

H. L. WHITMAN.
BALING PRESS.
APPLICATION FILED JULY 1, 1912.

1,059,248.

Patented Apr. 15, 1913.

2 SHEETS—SHEET 1.

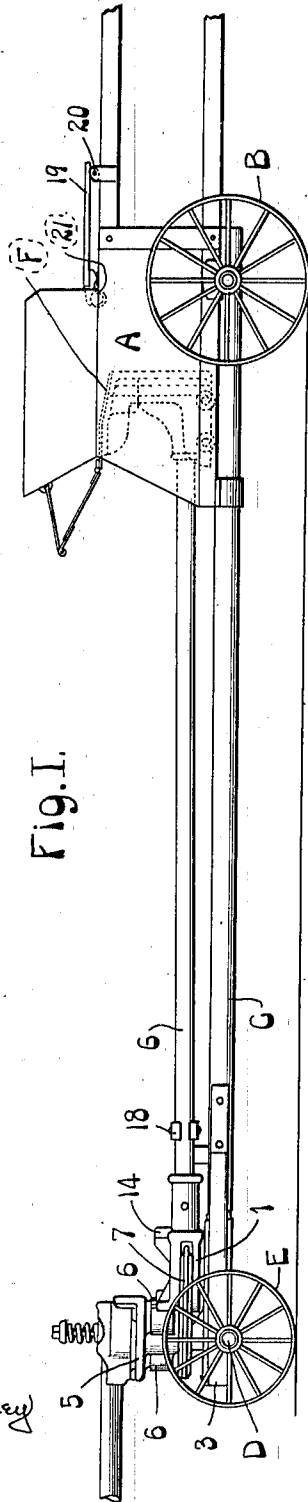


Fig. I.

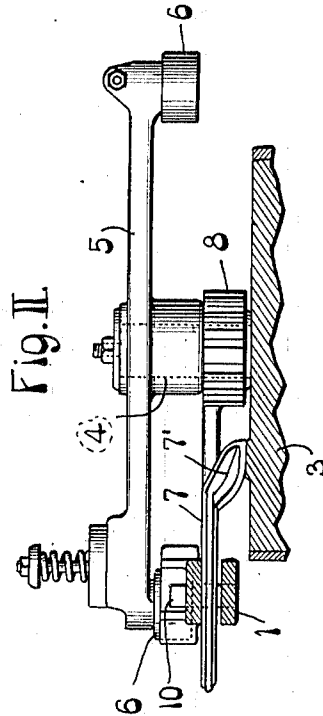


Fig. II.

Attest
A. J. McCauley
E. B. [Signature]

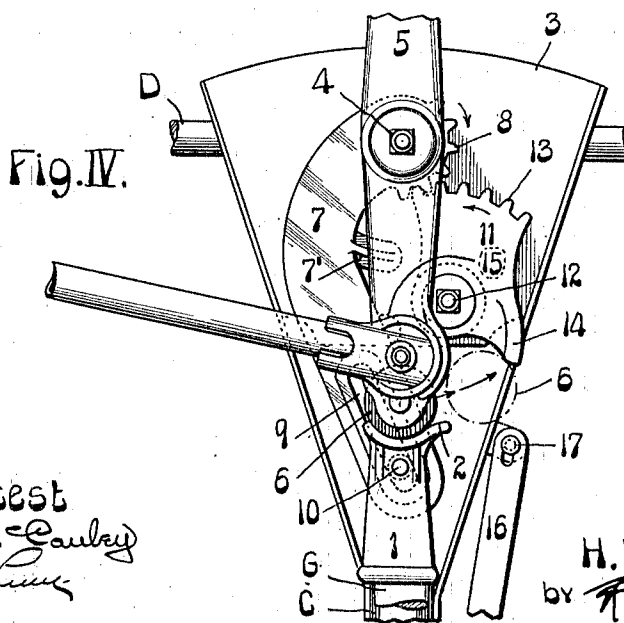
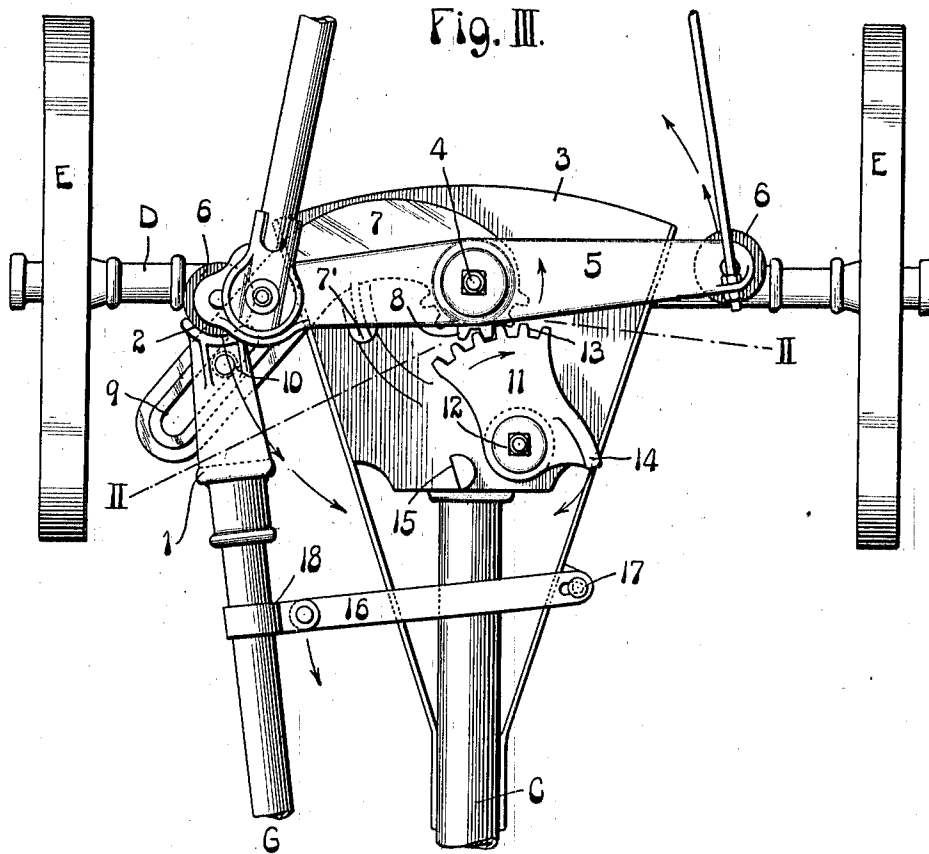
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2 SHEETS—SHEET 2.



Attest
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UNITED STATES PATENT OFFICE.

HENRY L. WHITMAN, OF ST. LOUIS, MISSOURI.

BALING-PRESS.

1,059,248.

Specification of Letters Patent.

Patented Apr. 15, 1913.

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To all whom it may concern:

Be it known that I, HENRY L. WHITMAN, a citizen of the United States of America, and a resident of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Baling-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a baling press, the present invention pertaining particularly to a baling press power mechanism, including a pull back device for the plunger operating pitman, and means whereby such pitman is so controlled that it will be subjected to end thrust only, with avoidance of strain so applied thereto as to cause the pitman to be bent when it is operated for the compression stroke of the plunger.

Figure I is a side elevation of a baling press having my improvement incorporated therein. Fig. II is a cross section taken on line II-II, Fig. III. Fig. III is a top or plan view of the power mechanism, with the parts shown in the positions they occupy during the initial compression stroke of the plunger and pitman. Fig. IV is a top or plan view of the rear end of the pitman and pitman operating members of the power mechanism, with the parts shown in the position assumed at the completion of the compression stroke.

In the drawings:—A designates the baling chamber of my press, which is preferably supported by ground wheels B, and is connected by a reach C to the axle D at the power end of the press, supported by ground wheels E.

F is a plunger, operable in the baling chamber A, and G the pitman connected to said plunger and extending therefrom to the power end of the press. The pitman G is provided with a bifurcated head 1, at the rear or outer end of which is a concave seat 2, that extends transversely of the pitman and its head.

At the junction of the reach C and the axle D at the power end of the press is a horizontal plate or frame 3, that is surmounted by a vertical post 4, which comprises the axis, around which the sweep of the press and another part, to be hereinafter more particularly mentioned, operate when my press is in service.

5 designates the power head of the sweep,

loosely fitted to the post 4, and adapted to be rotated therearound in a manner common in the operation of baling presses, in order that endwise movement of the plunger operating pitman G may be obtained in moving the plunger F in the baling chamber for its compression stroke.

The power head comprises horizontal arms, in which are journaled antifriction rollers 6 that are adapted to engage the seat 2 of the pitman heads 1 to drive the pitman G toward the baling chamber for compression stroke of the plunger of the press.

Inasmuch as the pitman G is movable endwise and the antifriction rollers 6 carried by the sweep power head are movable in a circular path around the vertical post 4, it is important that said pitman be so controlled during its endwise movements in a direction toward the baling chamber, and then upon its return stroke that its head 1 will be so positioned toward said antifriction rollers as to cause the power head to exert a force directed in a line with the axis of the latter, to avoid strain upon the latter, which would be incurred if the force were applied at a point offset from the line of its axis.

It is one of the main objects of my present improvement to provide means whereby the baling press pitman is returned accurately to a position that would make it possible for the power head to exert its force accurately in line with the axis of the pitman, and so control the pitman during its power stroke as to avoid undue strain thereupon, such as would be incurred if the force directed thereagainst by the power head was not directed strictly in line with the axis of the pitman. To attain the object sought, I make use of the parts about to be described.

7 designates a pull back lever for operating the pitman G upon its return stroke after it has been advanced to move the plunger of the press for a compression stroke. This pull back lever is loosely fitted to the vertical post 4 of the power mechanism, and is provided at its inner end with a plurality of teeth 8. In the outer end of the lever is a longitudinal slot 9 that is operable in the bifurcated head 1 of the pitman G, and which receives a vertical pin 10 in said head, that serves to connect the pull back lever to the pitman head.

11 is a segment gear pivoted at 12 to the plate 3, located beneath the power head 5.

This segment gear is provided with teeth 13 that mesh with the teeth of the pull back lever 7, and the end of the segment gear farthest removed from the axis of the sweep 5 and pull back lever 7 is located in the path of travel of the antifriction rollers 6 carried by the power head, being furnished with a cam 14 with which said antifriction rollers engage, subsequently to impartation of forward movements of the plunger G for compression strokes of the baling press plunger.

15 15 designates a stop surmounting the plate 3, and arranged in the path of travel of the pull back lever 7; the said stop serving as a means for limiting the movement of the said pull back lever during the forward stroke of the pitman.

20 16 designates a controller link by which the pitman G is caused to partake of its forward and backward strokes in positively defined lines of movement when operated in one direction by the power head 5, and in the opposite direction by the pull back lever 7. Inasmuch as the pitman has slot and pin connection with the pull back lever, it is highly essential that the means, such as the controller link 16 be provided, in order that when the pitman is drawn rearwardly by the pull back lever, it will be so positioned that the thrust imposed upon the pitman by the sweep will be directly in line with the longitudinal center of the pitman, thereby avoiding lateral strain upon the pitman that would result, if the thrust were applied at a point other than the longitudinal center of the pitman. The controller link 16 performs the intended office in a highly efficient manner that will be quite obvious. The said link has pivotal connection at 17 with the reach C, or the part associated therewith, and is pivotally attached to the pitman by any suitable means, such as a collar 18.

45 It is quite desirable that the pitman and pull back lever of my power mechanism be so arranged that they will operate freely above the reach of the baling press, and the plate or frame at the rear end of said reach, with a minimum amount of friction between the pitman and pull back lever, and the parts beneath them. To provide for such minimum amount of friction, I furnish the pull back lever with a shoe 7', which is operable upon the plate or frame 3 during the movements of said lever and which, due to its extending downwardly from said lever, serves to constantly support the lever and the pitman coöperable therewith out of contact with the parts over which they operate.

60 In the practical use of my power mechanism, the pitman G is moved forwardly toward the baling chamber of the press by pressure exerted thereagainst by the power head 5 and applied, as previously explained,

directly in line with the longitudinal center of said pitman. As the pitman advances from the position in Fig. III to the position seen in Fig. IV, it imparts movement to the pull back lever 7, which latter member, by coöperation with the segment gear 11, moves said segment gear from the position seen in Fig. III to the position seen in Fig. IV, at which time the pull back lever rests against the stop 15. Then, during the continued movement of the power head, the antifriction roller 6 that has operated against the pitman, moves in the direction indicated by the arrows Fig. IV, becoming separated from the pitman, and passing into contact with the cam 14 on the segment gear, against which it operates to move the latter in the direction indicated by the arrow Fig. IV, and to cause it to impart a reverse movement to the pull back lever 7. As a consequence, the pitman is returned to its former position by a rearward stroke, and the power head and antifriction roller 6 becoming separated from the segment gear, the power head continues its movement until the other antifriction roller 6 moves into engagement with the head of the pitman G for the next operation of such pitman, which has been so returned under the control of the controller link 16 as to receive thrust in line with its longitudinal center with avoidance of lateral strain upon the pitman.

I claim:—

1. In a baling press, a pitman, a power mechanism comprising a power head adapted to engage the rear end of said pitman, a pull back lever coöperable with said power head and having slot and pin connection with said pitman, said pull back lever and power head being movable about a common axis, teeth formed on said pull back lever around said axis, a segmental gear meshing with said teeth and operable by said power head for retracting said pull back lever, and a controller link for guiding said pitman.

2. In a baling press, a pitman, a power mechanism comprising a power head adapted to engage the rear end of said pitman, a pull back lever coöperable with said power head and having slot and pin connection with said pitman, said pull back lever and power head being movable about a common axis, means operable by said power head for retracting said pull back lever, and a controller link for guiding said pitman.

3. In a baling press, a pitman, a power mechanism comprising a power head adapted to engage the rear end of said pitman, a pull back lever coöperable with said power head and having slot and pin connection with said pitman, said pull back lever and power head being movable about a common axis, teeth formed on said pull back lever around said axis, a segmental gear meshing with said teeth and provided with an abut-

ment adapted to be engaged by said power head, and a controller link for guiding said pitman pivoted to a fixed part of the baling press at a point remote from said axis.

5 4. In a baling press, the combination with a pitman, of a power mechanism comprising a rotatable power head for operating said pitman, a pull back lever coöperable with said power head and having connection with

said pitman, the said pull back lever being 10 provided with a shoe operable upon a part of the baling press beneath said lever, and means operable by said power head for operating said pull back lever.

HENRY L. WHITMAN.

In the presence of—

A. J. McCAULEY,

E. B. LINN.

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