

(No Model.)

2 Sheets—Sheet 1.

E. G. HAGQUIST & S. RYDBECK.

BALING PRESS.

No. 362,156.

Patented May 3, 1887.

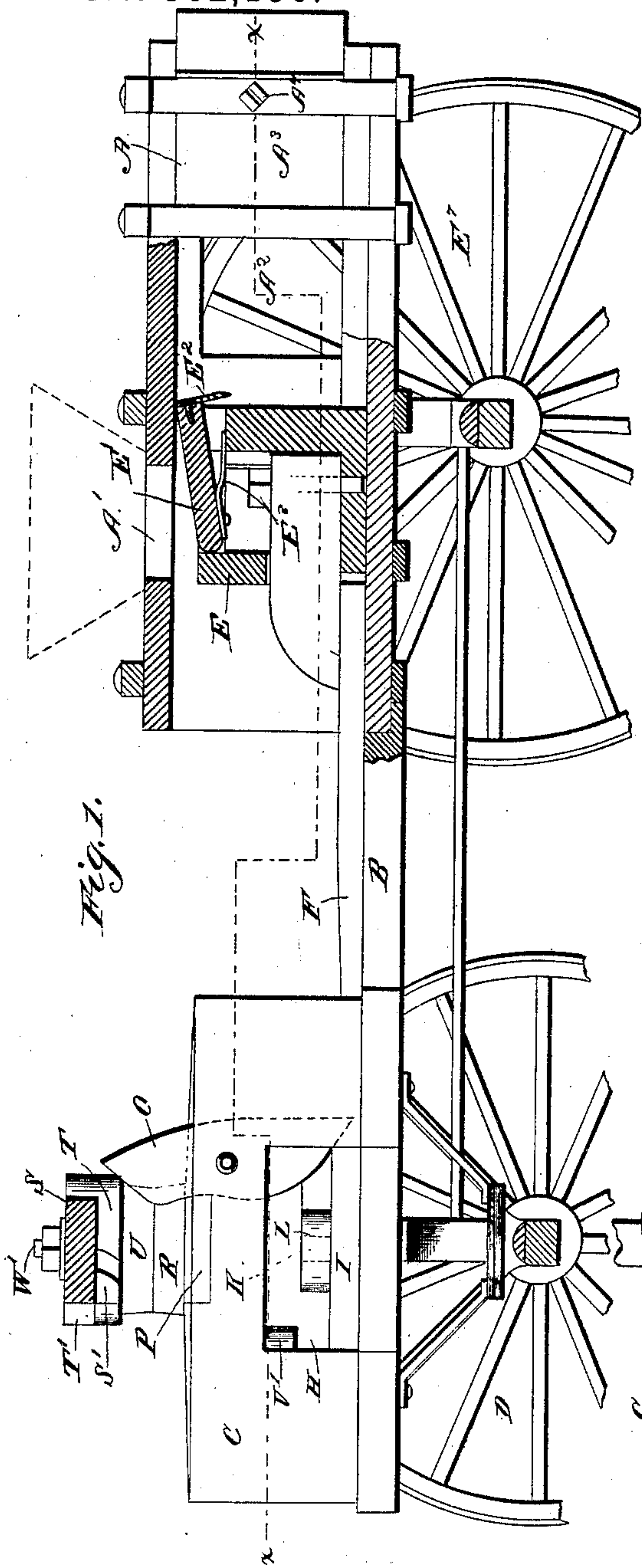


Fig. 1.

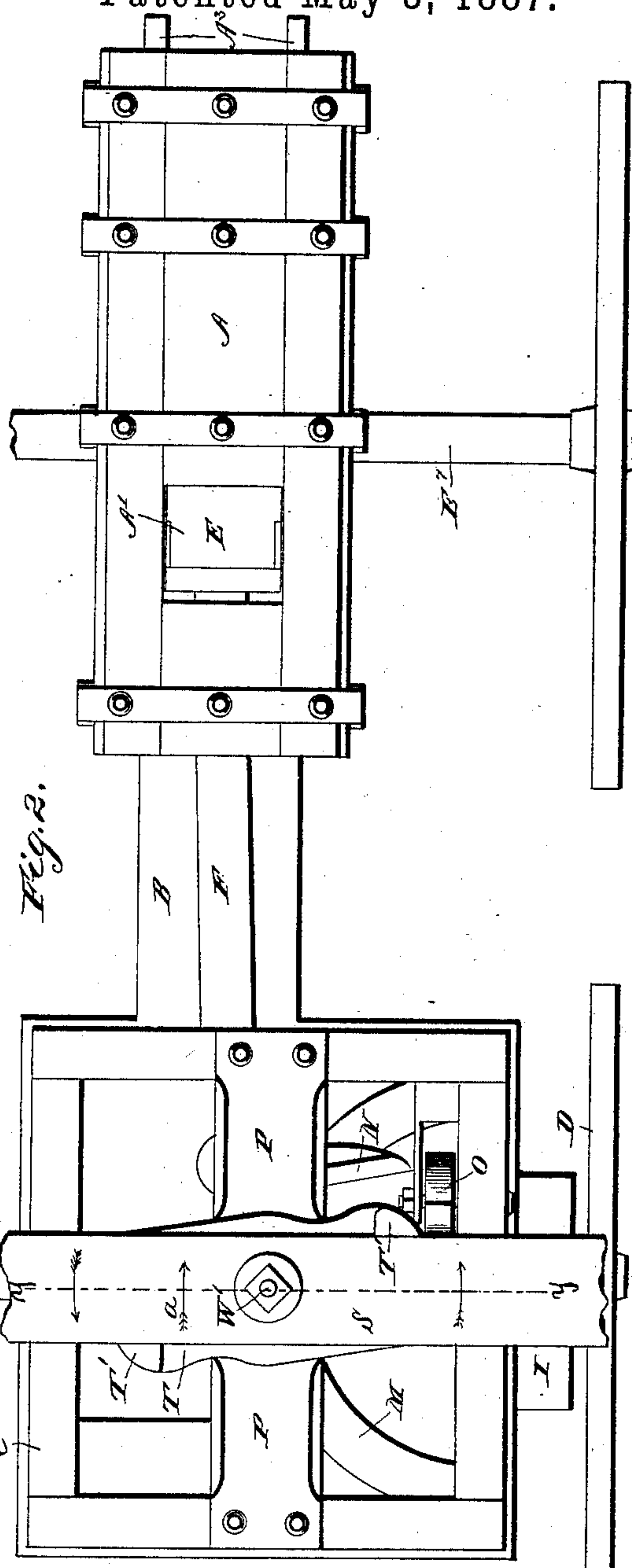


Fig. 2.

Witnesses
C. D. Taylor
J. W. Lamm

Inventors
E. G. Hagquist
Sven Rydbeck
By their Attorneys
C. A. Howley

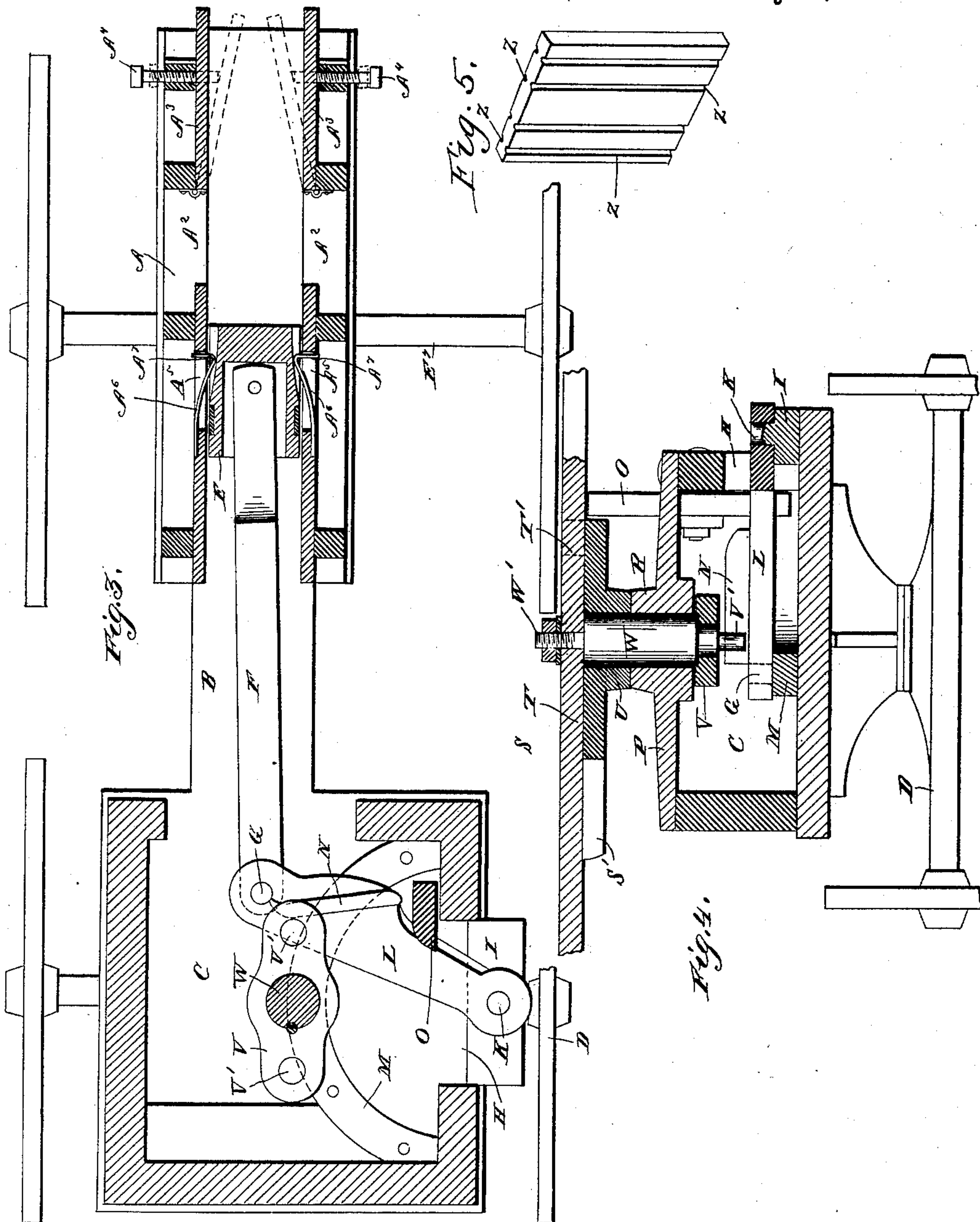
(No Model.)

2 Sheets—Sheet 2.

E. G. HAGQUIST & S. RYDBECK.
BALING PRESS.

No. 362,156.

Patented May 3, 1887.



Witnesses
D. Taylor
J. W. Gann

Inventors
E. G. Hagquist
Sven Rydbeck
By their Attorneys
C. A. Shaw

UNITED STATES PATENT OFFICE.

E. GUST. HAGQUIST AND SVEN RYDBECK, OF HECTOR, MINNESOTA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 362,156, dated May 3, 1887.

Application filed January 15, 1887. Serial No. 224,474. (No model.)

To all whom it may concern:

Be it known that we, E. GUST. HAGQUIST and SVEN RYDBECK, citizens of the United States, residing at Hector, in the county of Renville and State of Minnesota, have invented a new and useful Improvement in Baling-Presses, of which the following is a specification.

Our invention relates to an improvement in baling-presses; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation, partly in section, of a traveling hay-press embodying our improvements. Fig. 2 is a top plan view of the same. Fig. 3 is a horizontal section taken on the line xx of Fig. 1. Fig. 4 is a vertical section taken on the line yy of Fig. 2, looking in the direction indicated by the arrow a . Fig. 5 is a detail view of the division-board.

A represents a horizontal rectangular press-box, the front and rear ends of which are open. On the upper side of the press-box, near its front end, is an opening, A^1 , which communicates with a hopper or feeder, that is represented in dotted lines in Fig. 1.

In the sides of the press-box, near its rear end, are openings A^2 , and the extreme rear portions of the sides are formed by boards A^3 , which are hinged at their front ends, and thereby their rear ends are adapted to be swung inwardly toward each other. Set-screws A^4 pass through threaded openings in the rear portion of the frame of the press-box, and the ends of the said screws bear against the outer sides of the pivoted boards A^3 , so that the latter can be adjusted to and secured at any desired angle with relation to each other by turning the screws A^4 , for the purpose to be hereinafter explained.

In the sides of the press-box, at a suitable distance from the front end thereof, are longitudinal openings A^5 , through which the rear ends of detent-springs A^6 project inwardly, the said detent-springs having shoulders A^7 at their extreme rear ends that are normally projected inwardly into the path of the follower by the resilience of the springs. From the front end of the press-box projects a reach or platform, B, to the front end of which is at-

tached a rectangular box, C. The said box and the press-box are supported upon trucks D and E, whereby the press may be transported readily from one place to another.

E represents a follower, which is adapted to travel longitudinally in the press-box, and F represents a rod, which has its rear end pivoted in the follower and its front end provided on its upper side with a stud, G, which serves to pivotally connect the rod F to the inner end of a lever, L, as hereinafter described. In one side of the box C is made a rectangular opening, H, and on the outer side of the said opening is secured a block, I, having on its upper side a vertical projecting stud, K.

L represents a lever, which has one end pivoted on the stud K and its inner end pivoted on the stud G. This lever bears upon a curved way, M, in the bottom of the box C, and near the inner end of the said lever L, on its upper side, is arranged a diagonal vertically-projecting flange or tongue, N.

O represents a lever, which is fulcrumed to one side of the box C. The lower end of the said lever O is adapted to bear against the inner side of the lever L, and the upper end of the lever O projects from the upper side of the box C.

P represents a pair of cross-bars, which are secured to the upper edges of the box C, and are provided at their centers with a bearing, R.

S represents a sweep lever or beam, which is attached to the upper side of a head or yoke, T, that is provided with a depending annular collar, U, that bears on the upper side of the bearing R.

V represents a sweep disk or arm, which is provided at its center with an upwardly-projecting spindle, W, that extends through the central openings of the bearing R and the yoke T. The upper portion of the spindle W is keyed to the said yoke T, so that the latter and the arm or disk V will be caused to rotate together. From the outer end of the arm or disk V depend studs V' , which are adapted to alternately engage the flange or tongue N of the lever L as the disk or arm V is rotated. From the upper end of the spindle W projects a bolt, W' , which extends through an opening made in the sweep lever or beam. A nut is screwed on the upper end of the said

bolt and bears on the upper side of the sweep lever or beam, so as to secure the latter on the upper side of the yoke T. The latter is provided at its ends with vertical studs T', that bear against opposite sides of the sweep lever or beam, so as to secure the latter firmly on the yoke. From the under side of the sweep lever or beam, at a suitable distance upon opposite sides of the bolt W', depend cam-shoulders S', having their inner sides inclined in opposite directions. The inner ends of these shoulders bear against the ends of the head T, to assist in holding the sweep-lever firmly to the head.

On the upper side of the follower E is a hinged leaf, E', the free end of which is provided with a depending plate, E². The lower side of this plate is adapted to extend downwardly over the rear end of the follower. A flat spring, E³, is secured to the under side of the hinged leaf, the outer end of the said spring bearing in a recess which is made in the upper side of the follower. The function of this spring is to normally move the free end of the hinged leaf against the upper side of the press-box and to permit the said leaf to yield when it bears against the mass of hay projecting downwardly in the opening A' from the feeder as the follower moves forward.

The operation of our invention is as follows: The sweep-lever is rotated in the direction indicated by the outer arrows in Fig. 2 by means of horse or other power, and this causes the arm V to also rotate in the same direction.

One of the depending studs V' strikes against the front side of the flange N on the lever L, thus moving the latter rearwardly and causing the follower, which is attached thereto, to be moved rearwardly in the press-box. In its rearward movement the lever L comes in contact with the lower end of the lever O, thus turning the latter on its fulcrum and causing its upper end to move forward. As soon as the stud V' slips from the flange N, at the end of the reverse stroke of the follower, one of the shoulders S' of the sweep lever is brought in contact with the upper end of the lever O, and reverses the movement of the said lever, causing the latter to move the lever L forward in the press-box. There being two of the shoulders S' and two of the tappet studs V', it follows that the follower will be moved forward and back in the press-box twice at each complete revolution of the sweep-lever and the arm V.

The hay to be baled is fed into the press-box through the opening A', by the hopper or feeder. Before commencing operations the hinged boards A³ have their rear ends adjusted toward each other by the set-screws A⁴, so as to provide a wedge-shaped opening at the rear end of the press-box. As the hay is fed into the press-box, it is driven back by the rearward movements of the follower and compressed between the boards A³. When a sufficient quantity of hay has been lodged between the said boards, a division-board, such as shown in Fig. 5, is placed transversely in

the press-box, against the front side of the hay that is wedged between the inclined boards A³. The division-board is provided on opposite sides with transverse grooves Z, which are adapted to receive binding-wires to be used in securing the bales in the usual manner. The operation of the press is then continued until enough additional hay has been compressed in the box to form a bale, when a second division-board is placed on the front side thereof and arranged transversely in the press, and the bale secured by the wires. The hinged boards A³ are then relaxed from their converging position, and the operation of the press is continued until another bale is formed in the press-box in advance of the one already pressed. After the boards A³ are relaxed, the follower at each rearward stroke forces the baled hay rearwardly in the press-box, thus gradually ejecting the hay which was previously confined between the boards A³. By the time that the third bale is partly formed in the press-box, the first bale is forced out of the rear end thereof, the press-box being sufficiently long to hold two complete bales and part of a third.

The springs A⁶ will yield and spring outwardly at each rearward movement of the follower, and at each forward movement thereof the springs force their shoulders A⁷ inwardly beyond the sides of the press-box to prevent the hay that is being compressed therein from moving forward by its own elasticity in rear of the follower.

Having thus described our invention, we claim—

1. In a baling-press, the combination of the rotating arm V, having the tappet-studs, V', the follower, the lever L, connected thereto and adapted to be struck by the studs V', the sweep rotating with the arm V, and the fulcrumed lever O, having one end in the path of the lever L and the other end in the path of the sweep, for the purpose set forth, substantially as described.

2. In a baling-press, the combination of the rotating arm V, having the tappet V', the sweep rotating with the said arm and having the cam-shoulders S', the follower, the lever L, connected thereto and having the cam-flange N arranged in the path traversed by the tappets V', and the fulcrumed lever O of the first class, having one end in the path of the lever L and the other end in the path of the cam-shoulders S', substantially as described.

3. In combination with the follower, the lever L, connected thereto, the lever O, to actuate the lever L, and the sweep to actuate the lever O, as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

E. GUST. HAGQUIST.
SVEN RYDBECK.

Witnesses:

WILLIAM C. WHITE,
ANDREW OLSON.