(No Model.) 2 Sheets—Sheet 1.

C. E. JONES.

HAY PRESS.

No. 573,785. Patented Dec. 22, 1896.

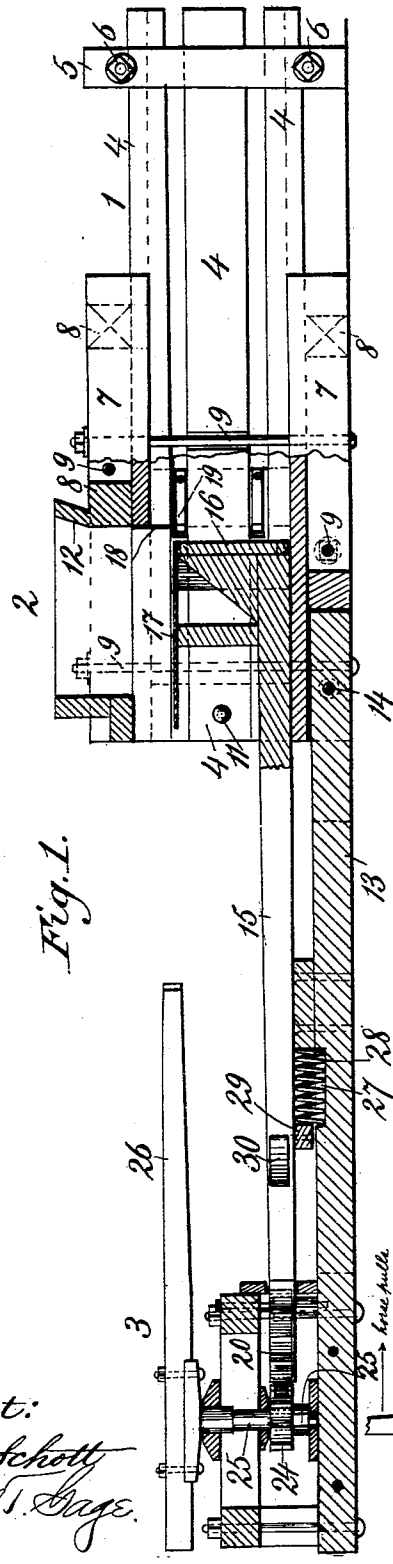

Fig. 1.

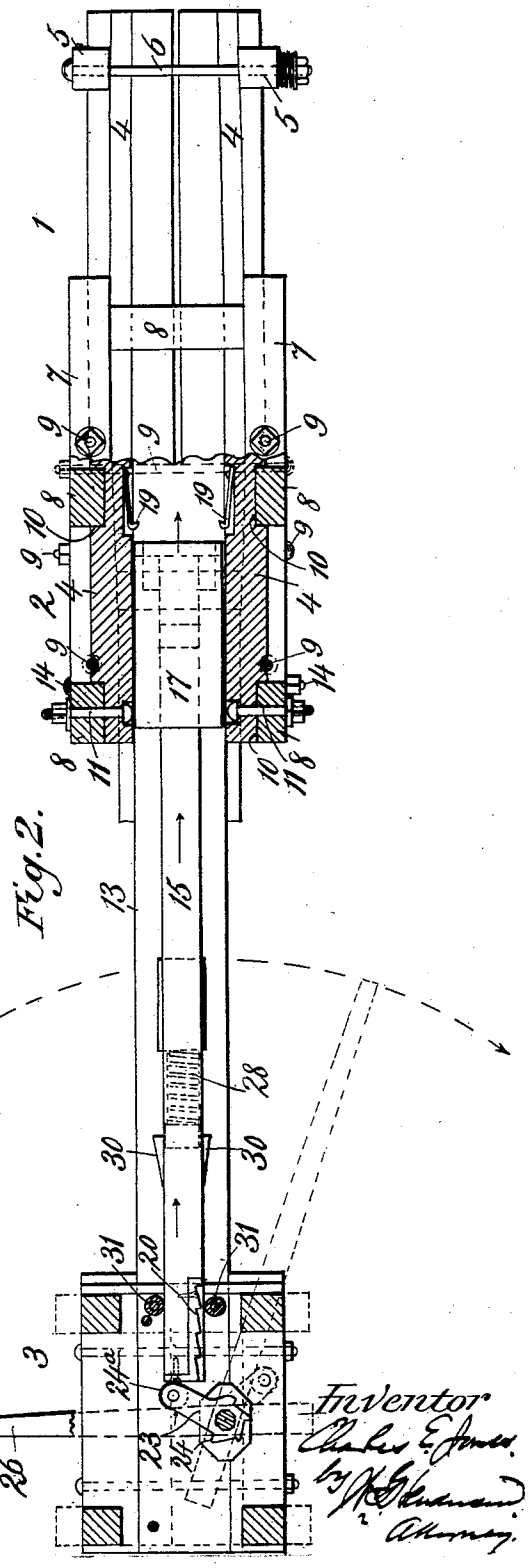

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

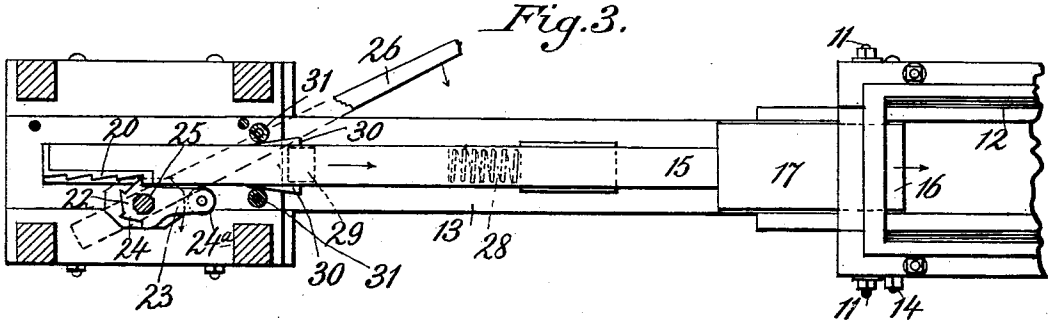

Fig. 4.

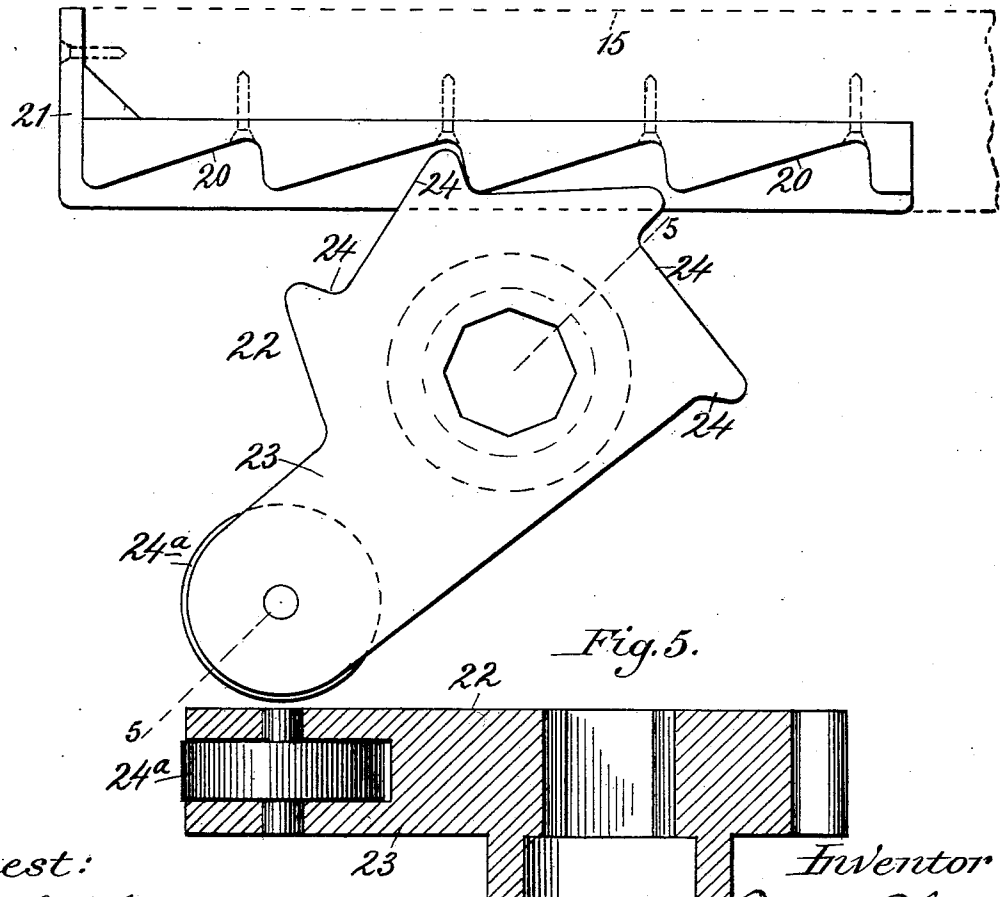

Fig. 5.

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UNITED STATES PATENT OFFICE.

CHARLES E. JONES, OF HILLSBOROUGH, TEXAS.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 573,785, dated December 22, 1896.

Application filed May 27, 1896. Serial No. 593,212. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. JONES, a citizen of the United States, residing at Hillsborough, in the county of Hill and State of Texas, have invented certain new and useful Improvements in Hay-Presses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to hay-presses; and it has for its object to provide a press in which the tie-box portion can be readily detached from the feed-box portion; also, in which the power-head portion can be readily detached from the feed-box portion; also, to provide an improved construction of plunger-beam and means for operating the same whereby the loose portions of hay fed into the feed-box are gathered or collected by the plunger through the instrumentality of teeth on a peculiarly-formed power-head engaging teeth on the plunger-beam and then compressed by a finger or arm on the power-head bearing against the end of the plunger-beam; also, to provide an improved form of power-head in connection with the sweep-lever, so that when the finger or arm on the power-head is made to exert its pressure on the plunger-beam the pressure will be directly lengthwise of the press, thereby avoiding the necessity of pinning or staking the press to the ground.

It has further for its object to improve the press in other particulars hereinafter particularly pointed out.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in the construction and also in the combination of parts hereinafter particularly described and then sought to be specifically defined by the claims, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a side view of the press with a portion in vertical section; Fig. 2, a plan view with a portion in vertical section; Fig. 3, a plan view of a portion of the press with parts in vertical section and showing the relation of the power-head to the plunger-beam when the latter is in its retracted position; Fig. 4, a plan view of the power-head and a portion of the plunger-beam on an enlarged scale, and Fig. 5 a vertical section through the power-head.

In the drawings the numeral 1 designates the tie-box portion of the press, 2 the feed-box portion, and 3 the power-head portion. The tie-box portion 1 is composed of the longitudinally-extending timbers 4, having at their forward ends the clamping-blocks 5 and clamping-bolts 6. The feed-box portion is composed of the longitudinally-extending timbers 7, the separating-blocks 8, and the securing-bolts 9. The opposite middle side timbers of the tie-box portion are passed through ways 10, formed in the sides of the feed-box portion, and the tie-box portion and feed-box portion are held together by the bolts 11, passed through the inner ends of the middle side timbers of the tie-box portion and through the sides of the feed-box portion at their forward ends.

When the two portions are to be separated, the bolts 11 are withdrawn and the tie-box portion slipped out of the feed-box portion. A hopper 12 is provided, as usual, to receive the hay which passes therefrom into the feed-box. The power-head portion 3 is composed of a frame made up of longitudinal and cross timbers bolted together, with a space between the top and bottom to receive the power-head and rear end of the plunger-beam. This power-head portion or frame is connected by a longitudinal beam 13 to the feed-box portion, the said beam being connected to the feed-box portion by a bolt 14, passed through the beam and the timbers of the feed-box, so that when said parts are to be disconnected it is only necessary to remove the connecting-bolt. By forming these several parts in the manner specified they can be readily separated from one another and compactly packed for transportation and can be readily set up for use.

The plunger-beam is designated by the numeral 15 and carries at its end next to the feed-box a follower 16, which serves to press the hay from the feed into the tie box portion. Above the follower is a shield or shelf 17, which slides beneath the open bottom of the hopper 12, so that when the follower is

pressed forward the shelf will prevent the hay falling through the hopper and back of the follower. A spring-plate 18 depends from the top of the feed-box next to the tie-box portion, so as to prevent any part of the hay being withdrawn with the follower and so as to smooth the hay in order that the top of the bale may be as smooth as the bottom. Side catches 19 are provided, as usual, to prevent each charge of hay from expanding back into the feed-box beneath the hopper on the withdrawal of the follower.

The rear portion of the plunger-beam is formed on one side with teeth 20, which may be cast in one piece and secured by screws or otherwise to the plunger-beam, and a metallic face-plate 21 may extend across the end of the beam. In the space between the top and bottom of the plunger-head portion is located the power-head 22, which consists of a metal block having a projecting finger or arm 23 and a series of teeth 24 back of the finger on the side of the block, and in the end of the finger is journaled a friction-roll 24. Through the hub of this power-head passes a vertical shaft 25, to the upper end of which is attached the sweep-lever 26.

The opening in the hub of the power-head is polygonal in form and is preferably formed with eight sides. The purpose of this is to permit the sweep-lever to be set at different angles as occasion may require, the lower end of the shaft 25 being of corresponding form, so as to fit in the hub. By this simple means I am enabled to readily change the angle of the sweep-lever, which at times is required to be set at a greater angle than at other times. This also enables me to bring the finger or arm 23 of the power-head at such angle to the sweep-lever, as indicated by full lines in Fig. 2 of the drawings, that when the end of the arm or finger is bearing against the end of the plunger-beam and the pull of the horse is on the sweep-lever the pull will be in the direction of the length of the press, as will be apparent from an inspection of Fig. 2 of the drawings. By this relative arrangement of the parts I am enabled to dispense with the necessity of staking the press to the ground, because under this arrangement when the greatest pressure is being exerted it is in the direction of the length of the press and therefore resisted by the weight of the entire press, whereas if the arrangement were otherwise the pressure would be at an angle to the length of the press, and consequently the press would have to be staked; otherwise the pressure would shift the press laterally. This also affords a greater leverage, so that a single horse is able to perform more work with greater ease than would be the case if the leverage were otherwise.

In the longitudinal beam 13 is formed a recess 27, in which I place a coiled spring 28, which lies directly under the plunger-beam. To the under side of the plunger-beam is secured a block 29, which when the beam is moved forward presses against the coiled spring 28, so as to compress the same, and when the pressure on the beam is released the recoil of this spring throws the plunger-beam backward and withdraws the follower from beneath the open bottom of the hopper.

For the purpose of checking the rebound of the plunger-beam I locate on opposite sides thereof the wedge-shaped blocks 30, which in the rebound of the plunger come in contact with the two friction-rolls 31, located one on each side of the beam in the forward portion of the power-head frame, and as these wedges come in contact with the friction-rollers the rebound is checked and the beam caused to stop in proper position for the teeth on the power-head to engage the teeth on the side of the beam. When these teeth are in engagement and the sweep-lever turned, the plunger-beam is fed forward, so as to collect or gather the loose hay in the feed-box and move it forward, and then as soon as the teeth are out of engagement the end of the finger or arm 23 bears directly against the end of the plunger-beam and the power or pressure applied thereto in a straight line, so as to compress the loose hay which has been gathered or collected in the first or initial movement of the beam.

If it is desired to remove the plunger-beam, it is simply necessary to remove one of the friction-rolls 31, which will then allow sufficient side movement of the beam to permit of its removal.

The operation of the press is apparent from the foregoing description of the several parts, and need not therefore be further enlarged upon.

I have illustrated and described with particularity what I consider to be the best details of construction of the several parts, but it is obvious that changes can be made without departing from the essentials of the invention.

Having described my invention and set forth its merits, what I claim is—

1. In a hay-press, the combination with the feed-box portion formed with recesses in its opposite sides, of the tie-box portion fitting partially within the feed-box portion and having longitudinal side timbers extending and lying within the recesses formed in the opposite sides of the feed-box portion, bolts passing through the opposite sides of the feed-box portion and through the portions of the side timbers of the tie-box which lie in the recesses of the feed-box portion for the purpose of rendering the tie-box detachable from the feed-box portion, and the power-head portion having a longitudinally-extending beam, the inner end of said beam fitting between the sides of the feed-box portion and secured thereto by a bolt by the removal of which the power-head portion may be detached from the feed-box portion, substantially as and for the purposes described.

2. In a hay-press, the combination with the

feed-box portion and the power-head portion, of the plunger-beam adapted to travel in a straight line lengthwise of the press and carrying at one end a follower for the feed-box portion and fitting at the opposite end in the power-head portion, a spring for retracting the plunger-beam, friction-rollers located at opposite sides of the plunger-beam at the power-head portion for guiding said beam, and wedge-blocks secured to opposite sides of the plunger-beam and adapted to engage said friction-rollers in the rebound of the plunger-beam so as to check the rebound and center the plunger-beam, substantially as and for the purposes described.

3. In a hay-press, the combination with the plunger-beam having teeth on its side at its rear end next to the power-head portion, means for guiding said beam in a straight line lengthwise of the press in its reciprocation, a power-head for moving said beam, said power-head consisting of a rotatable block having teeth on its sides to engage the teeth on the side of the power-beam for moving the latter to collect or gather the loose hay and provided with a finger or arm arranged to bear directly against the end of the beam as soon as the teeth of the block disengage the teeth of the beam, and a sweep-lever connected to said power-head block and extending from the block in the direction of its finger or arm and lying at an oblique angle to said finger or arm whereby the pressure of the finger or arm on the end of the plunger-beam is lengthwise instead of laterally thereof, substantially as and for the purposes described.

4. In a hay-press, the combination with the plunger-beam having teeth on its side at the end next to the power-head portion, of the power-head for moving said beam, said power-head consisting of a block formed with teeth on its side to engage the teeth on the side of the plunger-beam and provided with a finger or arm arranged to bear directly against the end of the beam as soon as the teeth of the block disengage the teeth of the beam and having a polygonal-shaped opening in its hub, and a sweep-lever attached to a shaft fitting in said polygonal opening of the power-head block and adapted to be adjusted therein to change the angle at which the sweep-lever shall stand to the arm or finger of the power-head block, substantially as and for the purposes described.

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

CHARLES E. JONES.

Witnesses:

S. M. CUNNINGHAM,

J. H. CLARIDGE.