

UNITED STATES PATENT OFFICE.

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BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 671,940, dated April 9, 1901.

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To all whom it may concern:

Be it known that I, WILLIAM R. COLMAN, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented a certain new and useful Improvement in Baling-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in presses for baling hay, excelsior, straw, cotton, and the like; and it consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a top or plan view illustrating my improvement, the sweep-shaft being shown in section. Fig. II is a side view. Fig. III is a vertical transverse section taken on line III-III, Fig. I. Fig. IV is a horizontal section taken on line IV-IV, Fig. III. Fig. V is a detail horizontal section showing the spring for retarding the backward movement of the cam-link against which the power-head bears. Fig. VI is a detail bottom view showing part of the pitman and the pivoted bumper carried thereby, part of the carrier-arm being shown in dotted lines.

Referring to the drawings, 1 represents the bed-plate that carries the power mechanism, and 2 part of the reach that connects the bed-plate to the baling-chamber. (Not shown.)

3 represents the pitman, having a head 4, provided with a curved end 5.

6 is a carrier-arm upon which the pitman rests and which is pivoted on a stud 7, rising from the bed-plate. Located on the stud over the carrier-arm is a washer 8, which has a clutch connection with the carrier-arm, as shown in Fig. III. The carrier-arm and washer are held on the stud by means of a bolt 9, between the nut of which and the washer is a coil-spring 10. By making the carrier-arm and the washer with its arm in separate pieces with a clutch connection between them the carrier-arm can be cheaply replaced in case it should become broken, and by providing the spring 10 the washer is held into clutch engagement with the carrier-arm, and any looseness that may occur by the backward turning of the nut on the bolt 9 is taken up by

the spring. The washer is provided with an arm 11, that extends in the direction of the length of the carrier-arm and under which the pitman moves as it is forced forward, so that the arm acts to hold the pitman down on the carrier-arm while the final pressure is being given. To the outer end of the carrier-arm is pivoted a spring 12, which acts to limit the outward movement of the pitman on the carrier-arm. As shown, the spring has two prongs, and by pivoting it to the carrier-arm it adjusts itself so that both prongs will bear against the pitman no matter at what angle the pitman may engage the spring, and the spring thus acts as an effective cushion-stop to the outward movement of the pitman on the carrier-arm. Just before the pitman reaches the limit of its forward movement a projection 13 on the head thereof comes against the curved end of the arm 11 of the washer and forces the arm and the carrier-arm to the position shown by dotted lines, Fig. I. As the pitman recedes a bumper 14, carried on the under side thereof, comes against the carrier-arm and forces the carrier-arm back to the position shown in full lines, Fig. I, and to check this movement with a cushioning effect, as well as to check the rearward movement of the pitman, I employ a spring 15, supported on a bolt 15^a, carried by a projection 16 on the bed-plate, through which it freely passes, the carrier-arm being provided with a lug 17, that comes against the head of the bolt as the carrier-arm moves backwardly with the pitman.

The bumper 14 has two prongs 18, that impinge the carrier-arm, and the bumper is pivoted to the pitman by means of a bolt 19, so that the prongs 18 can adjust themselves to a bearing against the carrier-arm.

20 represents the sweep of the press secured to a shaft 21, that carries a power-head 22, the ends of which are provided with friction-rollers 23.

24 represents a cam-link eccentrically pivoted to an arm 25, projecting from the bed-plate 1. The arm 25 is preferably turned up in the form of a loop, so as to form both an upper and lower bearing for the shaft or journal-pin 26 of the cam-link 24. The roller is connected by links 27 to the head 4 of the

pitman. As the power-head is turned its ends come against the cam-link 24 and by moving it toward the position shown in dotted lines, Fig. I, draws the pitman forwardly and inwardly, so that the end of the power-head following the end that is bearing against the cam-link 24 engages the head of the pitman and forces the same forward to give the final pressure to the plunger. As the power-head leaves the head of the pitman the latter rebounds, thus bringing the cam-link 24 back to the position shown in full lines, Fig. I, and as it reaches the limit of this position its movement is checked by a spring 28, secured to the bend of the arm 25, as shown in Fig. V, the free end of the spring bearing against the periphery of the cam-link. It will be seen that the spring 28 will exert a gradually-increasing resistance on the cam-link as the parts move backward, as the point of bearing between the cam-link and the spring moves farther from the pivot of the former as the parts recede, the spring thus acting to gradually stop the backward movement of the parts with increased resistance as the parts approach the limit of their rearward movement. The cam-link 24 may be a full circle, as shown in Fig. I, or may be a segment of a circle, as shown in Fig. V.

To start the return movement of the pitman in case the plunger should stick after the power-head leaves the pitman, I employ a bell-crank lever 30, that is pivoted to the bed-plate beneath the carrier-arm, as shown at 31, Fig. IV. The carrier-arm is recessed to receive the short end 32 of the lever 30, and the long end of the lever is in the path of the power-head, as shown in Fig. I. As the power-head leaves the end of the pitman it engages the long end of the bell-crank lever and by moving the lever on its pivot causes the short end of the lever to engage a lug 33 on the carrier-arm, thus starting the carrier-arm on its rearward movement, and the frictional contact of the pitman on the carrier-arm will also cause the pitman to start on its rearward movement.

I claim as my invention—

1. In a baling-press, the combination of a pitman, a carrier-arm supporting the pitman, a washer having connection with the carrier-arm and having an arm extending in the direction of the carrier-arm, so that the pitman will move thereunder and be held down thereby while the final pressure is being exerted, a projection on the pitman adapted to engage the arm of said washer, and means for moving said pitman, substantially as set forth.

2. In a baling-press, the combination of a pitman, a carrier-arm supporting the pitman, a spring for stopping the rearward movement of the carrier-arm, a washer having connection with the carrier-arm and having an arm extending in the direction of the carrier-arm, so that the pitman will move thereunder and be held down thereby while the final pressure is being exerted, a projection on the pitman

for engaging the arm of the washer, a bumper on the pitman for engaging the carrier-arm, and means for moving the pitman forward, substantially as set forth.

3. In a baling-press, the combination of a pitman, a carrier-arm supporting the pitman, a washer located over the pitman and having a clutch connection therewith, a spring located over the washer, and means for moving the pitman; said washer having an arm extending in the direction of the carrier-arm, so that the pitman will move thereunder and be held down thereby while the final pressure is being exerted and said pitman having a projection adapted to engage the arm on the washer, and a bumper adapted to engage the carrier-arm, substantially as set forth.

4. In a baling-press, the combination of a pitman, a pivoted carrier-arm supporting the pitman, and means for moving the pitman forward; said pitman being provided with a pivoted bumper having a pair of prongs adapted to engage said carrier-arm on the rearward movement of the pitman, substantially as set forth.

5. In a baling-press, the combination of a pitman, a pivoted carrier-arm supporting the pitman, and means for moving the pitman forward; said carrier-arm having a pivoted spring 12 to check the outward movement of the pitman on the carrier-arm, substantially as set forth.

6. In a baling-press, the combination of a pitman, a pivoted carrier-arm supporting the pitman, means for moving the pitman forward, and means for starting the pitman in its rearward movement, consisting of a pivoted bell-crank lever adapted to engage said carrier-arm and adapted to be engaged by the means that moves the pitman forward, substantially as set forth.

7. In a baling-press, the combination of a pitman, a power-head adapted to move the pitman forward, a bed-plate having a bent arm extending therefrom, a cam-link journaled in said arm and connected to said pitman and which is adapted to be engaged by said power-head, and a spring secured to the bent portion of the arms and which is adapted to bear against the periphery of the cam-link; the point of contact between the spring and the cam-link retreating from the pivot of the latter as the cam-link turns backward, whereby the spring exerts a gradually-increasing tension, substantially as set forth.

8. In a baling-press, the combination of a pitman, a power-head for moving the pitman forward, a bed-plate having a bent arm extending therefrom, an eccentrically-pivoted cam-link connected to said pitman and adapted to be engaged by said power-head, and a spring secured to the bent portion of the arm and which is adapted to bear against the periphery of the cam-link for checking the backward movement of the cam-link; the point of contact between the spring and the cam-link retreating from the pivot of the latter as the

cam-link turns backward, whereby the spring exerts a gradually-increasing tension, substantially as set forth.

5 9. In a baling-press, the combination of a pitman, a power-head for moving the pitman forward, an eccentrically-pivoted cam-link connected to said pitman and adapted to be engaged by the power-head, and a spring bearing against the periphery of said cam-

link; the point of contact between the spring and the cam-link retreating from the pivot of the latter as the cam-link turns backward, whereby the spring exerts a gradually-increasing tension, substantially as set forth.

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In presence of—

ALBERT B. WEISENBURGER,
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