G. R. MILLS.

BALING PRESS.

APPLICATION FILED MAR. 3, 1911.

1,005,271.

Patented Oct. 10, 1911.

3 SHEETS—SHEET 1.

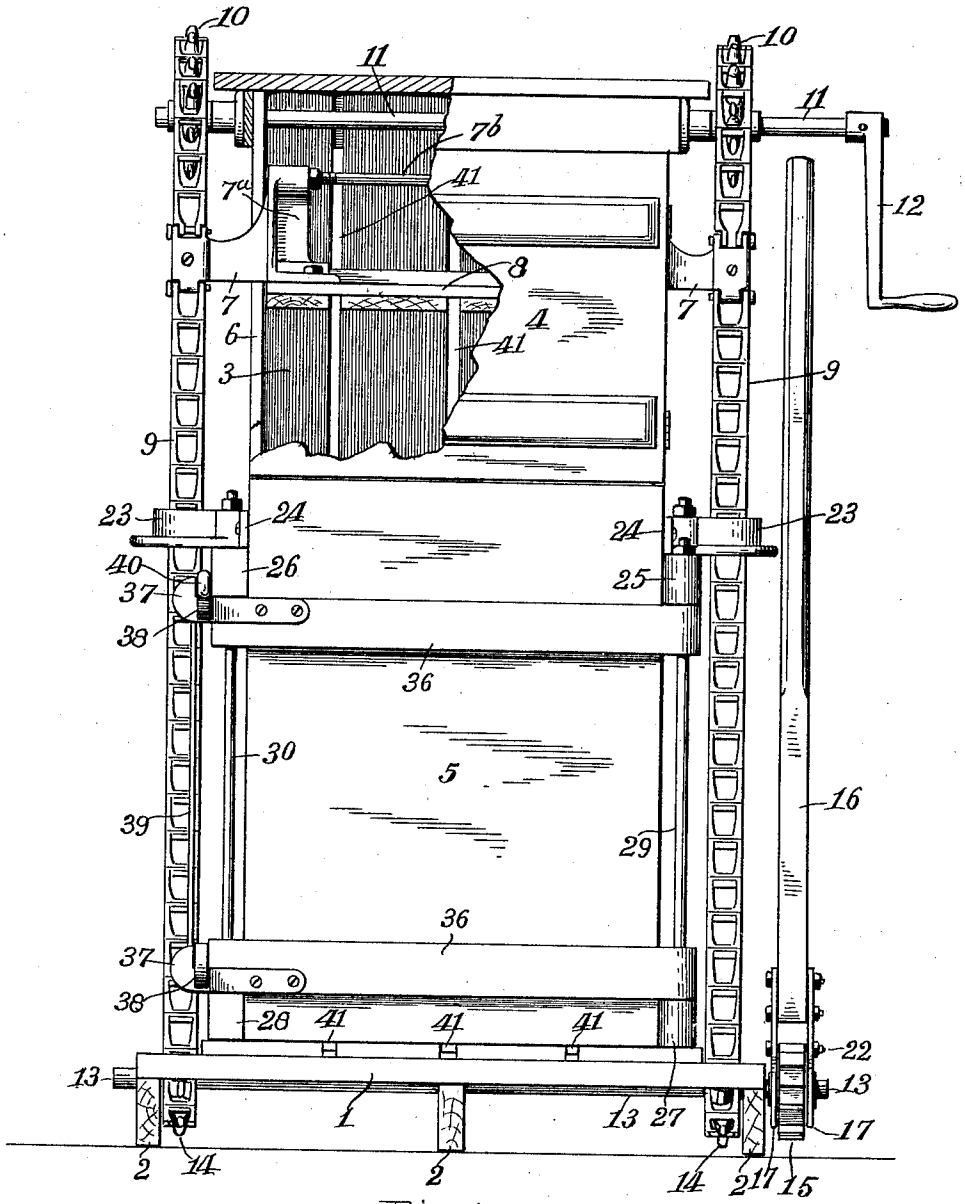

Fig. 1.

Witnesses

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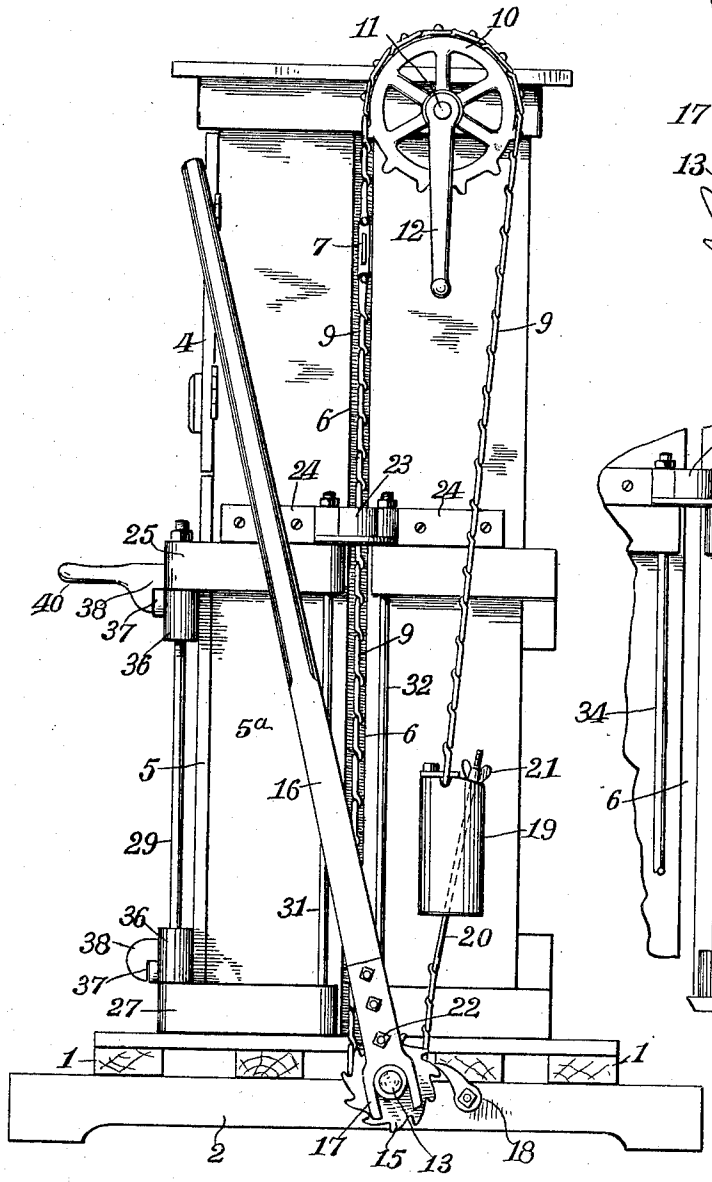

Fig. 2.

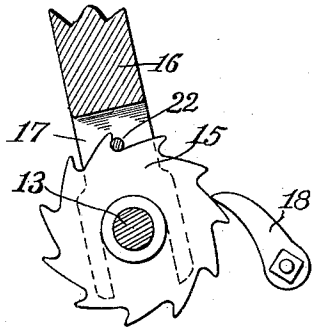

Fig. 7.

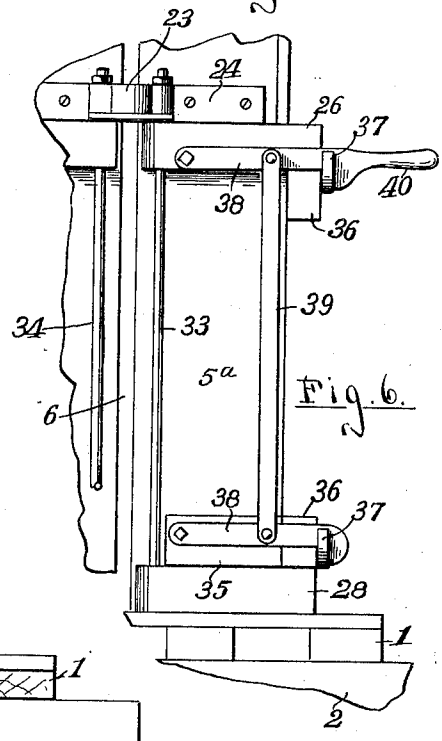

Fig. 6.

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3 SHEETS—SHEET 3.

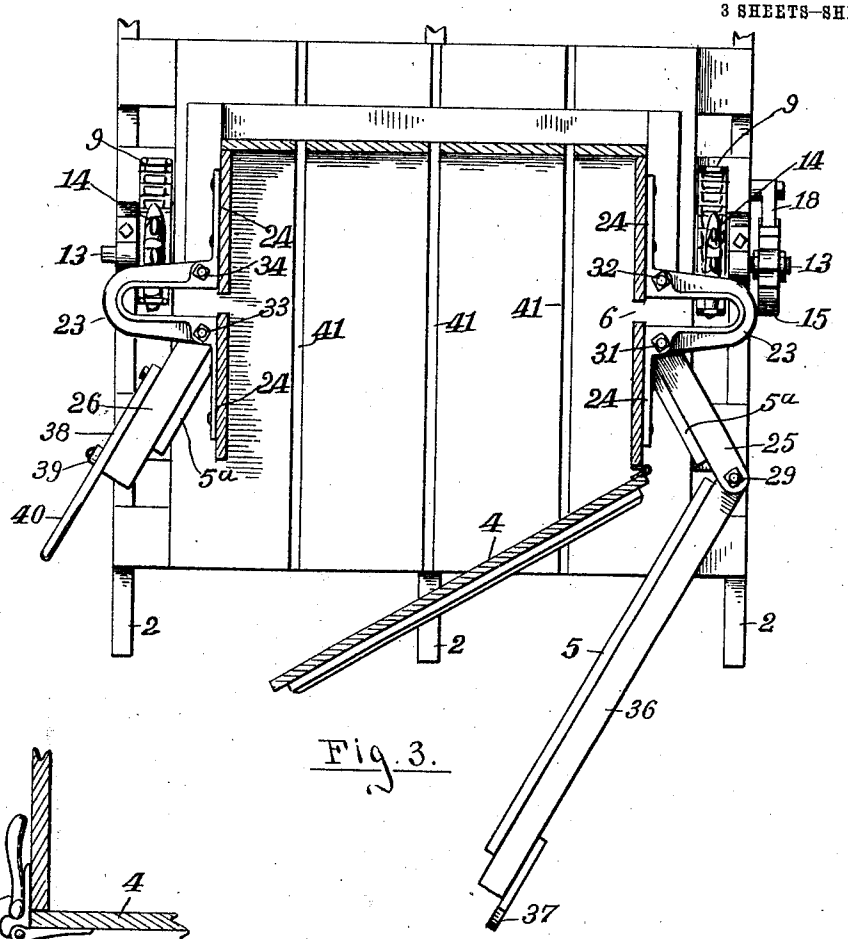

Fig. 3.

Fig. 4.

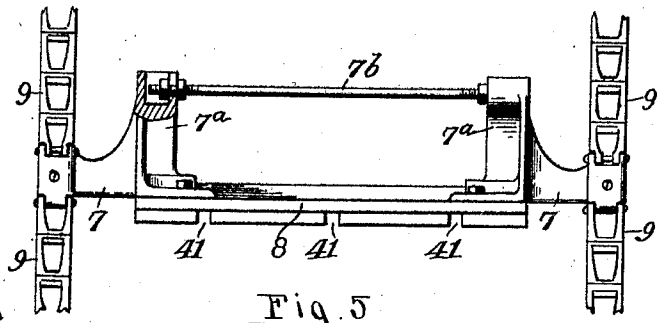

Fig. 5

Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE R. MILLS, OF HUDSON, MICHIGAN.

BALING-PRESS.

1,005,271. Specification of Letters Patent. Patented Oct. 10, 1911.

Application filed March 3, 1911. Serial No. 612,068.

To all whom it may concern:

Be it known that I, GEORGE R. MILLS, a citizen of the United States of America, residing at Hudson, in the county of Lenawee and State of Michigan, have invented certain new and useful Improvements in Baling-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in baling presses and its object is to provide a cheap, convenient and easily operated press intended mainly for baling waste paper and the like; to provide means for manually operating the same, and to provide the device with various new and useful features hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings in which:—

Figure 1 is a front elevation of a press embodying my invention with a portion at the upper left hand part broken away to show the construction; Fig. 2 is an end elevation of the same; Fig. 3 a plan view with the upper part in horizontal section; Fig. 4 a detail of the latch for the upper door; Fig. 5 a detail of the follower shown in elevation; Fig. 6 a detail in elevation of a portion of the end opposite to that of Fig. 2; and Fig. 7 an enlarged detail of the pawl and ratchet mechanism for applying final heavy pressure to the bale.

Like numbers refer to like parts in all of the figures.

1 represents any suitable platform provided with sills 2 on which the device is mounted.

3 is a suitable case of convenient dimensions mounted on the platform and having an upper front door 4 hinged to open outward and a lower front door 5 beneath the same the latter extending somewhat more than half way up the front and also adapted to open outward. In the middle of each end is a vertical slot 6, through which projects an arm 7 on an upwardly projecting bracket 7^a secured to the respective end of a follower 8 adapted to traverse vertically within the case. These brackets are connected by a horizontal tie-rod 7^b whereby the follower is rendered rigid and will not spring. The traverse of the follower is accomplished by means of a chain 9 attached to the outer end of each arm and extending over a sprocket wheel 10 mounted on a shaft 11, journaled in the upper part of the case and provided with a crank 12 for manually rotating the shaft. One part of each chain extends downward directly opposite the respective slot 6 and around a smaller sprocket wheel 14 mounted on a shaft 13 journaled below the platform 1. On the outer end of this shaft 13 is a ratchet wheel 15, and 16 is a lever provided with plates 17 adapted to embrace the ratchet wheel and each plate bifurcated to embrace the hub of the wheel and rotate thereon. Connecting these plates is a bolt 22 adapted to engage the respective teeth of the ratchet wheel, whereby the lever may be operated manually to turn the shaft and apply a powerful downward strain upon the chains 9 to force the follower down upon the contents of the case. To hold the ratchet wheel 15 as it is turned step by step by means of this lever 16, a pawl 18 is provided to engage the teeth of said wheel. To counterbalance the weight of the follower, a weight 19 is provided in each chain substantially opposite to the place where the chain is attached to the arm 7. Thus as the follower moves the weight moves in the opposite direction each being suspended by the chain 9 from opposite sides of the sprocket wheel 10. To take up any slack in the chain and adjust the chain, a longitudinally movable rod 20 is attached to one end of the chain and extends up through the weight 19 and is provided at its upper end with a wing nut 21 whereby the rod is adjusted in the weight to tighten the chain. The other end of the chain being attached directly to the upper end of the weight.

Near the middle of the case at each side, to strengthen the same and enable it to withstand the internal pressure, I provide U-shaped yokes 23 preferably of cast metal, embracing the chain and having oppositely extended base members 24 secured to the end walls of the case. These yokes with their base members constitute a rigid support and materially strengthen the case. They also provide supports for four vertically disposed rods 31 32 33 and 34 one at each side of each of the slots 6. These rods extend downward through the platform and serve to anchor the case thereto. On the rods 31 and 33 are pivoted arms 25 and 26 adjacent to the yokes, and 27 and 28 adja-

cent the platform 1 to which arms are secured the lower front portions 5^a of the end walls whereby the same are pivoted to swing outward as illustrated in Fig. 3.

Pivoted between the outer ends of the arms 25 and 27 are cross bars 36 to which is secured the lower front closure 5. Thus the parts 5 and 5^a can be swung outward removing the front and ends of the case up to the yokes and rearward to the slots 6 to release the bale after the same has been formed. To hold these movable parts in closed position the cross bars 36 are provided with fixed hooks 37 and the arms 26 and 28 are provided with oppositely arranged hooks 38 pivoted to engage and disengage the hooks 37. These hooks 38 are coupled to each other by a rod 39 to move simultaneously and the upper hook 38 is provided with a handle 40 to manually operate the same. The upper front part of the case is closed by a door 4 above the front closure 5 and the front closure extends upward somewhat above the yokes to meet the lower edge of the same. This upper closure 4 is hinged at one side to the front edge of one end of the case and provided with any convenient latch 42, as in Fig. 4, to hold the same closed.

The platform, rear wall and follower are provided with grooves or slots 41 to receive the bale ties or wires.

From the foregoing, the operation of my device will be readily understood. The follower can be quickly run up to the top of the case by turning the crank 12, the upper door 4 being opened, the lower part of the case can be filled with the material to be baled, and the follower run down and the same partially compressed thereby. If more material is required the follower is again raised and more can now be added. When sufficient and full pressure is required, the lever 16 and pawl 18 are applied to the ratchet wheel 15 and a very heavy pressure can now be applied to the bale. The front closure 5 and end portions 5^a can now be opened and the ties inserted, and secured before the pressure is finally removed from the bale.

What I claim is:—

1. A baling press comprising a case, a follower vertically movable in the case, a shaft journaled in the top of the case, a shaft journaled in the bottom of the case, a sprocket wheel on each shaft, a chain engaging the sprocket wheels and attached to the follower, a weight attached to the chain opposite to the follower, a rod attached to the chain and longitudinally adjustable in the weight, and means for manually rotating the shafts.

2. A baling press, comprising a case having vertical slots in its ends, chains opposite the slots, means for manually moving the chains, a follower vertically movable in the case, a bracket at each end of the follower, a tie rod connecting the brackets, and an arm on each bracket extending through the respective slot in the case and attached to the respective chain.

3. A baling press, comprising a case having a vertical slot in each end, an upper front door on the case, a yoke on each end of the case spanning the slot, rods extending downward from the yokes parallel with the slots, arms pivoted on the rods, end portions to the case mounted on the arms, cross bars pivoted to the arms at one end, means for detachably connecting the bars to the arms at the other end and a front door carried on the cross bars.

4. A baling press, comprising a case having a vertical slot in each end, a follower vertically movable in the case, arms on the follower extending through the slots, an upper front door to the case, a lower front door to the case, lower front end portions to the case hinged to swing outward, means for pivotally supporting the lower front door on one of said portions and for detachably connecting it to the other of said portions, a shaft journaled in the top of the case, a shaft journaled in the bottom of the case, sprocket wheels on the shafts, chains engaging said wheels to which the arms on the follower are attached, and means for manually rotating the shafts to move the follower.

5. A baling press, comprising a base, a case on the base having a vertical slot in each end, a shaft journaled in the top of the case, a shaft journaled in the base, sprocket wheels on the shafts, chains engaging said wheels and extending opposite the slots, a follower in the case, arms on the follower attached to the chains, a yoke at each end of the case spanning the respective chain and slot, and having extensions secured to the end of the case, rods secured in the yoke and extending through the case, arms pivoted on the front rods near the yoke and base, lower front end portions of the case carried by the arms, a rod connecting one pair of said arms, cross bars pivoted on said rod, a lower front door carried by said bars, hooks fixed on the cross bars, pivoted hooks on the other pair of arms to engage the hooks on the bars, a rod connecting said pivoted hooks and a handle on the upper hook to operate the same.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE R. MILLS.

Witnesses:

W. R. THOMPSON,

L. G. BRENNAN.