

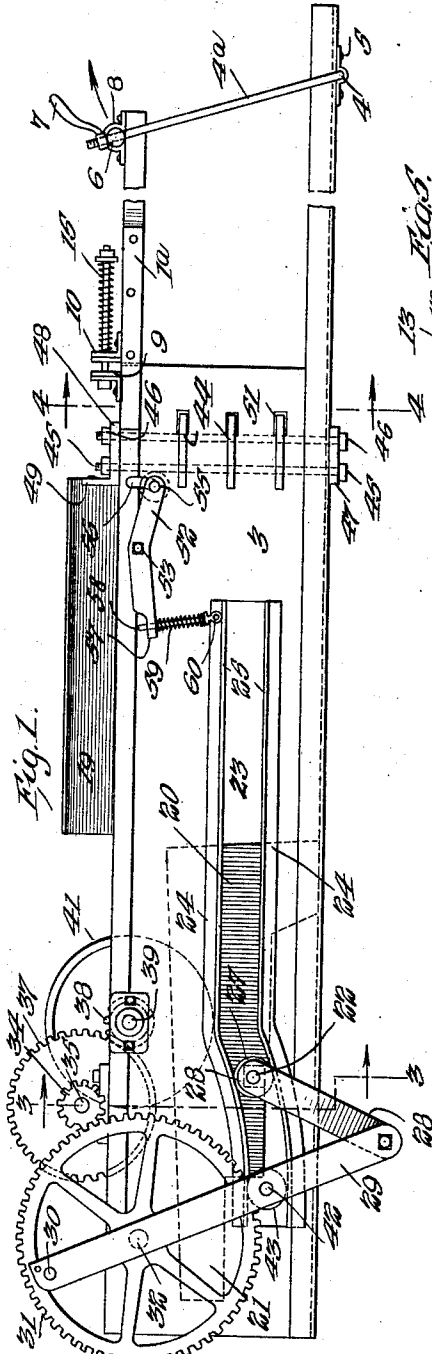
E. L. WETZIG.
HAY PRESS.

APPLICATION FILED APR. 3, 1912.

1,044,318.

Patented Nov. 12, 1912.

2 SHEETS—SHEET 1.



WITNESSES
E. L. Wetzig
C. E. Tramer

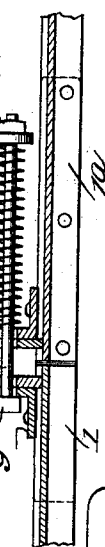
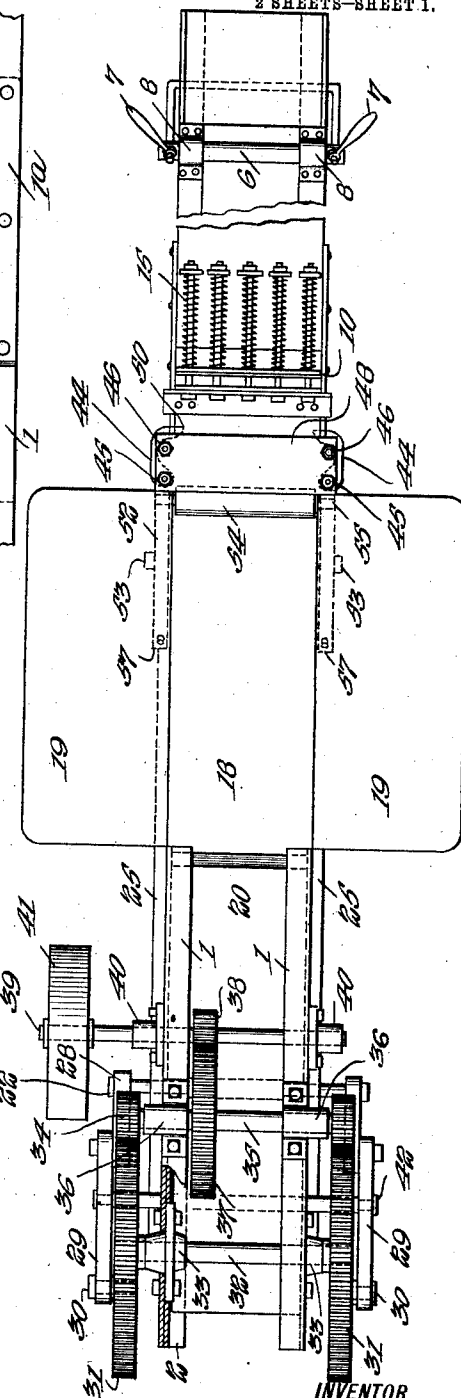


Fig. 3.



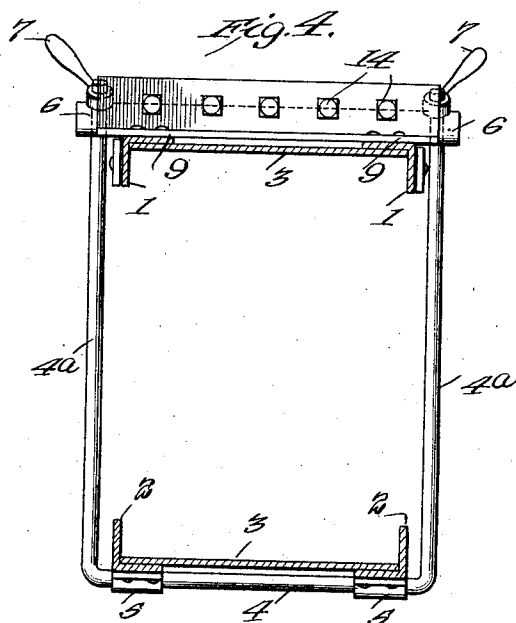
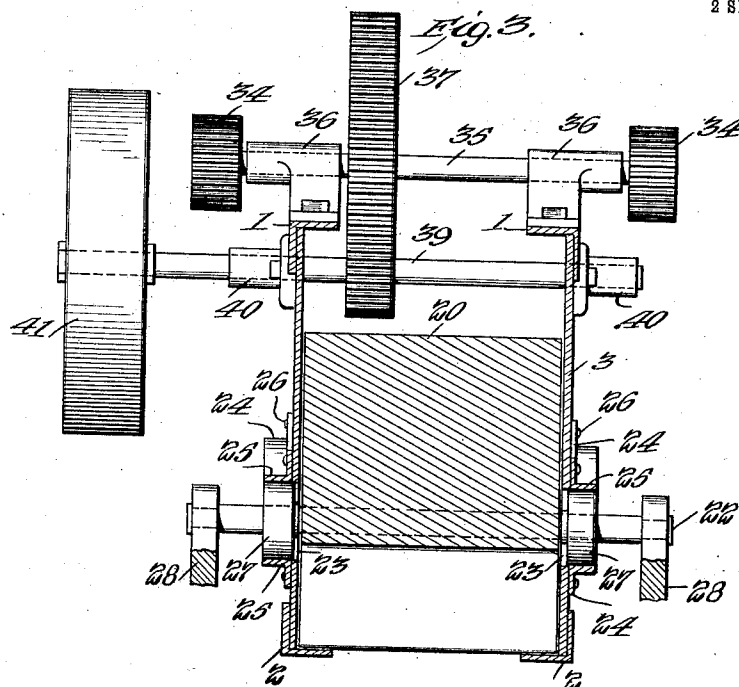
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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

ERNEST L. WETZIG, OF CLINT, TEXAS.

HAY-PRESS.

1,044,318.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed April 3, 1912. Serial No. 688,152.

To all whom it may concern:

Be it known that I, ERNEST L. WETZIG, a citizen of the United States, and resident of Clint, in the county of El Paso, State of Texas, have invented a new and useful Improvement in Hay-Presses, of which the following is a specification.

My invention is an improvement in hay presses, and has for its object the provision of means in a press of the character specified for reciprocating the plunger at regular intervals, and wherein the connection between the operating means and the plunger is of a character to transmit a high proportion of the power of the motor with a long working stroke and a quick return.

In the drawings: Figure 1 is a side view of the improvement; Fig. 2 is a plan view; Figs. 3 and 4 are sections on the lines 3—3 and 4—4, respectively, of Fig. 1; and Fig. 5 is an enlarged detail view of a portion of the pressing chamber.

The present embodiment of the invention comprises a frame composed of upper and lower pairs of longitudinal bars 1 and 2, of angle material, connected at one end by plates 3 to form a casing or pressing chamber for the material to be pressed. The bars 1 are of less length than the bars 2, and extensions 1^a are arranged in alinement with the said bars 1 and are secured thereto in a manner to be presently described.

A yoke or bail has its body 4 journaled in bearings 5 on the under faces of bars 2, and the arms 4 of the yoke or bail are passed through openings in the ends of a rod 6 journaled in bearings 8 on the extensions 1^a, and handle nuts 7 are threaded onto the ends of the arms above the rod.

An angle plate 9 is arranged transversely of the bars 1 adjacent to the extensions 1^a, and a similar plate 10 is arranged transversely of the extensions near the plate 9. Each plate has one of its portions secured to the bars 1 or 1^a, and the other portion extending vertically, and bars 11 and 12 are arranged on the inner faces of plates 9 and 10, respectively.

The vertical portions of plates 9 and 10 and bars 11 and 12 are perforated at spaced intervals, the perforations of the respective plates and bars being in alinement, and bolts 13 are passed through the openings, the said bolts extending longitudinally of the frame and having their heads 14 bearing against the outer face of plate 9 (Fig. 5).

A spring 15 encircles each bolt, bearing at one end against the outer face of plate 10 and at the other against a washer 16. A nut 17 engages each bolt adjacent to the washer.

An opening 18 is provided in the upper side of the pressing chamber at approximately the longitudinal center of the frame, and inclined deflecting or guide boards 19 are arranged at the sides of the opening. A plunger is provided in the chamber for pressing the hay, and the said plunger comprises a head 20 and a shank 21.

A shaft 22 is arranged transversely of the plunger near the junction of shank and head, and the ends of the shaft extend laterally through slots or guide openings 23 in the side walls of the chamber. An L-shaped or angle plate is arranged at each side of each slot or guide opening, and each plate consists of a portion 24 secured to the outer face of the side wall of the chamber by bolts or rivets 26 and a portion 25 extending laterally from the said wall.

The portions 25 of the plates at each slot or opening are parallel and form a track or guideway for a roller 27 on the shaft. The slots or openings are horizontal and straight for the greater portion of their length, but near their outer ends the said slots or openings are curved downwardly, the concavity of the curve being upwardly, and the plates 24—25 follow the curve of the slots (Fig. 1).

The ends of shaft 22 are extended beyond the side walls of the pressing chamber, and each end of the shaft 22 has a link 28 pivoted thereon. Each link has its opposite end pivoted to one end of a lever 29, whose opposite end is pivoted to a wrist pin 30 on a gear wheel 31 secured to the adjacent end of a shaft 32, arranged transversely of the chamber and journaled in bearings 33 in the side walls of the chamber.

Each gear wheel 31 meshes with a pinion 34 on the adjacent end of a counter shaft 35, journaled in bearings 36 on the bars 1, and provided intermediate its ends with a gear wheel 37. The gear wheel 37 meshes with a pinion 38 on a driving shaft 39, journaled in bearings 40 in the side walls of the chamber, and provided at one end with a pulley 41 for the engagement of a belt from any suitable motor.

Each of the levers 29 before mentioned is pivoted intermediate its ends, and nearer

the link 28 than the wrist pin 30, to the adjacent end of a shaft 42, and the said shaft is arranged transversely of the pressing chamber in the slots or openings 23, and is provided with wheels 43 engaging the guide or trackway formed by the angle plates 24—25 before mentioned.

When the driving shaft 39 is rotated the levers 29 once during each rotation of shaft 32 will be swung on the shaft 42 in such manner that the lower ends of the levers will be raised, thus moving the links 28 into a more nearly horizontal position and causing them to move the plunger toward the opening 18 of the chamber.

The shaft 22 must follow the guide or trackway, on account of the wheels 27, and shafts 22 and 42 will move in the said guide or trackways toward the opening 18 until the wrist pin 30 begins to move away from the said opening. The plunger is thus reciprocated once for each complete rotation of shaft 32. The gearing between driving shaft 39 and shaft 32 is a reducing gear, so that shaft 39 rotates at a much lower speed than shaft 32.

The material to be pressed, as, for instance, hay, is fed through opening 18, and is compressed against a plurality of series of trips 44, one of the series being arranged at each side of the pressing chamber. Each trip is pivoted at one end on a rod 45 arranged in vertical position just outside the chamber. A second rod 46 is arranged adjacent to each rod 45, and each trip is recessed on its inner side to receive the said rod.

The rods are passed through a plate 47 on the under side of the chamber along the outer face of the side wall of the chamber and through the horizontal portion 48 of an angle plate whose vertical portion 49 extends upwardly at the rear of opening 18. Each trip arm has a lateral lug 50 which extends through an opening 51 in the chamber wall into position for engagement by the material as it is pressed.

A lever 52 is pivoted at 53 at each side of the chamber at the rear end of opening 18, and a roller 54 is arranged transversely of the chamber below the rear end of the opening 18, the roller having trunnions 55 passing through arc-shaped slots 56 in the side walls and engaging the rear ends of the levers 52. Each lever 52 has a vertically perforated lug 57 at its forward end.

A rod 58 has one of its ends passed through the perforation of the lug, and a spring 59 encircles each rod between the lug and a head 60 on the lower end of the rod pivoted to the plate 24—25 adjacent to the lever. The roller may thus move upwardly as the bale increases in size, but is normally pressed toward the lower ends of slots 56 by the springs.

The plates 3 closing in the sides and top of the baling or pressing chamber extend only to the junction between the bars 1 and extensions 1^a, and the space between the extensions 1^a and the lower bars 2 is open, to permit access to the bale for the placing of wires. As the bale is pressed toward the yoke 4—4^a, the extensions 1^a may move longitudinally away from the bars 1 and also upwardly to some extent away from the bars 2 against the resistance of springs 15. The said parts swing on the yoke or bail, and the nuts 7 may be turned to vary the pressure exerted by the bail.

The arrangement of the operating mechanism for the plunger permits powerful leverage and a consequent increase in efficiency, together with a long pressing stroke and a very quick return of the plunger.

I claim:

1. A press, comprising a pressing chamber having a feed opening intermediate its ends in its upper side, the chamber having each of its side walls longitudinally slotted, an angle plate at each side of each slot having one of its portions secured to the outer face of the side wall and the other portion extending horizontally outward, and forming with the adjacent plate a trackway, a plunger in the chamber, a shaft journaled in the plunger and extending through the slots at each end, a wheel on each end of the shaft engaging the trackway, links pivoted to the ends of the shaft, levers pivoted to the other ends of the links, a shaft passing through the slots adjacent to the first shaft, each lever being journaled intermediate its ends on the adjacent end of the shaft, a shaft journaled transversely of the chamber above the outer ends of the slots, a gear wheel at each end of the shaft, each gear wheel having a wrist pin on which the other end of the adjacent lever is journaled, and means for rotating the shaft, said means comprising a driving shaft, and a reducing gear connection between the driving shaft and the gear wheels.

2. A press, comprising a pressing chamber having a feed opening intermediate its ends in its upper side, the chamber having each of its side walls longitudinally slotted, an angle plate at each side of each slot having one of its portions secured to the outer face of the side wall and the other portion extending horizontally outward, and forming with the adjacent plate a trackway, a plunger in the chamber, a shaft journaled in the plunger and extending through the slots at each end, a wheel on each end of the shaft engaging the trackway, links pivoted to the ends of the shaft, levers pivoted to the other ends of the links, a shaft passing through the slots adjacent to the first shaft, each lever being journaled intermediate its ends on the adjacent end of the shaft, a

shaft journaled transversely of the chamber above the outer ends of the slots, a gear wheel at each end of the shaft, each gear wheel having a wrist pin on which the other end of the adjacent lever is journaled, and means for rotating the shaft.

3. A press, comprising a pressing chamber having a feed opening intermediate its ends in its upper side, the chamber having each of its side walls longitudinally slotted, a plunger in the chamber, a shaft journaled in the plunger and extending through the slot at each end, links pivoted to the ends of the shaft, levers pivoted to the other ends of the links, a shaft passing through the slots adjacent to the first shaft, each lever being journaled intermediate its ends on the adjacent end of the said shaft, a shaft journaled transversely of the chamber above the outer ends of slots, a gear wheel at each end of the shaft, each gear wheel having a wrist pin on which the other end of the adjacent lever is journaled, and means for rotating the shaft.

4. A press, comprising a pressing chamber provided with a feed opening intermediate its ends, a plunger slidable in the chamber longitudinally thereof, and means for reciprocating the plunger, said means comprising a shaft journaled transversely of the plunger, the side walls of the chamber being longitudinally slotted to permit the passage of the ends of the shaft, a wheel on each end of the shaft, a track plate at each side of each slot for engagement by the wheels, a shaft journaled transversely of the chamber above the outer ends of the slots, means for rotating said shaft, a wheel provided with a wrist pin on each end of the shaft, levers pivoted at one end to each wrist pin, links connecting the other ends of the levers to the shaft of the plunger, a shaft connecting the levers intermediate their ends and passing through the slots, and a wheel on each end of the shaft engaging the track plates.

5. A press, comprising a pressing chamber provided with a feed opening intermediate its ends, a plunger slidable in the chamber longitudinally thereof, and means for reciprocating the plunger, said means comprising a shaft journaled transversely of the plunger, the side walls of the chamber being longitudinally slotted to permit the passage of the ends of the shaft, a wheel on each end of the shaft, a track plate at each side of each slot for engagement by the wheels, a shaft journaled transversely of the chamber above the outer ends of the slots, means for rotating said shaft, a wheel provided with a wrist pin on each end of the shaft, levers pivoted at one end to each wrist pin, links connecting the other ends of the levers to the shaft of the plunger, and a wheel journaled on each lever inter-

mediate its ends and engaging the track plates of the adjacent slots.

6. A press, comprising a pressing chamber provided with a feed opening intermediate its ends, a plunger slidable in the chamber longitudinally thereof, and means for reciprocating the plunger, said means comprising a shaft journaled transversely of the plunger, the side walls of the chamber being longitudinally slotted to permit the passage of the ends of the shaft, a wheel on each end of the shaft, a shaft journaled above the outer ends of the slots, a wheel provided with a wrist pin at each end of the shaft, means for rotating the shaft, levers pivoted at one end to each wrist pin, links connecting the other ends of the levers to the shaft of the plunger, and a shaft connecting the levers intermediate their ends and passing through the slots.

7. A press, comprising a pressing chamber provided with a feed opening intermediate its ends, a plunger slidable in the chamber longitudinally thereof, and means for reciprocating the plunger, said means comprising a shaft journaled transversely of the plunger, the side walls of the chamber being longitudinally slotted to permit the passage of the ends of the shaft, a shaft journaled above the outer ends of the slots, a wheel provided with a wrist pin at each end of the shaft, means for rotating the shaft, levers pivoted at one end to each wrist pin, links connecting the other ends of the levers to the shaft of the plunger, and a shaft connecting the levers intermediate their ends and passing through the slots.

8. In a press, a pressing chamber provided with a feed opening intermediate its ends in its upper side, a plunger slidable in the chamber at one end thereof, means for reciprocating the plunger toward and from the other end of the chamber, the top wall of the chamber being divided on the opposite side of the feed opening from the plunger to form a movable section, each section of the top wall having a vertical flange at the meeting end thereof, a plurality of bolts passing through the flanges and being movable with respect thereto, springs between one end of the bolts and the adjacent flange, a bail comprising a body and arms, the body being pivoted to the main section of the chamber, the movable section having a roller provided at each end with an opening for receiving the adjacent arm of the bail, and a handle nut threaded on to each arm above the roller.

9. In a press, a pressing chamber provided with a feed opening intermediate its ends in its upper side, a plunger slidable in the chamber at one end thereof, means for reciprocating the plunger toward and from the other end of the chamber, the top wall of the chamber being divided on the opposite side

of the feed opening from the plunger to form a movable section, each section of the top wall having a vertical flange at the meeting end thereof, a plurality of bolts passing through the flanges and being movable with respect thereto, springs between one end of the bolts and the adjacent flange, a swinging connection between the sections of the chamber for permitting the movable section to swing away from the main section, and means in connection with the said connection for varying the extent of the swinging movement.

10. In a press, a pressing chamber provided with a feed opening intermediate its ends in its upper side, a plunger slidable in the chamber at one end thereof, means for reciprocating the plunger toward and from the other end of the chamber, the top wall of the chamber being divided on the opposite side of the feed opening from the plunger to form a movable section, each section of the top wall having a vertical flange at the meeting end thereof, a plurality of bolts passing through the flanges and being movable with respect thereto, springs between one end of the bolts and the adjacent flange, and a swinging connection between the sections for permitting the movable section to move away from the main section.

11. In a press, a pressing chamber provided with a feed opening intermediate its ends in its upper side, a plunger slidable in the chamber at one end thereof, means for reciprocating the plunger toward and from the other end of the chamber, the top wall of the chamber being divided on the opposite side of the feed opening from the plunger to form a movable section, a yielding connection between the sections at the inner end of the movable section, and a swinging connection between the sections at the outer end of the movable section.

12. In a press, a pressing chamber provided with a feed opening intermediate its ends in its upper side, a plunger slidable in the chamber at one end thereof, means for reciprocating the plunger toward and from the other end of the chamber, the top wall of the chamber being divided on the opposite side of the feed opening from the plun-

ger to form a movable section, a yielding connection between the sections for permitting the movable section to move away from the main section, and means for varying the tension of the said connection.

13. In a press, a pressing chamber provided with a feed opening intermediate its ends in its upper side, a plunger slidable in the chamber at one end thereof, means for reciprocating the plunger toward and from the other end of the chamber, the top wall of the chamber being divided on the opposite side of the feed opening from the plunger to form a movable section, and a yielding connection between the sections for permitting the movable section to move away from the main section.

14. In a press, comprising a pressing chamber having a feed opening, and a plunger mounted to reciprocate in the chamber on one side of the opening, said chamber having a movable top section on the other side of the feed opening, and a yielding connection between the movable section and the main section of the chamber.

15. In a press, comprising a feeding chamber having a feed opening and a plunger mounted to reciprocate in the chamber on one side of the opening, said chamber having its side walls cut away on the other side of the feed opening from the plunger and the top wall being divided into sections at the end of the side walls, a swinging connection between the outer section of the top wall and the bottom wall of the chamber, and a yielding connection between the said outer section and the inner section.

16. In a press, comprising a feeding chamber having a feed opening and a plunger mounted to reciprocate in the chamber on one side of the opening, said chamber having its side walls cut away on the other side of the feed opening from the plunger and the top wall being divided into sections at the end of the side walls, and a yielding connection between the outer section of the top wall and the inner section.

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Witnesses:

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