(No Model.) 2 Sheets—Sheet 1.

A. N. PETERS.

PRESS.

No. 454,662. Patented June 23, 1891.

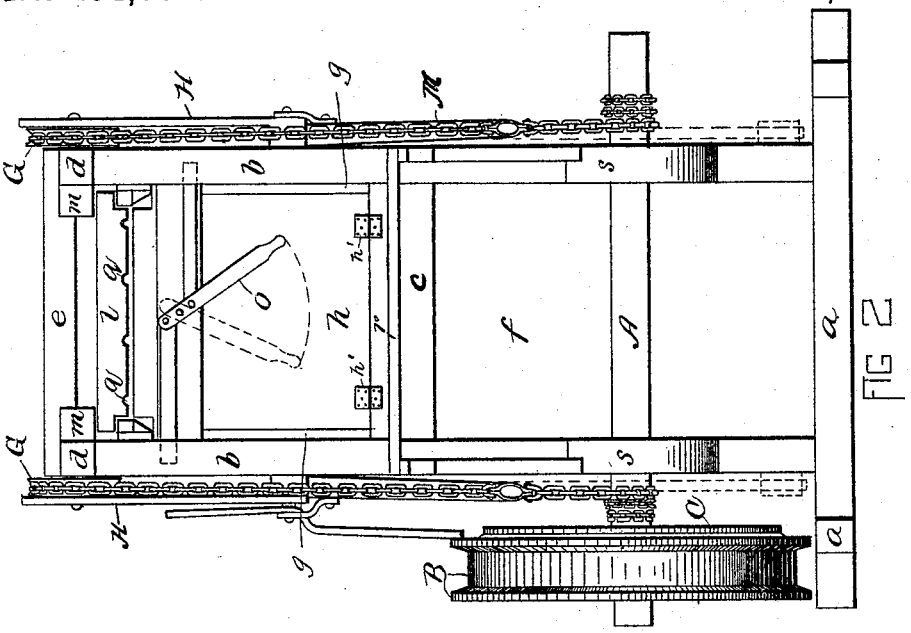

FIG 2

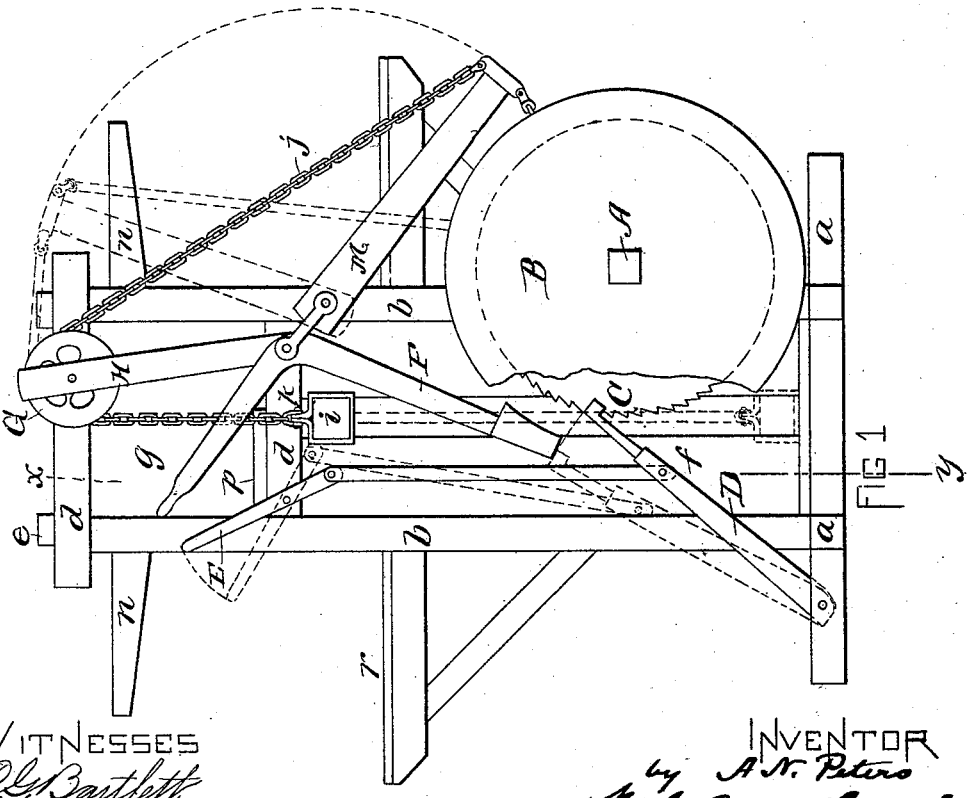

FIG 1

WITNESSES
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INVENTOR
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Wright, Brown & Crosby.
Attys.

(No Model.) 2 Sheets—Sheet 2.

A. N. PETERS.

PRESS.

No. 454,662. Patented June 23, 1891.

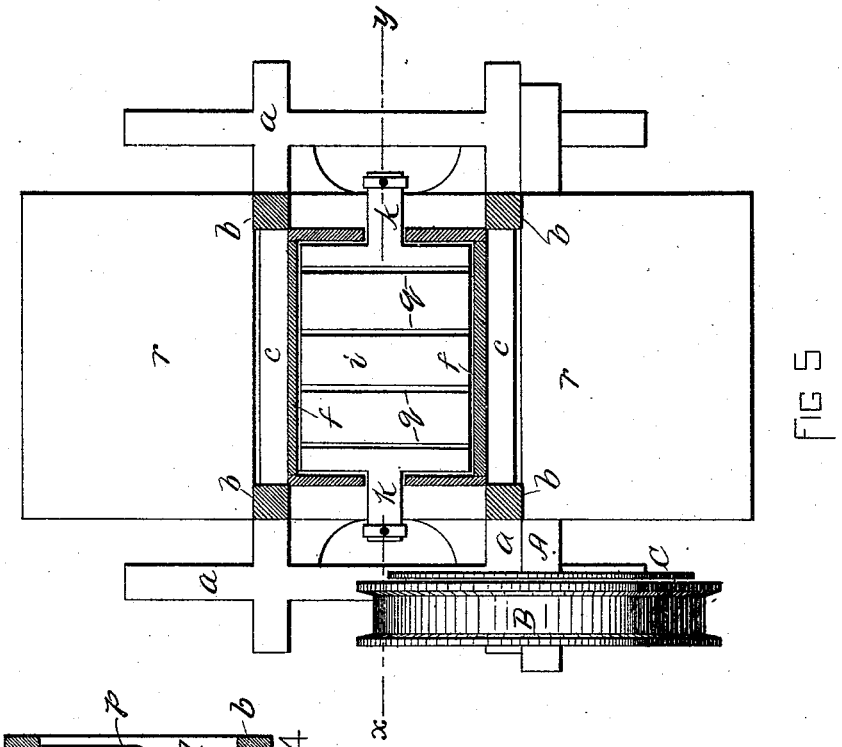

FIG 5

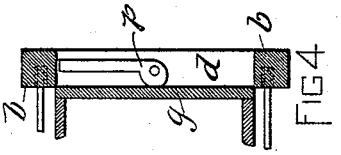

FIG 4

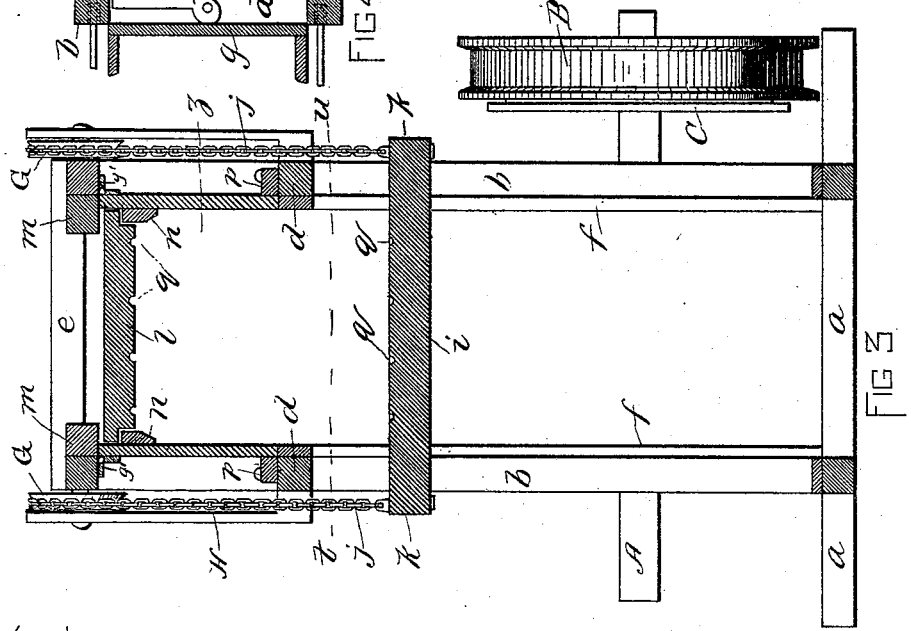

FIG 3

WITNESSES
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UNITED STATES PATENT OFFICE.

ALEXANDER NEVERS PETERS, OF ST. JOHN, CANADA.

PRESS.

SPECIFICATION forming part of Letters Patent No. 454,662, dated June 23, 1891.

Application filed November 15, 1890. Serial No. 371,521. (No model.) Patented in Canada March 5, 1890, No. 33,869.

To all whom it may concern:

Be it known that I, ALEXANDER NEVERS PETERS, of St. John, New Brunswick, have invented certain new and useful Improvements in Presses, (patented in Canada March 5, 1890, No. 33,869,) of which the following is a specification.

My invention has relation to presses designed to compress hay, straw, peat, excelsior, wool, and other fibrous material into bales to be bound for storage or shipment.

It is the object of the invention to provide such improvements in baling-presses as will render the same simple in and cheap of construction and at the same time provide a press which may be readily used, be certain in its operation, and be thoroughly efficient for the purposes for which it is invented.

Reference is made to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side view of a machine embodying my inventions. Fig. 2 is a view of the front of said machine or of that side which is to the right in Fig. 1. Fig. 3 is a vertical section on the line *x y* on Figs. 1 and 5 and looking toward the front of the machine. Fig. 4 is a plan at *z* on Fig. 3. Fig. 5 is a horizontal section and plan on the line *t u* on Fig. 3.

My invention comprises a wheel and axle, pulleys, chains, &c., constructed and arranged in such a manner that when power is applied to cause the large wheel to revolve either by uncoiling a rope from its circumference by a power moving horizontally in a straight line or by gearing said large wheel with a suitable engine, the movable bottom of the well of the machine may be drawn up with a force much greater than the power applied.

My invention comprises the aforesaid parts constructed and arranged with respect to arms or accumulators, which are stout bars of wood, iron, or any rigid material, pivoted at one end to the frame-wood of the machine, and their other end is attached to the lifting-chain in such a way as to describe an arc of a circle as the chains are wound upon the axle. The effect of these arms is to cause the movable bottom of the well to rise with great rapidity during the first part of its ascent, but to cause it to move more slowly, but with vastly-increased force, as it attains the limit of its upward course, thus accumulating the effect of uniformly-moving force or power on the increased resistance of the more and more closely-packed material in the press.

On the drawings, *a a* are four crossed sills forming the base of the machine. *b b b b* are four uprights, *c c* and *d d* are cross-ties, and *e e* head-pieces. All these are of stout wood, framed and bolted together in a substantial manner to resist the great strains arising from the working of the press. The space between the four uprights is inclosed with stout planks *f f*, forming the lower part of the pit or well of the machine.

g h are doors forming the upper part of the well, the doors *g g* being hinged to the frame, as indicated at *g'* in Fig. 3, and the doors *h* being also hinged to the frame, as at *h'* in Fig. 2.

i is a movable bottom, which is drawn upward by the chain *j*, fastened to it by the lugs *k k*.

l is a cover of strong plank prevented from being pushed upward by the cross-pieces *m m*, but free to move forward or back on the ways or arms *n n*.

o is a double-acting bolt and lever to hold door *h* in its vertical position.

p is an eccentric-lever pivoted on the cross-tie *d*, which being revolved allows the door or flap *g* to slightly open to free the bundle when ready for removal.

q q are grooves in the bottom and cover, through which wire or other binding material may be pushed.

r r are platforms of plank on which workmen stand to handle the bales.

A is a stout axle fastened to the uprights *b b* by cleats *s s*, around which the lifting-chains *j j* are coiled as the bottom of the press is lifted.

B is a large wheel, to which power is applied either by uncoiling a rope from its circumference by the traction of the animals or by gearing with a suitable engine.

C is a ratchet, and D a pawl to prevent the wheel B being turned backward.

E is a handle, by which a workman standing on the platform *r* can release the pawl D.

F is a brake, also worked from platform *r* to prevent the wheel turning backward too quickly when the pawl is released.

G G are pulleys, over which the lifting-chains *j j* pass.

H H are uprights for sustaining the outer ends of the pivots, on which the pulleys G revolve, the inner ends resting on the cross-ties *d d*.

M M are the accumulators. The dotted lines show their position at the commencement of the operation, the full lines when the operation is nearly completed.

When it is desired to operate the machine, the material to be pressed is thrown into the well and tramped down as firmly as may be necessary by a workman staying in the well. When sufficient material is in the well, the doors *h h g g* are closed and bolted, the cover *l* is pushed into position, the large wheel is caused to revolve, and in doing so it winds the chains *j j* on the axle A, and causes the movable bottom *i* to be drawn upward, compressing the material in the well against the top cover *l*. As the chains *j j* pass up over the pulleys G G, the free ends of the accumulators M M begin to describe an arc of a circle, and, pressing the chains out of the direct line from the pulleys G G to the axle A, thereby cause the movable bottom *i* to rise with a more rapid motion than would have been communicated to it by the mere winding of the chains *j j* upon the axle A if the accumulators M M were omitted. These accumulators reach a horizontal position when the movable bottom *i* has accomplished about two-thirds of its course. After passing that point they by approaching the perpendicular line impart a slower motion to the ascent of the bottom *i*, thus accumulating the motive power at the close of its course. The bottom *i* having been drawn up to the cross-ties *d d*, the bolts *o o* are drawn and the doors *h h* are pulled back into a horizontal position, resting on the platforms *r r*. Wire or other binding material is passed through the grooves *q q* and securely tied. Then the doors *g g* are released by turning the eccentrics *p p*. The bottom *i* (the motion of which is controlled by the pawl D and brake F) is allowed to sink slightly and the bundle, released on all sides by opening the top of the well *l*, is easily rolled out on the platform *r* and removed. The weight of the movable bottom *i*, when allowed to sink down into the well, is sufficient to recoil the driving-rope on the large wheel B, when, the doors being replaced, the machine is ready for another operation.

I claim as my invention—

1. In a press, the combination, with the frame and the movable bottom, of an axle, two pulleys mounted on opposite sides of the upper part of the frame and in the same axial line, two arms pivoted below the pulleys and in the same axial line with each other, a flexible connection from the axle to the end of one arm and then over one pulley to one side of the movable bottom, and a second flexible connection similar to the first and connecting the other end of the axle with the other side of the movable bottom, substantially as described.

2. In a press, the combination, with the frame and the movable bottom, of the wheel and axle B A, the pulleys G G in the same axial line, the arms M M, pivoted to the frame in the same axial line with each other, the chains *j j*, leading from the ends of the axle to the ends of the arms and therefrom over the pulleys to opposite sides of the movable bottom, the pawl and ratchet D C, and the brake F, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 10th day of November, A. D. 1890.

ALEXANDER NEVERS PETERS.

Witnesses:

C. A. STOCKTON,

JAMES A. MCLEAN.