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Patented Sept. 18, 1900.

W. D. WATKINS & T. P. PRUIT.

BALING PRESS.

(Application filed Feb. 28, 1900.)

(No Model.)

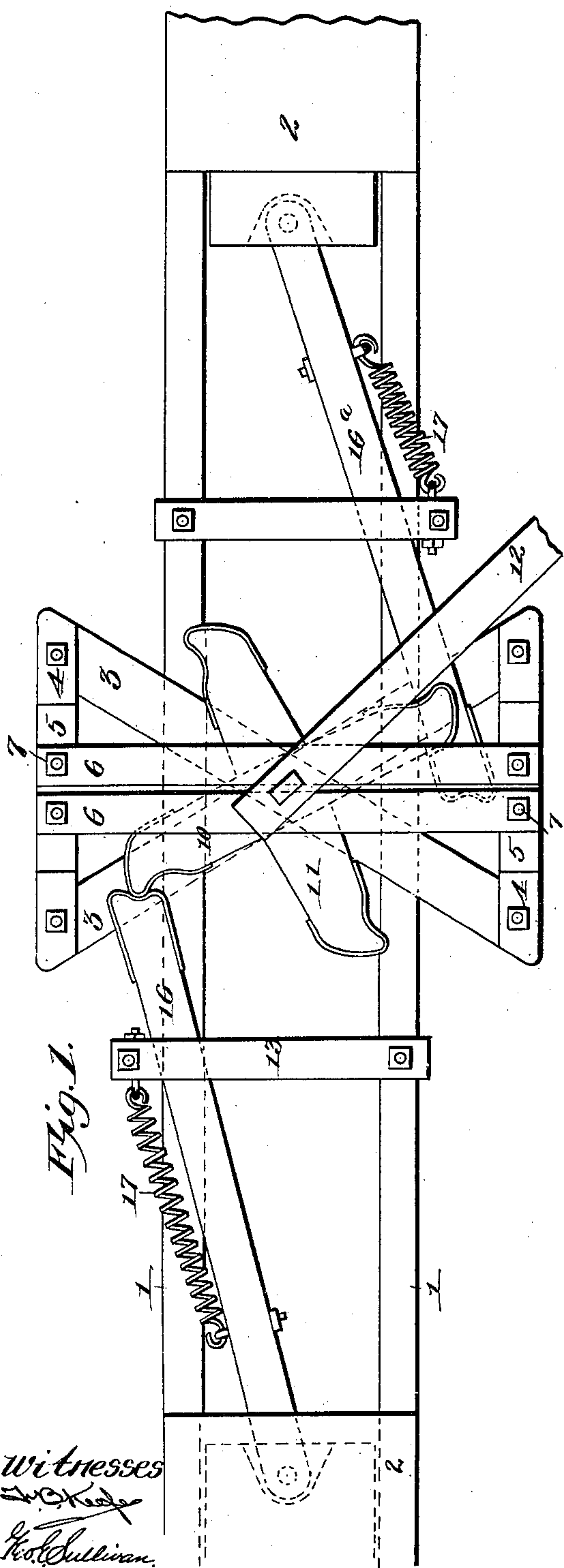


Fig. 1.

Witnesses
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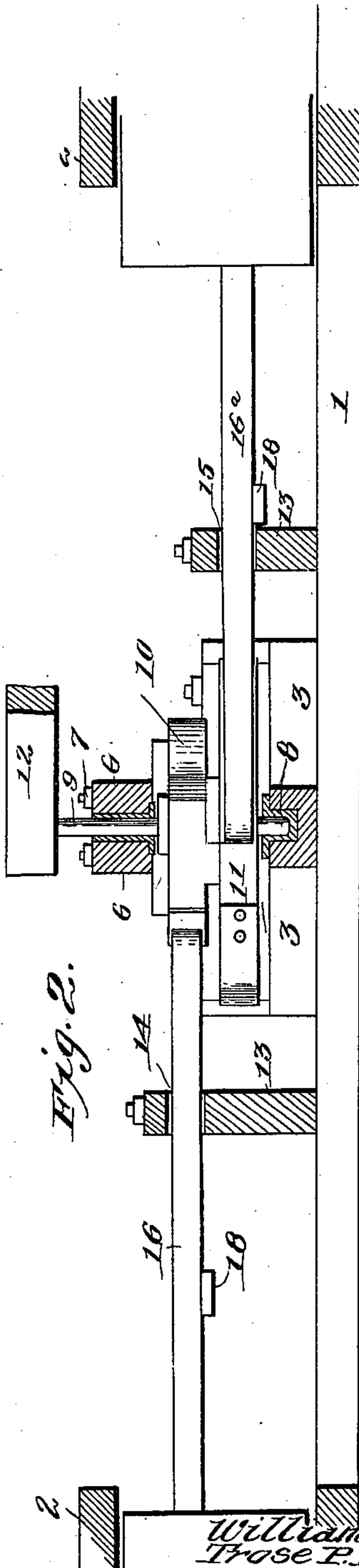


Fig. 2.

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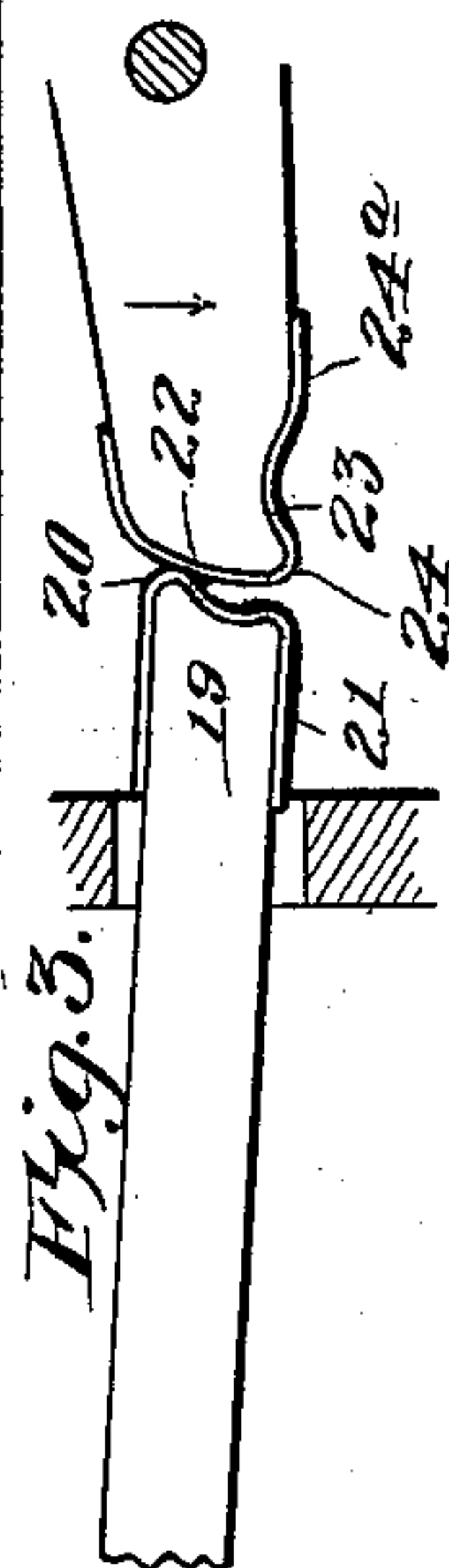


Fig. 3.

UNITED STATES PATENT OFFICE.

WILLIAM D. WATKINS AND TROSE P. PRUIT, OF BROWNWOOD, TEXAS.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 658,304, dated September 18, 1900.

Application filed February 28, 1900. Serial No. 6,875. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM D. WATKINS, and TROSE P. PRUIT, citizens of the United States, residing at Brownwood, in the county of Brown and State of Texas, have invented new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to baling-presses, and has for its object to provide a duplex baling-press of improved construction, wherein the power is alternately applied by novel mechanism to the two baling-plungers in such manner that only one plunger at a given time is operating to compress the bale, and at the completion of the stroke thereof the other plunger is operated to compress its bale, the arrangement being such that the plungers are alternately engaged and released by the power mechanism and are automatically returned to operative position after they have been released. It is also the purpose to improve, simplify, and render more durable the construction and increase the efficiency and rapidity of the operation of this class of baling-presses generally.

To these ends our invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a top plan view of our improved baling-press. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a detail top plan view of the power.

In carrying our invention into effect we form a frame comprising two parallel sills 1, to the opposite ends of which are attached the baling-boxes 2, of usual or any preferred construction, and firmly bolted to said sills intermediate the ends of the latter is the power bed or frame, comprising two beams 3, which cross each other diagonally midway between their ends, where they are mortised together, and near their ends are bolted to the sills 2. Seated on and bolted to the opposite outer ends of the two diagonal beams 3 are cross-beams 4, and on the upper sides of said cross-beams are arranged blocks 5. The opposite ends of two beams 6 rest centrally on the

blocks 5, and through the cross-beams 4, blocks 5, and beams 6 are passed vertical bolts 7, which operate to firmly tie said parts together. As shown, the beams 6 are secured closely side by side and fitted centrally therein, and in the intersecting portions of the two crossed diagonal beams 3 are metallic bearings or boxes 8, in which is journaled a vertical shaft 9. On the shaft 9, between the beams 3 and 6, is rigidly fixed a duplex or cruciform power-head, comprising two bars 10 and 11, arranged at right angles to one another and firmly bolted together, and on the upper end of the shaft 9 is fixed a horse-power sweep 12.

Fixed on the sills intermediate the power and the bale-boxes are two guides, each consisting of a horizontally-slotted frame 13, bolted transversely to the sills, the slot 14 of one of the guides being arranged at a higher level or at a greater distance above the sills 2 than the corresponding slot 15 in the other guide for the purpose hereinafter made apparent. Loosely passing through the slots in the guides 13 are two plunger-beams 16 and 16^a, the outer ends of said plunger-beams being pivotally connected to plungers arranged to reciprocate in the bale-boxes. To each of the plunger-beams is attached one end of a coiled spring 17, the other end of the spring being attached to one end of the adjacent guide 13, the springs operating to retract the plunger-beams and plungers after they have pressed a bale and to draw the plunger-beams to one side, as will hereinafter be explained, stops 18 being fastened to the plunger-beams and abutting the guides 13 to check or limit the rebound of said beams. As shown, the bars 10 and 11 of the cruciform power-head are fixed on the shaft 9, one above the other, and by forming the slots 14 and 15 at different levels, as described, one of the plunger-beams 16 will lie in the same plane as the bar 10, while the other plunger-beam 16^a will lie in the plane of the bar 11. The inner end of each plunger-beam is notched or forked, as shown at 19, one of the forked ends, as 20, being slightly longer than the other, and said notched or forked ends are shod with correspondingly-shaped metallic straps 21. The opposite ends of each of the bars 10 and 11 are reversely curved or rounded off, as indicated

at 22, and their diagonally-opposite end edges are recessed, as indicated at 23, thereby forming angularly-projecting fingers 24, that are adapted to engage the notched or forked ends 5 of the plunger-beams. The ends of the bars 10 and 11 are also shod with metallic straps 24, as shown.

The operation of our improved baling-press is as follows: The draft-team is harnessed to 10 the free end of the sweep 12 and the latter is revolved about the shaft 9, rotating the latter and with it the cruciform power-head. As the latter is rotated the finger 24 on one of the arms of the bars 10 or 11—say 11, for ex- 15 ample—will engage the notched or forked end 19 of the adjacent plunger-beam 16 and force the latter longitudinally outward and simultaneously laterally inward. As the bar 11 and plunger-beam 16 approach a position in 20 which they will be in, alinement the longer forked arm 20 of the plunger-beam will engage the rounded edge 22 of the bar and will operate as a lever to throw the finger 24 out of engagement with the notched end of the 25 plunger-beam, and the latter will then glide off said rounded end of the bar and will be immediately retracted by its spring 17 and simultaneously drawn laterally to its former position to be engaged by the end of the other 30 arm of the bar 11 when it moves around to the proper position for such purpose. It will of course be understood that as the plunger-beam 16 was forced outward by the power-head its plunger was also moved forward in 35 its bale-box to compress the bale. About the same time the end of the bar 11 disengages the end of the plunger-beam 16 the end of one arm of the bar 10 engages the end of the plunger-beam 16^a to force it outward to 40 compress a bale in the other bale-box and then release the plunger-beam. In this manner one or the other of the plunger-beams and its plunger is always during the operation of the machine compressing a bale, and 45 as soon as one plunger-beam is released by its bar on the power-head the other plunger-beam will be engaged and thrust outward by the other bar of the power-head, whereby at each complete revolution of the sweep four 50 compressions will be made, two in each bale-box.

It will of course be understood that as a bale is being compressed in one of the bale-boxes the other bale-box is prepared for the 55 succeeding compression to be made therein. It will also be noted that the cruciform power-head is never thrusting forward both plunger-beams at the same time, and hence the team never has to exert more than sufficient power 60 at one and the same time than is necessary to make a single compression.

Having described our invention, what we claim is—

1. In a duplex baling-press, the combination 65 with two bale-boxes and their reciprocating plungers and plunger-beams, of the intermediate rotatable cruciform power-head

comprising two crossed bars arranged in different horizontal planes, and means for rotating the power-head, the ends of one of the 70 said bars being arranged to alternately engage the free end of one of the plunger-beams, and the ends of the other bar being arranged to alternately engage the end of the other 75 plunger-beam so that each plunger will be twice operated during a single rotation of the power-head, substantially as described.

2. In a duplex baling-press, the combination with two bale-boxes and their reciprocating plungers and plunger-beams, of means 80 for retracting the plunger-beams and drawing their inner ends laterally away from one another, a rotatable cruciform power-head arranged between the inner adjacent ends of the plunger-beams and comprising two crossed 85 bars arranged in different horizontal planes, and means for rotating the power-head, the ends of one of the said bars being arranged to alternately engage the free end of one of the plunger-beams, and the ends of the other 90 bar being arranged to alternately engage the end of the other plunger-beam so that each plunger will be twice operated during a single rotation of the power-head, substantially as described. 95

3. In a duplex baling-press, the combination with two bale-boxes and their plungers, and the plunger-beams arranged in different horizontal planes and pivotally connected at 100 their opposite outer ends to the plungers, of a rotatable cruciform power-head arranged between the inner adjacent ends of the plunger-beams and comprising two crossed bars arranged in different horizontal planes corresponding to the horizontal planes of the plun- 105 ger-beams, the ends of one of the said bars being arranged to alternately engage the free end of one of the plunger-beams, and the ends of the other bar being arranged to alternately engage the free end of the other 110 plunger-beam, and springs for retracting said plunger-beams so that each plunger will be twice operated during a single rotation of the power-head when the latter are released by 115 the power-head and for drawing them laterally to one side into position to be again engaged by the power-head, substantially as described.

4. In a duplex baling-press, the combination with two bale-boxes and their plungers, 120 and the plunger-beams arranged in different horizontal planes and pivotally connected at their opposite outer ends to the plungers, of a rotatable cruciform power-head arranged between the inner adjacent ends of the plun- 125 ger-beams and comprising two crossed bars disposed in different horizontal planes corresponding to the horizontal planes of the plunger-beams, the ends of one of the said bars being arranged to alternately engage 130 the free end of one of the plunger-beams, and the ends of the other bar being arranged to alternately engage the free end of the other plunger-beam, the arrangement being such

that as one of the bars is about to release one of the plunger-beams, the other bar engages the other plunger-beam so that each plunger will be twice operated during a single rotation of the power-head, and means for retracting said plunger-beams and drawing them laterally to one side, substantially as described.

5. In a duplex baling-press, the combination with the two baling-presses and their plungers and the plunger-beams disposed in different horizontal planes and pivotally connected at their opposite outer ends to the plungers, of horizontally-slotted guides in which the plunger-beams reciprocate and are free to move laterally, a rotatable cruciform power-head arranged between the inner adjacent ends of the plunger-beams and comprising two crossed bars disposed in different horizontal planes corresponding to the horizontal planes of the plunger-beams, the ends of one of the said bars being arranged to alternately engage the free end of one of the plunger-beams, and the ends of the other bar being arranged to alternately engage the free end of the other plunger-beam so that each plunger will be twice operated during a single rotation of the power-head, coiled springs each attached at one end to one of the plunger-beams and at its other end to one end of the corresponding guide, and stops attached to the plunger-beams and operating to abut the guides and check or limit the re-

bound of the plunger-beams, substantially as described.

6. In a duplex baling-press, the combination with the two parallel sills and the bale-boxes attached to the opposite sides thereof, of the horizontally-slotted guides fixed to the sills intermediate the bale-boxes, the power-head frame fixed to the sills between the said guides and comprising two diagonally-crossed beams bolted transversely to the sills, cross-beams fixed to the outer ends of the diagonally-crossed beams, transverse beams fixed on said cross-beams, a vertical shaft journaled in said transverse beams and diagonally-crossed beams, a sweep fixed on the upper end of the shaft, a cruciform power-head fixed on said shaft, and plunger-beams fixed at their outer ends to the plungers and arranged to be alternately engaged and released by the power-head so that each plunger will be twice operated during a single rotation of the power-head, said plunger-beams being arranged to freely move in said guides, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

WILLIAM D. WATKINS.
TROSE P. PRUIT.

Witnesses:

J. H. REESE.
E. SELLESEN.