

J. BARENS.
BALING PRESS.

APPLICATION FILED JAN. 7, 1909.

957,026.

Patented May 3, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

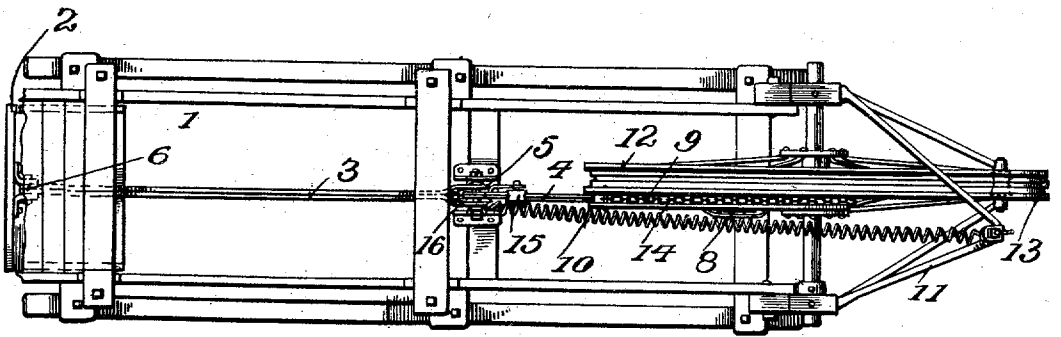
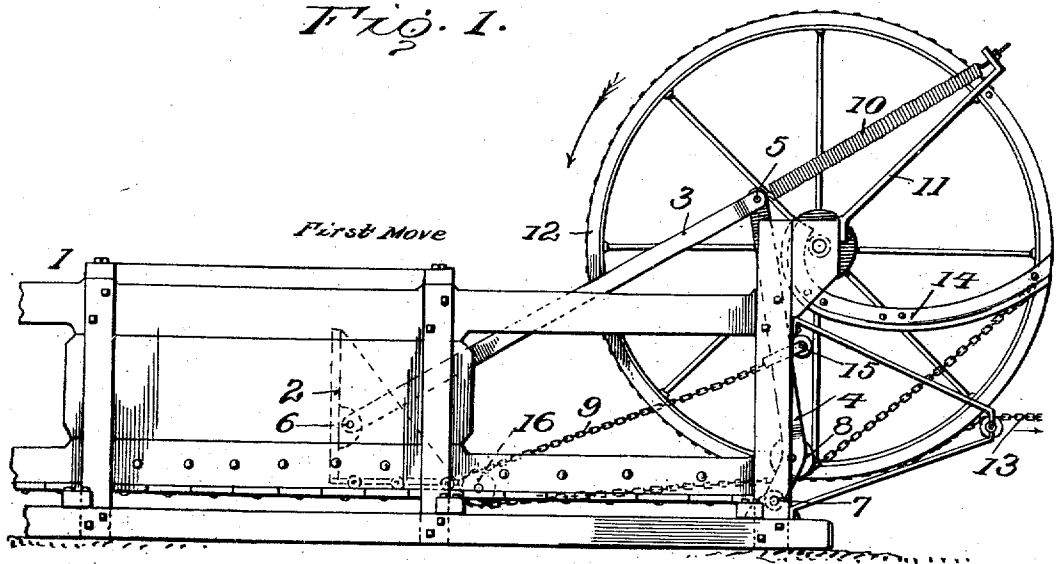


Fig. 2.

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W. H. Morrison

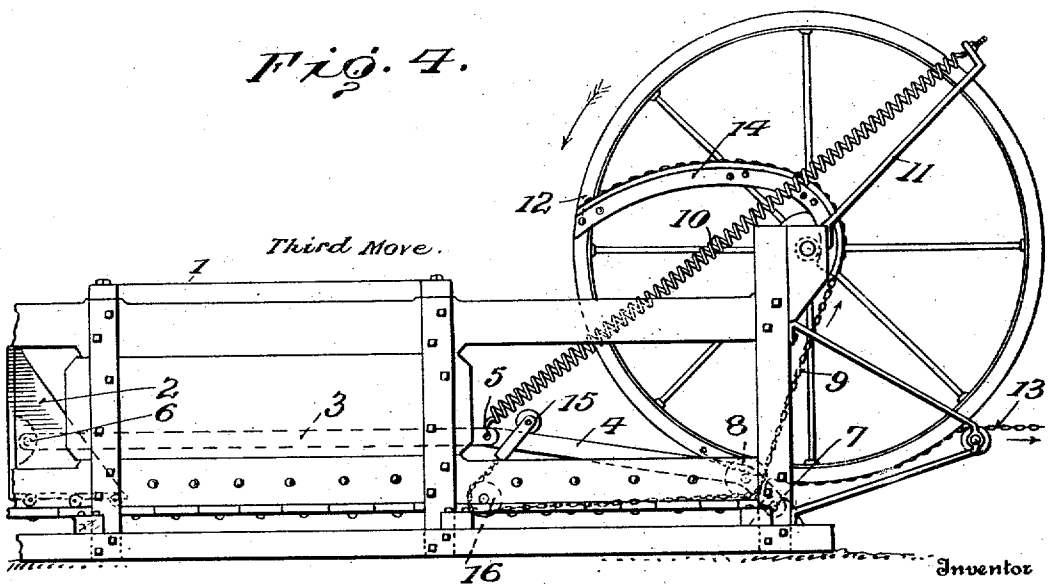
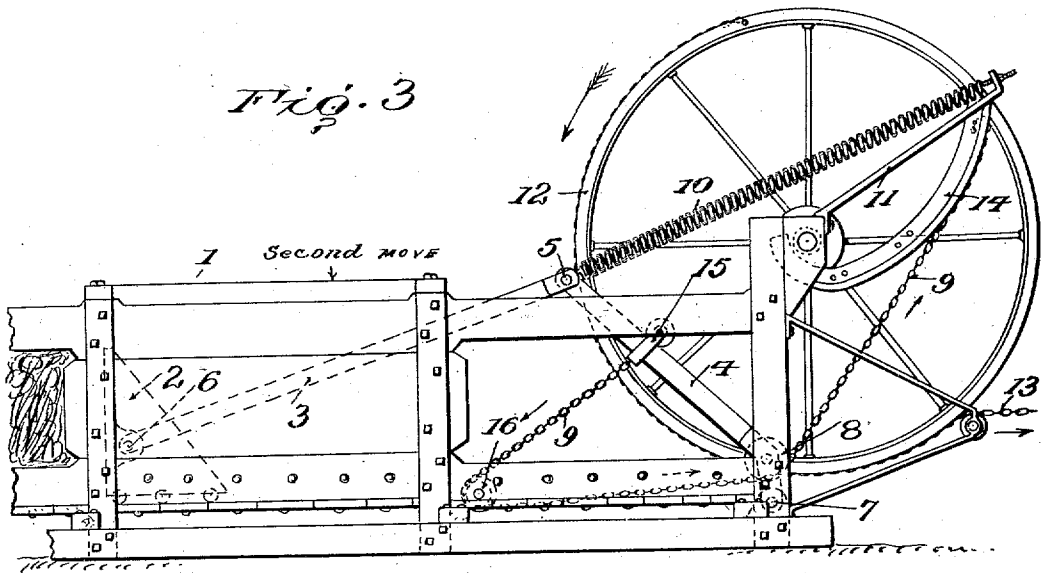
[Signature] Attorneys

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JACOB BARENS, OF ALTUS, ARKANSAS.

BALING-PRESS.

957,026.

Specification of Letters Patent.

Patented May 3, 1910.

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To all whom it may concern:

Be it known that I, JACOB BARENS, citizen of the United States, residing at Altus, in the county of Franklin and State of Arkansas, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

The purpose of this invention is to devise novel and effective means for operating the plunger of baling presses, the actuating means being such as to enable power to be effectively applied proportionate to the compression of the bale.

A further purpose of the invention is to supply operating means which may be actuated by horse power by a direct pull, a pair of toggle links being employed, and means cooperating therewith to aline the links as the material is compressed in the baling chamber with the result that force is effectively utilized to the best possible advantage.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation of a baling press embodying the invention showing the normal position of the parts; Fig. 2 is a top plan view; Fig. 3 is a view similar to Fig. 1 showing the relation of the parts when the plunger has been advanced to compress the bale; and, Fig. 4 is a view similar to Figs. 1 and 3 showing the relation of the parts when the plunger is at the limit of its forward stroke.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The baling chamber 1 may be of any construction and 2 designates the plunger arranged to operate therein. Toggle links 3 and 4 are pivoted to each other at 5 and to the plunger and framework of the press at 6 and 7 respectively. The toggle link 4 is provided with an angular or deflected portion near its pivotal connection with the framework and is provided with a pulley 8 near the point of deflection to receive an operating chain or cable 9. One end of a coil spring 10 is connected to the toggle links at

the joint 5 while the opposite end thereof is suitably connected to a support, such as a bowed standard 11.

The purpose of the spring 10 is to return the parts to normal position after the plunger has been advanced to the limit of its movement. A bull wheel 12 is mounted upon the framework of the press and may be of any diameter and has a draft chain or cable connected thereto for attachment of the horse by means of which the bull wheel is turned when the press is in operation. A cam 14 is provided upon one side of the bull wheel and the draft chain or cable 9 is connected at one end to the outer end thereof. The cam 14 like the periphery of the bull wheel is grooved to provide a seat to receive the draft chains or cables 9 and 13, so as to prevent lateral displacement thereof. The cam 14 has an approximate radial arrangement, its inner end curving about the center of the bull wheel, so as to produce a gradual and effective pressure when giving the final movement to the plunger upon its forward stroke. One end of the draft chain or cable 9 is attached to a trolley 15 mounted to travel upon the toggle link 4, whereby the point of application of the power gradually approaches the joint 5 as the links 3 and 4 are brought into alinement in the operation of the press. A guide pulley 16 is applied to the framework of the press and the draft chain or cable 9 passes therearound. The guide pulley 16 is located a distance from the pivot connection 7 of the toggle link 4 with the framework slightly less than the length of the toggle link 4, so that when the toggle links 3 and 4 are in alinement the trolley 15 will occupy a position corresponding approximately to the joint 5 between the toggle links 3 and 4. This arrangement insures the most effective application of power.

In the normal position of the parts the toggle link 4 stands approximately vertical and after the baling chamber has received a charge of material to be compressed, the horse attached to the draft chain or cable 13 is driven forward thereby turning the bull wheel 12 and imparting movement to the cam 14, which exerts a pull upon the draft chain or cable 9 with the result that the toggle link 4 is moved from the vertical position and the plunger 2 advances in the baling chamber. As the resistance to the forward

movement of the plunger increases the leverage proportionately increases, first, by the action of the cam 14, secondly, by the power of the toggle links 3 and 4, and thirdly, by the movement of the trolley 15 upon the toggle links 4 toward the joint 5. When the plunger is advanced to the limit of its movement the toggle links 3 and 4 aline and upon permitting the horse to back the spring 10 comes into play and returns the parts to normal position. In the operation of the press the horse is alternately driven forward and then backed, the force being applied by a direct pull and the power augmented by the combined action of the cam 14, the toggle links and the movement of the draft chain or cable 9 upon the toggle link 4. From the foregoing it will be understood that the invention provides a press operating means which is both simple and effective and which enables direct application of draft in a straight line and by a direct pull; the parts being so arranged as to proportionately increase the power as the compression of the bale increases, thereby enabling the pull to be practically steady and uniform.

Having thus described the invention what is claimed as new is:

1. In combination with a supporting frame having a baling chamber provided with a plunger, of pivotally connected toggle links, one of which is pivotally connected to the supporting frame and the other to the plunger, a trolley slidably mounted on one of the toggle links, a bull wheel journaled on the frame and provided with a cam, a guide pulley mounted on one of the toggle links, a second guide pulley mounted on the supporting frame, and a cable, one end of which is secured to the trolley and the other end thereof extending over said guide pulleys for attachment to the cam.

2. The combination with a supporting frame having a baling chamber provided with a plunger, of pivotally connected toggle links, one of which is pivotally connected to the plunger and the other provided with an angular terminal pivotally connected to the supporting frame, a guide pulley journaled on the angular terminal of one of the toggle links, a trolley slidably mounted on said angular toggle link, a guide pulley mounted on the supporting frame, a bull wheel having a cam, a flexible element having one end thereof secured to the trolley and its other end passed over the guide pulleys for attachment to the bull wheel, an arm extending laterally from the supporting frame and a spring forming a connection between the outer end of the arm

and the pivotal connection between the toggle links.

3. In a baling press the combination with a supporting frame having a baling chamber and provided with a plunger, of pivotally connected toggle links, one of which is pivotally connected with the plunger and the other provided with a deflected terminal for pivotal connection with the supporting frame, a trolley slidably mounted on the deflected toggle link, a guide pulley journaled on the deflected toggle link, a similar guide pulley journaled on the frame, a bull wheel having a cam secured thereto, a flexible element having one end thereof secured to the trolley and its other end passing over the guide pulleys for attachment to the bull wheel, an arm extending upwardly from the supporting frame, a spring having one end thereof secured to the arm and its other end fastened to the toggle links at their pivotal juncture, a draft cable encircling the bull wheel and a bracket extending laterally from the supporting frame and having a roller mounted for rotation thereon and adapted to receive and guide the draft cable.

4. In power applying means, the combination of toggle links, a guide pulley applied to one of the toggle links near the outer end thereof, a trolley mounted to move upon the toggle link provided with said guide pulley, a second guide pulley arranged within the radius of the joint between the toggle links, and a draft chain or like connection passed around said guide pulleys and attached to the said trolley.

5. In power applying means the combination of toggle links, a bull wheel, means for operating the bull wheel by a direct pull, a cam applied to a side of the bull wheel, a trolley slidably mounted on one of the links and connecting means between said cam and trolley.

6. In combination toggle links, a trolley mounted to move upon one of the toggle links, a guide pulley applied to the toggle link provided with the trolley near the outer end thereof, a second guide pulley arranged within the radius of the toggle link provided with the said guide pulley and trolley, a bull wheel, a cam upon one side of the bull wheel, and a flexible connection between the cam and trolley and passed around said guide pulleys.

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

JACOB BARENS. [L. s.]

Witnesses:

GEORGE RANEY,
R. C. HILL.