

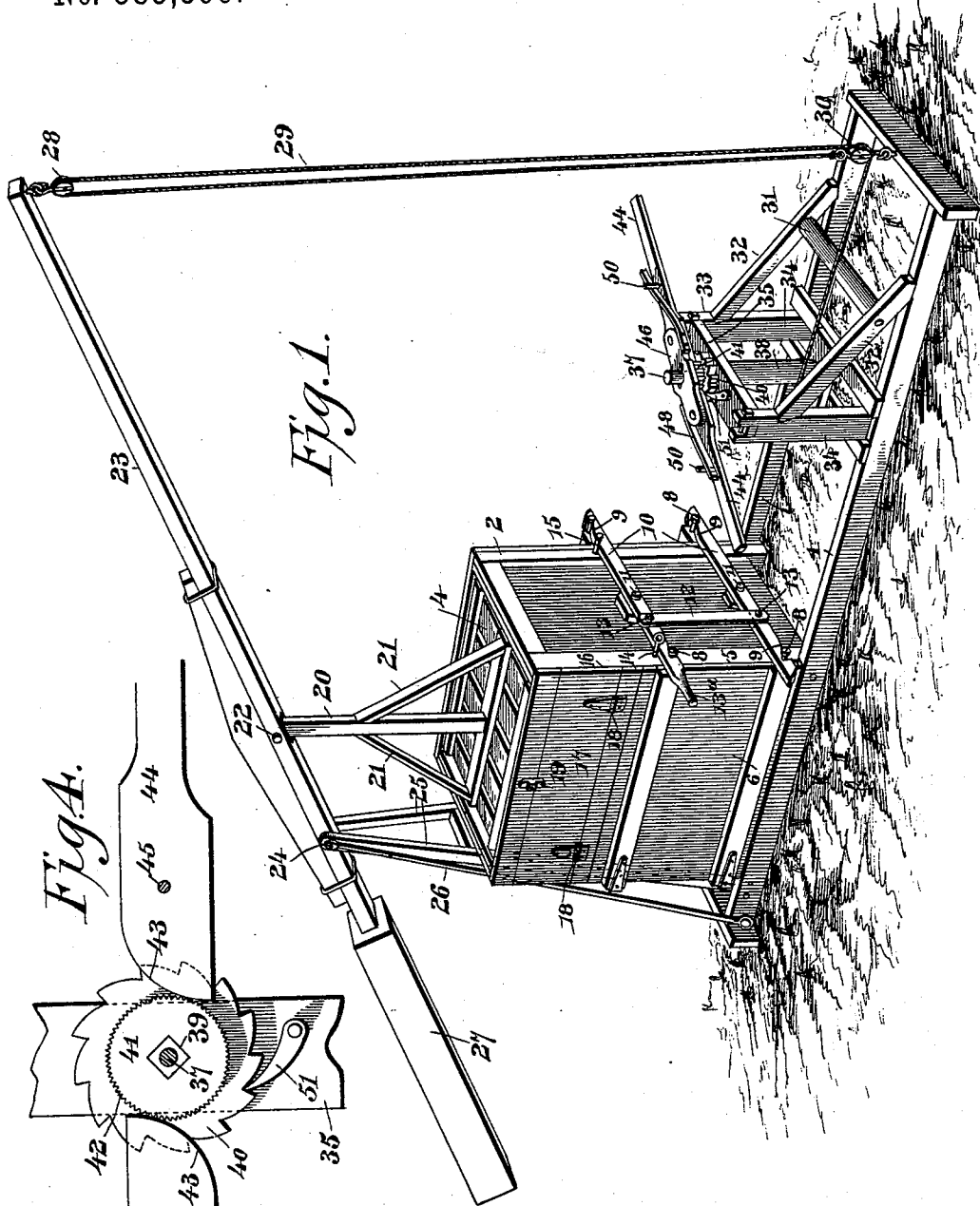
(No Model.)

2 Sheets—Sheet 1.

W. A. KYLE.
HAY PRESS.

No. 583,599.

Patented June 1, 1897.



Inventor

William A. Kyle

By his Attorneys,

C. A. Snow & Co.

Witnesses

Jas. L. McArthur
S. P. McArthur

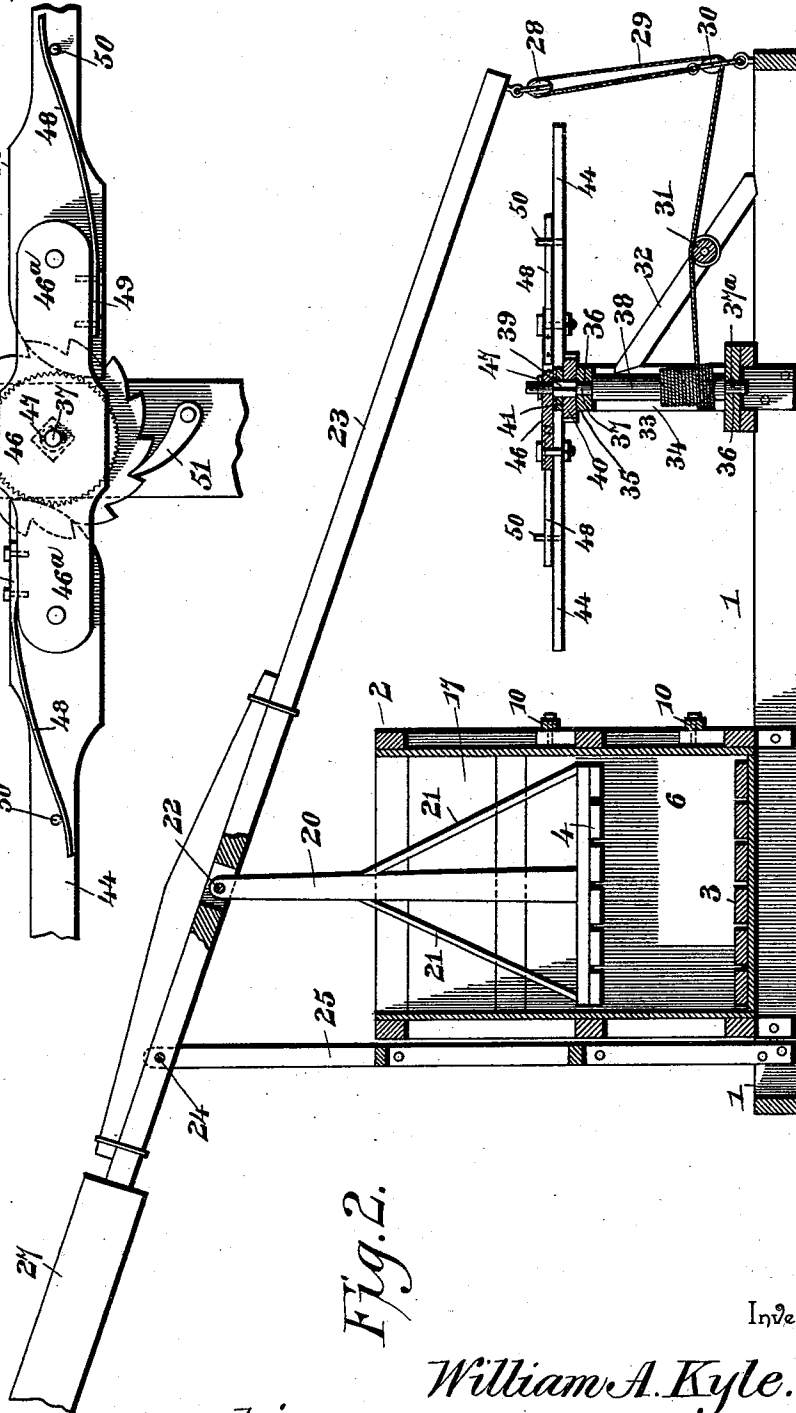
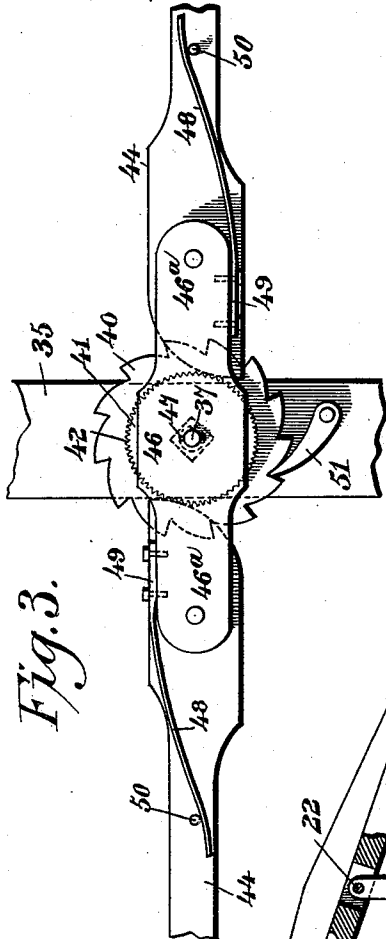
(No Model.)

2 Sheets—Sheet 2.

W. A. KYLE.
HAY PRESS.

No. 583,599.

Patented June 1, 1897.



Inventor

Witnesses

Jas. K. McElathran
S. P. Holman & Co.

By *his* Attorneys,

William A. Kyle.

Cal Snow & Co.

UNITED STATES PATENT OFFICE.

WILLIAM A. KYLE, OF SCOTTSBOROUGH, ALABAMA.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 583,599, dated June 1, 1897.

Application filed November 6, 1896. Serial No. 611,264. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. KYLE, a citizen of the United States, residing at Scottsborough, in the county of Jackson and State of Alabama, have invented a new and useful Hay-Press, of which the following is a specification.

This invention relates to hay-presses; and it has for its object to provide a simple and inexpensive press of this character having positive and efficient means for quickly baling hay with but a small expenditure of power.

With this and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of a hay-press constructed in accordance with this invention. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a plan view of the ratchet-operating mechanism for furnishing the power to operate the press. Fig. 4 is a sectional view of the construction illustrated in Fig. 3.

Referring to the accompanying drawings, the numeral 1 designates a base-frame for supporting all of the parts of the press, including the operating mechanism thereof, and built upon the base-frame 1 at one end thereof is an upright press-box 2, open at its upper side and provided within its bottom with a slatted pressing-platform 3, opposed to the slatted plunger 4, arranged to work within the box 2 above the said platform, in the manner to be presently described. Directly above the bottom pressing-platform 3 is located the baling-chamber 4 of the press-box, at directly opposite sides of which chamber the press-box is provided with the door-openings 5, adapted to be covered and uncovered by the oppositely-located side doors 6, hinged at one end, as at 7, to one end of the press-box and provided at their free ends with the offstanding catch-pins 8, adapted to be engaged by the shouldered catch-notches 9, formed in opposite ends of a pair of parallel fastening-levers 10.

The fastening-levers 10 are pivotally mounted intermediate of their ends, as at 11, on the end of the press-box opposite the end

to which the doors 6 are hinged, and the said levers are connected together for simultaneous movement by an intermediate connecting-bar 12, pivoted at its opposite ends, as at 13, respectively to the oppositely-located parallel fastening-levers, and one of said levers is provided at one end with a hand-grasp 13^a, which is grasped by the hand to provide for the simultaneous oscillation of the levers to fasten and unfasten the side doors 6. The catch-notches 9 of each lever 10 are arranged, respectively, on upper and lower sides of such lever, so as to simultaneously engage and disengage the diametrically opposite catch-pins 8 of the opposite doors 6, and when both levers 10 are disposed in a horizontal position with their notches 9 engaged with the pins 8 of the oppositely-located doors the levers are secured or locked in such position by means of a locking-pin 14, adapted to be inserted in an opening in one end of the press-box directly above the upper lever 10, and a stop-pin 15 is projected from one end of the box 2 at a point opposite the position of the pin 14 to prevent the ends of the levers 10, carrying the bar 12, from dropping when the side doors 6 are thrown open. By removing the pin 14 and elevating the end of the upper lever 10, having the hand-grasp 13^a, both fastening-levers will be simultaneously disengaged from the side doors to permit of the opening of the latter.

Directly above one of the side doors 6 the press-box 2 is provided with a side feed-opening 16, within which works the feed-door 17, hinged to the lower side of said opening and secured at its free edge by a turnbuckle 19. The plunger 4 is adapted to be elevated to a position above the plane of the opening 16 when it is desired to fill the baling-chamber of the box with hay previous to the baling operation, as will be readily understood. The said plunger 4, which works within the press-box, has securely connected therewith the plunger-stem 20, preferably braced to the plunger 4 by means of the opposite inclined braces 21 and pivotally connected at its upper end, as at 22, to the under side of a walking-beam 23. The walking-beam 23 is pivotally mounted intermediate of its ends, as at 24, between the upper ends of a pair of upwardly-convergent frame-standards 25, suit-

ably connected together and forming an upright supporting-frame mounted on one end of the base-frame 1, and a pair of opposite inclined brace-rods 26 are connected, respectively, with the upper ends of the standards 25 and opposite sides of the frame 1 to provide for securely bracing said supporting-frame for the walking-beam in its upright position. At the side of its pivotal support 10 opposite the connection of the stem 20 therewith the walking-beam 23 carries a counter-balance-weight 27 for normally elevating the plunger 4 to a position above the feed-opening after the baling operation, and at its end 15 opposite the weight 27 the walking-beam 23 carries a pulley 28, through which is passed an operating-cable 29, one end of which is made fast to the sheave of a guide-pulley 30, loosely connected with the base-frame 1 at 20 one end thereof.

The operating-cable 29 passes around the guide-pulley 30 and over a guide-roller 31, journaled in a horizontal position between a pair of oppositely-located inclined braces 32, 25 arranged at one side of and against an upright windlass-frame 33, supported on the base-frame 1 between one end thereof and the press-box 2. The upright windlass-frame 33 essentially comprises a pair of oppositely-located frame-uprights 34 and a top cross-bar 35, detachably connected at its opposite ends with the upper ends of the uprights 34. The upright windlass-frame 33, constructed essentially as described, is provided between 35 its opposite uprights 34 with vertically-alined bearing-openings 36, receiving therein the oppositely-located spindle portions 37 and 37^a of an upright or vertically-disposed operating-windlass 38, on which winds and unwinds 40 one end of the operating-cable 29. The upright or vertically-disposed operating-windlass 38 is formed with an elongated upper spindle extremity 37, which is provided directly above the top cross-bar of the frame 45 33 with a squared portion 39, which receives the squared opening of the horizontally-disposed ratchet check-wheel 40 arranged to work on top of the frame 33, and directly above the ratchet check-wheel 40 is arranged 50 a friction-disk 41, also provided with a squared opening to fit over the squared portion 39 of the upper spindle of the windlass, said disk 41 and wheel 40 turning with the windlass by reason of their connection with the squared 55 spindle portion 39.

The friction-disk 41 is provided with a milled or roughened periphery 42, with which contact the correspondingly milled or roughened rounded cam ends 43, formed at the inner 60 extremities of the oppositely-located operating-levers 44. The operating-levers 44 are disposed at diametrically opposite sides of the windlass 38 and are duplicates in construction, it being observed that the inner 65 rounded cam ends 43 of the oppositely-located levers are reversely disposed with respect to each other in order to obtain a grip on

the friction-disk 41 when the said levers are moved simultaneously in the same direction. The oppositely-located operating-levers 44 70 are arranged to work in a horizontal plane and are pivotally secured at their inner ends by means of the pivot pins or bolts 45, respectively, to opposite arms 46^a of an oscillating lever-plate 46, loosely turning on the upper rounded extremity of the spindle 37 above 75 the friction-disk 41, and said oscillating lever-plate 46 may be conveniently held in place on the spindle 37 by means of a securing-pin 47, fitting transversely in an opening formed 80 in the spindle above the said plate 46.

The inner rounded cam ends of the oppositely-located operating-levers are normally held in frictional contact with the periphery 85 of the friction-disk 41 by means of the leaf-springs 48, secured fast at one end, as at 49, to the oppositely-extending arms of the lever-plate 46 and bearing at their free ends against the pins 50, projected from the upper sides of the levers 44 intermediate of the ends of the 90 latter. The normal tendency of the springs 48 is to oscillate the levers 44 on their pivots in the direction that will cause the rounded cam ends 43 to bind against the disk 41, so that when the said levers are moved in the 95 same direction in which the tension of the springs is exerted the windlass 38 will be caused to rotate and wind up the cable 29 thereon when it is desired to force the plunger 4 down onto the hay within the press-box 100 and compress the same into a bale, and a check dog or pawl 51 is pivotally mounted on top of the frame 33 and adapted to engage with the teeth of the ratchet check-wheel 40 to prevent the windlass from turning backward when a new grip of the levers 44 on the 105 ratchet-disk is being taken.

In operating the press the plunger is normally disposed in the position referred to to permit of the baling-chamber being filled with 110 hay through the feed-opening 16 of the press-box, and when a proper amount of hay has been placed within the press-box the feed-door is closed and the operating-levers 44 grasped and oscillated back and forward to 115 provide for turning the windlass 38 in a direction to wind up the operating-cable and cause a deflection of the plunger 4 onto the loose hay. When the levers 44 are moved in one direction, they will bind on the disk 41 and 120 cause the windlass 38 to rotate; but when swung in the direction opposite the direction in which the springs 48 exert their tension the said levers will turn sufficiently on their pivots 45 so as to loosen their grip on the disk 125 41 and by this means enable the operators to take a new grip on said disk, it of course being understood that the check dog or pawl 51 prevents the windlass from turning backward. When the hay has reached the de- 130 sired compression, the side doors 6 are opened to permit of the tying of the bale, and by then releasing the dog or pawl 51 the weight 27 swings the walking-beam 23 to its normal

position, the operating-cable 29 unreeling from the windlass 38 during this movement.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a press, an upright press-box provided with oppositely-located door-openings, oppositely-located side doors covering and uncovering said openings and hinged at one end to one end of the press-box, said doors being provided at their free ends with off-standing catch-pins, a pair of parallel fastening-levers pivotally mounted intermediate of their ends on one end of the press-box and provided in their opposite ends with diagonally opposite notches adapted to engage with the catch-pins of the oppositely-located doors, an intermediate connecting-bar pivotally connecting the two fastening-levers for simultaneous movement, and a locking-pin adapted to be detachably inserted in an opening in the press-box above one of the fastening-levers, substantially as set forth.

2. A hay-press power, comprising an upright windlass-frame, a windlass journaled vertically within the frame and having an elongated upper spindle, a ratchet check-wheel fitted on said upper spindle, a peripherally milled or roughened friction-disk fitted on said spindle above the ratchet check-wheel, a check dog or pawl pivotally mounted on the windlass-frame and engaging with the ratchet-wheel, an oscillating lever-plate loosely mounted on the said upper spindle above the ratchet-disk and having oppositely-extending arms, and spring-adjusted oppositely-

located operating-levers pivotally mounted on the opposite arms of the lever-plate and provided with inner rounded cam ends normally contacting with said friction-disk, substantially as set forth.

3. In a hay-press, an upright press-box, a counterbalanced walking-beam pivotally supported above the press-box and carrying a plunger working therein, a suitably-arranged upright windlass-frame, a windlass journaled vertically within the frame and having an elongated upper spindle provided with a squared portion, a ratchet check-wheel fitted on the squared portion of said upper spindle, a peripherally milled or roughened friction-disk fitted on said squared portion of the spindle above the ratchet check-wheel, a check dog or pawl pivotally mounted on the windlass-frame and engaging with the ratchet-wheel, an oscillating lever-plate loosely mounted on said upper spindle above the ratchet-disk and having oppositely-extending arms, oppositely-located operating-levers provided with inner rounded cam ends pivotally mounted on the oppositely-extending arms of the lever-plate, springs attached to the lever-plate and engaging with said operating-levers to provide for normally holding the cam ends thereof in contact with the friction-disk, and a suitably-guided operating-cable winding and unwinding on the windlass and having a pulley connection with the unweighted end of the walking-beam, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WM. A. KYLE.

Witnesses:

WM. J. ROBINSON,
POPE W. KEITH.