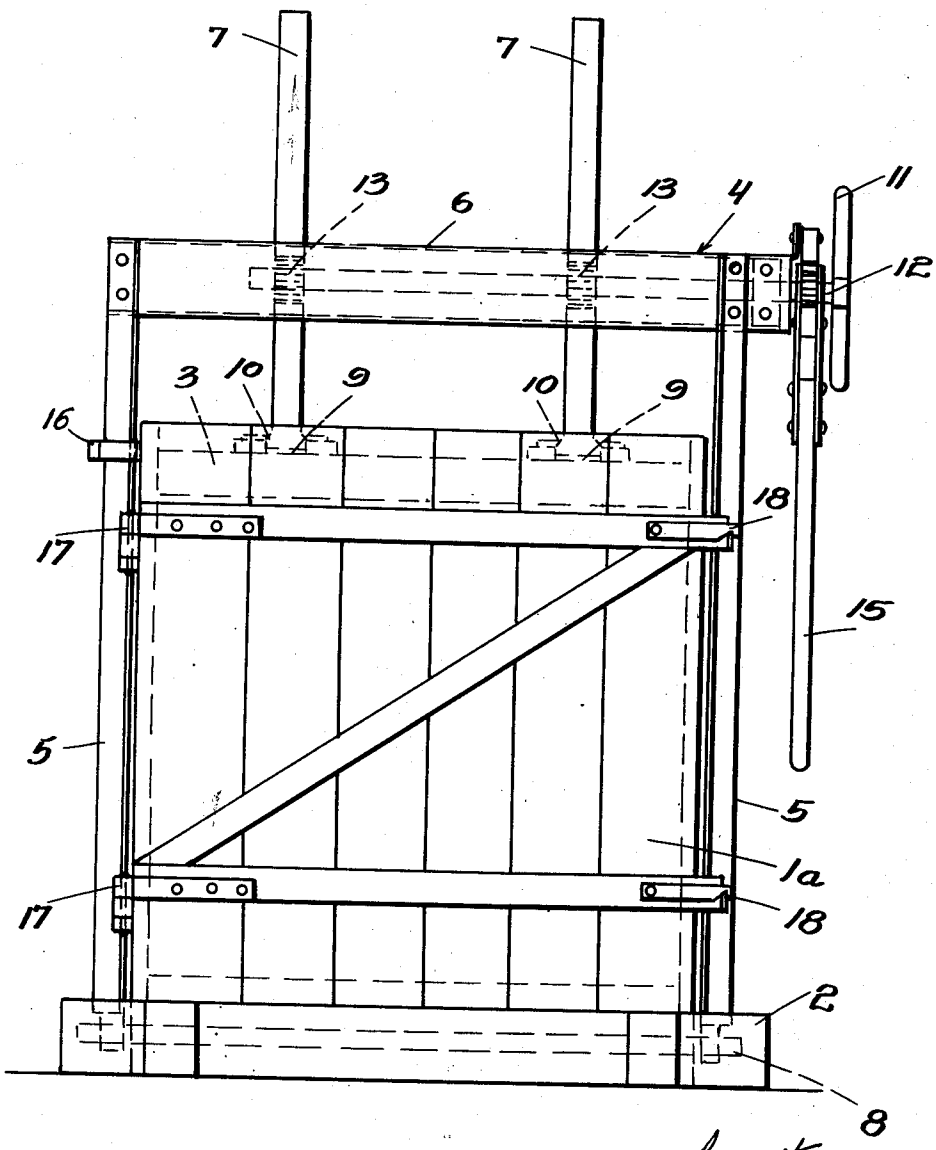
Oct. 6, 1953 E. J. J. JONSSON 2,654,309

VERTICAL BALING PRESS

Filed June 7, 1949 3 Sheets-Sheet 1

FIG. 1



Inventor:
E. J. J. Jonsson
By
E. F. Henderoth
Atty.

Oct. 6, 1953

E. J. J. JONSSON

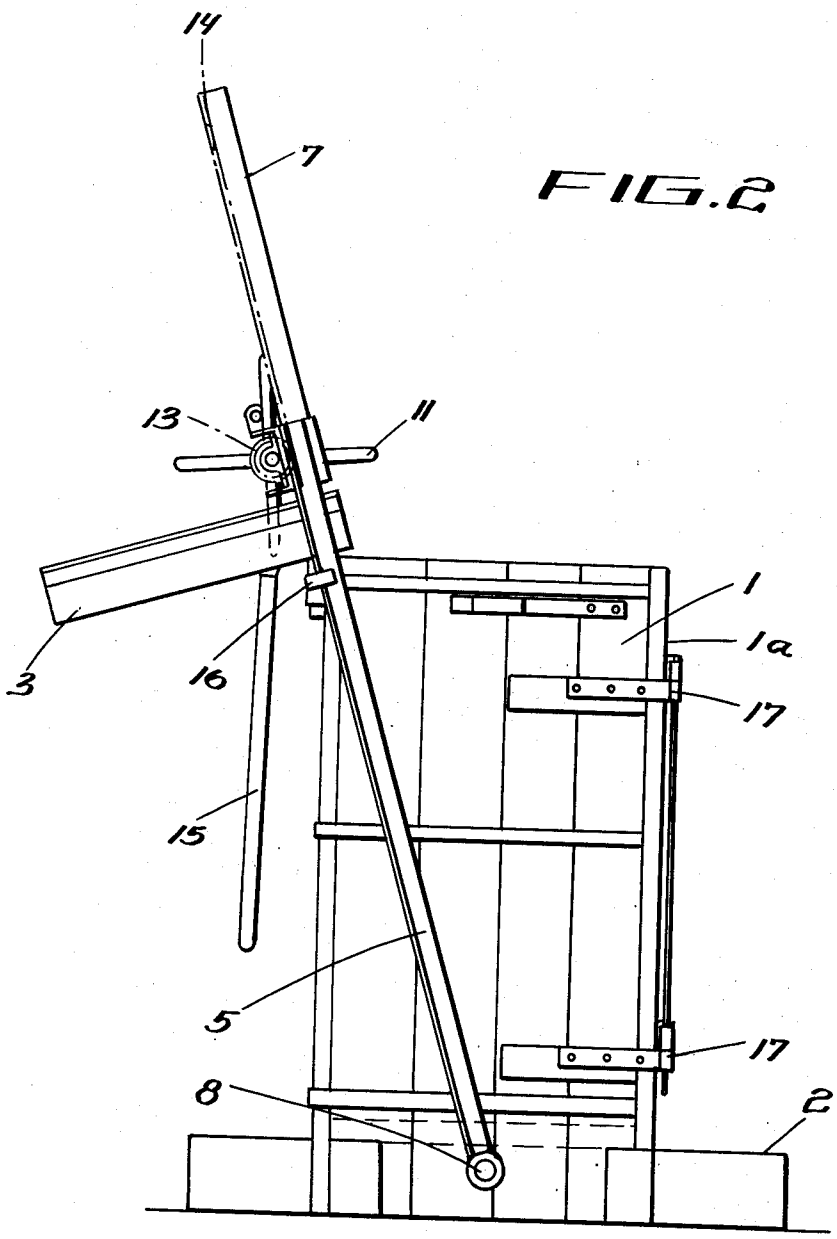
2,654,309

VERTICAL BALING PRESS

Filed June 7, 1949

3 Sheets-Sheet 2

FIG. 2



Inventor:
E. J. J. Jonsson
By E. F. Henderson
Atty

Oct. 6, 1953

E. J. J. JONSSON

2,654,309

VERTICAL BALING PRESS

Filed June 7, 1949

3 Sheets-Sheet 3

FIG. 3

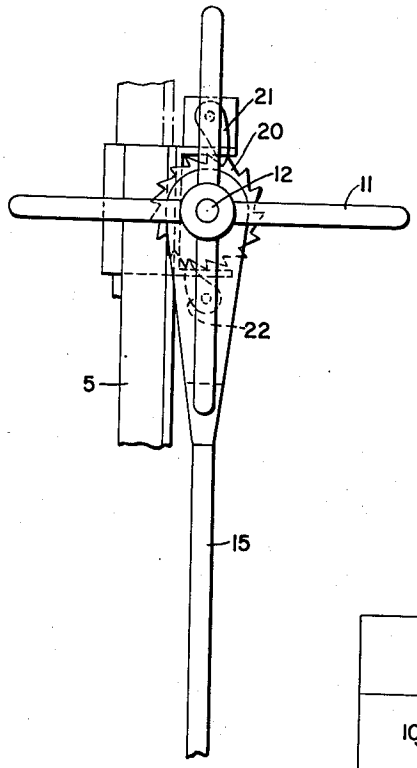


FIG. 4

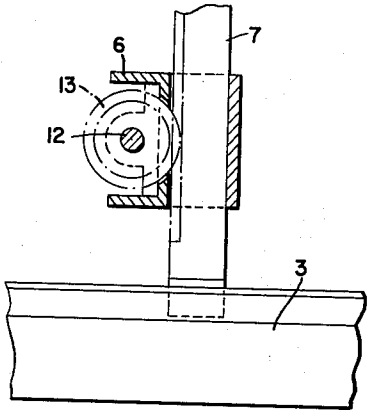


FIG. 5

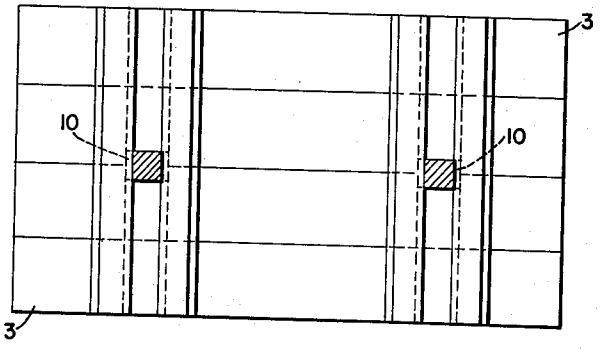
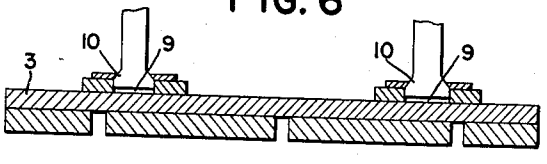


FIG. 6



INVENTOR
EINAR JULIUS JAKOB JONSSON

BY E. F. Wenderoth
ATTORNEY

Patented Oct. 6, 1953

2,654,309

UNITED STATES PATENT OFFICE

2,654,309

VERTICAL BALING PRESS

Einar Julius Jakob Jonsson, Stockholm, Sweden

Application June 7, 1949, Serial No. 97,639
In Sweden September 10, 1946

1 Claim. (Cl. 100—228)

1

This invention relates to baling presses for packing into bales various materials such as paper, rags, peat, straw etc., and particularly to such vertical baling presses which comprise an upwardly open, usually prismatic box or container into and out of which is vertically reciprocable by a manual, hydraulic or electric source of power a press piston mounted on a piston rod or rods displaceably passing through the cross-beam of a yoke-shaped support, the opening of said container being capable of being uncovered for permitting access to the interior of the container by moving the yoke and press piston rearward when the latter has been raised above the opening of the container.

The vertical baling presses hitherto employed suffer from the disadvantage that, when the press piston is raised above the container to enable the latter to be charged with material to be baled, the cross-beam of the support or yoke and the press piston cannot be moved into such a position that the opening of the container will be completely uncovered. This involves the disadvantage that the container cannot be charged directly from above and from any substantial height, and further that it will not be possible for a person conveniently to enter into the container when required during the course of the charging in order to stamp down the loosely accumulated material. For that reason it has most often been necessary to undertake this stamping operation which is repeatedly required when the charging is taking place, by means of the press piston proper, a procedure which is very tedious as compared with the first-mentioned one and which, in addition, involves an increased rate of wear of the mechanical equipment per production unit.

With a view to overcome the said disadvantages, according to the present invention, there is proposed an improvement in such baling presses which makes it possible, when the piston is raised above the container, to move the piston into a position in which said opening is substantially completely uncovered for access to the container. For this purpose, a baling press according to this invention is mainly characterized by the features that said yoke carrying said press piston is pivotally connected to its support, and that said press piston, in addition to its being reciprocable in the direction of operation, is arranged to be displaceable relative to the cross-beam of said yoke in a direction normal to the plane of the yoke, whereby the opening of the container can be completely uncovered, in that said piston is displaceable relative to the foot

2

ends of said piston rods to such an extent that said foot ends will be situated at or near one of the edges of said piston proper instead of at the central line of the piston parallel to said edge, which is normally the case.

One embodiment of the baling press according to the invention is to be described in the following by way of example, reference being had to the accompanying drawings in which:

Fig. 1 is a frontal elevation view of a baling press incorporating the invention, the press piston being shown moved into the opening of the press container.

Fig. 2 is a left-hand side elevation view of the same baling press, the yoke being shown rocked rearward and the press piston displaced rearward into a position in which the opening of the press container is completely uncovered.

Fig. 3 is a partial end view showing in greater detail means for operating the shaft for movement of the baling press.

Fig. 4 is a partial sectional view through a piston rod showing in detail operating means therefor.

Fig. 5 is a plan view illustrating the guiding track, and

Fig. 6 is a partial side view showing the guiding track and shoe arrangement.

Referring to the drawing the container of the baling press wherein the material in question is to be baled is designated with the numeral 1. In this instance, the container 1 is in the form of an upwardly open prismatic wooden box the front wall of which consists of a door 1a hinged at 17 to one side-wall of the container 1, which door can be opened for the removal of a bale packed within the container, the door being adapted to be secured in its closed condition by means of latches 18. The container 1 is supported on a solid base 2 or on a floor, and below the container 1 a transversely extending pivot rod 8 is mounted in said base 2 centrally below the side-walls so as to project from the outer surfaces thereof. Journalled on the end portions of the pivot rod 8 are the lower ends of the legs 5 of a yoke-shaped piston supporting member or yoke 4, said legs 5 being thus adapted, when the yoke is being rocked, to move in parallel relation to the sidewalls of the container. The intermediate portion of the yoke 4 is formed by a cross-beam 6 which serves as a carrying and guiding member for the piston rods 7 of the press piston 3 and also carries the driving equipment (to be described hereinbelow) for vertically reciprocating the press piston 3.

The press piston 3 is formed by a robust and relatively heavy plate which, when moved into the container 1, fits with its edge surfaces rather closely in the interior of the container 1. The press piston 3 is mounted on a pair of piston rods 7 which are vertically reciprocable through vertical bores in the cross-beam 6. In the actual embodiment, the piston rods 7 are formed partly as racks, the teeth 14 of which are engaged by toothed gears 13 keyed to a horizontal shaft 12, the shaft 12 being rotatably mounted in the cross-beam 6 and adapted to be rotated by means of any suitable power source. In the present instance, as shown in Fig. 3, the drive is intended to be manual, through operation of a pin wheel 11 or the like. The pin wheel is secured on shaft 12 and upon turning of the pin wheel the shaft 12 is rotated thereby operating to lower piston 3 through the piston rods 7 and teeth 13 and 14. A ratchet gear 20 is also secured to shaft 12 and coacts with pawl 21 pivotally mounted on yoke 4 to prevent rotation of shaft 12 in a pressure release direction. When, towards the end of the throw of the press piston 3, an increased force is required to force the piston downwards then lever 15, freely rotatably carried on shaft 12 is brought into action. The lever 15 has a pivoted pawl 22 thereon for coaction with ratchet gear 20. As seen from Fig. 3, pawl 22 will not prevent rotation of shaft 12 in a piston pressing direction when pin wheel 11 is turned and therefore lever 15 is, during normal operation, not active. When, however, lever 15 is turned in a clockwise direction then pawl 22 coacts with the teeth of ratchet gear 20 and due to the length of lever 15 a large torque is applied for rotating shaft 12.

The piston 3, in its condition of being raised above the opening of the container 1, in order to leave access to the container 1 without the necessity of rocking the yoke 4 rearward through a sufficient angle to require any substantial force to move the yoke 4 and the relatively heavy piston 3 back to the operating position, and also to avoid any major bending stress in the legs 5 at the stops 16 limiting the movement of the yoke, is displaceable rearward independently of the yoke to an extent nearly equal to half the width of the piston 3 and in a direction normal to the plane of the yoke, i. e. the plane passing through the axes of the piston rods 7. For this purpose, the lower ends or feet of the piston rods are formed or provided with slide shoes 10 adapted, when the piston 3 is being displaced, to slide in two corresponding guiding tracks 9 provided on or formed in the top surface of the piston 3 and extending in a direction normal to the above-mentioned plane. Thereby the advantage is attained, that, after raising the piston 3 a short distance above the opening of the container 1, the yoke need only be rocked to the position shown in Fig. 2 resting against the stop 16 at the rear upper corner of the container 1, after which, in the manner described, the piston 3 may be independently moved to the position illustrated in which the foot ends of the piston rods 7 are situated at or near the front edge instead of at the center of the piston, the latter being the case when the piston occupies its operating position.

It will be understood that the invention is not restricted to the specific embodiment described and illustrated, the same being susceptible of various modifications without departing from its intended scope as defined in and by the appended claim.

What I claim and desire to secure by Letters Patent is:

A vertical baling press comprising in combination an open upper end container, a support for said container, a pivot rod secured in said support below said container, a yoke mounted on said pivot rod, said yoke having an intermediate portion extending across said open upper end of said container and having openings therethrough, a shaft rotatably journalled in said intermediate portion, shaft rotating means attached to an end of said shaft, toothed gears secured on said shaft, piston rods having rack teeth thereon slidably positioned in said openings in said intermediate portion, said toothed gears and said rack teeth coacting for vertical movement of said piston rods, a press piston, said press piston having guiding tracks in the top surface thereof, and slide shoes on the lower ends of said piston rods inserted in said guiding tracks of said piston, said shaft rotating means upon actuation thereof rotating said toothed gears for raising and lowering said piston rods by coaction with said rack teeth and moving said piston in said container, said yoke, when said piston is raised above the top of said container, being adapted for angular movement to move said piston over said open end and said piston being adapted to slide on said slide shoes whereby the upper end of said container is left free.

EINAR JULIUS JAKOB JONSSON.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
152,812	Simonson	July 7, 1874
300,866	Harbaugh	June 24, 1884
674,836	Carter	May 21, 1901
1,002,975	Eagleson	Sept. 12, 1911
1,736,338	Brown	Nov. 19, 1929

FOREIGN PATENTS

Number	Country	Date
542,556	Great Britain	of 1942