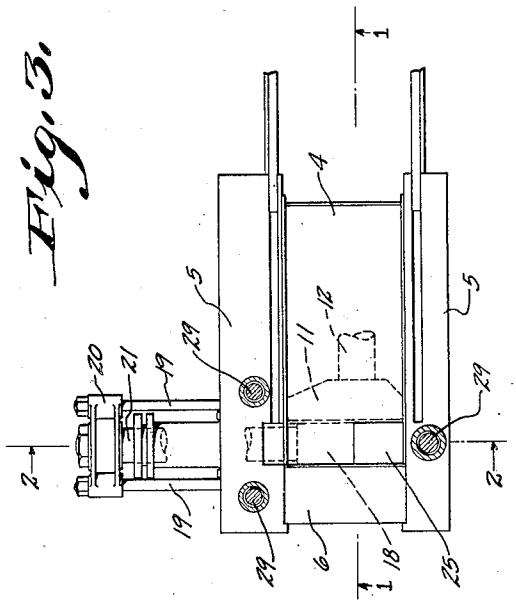
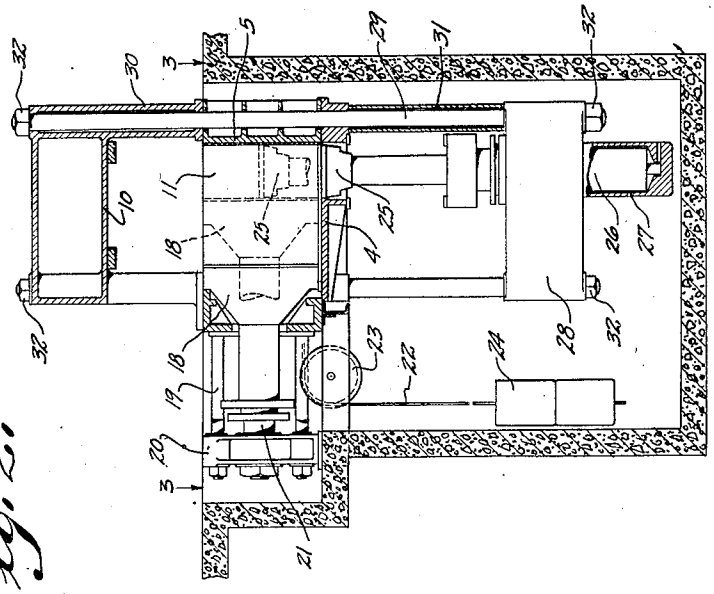


Fig. 2.



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UNITED STATES PATENT OFFICE

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BALING PRESS

Application filed June 9, 1927. Serial No. 197,625.

The invention relates to baling presses.

In the scrapping of bulky material, by crushing the same into a bundle in a baling press, the usual double ram press cannot be satisfactorily employed to reduce the scrap to its proper size and rehandling and additional equipment is necessary and the cost of the equipment and labor would be high. To obviate these conditions the object of this invention is to provide a press wherein the material to be scrapped is operated upon to decrease its three dimensions while in the press box so as to produce a sufficiently compact scrap bundle for ready handling.

The invention also has for its object the arrangement of the rams to efficiently take care of the strain to which they and the press box are subjected.

The invention further consists in the several features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings Fig. 1 is a vertical sectional view of a baling press embodying the invention, showing it in open position in full lines and the cover in closed position in dotted lines, the section being taken along the line 1—1 of Fig. 3;

Fig. 2 is a transverse sectional view taken on the line 2—2 of Fig. 3;

Fig. 3 is a detail sectional view taken on the line 3—3 of Fig. 2.

In the drawings the numerals 4, 5 and 6 designate the bottom, sides and ends of the press box, respectively, and 7 the movable cover which is of known construction and is moved by a piston 7′ working in a cylinder 8′ and connected with a rod 9′. This cover is provided with wedges 8 adapted to cooperate with wedges 9 on a bridge-piece 10 supported above the press box to hold the cover closed.

A pressing member, instanced here as a arm 11, works lengthwise of the press box to initially compress the material between it and the closed end of the press box when the cover is closed. This ram may be operated in any suitable manner and is preferably hydraulically operated by forming its rear portion 12 as a cylinder slidably mounted on a fixed rod 13 through which the pressure-fluid is introduced into the space between the inner end of the bore of the rear portion 12 and said rod, which gradually increases as said ram 11 is moved on its working stroke. The ram may be retracted in any suitable manner and as shown a cable 14 is secured to said ram, passes over a pulley 15 and is connected to a retractible weight 16 working in a pit 17. Thus the ram 11 acts to reduce one dimension of the material deposited within the press box.

For reducing the second dimension of the material, a pressing member, instanced here as a ram 18, is mounted to move across the press box between the end 6 thereof and the face of the ram 11 and is preferably hydraulically operated, similar to the first ram, and the reactions are taken up by rods 19 respectively secured to one side of the press box and a mounting 20 for the fixed portion 21 of the hydraulic cylinder. This ram 18 may be retracted in any suitable manner and, as shown, a cable 22 secured to the ram passes over a pulley 23 and is connected to a retractible weight 24 working in the pit 17. Thus, on its pressing stroke this ram 18 acts to reduce the second dimension of the material previously reduced by the ram 11.

For reducing the third dimension of the material, a pressing member, instanced here as a ram 25, is mounted to move across the end 6 and one of the sides of the press box and across the face of the rams 11 and 18, thereby compressing the material in the space thus defined between it and the cover 7 of the press box and finally to eject the finished pressed bundle from the press when the cover 7 is moved back. This ram may

be operated in any suitable manner and as shown is hydraulically operated, as by having its piston 26 mounted to work in an hydraulic cylinder 27, which cylinder is carried on a support 28.

To reduce the strains incident to the pressing operation it will be noted from Fig. 3 that the vertical axis of the piston rod for the ram 11 is offset from the vertical center line of the press box so as to better resist the strains imposed by the action of the ram 25 and to reduce and counteract the strains of the ram 25 relative to the press box a series of tension rods 29 are provided which pass loosely through the sides of the press box and tie the bridge-piece 10 and the support 28 together, said bridge-piece having tubular portions 30 engaging the top of the sides of the press box. Tubular member 31 are also interposed between the bottom of the press box and the support 28 and nuts 32 tie these parts together through the strains between the cover and the ram 25 are taken up by the rods which take the tensional strains and relieve the box itself of such strains. There are preferably three tension rods, two of which pass through the press at one side and at equal distances from the vertical center line through the axes of the rams 18 and 25, and one of which passes through the press box on the other side of said line of centers.

With this construction the successive actions of the rams upon the material while in the press box reduces relatively bulky scrap at one charging into a bundle that is sufficiently compact so that it may be readily handled.

It is to be understood that this invention is not to be limited to any particular form or arrangement of parts except in so far as such limitations are included in the claims.

What we claim as our invention is:

1. In a baling press, the combination with a press box having a closed end and a removable cover, of a pressing member working in said box toward said closed end, a second pressing member working in said box at right angles to said first pressing member and said end, and a third pressing member working in said box at right angles to and across the faces of said first and second pressing members and said end.

2. In a baling press, the combination with a press box having a removable cover, of a pressing member working in and lengthwise of said box, a second pressing member working in said box at right angles to and across the face of the first member, and a third pressing member working in said box at right angles to and across the faces of said first and second members, means above the press box cooperating with said cover to hold it in closed position, an actuator associated with said third pressing member, and tension rods connecting said means and actuator together, said rods being arranged on opposite sides of said press box, one of said rods having its center line in a plane passing through the axes of said second and third pressing members and the other of said rods being spaced at substantially equal distances from said center line.

In testimony whereof, we affix our signatures.

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