T. F. HORRIGAN.

PAPER BALING PRESS.

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1,246,923.

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Fig. 1.

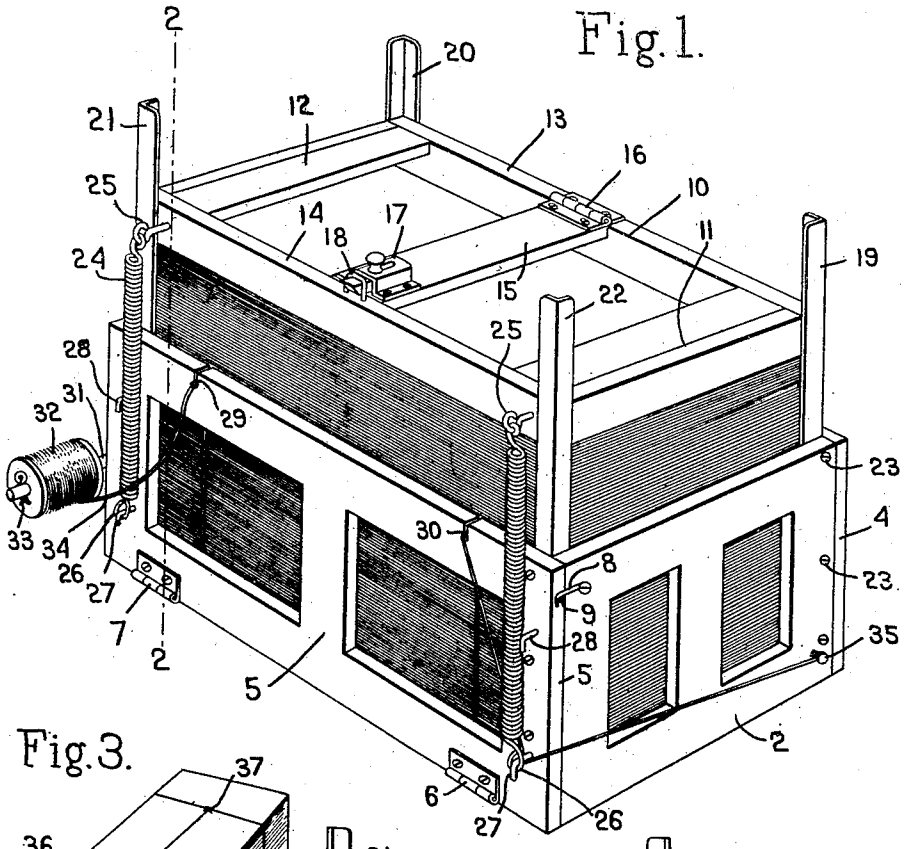


Fig. 3.

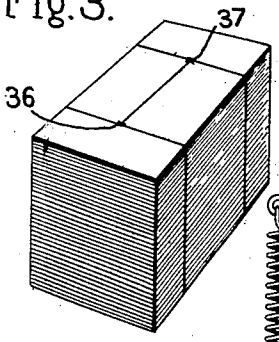


Fig. 2.

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PAPER-BALING PRESS.

1,246,923. Specification of Letters Patent. Patented Nov. 20, 1917.

Application filed March 2, 1917. Serial No. 151,893.

To all whom it may concern:

Be it known that THOMAS F. HORRIGAN, a citizen of the United States, and resident of Brighton, county of Suffolk, State of Massachusetts, has invented an Improvement in Paper-Baling Presses, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to improvements in baling presses and is designed particularly to provide a baling press for packaging flat articles such as sheets of paper, bags, etc.

It has heretofore been customary for persons purchasing articles of merchandise to throw away the paper in which the articles are wrapped or the bags in which they are inclosed. This results in the waste of a large amount of paper and bags which are not soiled or otherwise unfit for use. At the present time the cost of paper is so high that this wastage reduces materially the profits of the merchant and also necessitates the payment of higher prices by the consumer.

One of the principal objects of the present invention therefore is to provide a baling press in which sheets of paper, paper bags and like articles may be placed and preserved in flat condition and in which a sufficient number may be accumulated to form a bale, means being provided for holding a wrapper for the bale so that it may be easily bound.

Another object of the invention is to provide a novel follower for the baling press which can be raised at one end to permit the introduction of an article without releasing the pressure of the follower upon the opposite end of the bale.

Another object of the invention is to provide a baling press of the character above specified which is adapted to form a bale of considerably greater height than that of the receptacle in which the papers are first laid.

Another object of the invention is to provide means for readily removing the bale from the press.

Another object of the invention is to provide convenient means for supporting a wrapper for the bale so that when the bale is complete it may be secured around the same in a convenient manner.

Other features of the invention will more fully appear from the following description and the accompanying drawings and will be pointed out in the annexed claims.

The drawings illustrate a preferred form of baling press embodying my invention,

Figure 1 is a perspective view of the baling press with the bale partially formed therein,

Fig. 2 is a vertical transverse sectional view of the baling press, on lines 2—2 Fig. 1, omitting the bale,

Fig. 3 is a perspective view of a bale of paper formed in said press showing a preferred manner in which the same may be bound.

The preferred embodiment of the invention illustrated herein comprises a rectangular frame having a solid bottom or base 1 having ends 2, 3 and sides 4, 5 extending vertically upward therefrom, the ends and sides preferably being of skeleton form. The front side desirably is secured to the base by hinges 6, 7 and is secured in closed position by suitable hooks 8 pivotally mounted upon the ends 2, 3 engaging pins 9 projecting over the ends of the side 5. By reason of this construction the side 5 may be swung outwardly to permit the removal of the bale from the front of the press.

The follower 10 preferably comprises a rectangular skeleton frame having ends 11, 12 connected by side pieces 13, 14. A cross piece 15 preferably extending transversely across the middle portion of the follower is connected to the side piece 10 by a hinge 16 and is detachably secured to the cross piece 14. A convenient locking device for this purpose which is illustrated herein comprises a latch 17 mounted upon the cross piece 15 engaging a keeper 18 secured to the side piece 14.

Guides 19, 20 and 21, 22 desirably are provided at the inner corners of the frame and serve the double purpose of strengthening the frame and of providing an abutment for the ends of the articles as they are being placed in the press, thus facilitating the building of a bale having uniform ends and sides. The guides 19, 20 may be secured to

the ends and sides by suitable screws 23 or other fastenings and thereby serve to strengthen the corners of the box, while the guides 21 and 22 may be similarly secured to the hinged front side of the press in such a manner that when the press is in closed position the free sides of the angle plates will lie closely against the inner sides of the ends of the frame. By reason of this construction the front guides are removed from engagement with the bale when the front side is opened. When the front side is closed however the guides 21 and 22 will engage the corners of the articles which are placed in the baling press and will prevent undue pressure against the ends of the frame.

The follower desirably is slightly shorter than the distance between the guides 19, 20 and 21, 22 so that it can be freely raised one end at a time without binding.

In order to press the follower down upon the bale and still to permit the building up of the bale to a desired height the resilient means are attached to the follower near its ends and detachably secured to the frame. A preferred form of resilient means for accomplishing this purpose which is illustrated herein consists of spiral springs 24 which are secured to screw eyes 25 or other permanent fastenings anchored in the follower adjacent its ends, the opposite ends of the springs 24 being provided with loops 26 which detachably engage hooks 27 projecting laterally from the sides 4 and 5. Preferably a plurality of such hooks is provided, one pair of extra hooks 28 being illustrated herein.

By reason of this construction the spring may be secured to the hooks 27 when a comparatively small amount of material is in the press and may be secured to the hooks 28 when it is desired to build the bale to a greater height than that which will be conveniently permitted when the springs are attached to the hooks 27.

Pairs of guideways 29, 30 are provided in the sides of the frame to retain the binder in proper position during the building of the bale. These guides may be in the form of slots leading to enlarged circular openings, which may, if desired, be provided with a metallic bushing. The binder which may be of wire or of cord is led through the slots which are positioned at equal distances from the respective ends of the sides 4 5. Similar guides may also be provided in the ends if it is desired to also wrap the binder longitudinally. In order to have a sufficient supply of binding material constantly at hand a spool holder may be connected to the frame at any convenient point. As illustrated herein the spool holder consists of a shaft 31 secured to the end adapted to support a spool 32 which may be prevented from removal by a cotter pin 33 or other suitable means.

It is contemplated that the bale press shall be of a size to receive standard sheets of wrapping paper ordinarily used by merchants.

In the operation of the device the binder 34 is drawn from the spool and carried through the guide 29 in the front side 5, thence across and through a similar guide in the rear side 4. It is then carried to the right and brought back through a guide in the rear side 4 corresponding to the guide 30 in the front side 5, thence across the frame and through the guide 30 and downwardly under the hook 27 and its end finally attached to a suitable snubbing post 35 which may be located at a convenient part of the box to give the desired length of end to reach to the middle of the bale and tie. The portions of cord which cross the frame are depressed within the frame to the bottom and a sufficient amount allowed on the back side of the frame between the guides corresponding to 29 and 30 to reach the middle of the top of the bale and extend lengthwise thereof the distance between the guides 29 and 30. When thus prepared the articles to be packaged are introduced in the bale press, the follower being raised at one end to permit the end of the paper or side of the bag to be inserted therebetween, the article preferably being thrust through the open central portion of the follower. Where large articles such as sheets of paper are to be introduced the cross bar 15 may be unlatched and turned back on its hinge out of the way. By putting in alternately layers of bags and sheets of wrapping paper a very satisfactory bale can be built up.

By reason of the fact that the follower can extend above the top of the frame, as illustrated, the bale may be built as high as desired, the lower end of the springs being secured to the hooks 27 or 28 to give the desired pressure upon the follower. When the bale has been built as high as desired the end of the binder will be released from the snubbing post and drawn upward. At the same time the loose portion of the binder at the back of the bale is brought over the top of the bale and the end tied thereto at the point 36. A sufficient amount of binder is then unreeled from the spool 32 and brought up to engage the binder engaging the opposite end of the bale and is tied at the point 37. By this means the portion of the binder which lies between the points 36 and 37 serves to hold down the central portion of the bale.

Instead of wrapping the bale as above described, separate binders may be placed in the guides 29 and 30 and wrapped directly around the end portions of the bale. When

the bale is thus bound the resilient members 24 are disengaged from their retaining hooks 27 and the follower removed. The front side of the frame is then unhooked and dropped down and the bale removed through the open front. While the hinged front side is preferable, a closed frame may be utilized in which case the bale may be removed by first detaching the follower and then inverting the baling press so that the bale will drop out of its open top.

It is to be understood that the embodiment of the invention disclosed herein is of an illustrative character and is not restrictive and that the principles of the invention may be incorporated in other forms within the meaning and scope of the following claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is;

1. A baling press comprising a frame having a bottom and vertical sides adapted to receive the material to be baled, a rigid follower extending across the open top, springs located at opposite sides of said frame connected respectively to said follower and said frame and normally tending to force the follower toward the bottom of said frame whereby the pressure of said springs will be exerted continuously by the follower upon the bale as the latter is built up above the top of said frame.

2. A baling press comprising a rectangular frame having a bottom and vertical sides and ends adapted to receive the material to be baled, a follower extending across the open top of said frame, springs located on opposite sides of said follower connecting said follower to said frame whereby either end of the follower may be raised independently of the other to permit the introduction of material beneath said follower and means for adjusting the tension of said springs.

3. A baling press comprising a frame having a bottom and vertical sides and ends adapted to receive the material to be baled, a follower, springs located adjacent the ends of said follower and connecting said follower to the frame whereby either end of the follower may be raised independently of the other to permit the introduction of material beneath the follower, and vertical guides for said follower extending above said frame at the corners thereof.

4. A baling press comprising a frame having a bottom and vertical sides and ends adapted to receive the material to be baled, a follower, springs located adjacent the ends of said follower and connecting said follower to the frame whereby either end of the follower may be raised independently of the other to permit the introduction of material beneath the follower, and angle irons connected to said frame at its corners and extending above the top thereof positioned to embrace and guide the corners of said follower.

5. A baling press for flat articles comprising a rectangular frame having vertical sides and ends, a skeleton follower having end pieces and connecting side pieces providing an open central portion, detachable springs connecting the follower to the frame located at or adjacent the ends of said follower whereby either end of the follower may be raised independently of the other to permit the introduction of a flat article therebeneath.

6. A baling press comprising a rectangular frame having a bottom, vertical sides and ends, a follower, springs connected to said follower adjacent its ends and a plurality of fastening means upon said frame located at different distances from the top thereof adapted alternatively to engage said springs whereby the said springs may be adjusted to provide for the building of bales of different heights.

7. A baling press for flat articles comprising a rectangular frame, a skeleton follower having end pieces and connecting side pieces providing an open central portion, detachable springs connecting the follower to the frame located adjacent the ends of said follower whereby either end of the follower may be raised independently of the other to permit the introduction of a flat article therebeneath and a cross bar extending transversely across the central portion of the follower and releasably connected thereto.

8. A baling press for flat articles comprising a rectangular frame, a skeleton follower having end pieces and connecting side pieces providing an open central portion, detachable springs connecting the follower to the frame located adjacent the ends of said follower whereby either end of the follower may be raised independently of the other to permit the introduction of a flat article therebeneath, a cross bar hinged to one of the side pieces of said follower and extending across the central opening therein and means for releasably securing the other end of said cross bar to the opposite side piece.

9. A baling press comprising a rectangular frame having a bottom, sides and ends, one of said sides being hinged to said bottom, a follower, helical springs attached to the sides of said follower adjacent its ends and means for detachably securing said springs to said sides whereby continuous pressure will be imposed upon the bale of material within said frame and the pivoted side retained in vertical position by the tension of the springs which are attached to it.

10. A baling press comprising a rectangu-

lar frame having a bottom, ends, and sides, one of said sides being hinged to the bottom, angle plate guides connected to said hinged side adjacent its ends, extending beyond the top of said sides and adapted to lie within the frame adjacent the end thereof when the side is in closed position, corresponding angle plate guides secured within the opposite corners of said frame, a follower adapted to engage loosely said guides and springs detachably connecting said follower to said frame adjacent its ends.

In testimony whereof, I have signed my name to this specification.

THOMAS F. HORRIGAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."