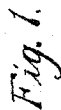
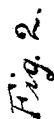


E. C. SOOY.
BALING PRESS POWER.

Patented Apr. 4, 1893.



Witnesses
S. L. Chasson
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By his Attorneys,
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UNITED STATES PATENT OFFICE.

EPHRAIM C. SOOY, OF KANSAS CITY, MISSOURI, ASSIGNOR TO THE KANSAS CITY HAY PRESS COMPANY, OF MISSOURI.

BALING-PRESS POWER.

SPECIFICATION forming part of Letters Patent No. 494,798, dated April 4, 1893.

Application filed July 23, 1892. Serial No. 440,999. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM C. SOOY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Baling-Press Powers; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is:—to obtain the power requisite to give the initial stroke to the pitman with a reduction in length of the arm of the lever operating the pitman.

My invention further consists in the novel construction and combination of parts which will be first fully described and specifically pointed out in the claims.

In the drawings:—Figure 1. is a broken plan view of the press in horizontal section taken upon the line x, x , of Fig. 2. one end of the press being shown mounted upon traction wheels and axle and the baling chamber, with the plunger therein at the other end of the press, also showing the pitman in a position to be operated, and at the limit of rebound; and on dotted lines the position of the pitman and levers when nearly in alignment and the power applied to compress the material in the baling chamber. Fig. 2. is a side view of the press.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings:—A. represents a horizontal platform or bed which is made narrow in width and of a suitable length to support the power shaft and the feed receptacle.

Upon the extreme forward end portion a , of the bed or platform A. is rigidly secured a U shaped casting or support B the upper portion b , and the lower portion b' , of which support are parallel and extend equally the required distance in the direction of the other or rear end portion a' , of said bed. Extending through the outer end of the upper portion b , of the said support B. in a vertical direction is a circular opening or journal bearing b^2 , and in the lower portion b' , of the said sup-

port b' . in a vertical line with the bearing b^2 , is an opening or bearing b^3 , which is smaller in diameter than the opening b^2 . Between said portions b, b' , of the support B. is placed in a vertical position a rotary shaft C. upon the lower end of which shaft is a short journal c , which enters the bearing b^3 , in the portion b' , of the support B. and upon the other end of said shaft is a journal c' , which extends through the vertical opening b^2 , in the portion b , of the said support, and a slight distance above the upper side of said portion b , and to said journal c' , is, above the said portion b , rigidly attached in a horizontal position, a narrow yoke or plate D. both ends of which yoke extend an equal distance from said journal c' . To the yoke D. is bolted one end of a horizontal draft pole E.

To the shaft C., between the portions b, b' , of the support B. is rigidly attached the lever arms C', C^2 , which constitute a double armed lever and which arms extend in one line of direction in the line of the diameter of shaft C. and an equal distance respectively from both sides of said shaft. The outer end portion of each one of the arms C', C^2 , is forked at c^3, c^3 . Between the forked end C' , is pivoted on the pivot c^4 , the anti-friction roller c^5 , and between the forked end of the arm C^2 , is pivoted an anti-friction roller c^7 .

Upon the extreme end portion a' , of the bed A. is attached the feed receptacle F. for the reception of the material to be baled, and in said receptacle is placed the reciprocating plunger G. To the plunger G. is pivotally attached one end of the pitman H. the other or vibrating end of which pitman extends in the direction of shaft C. and upon one side of said shaft and a short distance beyond the point of contact of the bearing of the lever arm. The pitman H. is narrow in width, the inner edge h , of said pitman which comes into contact with the lever arms C', C^2 , being parallel with the outer edge h' , of said pitman. Attached to the vibrating end of the pitman H. and to the outer edge h' , and extending beyond the end of said pitman a short distance, is a fixed bearing arm h^2 . The outer edge h^3 , of the arm h^2 , from the end attached to the pitman, is made to describe a curved line h^3 , and the extreme outer end extended

outwardly in the direction of the line of the inner edge of the pitman, and to a position equidistant from both lines. The inner edge of the arm h^2 , is made to describe a single inwardly curved line h^4 extending from the outer end of the said arm to the end of the pitman. The inner edge h , of the pitman is made to describe an outwardly curved line h^5 , at the extreme end of said pitman extending toward the outer edge of the pitman and meeting the curved line h^4 , of the arm h^2 .

Between the rear end of the arm h^2 and the outer edge h' , of the pitman is formed a shoulder or stop h^6 . On the said edge of the pitman, a short distance from the shoulder h^6 , in the direction of the plunger G. is attached rigidly a stop block h^7 .

On the shaft C. between the under side of the portion b , of the yoke B. and the upper side of the lever arms C' . C^2 . is loosely mounted one end of a vibrating arm I. the other end of which arm extends over the upper side of the pitman, and in the direction of the outer side edge of said pitman, and a short distance beyond the line of the stops h^6 , h^7 . Upon the said shaft C. and between the lower portion b' , of the yoke B. and the under side of the lever arms C' . C^2 . is loosely mounted one end of an arm I' . which is similar to the arm I. and extends in the same direction and corresponds in length to the arm I. Vertically through the outer vibrating end of the arm I. is passed one end of the bolt i , the other end of which bolt is extended downwardly between the stops h^6 , h^7 , through the outer end of the arm I' . and both heads of the bolt made rigid with the respective arms.

The forward end of the platform beneath the power shaft C. is rigidly attached to the axle K. Said axle extends in a transverse direction to and upon the under side of said platform or bed A. and upon the other ends of said axle are mounted the traction wheels L. L. The other end of the press is mounted in a similar manner.

To one of the sides of the feed receptacle F. is attached one end of a horizontal stay rod M. the other end of which rod is rigidly attached to the side of the portion b , of the U shaped casting or support B.

In the operation of the press the horse or other power is attached to the pole E, and said pole made to describe a movement in the line of a circle and rotation is thus imparted to shaft C. The material to be baled is placed in the receptacle F. and as the receptacle is filled the expansion of the material causes the pitman to rebound. The pressure brought to bear on the shaft C. is communicated to the lever arms C' . C^2 . and one of the anti-friction rollers in one of the lever arms C' . C^2 . is brought to bear upon the inner edge h , of the pitman, and under the said leverage the vertical limited movement of the pitman is checked by the bolt i , on the arms I. I' .

which bolt meets the stop h^7 , on the outer edge of the pitman and at the same time the movement of the pitman is toward the feed chamber F. the arms I. I' . vibrating in the movement of the pitman, and the said vibrating end of the pitman is carried to a position in which one of the rollers in the arm of one of the lever arms passes over the curved edge h^5 , of said vibrating end of the pitman, and engages with the end of the pitman directly opposite the curved line h^4 , of the fixed arm h^2 , in readiness for the stroke of the lever arm. In the first quarter of a circle of rotation the lever arms and pitman are carried to a position shown in dotted lines, Fig. 1. in which the lever arms and pitman are nearly in alignment in which position the outer end of the curved arm h^2 , bears against the side of the lever arm adjacent to the inner edge of the pitman and forms a fulcrum for said lever arm at a point between the anti-friction rollers and the shaft C., the guide arms I. I' , following the movement of the pitman, and when near said alignment the bolt i , comes into contact with the stop h^6 . In the next quarter of a circle of rotation the roller in engagement with the end of the pitman which is prevented from thrusting the curved arm h^2 , laterally from its position against the side of the lever arm,—is thrown therefrom in the direction of the line of the inner edge of the pitman, and said pitman under the expansion of the material rebounds, and the force of the rebound is checked by the stop h^7 . The instant disengagement of the lever arm with the vibrating end of the pitman permits the other lever arm and its roller to be brought at once into engagement with the inner edge of said pitman, and in readiness for a repeated action of the lever arms. In this manner I am enabled to reduce the length of the respective lever arms, and employ the power with the greatest advantage in operating the pitman.

Having fully described my invention, what I now claim as new, and desire to secure by Letters Patent, is—

1. In baling press powers, the combination with the bed and the driving shaft upon said bed, having oppositely extended lever arms, and anti-friction rollers in the ends of said arms, of a recoiling pitman having a vibrating end upon one side of said shaft, a guiding arm upon and extending beyond the outer edge of said pitman having a fulcrum for the lever arms, between the lines of outer and inner edges of said pitman, guiding arms loosely mounted on said driving shaft embracing the upper and lower sides to said pitman and having their outer ends extending beyond the line of the outer edge of said pitman linked together, said vibrating end of the pitman having stops upon its outer edge in the path of the link on the guiding arms, substantially as and for the purpose described.

2. In a baling press having a suitable bed,

the combination with the driving shaft upon
said bed having oppositely extended lever
arms and anti-friction rollers in the ends of
said arms, of a rebounding plunger and a pit-
5 man having a vibrating end adapted to re-
bound upon one side of said shaft and an
inwardly curved guiding arm upon said end
of said pitman, and vibrating arms loosely
mounted upon said shaft and having their
10 outer ends extending beyond the line of the

outer edge of said pitman, and a bolt con-
nected with said outer ends, and stops upon
the outer edge of said pitman in rear of said
curved arm, in the path of said bolt, substan-
tially as and for the purpose described.

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Witnesses:

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