Oct. 24, 1933. H. JACOBSON 1,932,041

BALING PRESS

Filed Dec. 12, 1931 3 Sheets-Sheet 1

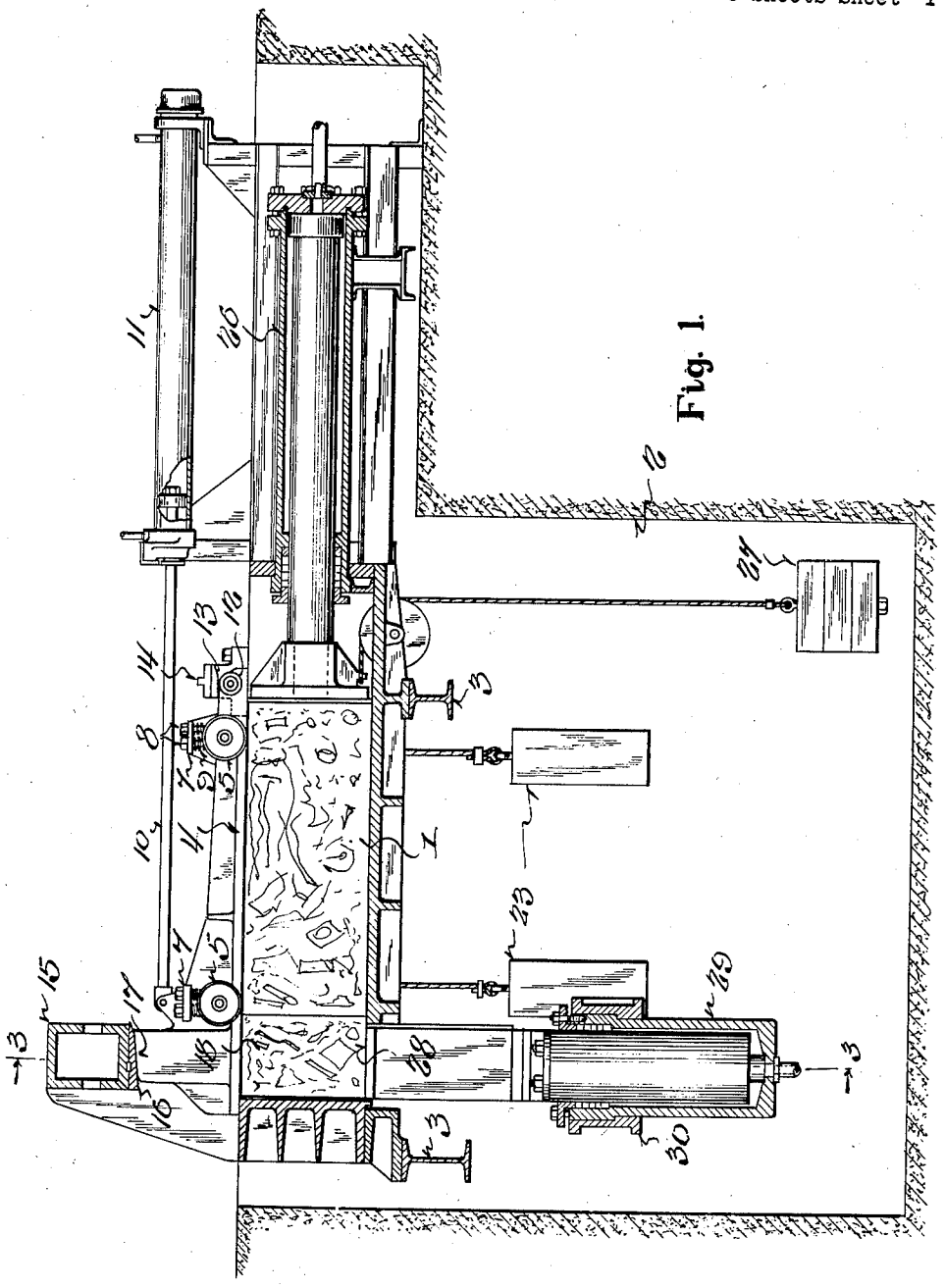


Fig. 1.

INVENTOR
Henry Jacobson
BY Young & Young
ATTORNEY

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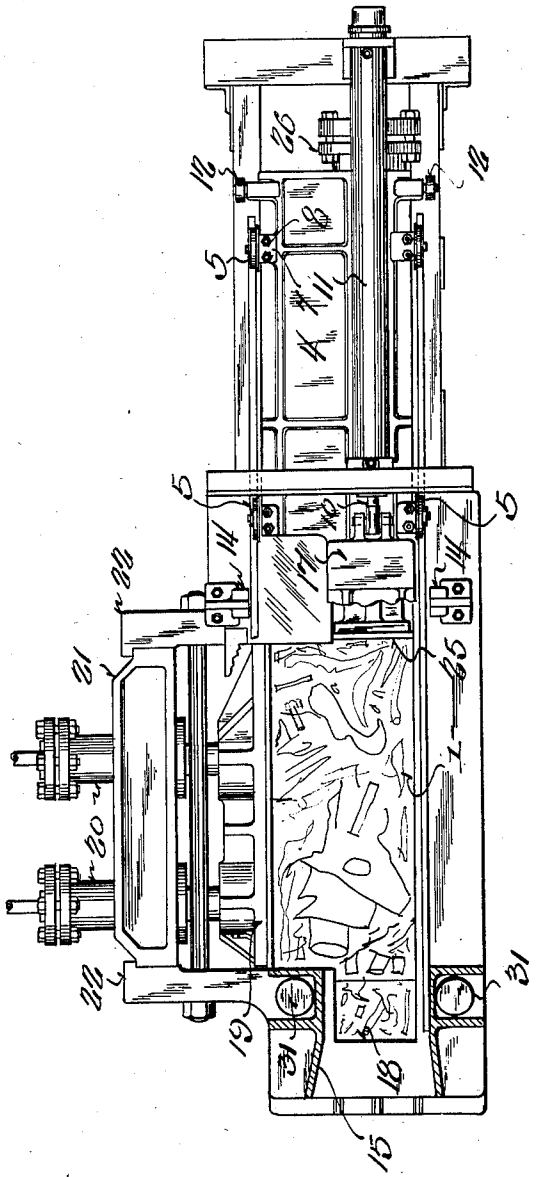


Fig. 2

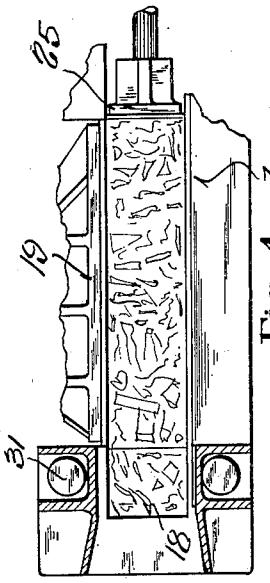


Fig. 4

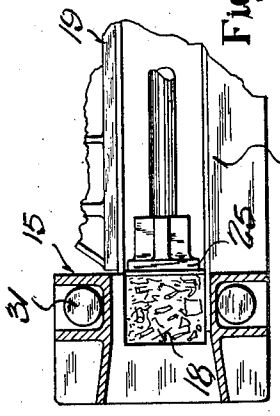


Fig. 5

INVENTOR

BY Henry Jacobson

ATTORNEY

Oct. 24, 1933. H. JACOBSON 1,932,041

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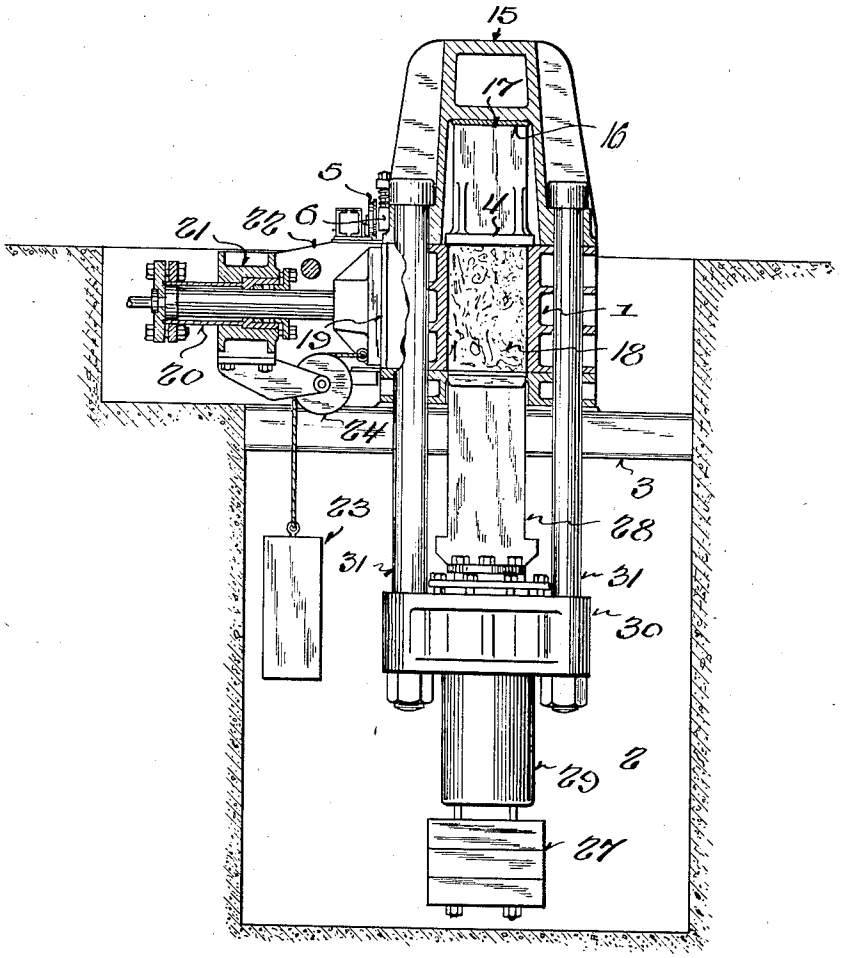


Fig. 3

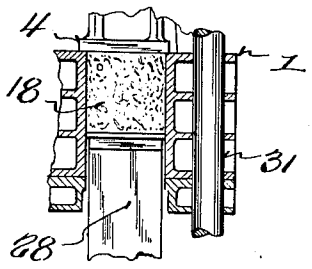


Fig. 6

INVENTOR
Henry Jacobson
BY Young & Young
ATTORNEY

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UNITED STATES PATENT OFFICE

1,932,041

BALING PRESS

Henry Jacobson, Milwaukee, Wis., assignor to Galland-Henning Mfg. Co., Milwaukee, Wis., a corporation of Wisconsin

Application December 12, 1931
Serial No. 580,538

5 Claims. (Cl. 74—42)

This invention pertains to baling presses, and more particularly to a triple compression press.

The invention has primarily for its object to provide a comparatively simple, economical and efficient press of the foregoing type, having an exceptionally large baling chamber for bulky scrap, and which can be operated in a manner similar to a conventional double compression press for baling small, compact scrap or clippings.

Incidental to the foregoing, a more specific object resides in the provision of a triple compression press, in which the final high compression is effected between solid walls.

Another object resides in the provision of a press of the foregoing type, including an elongated press box, in which the initial compression is performed transversely, the second compression longitudinally, and the third compression vertically.

A still further and highly important object resides in the provision of a press box having a restricted offset pocket, in which the final high compression is effected.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawings is illustrated one complete example of the physical embodiment of the present invention constructed according to the best mode so far devised for the practical application of the principles thereof.

In the drawings:

Figure 1 is a longitudinal section through a press constructed in accordance with the present invention.

Figure 2 is a plan view with parts broken away and in section.

Figure 3 is a vertical section taken on the line 3—3 of Figure 1.

Figure 4 is a fragmentary plan section, illustrating the manner in which the initial compression is obtained.

Figure 5 is a similar view illustrating the second compression, and

Figure 6 is a fragmentary section illustrating the final compression.

In carrying out the present invention, various conventional features are employed, such as a sliding cover and the usual compression rams. Therefore, the same form no specific part of the present invention, which is directed broadly to the manner in which the respective compressions are effected, and the highly novel design of the press box.

In the drawings, the numeral 1 designates the press box, which is preferably positioned within the well 2, and supported upon the transverse beams 3 with the filling opening substantially level with the floor line, thus facilitating filling of the box. Slidably mounted above the box is the usual cover 4, which is supported by the wheels 5 mounted upon the stub shafts carried by the blocks 6, which in turn are resiliently connected with the brackets 7 to the studs 8 and the coil springs 9. Normally a slight clearance is provided between the cover 4 and the top of the press box, to permit easy actuation of the same, by means of the piston 10 and the fluid cylinder 11.

When the cover is reciprocated to closed position, the same is urged into intimate contact with the top of the press box in the usual manner, which, in the present instance, comprises lateral rollers 12 carried by the rear of the cover and engaged under the cam plates 13 carried by brackets 14 secured to the top of the press box. The front of the cover is forced downwardly into engagement with the top of the press box by means of a head yoke 15 mounted upon the top of the press box and provided with a cam plate 16 which engages the wedge boss 17 provided on the front end of the cover.

As best shown in Figure 2, the press box 1 is also open at one side and is provided at its forward end with an offset pocket 18 positioned at one side of the box and extending longitudinally therefrom.

Slidably mounted within the box is a conventional ram 19, which forms one side of the box and is actuated transversely therein by a pair of fluid pressure cylinders 20 to effect initial compression of material contained within the box. As best shown in Figure 2, the cylinders 20 are carried by a longitudinal beam 21 secured to the arms 22 projecting laterally from the press box. Counterweights 23, connected with the ram 19 by means of cable trained over the pulleys 24, serve to return the ram to normal position when the fluid pressure is released within the cylinders 20.

The secondary compression is obtained by the ram 25 actuated longitudinally of the press box by means of the pressure cylinder 26. The ram 25 is also provided with a counterweight 27 for returning the same to normal position.

The third, or final, compression, which is effected within the offset pocket 18, is obtained by the vertical ram 28 operating through the bottom of the press, and actuated by the pressure cylinder 29, carried by the crosshead 30, which is supported below the press box by the tie rods 31, which also serve to secure the head yoke 15 to the press box. The ram 28 is returned to normal position through gravity, no counterweight being required.

From the foregoing explanation, taken in connection with the accompanying drawings, it is believed that the operation of the present invention will be readily apparent, in that when it is desired to bale bulky scrap, such as automobile fenders, body parts, discarded steel furniture, drums, barrels, and large, fluffy clippings, into a neat, compact bundle of minimum dimensions, the scrap is placed within the press box 1, after which the cover 4 is shifted to closed position, and securely engaged with the top of the press box, as heretofore explained. The ram 19 is then actuated to obtain initial compression transversely of the press box, and throughout its entire length, as best illustrated in Figure 4. The longitudinal ram 25 is then actuated to obtain the second compression of the scrap within the offset pocket 18. Lastly, high compression is obtained by means of the vertically actuated ram 28, which works against the forward end of the cover 4 that projects over the pocket 18, and which is locked in position by the rigid head yoke 15.

Thus it will be seen that an exceedingly simple, economical and efficient triple compression press has been provided, in which the three compressions are obtained by three sets of hydraulically actuated rams. The first compression is from the side, the second compression in a longitudinal direction, and the third and final compression from below by means of the vertical ram, which also serves to eject the bale from the pocket 18 when the cover 4 is withdrawn. The final compression, being made between solid walls at the high pressure end of the press box, assures a neat and compact bale free from fins and loose pieces.

Further, inasmuch as the initial compression is from the side, an extra large baling chamber for bulky scrap is permissible, and which, in spite of its size, permits speedy and efficient operation, and an exceedingly simple, sturdy and rugged construction. Few moving parts are employed, making the maintenance readily comparable with that of an ordinary double compression type of baling press.

The manner in which the respective compressions is obtained also offers, in addition to affording an exceptionally large chamber for bulky scrap, the equivalent of a conventional double compression press for baling small, compact clippings, by simply leaving the first compression head or ram 19 in advance position, as illustrated in Figure 4, and utilizing the second and third compressions only, thus meeting all conditions and providing ideal equipment for scrapyard service.

The press is constructed entirely of heavily ribbed steel castings securely bolted together, insuring permanent alinement and prevention of distortion. As is customary, the press box is also lined with easily renewable steel plates.

Particular attention is directed to further advantages resulting from the novel construction of a press box provided with an offset pocket, in that final compression is obtained between three solid walls, a feature heretofore only obtainable in conventional double compression presses. Also, the foregoing arrangement permits the top yoke and vertical cylinder assembly to be constructed proportionately to the width of the bale, rather than to the full width of the box, thus providing a compact and extremely rigid structure.

A further advantage, to be derived from the method of obtaining the respective compressions, results from the fact that the first compression being transversely of the press box, bulky material is equally crushed, thus allowing additional material to be added to the box by merely withdrawing the initial compressing ram. Further, inasmuch as the initial pressing operation is accomplished by a comparatively short stroke, a minimum period of time is required for the operation.

I claim:—

1. In a baling press, the combination of an open press box provided with an offset pocket, a movable cover for closing the filling opening, a ram working transversely of said box for obtaining initial compression of material therein, a second ram working longitudinally of said box for obtaining secondary compression of material therein, and a third ram operating in said pocket for obtaining final compression of material therein.

2. In a multiple compression baling press, the combination of an open press box provided with an offset recess in one of its walls and alined with the adjacent wall, a movable cover for closing the filling opening, a ram working transversely of said box for initially compressing the material therein and forming a continuation of one of the walls of said recess, a second ram working longitudinally of said box for compressing material into said recess, and a third ram operable in said recess for obtaining final compression of material therein.

3. In a multiple compression baling press, the combination of an open press box provided with an offset pocket alined with one of the walls of the box, a movable cover for closing the filling opening, a ram working longitudinally in said box for obtaining secondary compression of the material therein against one of the walls of said recess, and a third ram operable in said recess for final compression of material therein against said cover.

4. In a baling press, the combination of an open press box provided with an offset pocket, a movable cover for closing the filling opening and provided with an offset projection conforming to said offset pocket, a ram working transversely of said box for obtaining initial compression of material therein, a second ram working longitudinally of said box for obtaining secondary compression of material therein, and a third ram operating in said pocket for obtaining final compression against the projection of said cover.

5. In a baling press, the combination of an open press box provided with an offset pocket, a movable cover for closing the filling opening, a ram working transversely of said box for obtaining initial compression of material therein, a second ram working longitudinally of said box for obtaining secondary compression of material therein, and a third ram operating in said pocket and moving across the face of the longitudinal ram only for obtaining final compression of material in said pocket.

HENRY JACOBSON.