

No. 891,329.

PATENTED JUNE 23, 1908.

P. K. DEDERICK.

BALING PRESS.

APPLICATION FILED DEC. 30, 1907.

2 SHEETS—SHEET 1.

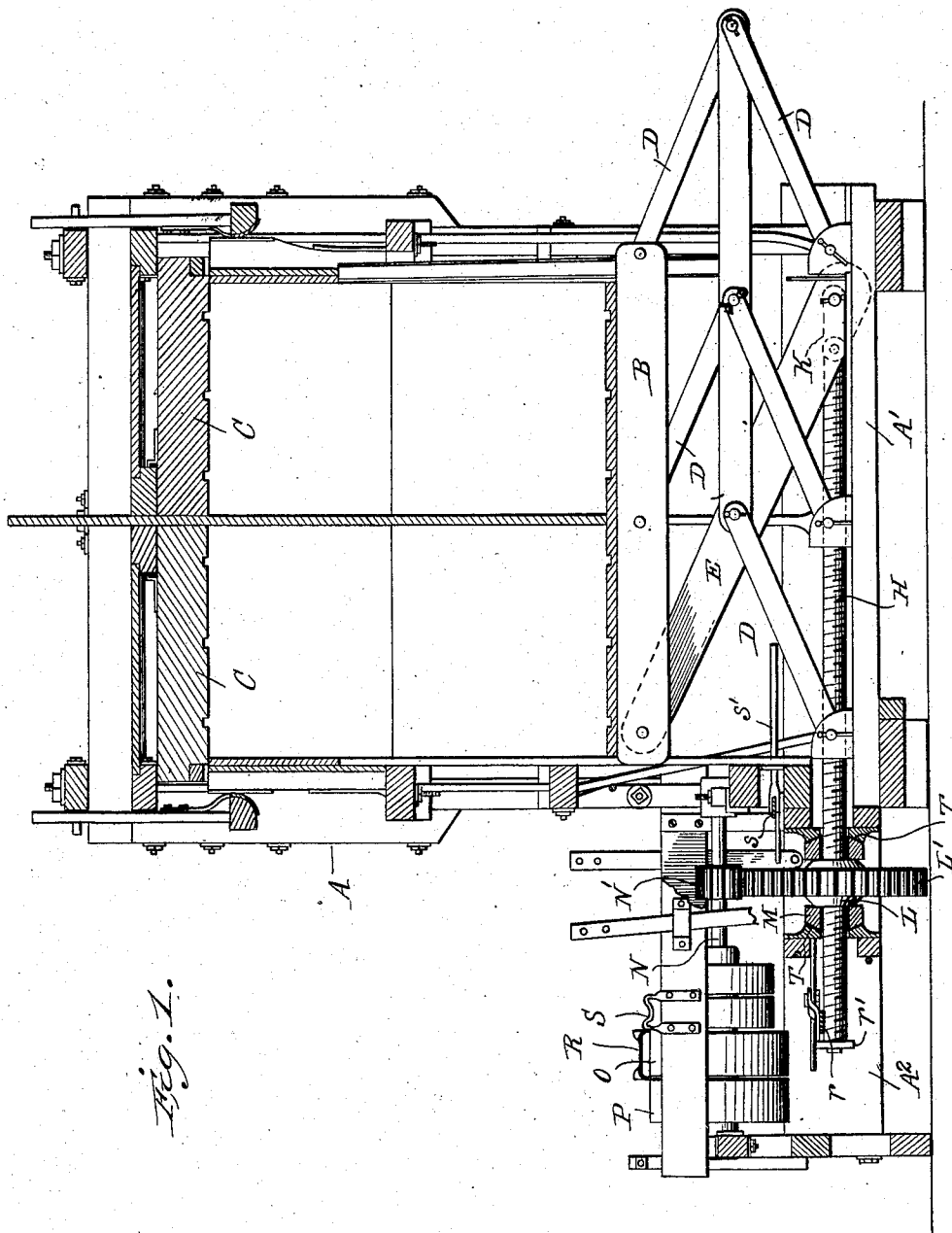


Fig. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

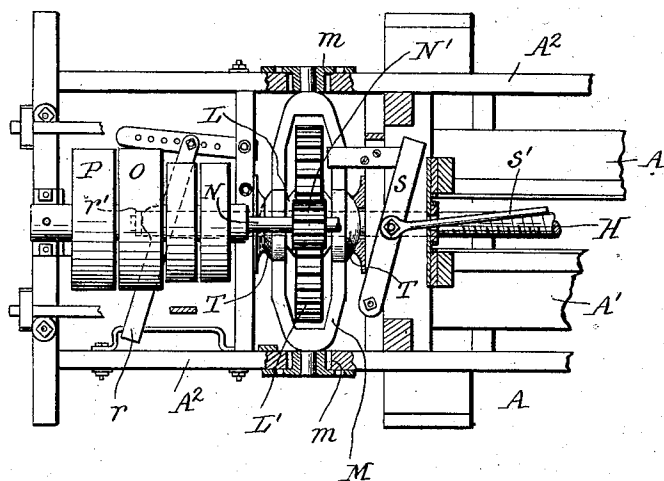
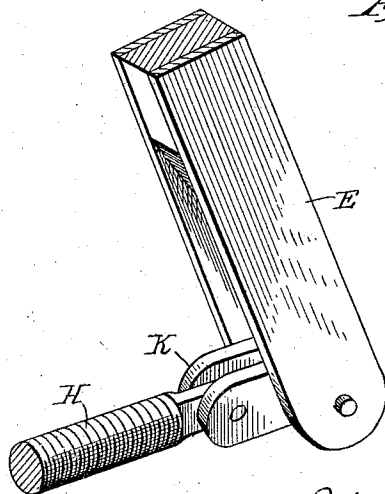


Fig. 3.



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BALING-PRESS.

No. 891,329.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PETER K. DEDERICK, of Albany, in the county of Albany and State of New York, have invented a certain new and useful Improvement in Baling-Presses; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

The present invention relates to the class of baling presses illustrated in my prior patents Nos. 583,460; 583,461; 603,264; 625,436 and 675,439, the object of the invention being to provide an improved power mechanism for operating the follower.

In pressing a bale the great pressure necessarily employed causes more or less settlement or springing of the framing or timbers, particularly the lever and toggle arm supporting portions and in addition there is a tendency to sway laterally and in some instances to tilt the follower out of level.

Because of the practical impossibility of preventing appreciable yielding of the parts as above indicated, a tackle is almost universally employed to transmit the power to the levers and while other forms of power connections have been suggested, the distortion and friction caused by the distortion have heretofore rendered their use impractical in baling presses employing toggle arm arrangements. In accordance with the present invention the power connection is formed by a screw connected with the toggle lever or one of the toggle levers at one end and cooperating with a power driven nut, the connections being such that binding distortion or undue friction of the screw through any of the before mentioned causes is effectually prevented.

In the accompanying drawings—Figure 1 is a vertical sectional view of a press embodying the present improvements. Fig. 2 is a detail plan of the gear nut and end of the screw power connection. Fig. 3 is a detail perspective of the end of the toggle lever and link connection with the screw, the parts being shown as separated from each other.

Like letters of reference in the several figures indicate the same parts.

The general construction of the press frame A, follower B and heads C are well known and in common use and therefore need no specific description. The power mechanism embodies primarily a set of toggle arms

D and toggle lever E jointed together and to the followers B and timbers A forming the bottom of the press framing. Generally speaking, the arrangement of the toggle arms and levers is *per se* well known and may be varied in accordance with well known practice, but the lower end of the toggle lever should move in a practically straight line in running the follower up or down, subject, of course to variation due to springing or yielding of the framing and other parts under strains incident to the pressing operations. This variation has, in practice, been so serious a factor that toggle arrangements in which the flexible connections would accommodate themselves to it have of necessity been employed for operating the power levers, but in accordance with the present invention a screw H is employed, said screw extending through between the lower ends of the toggle arms and having its end jointed to the lower end of the toggle lever E, preferably by a link connection K.

The body of the screw works and takes a bearing in a nut L connected or formed integral with a gear wheel L' and adapted to be supported in a cross frame M. The nut is loosely or pivotally supported, that is to say, it is permitted to have a movement to accommodate itself to the angle of the axis of the screw and for this purpose the frame M may conveniently be pivotally mounted in the timbers A² of the frame A and the pivotal bearings are preferably somewhat loose as shown at *m* and the frame M being circular at the sides T to bear against the power frame to permit of a more perfect accommodating movement when the parts are under heavy strain during baling operations. For turning the nut to move the screw longitudinally a power shaft N driven by fast and loose pulleys O, P, is provided with a small gear wheel N' meshing with the larger gear wheel L' on the nut.

Automatic belt shifters R, S, for shifting the belts as the follower reaches the extremes of its movement are provided, one moved by a lever *r* operated by a head or projection *r'* on the outer end of the screw and the other by a lever *s* operated by the toggle lever through a projection *s'*. These belt shifters shift the belts to the loose pulleys to arrest the movement of the traverser and the belts are shifted to the tight pulleys by hand as is well understood in power press operating mechanism.

It will be noted that in the preferred construction the screw does not rotate but has a movement longitudinally of its axis and further that in the preferred embodiment the axial line of the screw, the axes of the pivots of the lower ends of the toggle arms and the pivotal loose connection between the screw and toggle lever are all in practically the same plane. By arranging the screw to operate on the lower end of the toggle lever, all cramping or binding of the screw in holding the follower level is avoided and by arranging the screw to accommodate itself to the slight change in angle due to the spring or sway of the parts friction on the screw is avoided even though the screw rotates but does not travel.

What I claim is:—

1. A press embodying a frame, follower, toggle arms and toggle lever jointed together and to the follower and frame, and a power mechanism embodying a power screw and nut pivotally connected intermediate the frame and end of the toggle lever, whereby bending of the screw is prevented.

2. A press embodying a frame, follower, toggle arms and lever jointed together and to the follower and frame, and a power screw for the toggle lever extending between the lower ends of the toggle arms, the fixed pivots of the toggle arms and axis of the screw being located in substantially the same plane; substantially as described.

3. A press embodying a frame, follower, toggle arms and lever jointed together and to the follower and frame, a power nut and screw for the toggle lever extending between the lower ends of the toggle arms and a link connection between the end of the screw and end of the toggle lever; substantially as described.

4. A press embodying a frame, follower, toggle arms and lever jointed together and to the follower and frame, a power nut and screw for the toggle lever extending between the lower ends of the toggle arms, one end of said screw being connected with the toggle lever and a bearing on the frame in which the nut is mounted for supporting the opposite end of the screw the said toggle arms and ends of the toggle lever on opposite sides of its intermediate pivot being all of equal lengths.

5. A press embodying a frame, follower, toggle arms and lever jointed together and to the follower and frame, a power screw extending between the lower ends of the toggle arms and connected at one end with the toggle lever and a power driven nut on the screw, pivotally supported in the frame to conform to the angular position of the screw.

6. A press embodying a frame, follower, toggle arms and lever jointed together and to the follower and frame, a power screw extending between the lower end of the toggle arms, a link connection between the screw and toggle lever and a power driven nut on the screw pivotally supported in the frame to conform to the angular position of the screw.

7. A press embodying a frame, follower, toggle arms and lever jointed together and to the follower and frame, a power screw having a joint connection with the lower end of the toggle lever, passing between the lower ends of the toggle arms and pivotally supported from the frame whereby the angle of the screw may vary and means for applying power to the screw to advance the follower.

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Witnesses:

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