No. 624,112.

Patented May 2, 1899.

E. C. SOOY.

BALING PRESS.

(Application filed Feb. 14, 1898.)

4 Sheets—Sheet 1.

(No Model.)

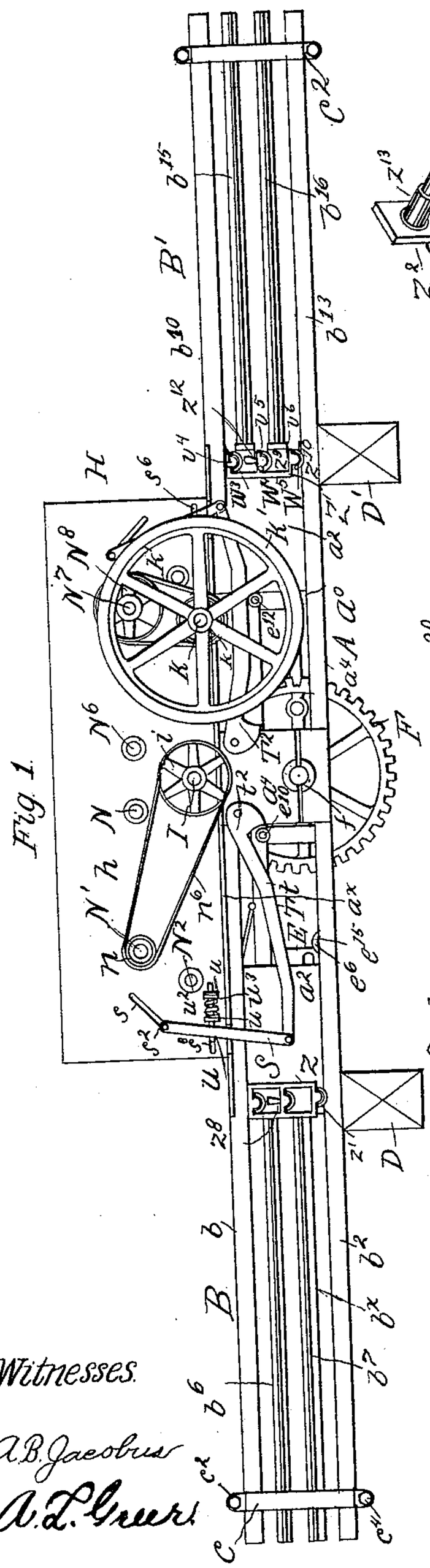

Fig. 1.

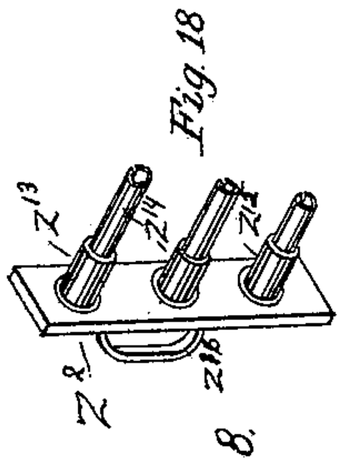

Fig. 18

Fig. 8.

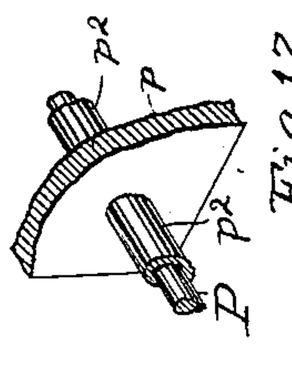

Fig 17

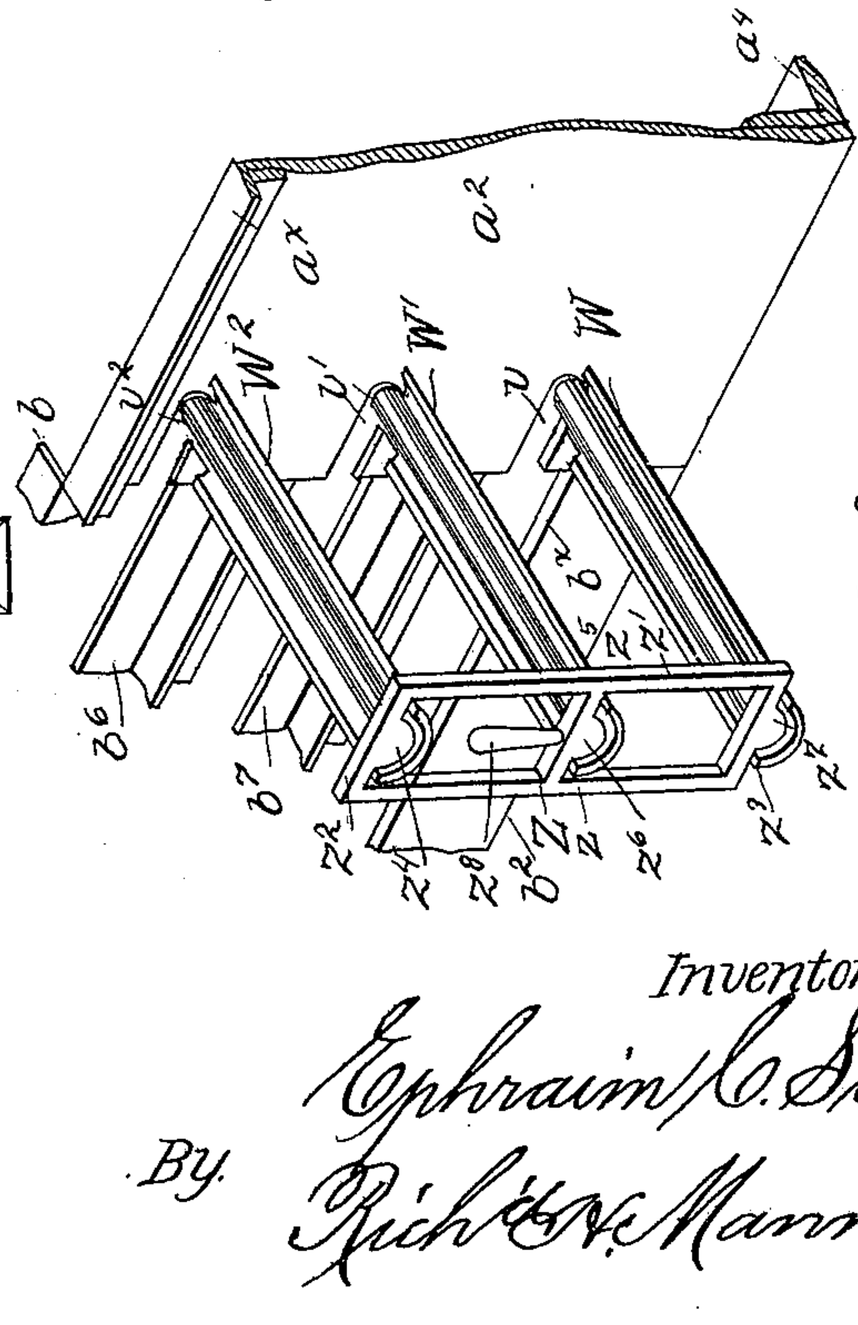

Fig. 9.

Witnesses.

A. B. Jacobus

A. L. Greer

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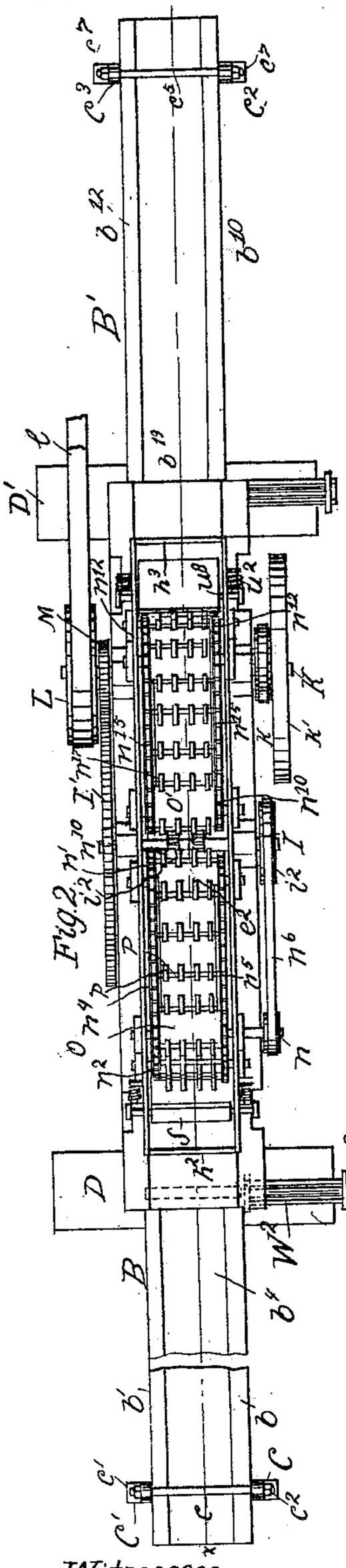

Fig. 2.

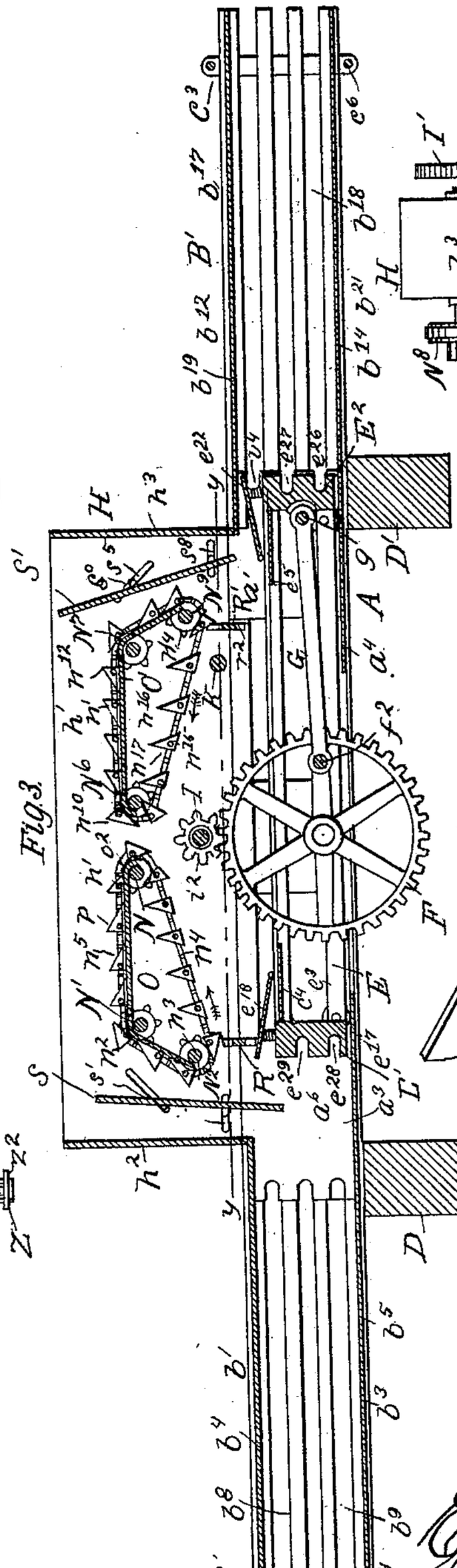

Fig. 3.

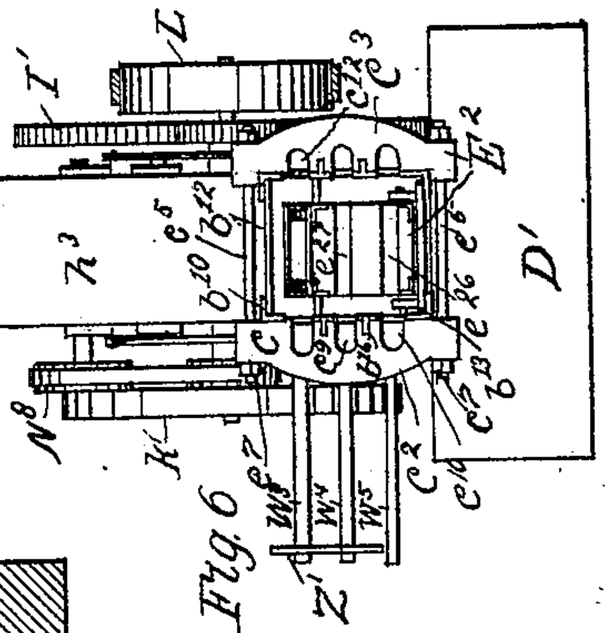

Fig. 6

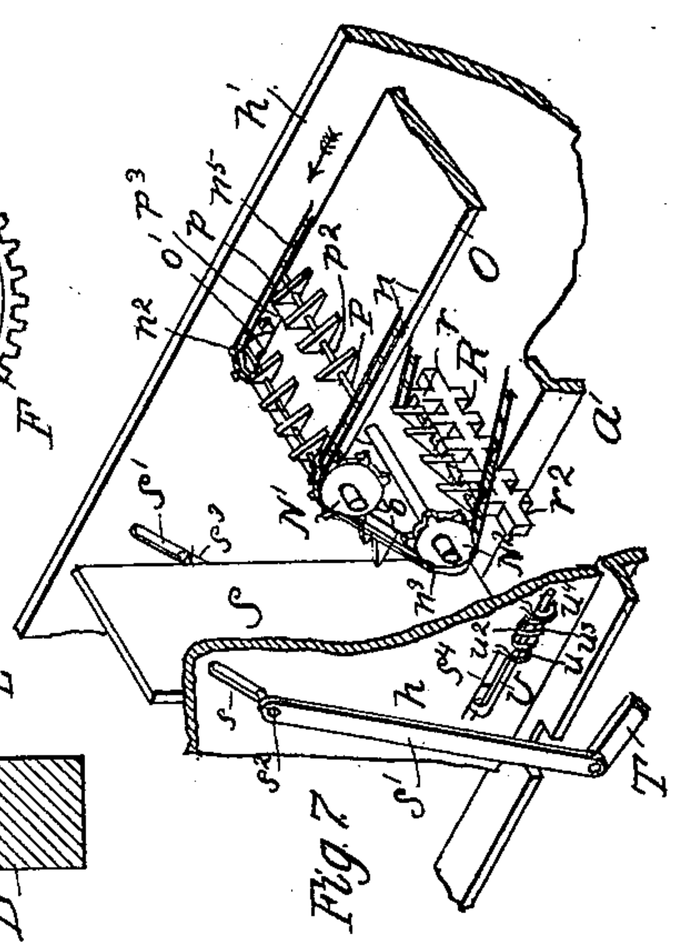

Fig. 7

Witnesses.

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No. 624,112.

Patented May 2, 1899.

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(Application filed Feb. 14, 1898.)

(No Model.)

4 Sheets—Sheet 3.

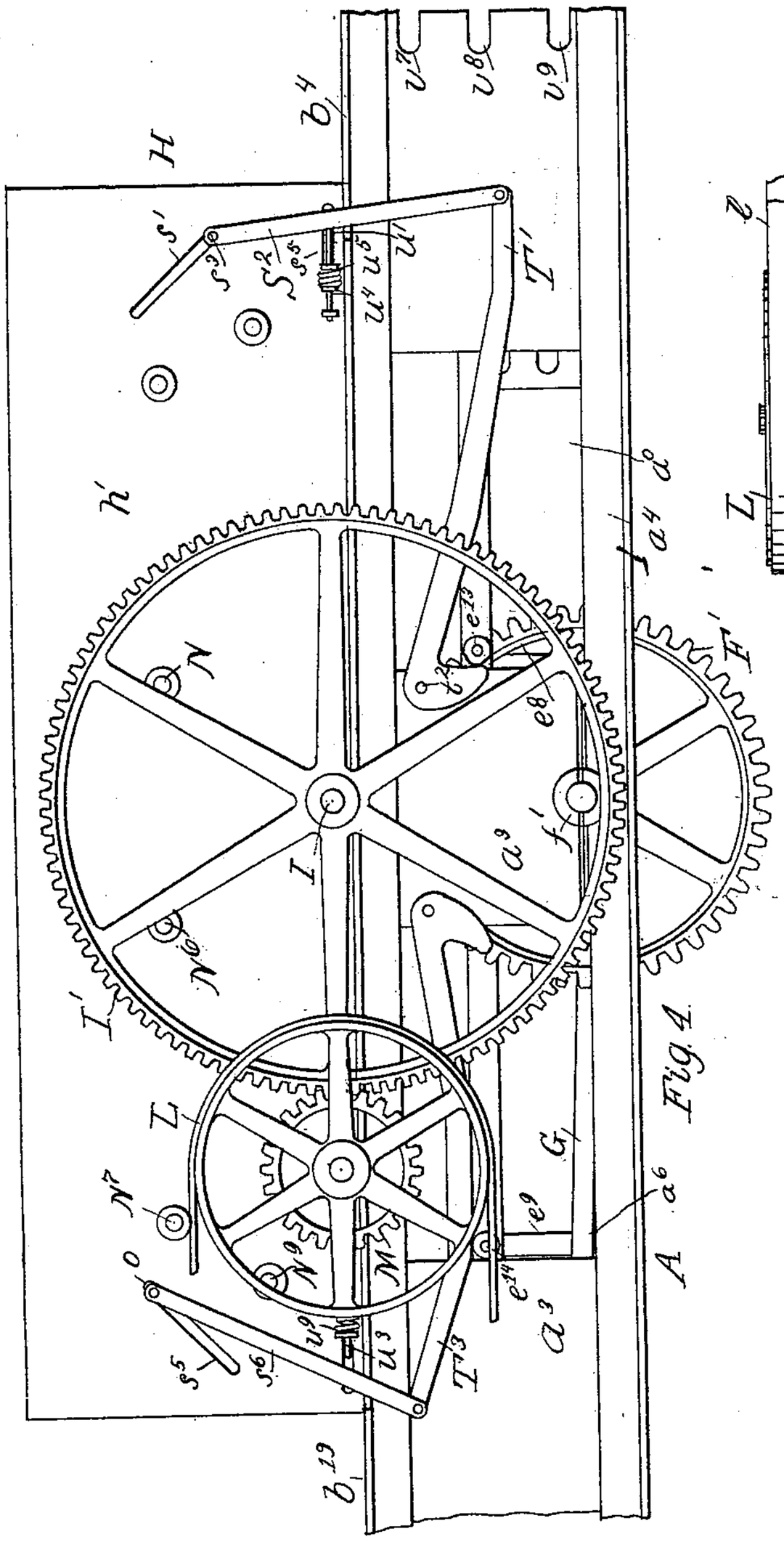

Fig. 4.

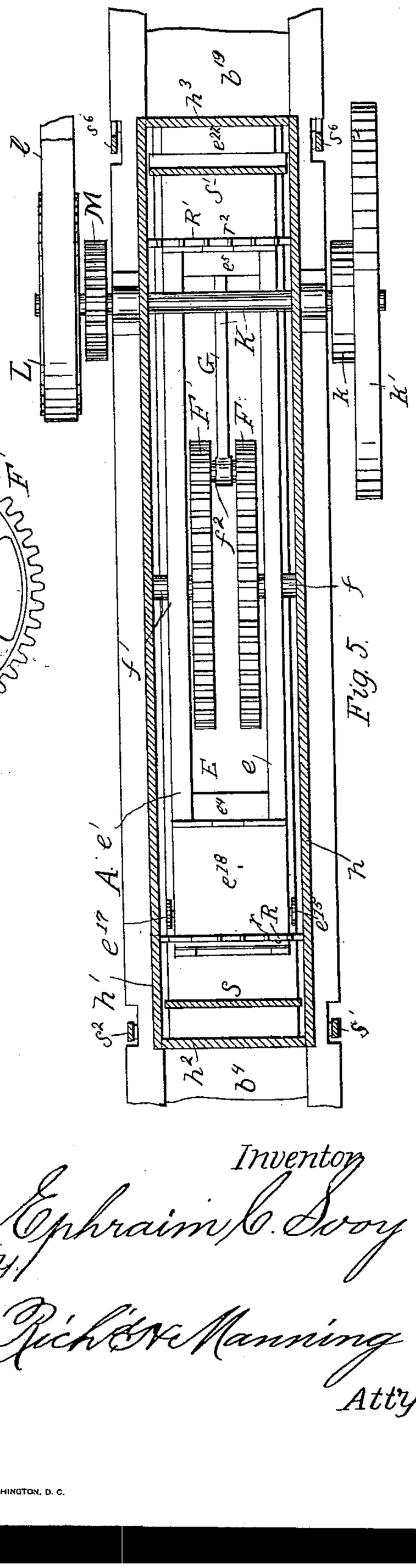

Fig. 5.

Witnesses.

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No. 624,112. Patented May 2, 1899.

E. C. SOOY.

BALING PRESS.

(Application filed Feb. 14, 1898.)

(No Model.) 4 Sheets—Sheet 4.

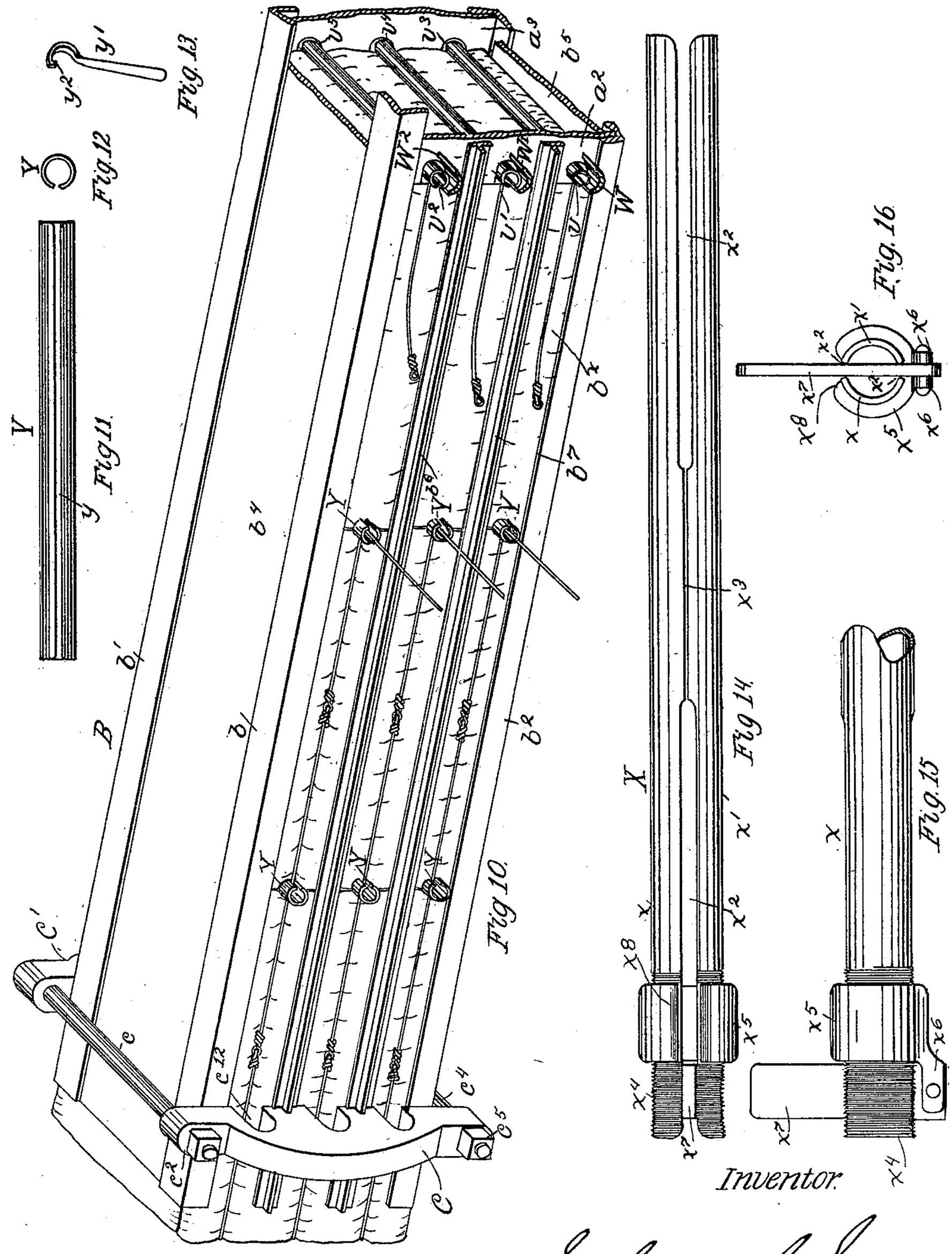

Fig. 10.

Fig. 13.

Fig. 11.

Fig. 12.

Fig. 16.

Fig. 14.

Fig. 15.

Inventor.

Witnesses.

A. B. Jacobus

A. L. Greer.

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UNITED STATES PATENT OFFICE.

EPHRAIM C. SOOY, OF KANSAS CITY, MISSOURI.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 624,112, dated May 2, 1899.

Application filed February 14, 1898. Serial No. 670,277. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM C. SOOY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Baling-Presses; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The objects of my invention are, first, to convey the material to a position above the feed-receptacle to be acted upon by the material-condensing devices, and also deposit the condensed material within the feed-chamber automatically; second, to prevent the loose ends of the baling material from impeding the operation of the conveyers; third, to facilitate the separation of the compressed material into bales during the rapid movements of the head-block or plunger; fourth, to throw the separate division-tubes within the baling-chamber simultaneously; fifth, to enable the division-tubes to part from the bale as it emerges from the delivery end of the baling-chamber.

My invention consists in the novel construction and combination of parts, such as will be first fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the improved duplex baling-press. Fig. 2 is a plan view of the improved press as seen in Fig. 1. Fig. 3 is a longitudinal sectional view of the press, taken upon the line $x\,x$ of Fig. 2. Fig. 4 is a side view, enlarged, of the other side of the duplex feed-receptacle to that seen in Fig. 1, also showing broken portions of the separate baling-chambers. Fig. 5 is a horizontal sectional view, enlarged, taken upon the line $y\,y$ of Fig. 3 and showing the lower duplex feed-chamber. Fig. 6 is an end view of the improved press, taken from a position opposite the end of the baling-chamber at the right hand of the press as seen in Fig. 1. Fig. 7 is a broken detail view in perspective of the upper feed-receptacle, showing the automatic condensing device. Fig. 8 is a detail view in perspective of the duplex plunger. Fig. 9 is a broken view in perspective of a portion of the side of the lower feed-chamber and baling-chamber, showing the separate stationary guides for the division-tubes. Fig. 10 is a detail view in perspective of one of the baling-chambers of the press, showing broken portions of the contiguous feed-chamber, also showing the division-tubes in position between the separate bales with the tube guide-plates being broken away, and also showing the bale-tying wires extending through the slotted tubes. Fig. 11 is a plan view, and Fig. 12 an end view, of one of the slotted division-tubes. Fig. 13 is a side view of the tube-turning tool. Fig. 14 is a plan view of an alternate form of tube to that shown in Fig. 10. Fig. 15 is a side view in detail of a portion of the tube as seen in Fig. 14. Fig. 16 is an end view of the division-tube as seen in Fig. 15. Fig. 17 is a detail broken view of one of the material-conveying plates and rod, showing the separating-thimble. Fig. 18 is a view in perspective of an alternate form of guide for the division-tubes.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

The present invention relates to the duplex press especially designed for the reception of large quantities of the baling material and its rapid compression with power transmitted from a stationary engine or a motor of sufficient horse-power efficiency.

Referring to the drawings, A represents the lower feed-receptacle for the baling material of the press, which for the purpose before alluded to consists of a longitudinal receptacle or chamber comparatively narrow in width and exceeding in length twice that of a feed-chamber of an ordinary single-plunger portable hay-press, at each end of which receptacle is a feed-chamber a', which chambers are alternately traversed by the plunger hereinafter described.

a^2 a^3 are the opposite vertical sides of the duplex feed-chamber A, and a^4 the bottom of said chamber. In one side a^2 of the feed-chamber A is an opening $a^\times$, extending from a position opposite the rear end portion of the chamber a' at the limit of the rebound of the plunger nearly to the central portion of said side a^2. In the direction of the other end of

the feed-chamber and in the side a^2 is an opening a^0 of the same length as the opening $a^\times$, both of which openings extend from the plane of the bottom a^2 to the upper edge of said feed-chamber. In the side a^3 of the feed-receptacle A are openings a^5 a^6, which are directly opposite the openings $a^\times$ a^0 and are of the same length and width.

The ends and top portion of the chamber A are open for the passage of the material to be baled and the operative mechanism hereinafter described. With the sides a^2 a^3 and bottom portion a^4 at one end of said chamber A is connected rigidly one end portion of a longitudinal baling-chamber B, which is composed of angle-bars b b' at the top and the angle-bars b^2 b^3 at the bottom of said chamber, which bars extend the length of chamber B and from the outer edges of said chamber. Extending from the inner side portion of the angle-bar b to the inner side of the angle-bar b' is a plate b^4, which extends from the outer end of said chamber B to the feed-chamber a' and a short distance over said chamber. The bottom of said chamber B consists of a plate b^5 of the same length and width as the plate b^4 and which extends from the inner side of the angle-bar b^2 to the inner side of the angle-bar b^3. (See Fig. 10.)

Between the upper and lower angle-bars b b^2 on one side of the baling-chamber B are the T angle-bars b^6 b^7, which are the same in length as the bars b b^2 and are connected with the feed-chamber A in like manner, said bars b^6 b^7 being arranged at equal distances apart from each other and the respective bars b b^2, thus affording separate longitudinal openings $b^\times$, and with the flat portion of the said T-bars presented to the inner side of the baling-chamber. On the other side of the baling-chamber B and between the angle-bars b' b^3 are the longitudinal side bars b^8 b^9, (see Fig. 3,) which are the same as bars b^6 b^7 and arranged in position at the same distance apart.

Near the delivery end of the baling-chamber B and upon one side of the said chamber is a vertical clamping-bar C, and upon the other side of said chamber is a vertical bar C', the ends of which bar extend above and below the plane of the top and bottom of said chamber. Through the upper end of the bar C, above the plane of the plate b^4, is extended one end of a rod C, which is provided with a head c' at one end and screw-threaded at the other end, which latter end extends through the upper end of bar C' and is provided with an adjusting-nut c^3. Through the lower ends of the bars C C' is extended the rod c^4, which is the same as rod c and provided with an adjusting-nut c^5 in like manner as upon rod c. Extending in an opposite direction and from the other end portion of the lower feed-chamber A is a separate baling-chamber B', which is constructed of angle-bars b^{10} b^{12} at the top and b^{13} b^{14} at the bottom, as described of the angle-bars b b' b^2 b^3 of the chamber B, and connected with the feed-chamber A in like manner. Between the angle-bars b^{10} b^{13} are the side bars b^{15} b^{16}, and between the angle-bars b^{12} b^{14} are the side bars b^{17} b^{18}, which side bars are of the same length and the same distance apart as described of the similar bars b^6 b^7 b^8 b^9 in the baling-chamber B. Extending from the outer end of the chamber B in the direction of and a short distance over the lower feed-chamber a', and also between the angle-bars b b', is a top plate b^{19}, which is the same as the plate b^4 in the chamber B. Between the angle-bars b^{13} b^{14} is a plate b^{21}, which forms the bottom to said chamber and is the same as the plate b^5 in chamber B.

Near the delivery end of the chamber B' are vertical side clamping-bars C^2 C^3, which are the same as the bars C C', and are provided with screw-threaded connecting-rods c^5 c^6, extending from one bar C^2 to the bar C^3 and having adjusting-nuts c^7, as described of the rods c c^4 on the bars C C'. In the inner side portion of the clamping-bar C^2 in a transverse direction to said bar is a slot c^8, which is directly opposite the space between the upper angle-bar b^{10} on the side of the chamber adjacent to said bar C^2 and the bar b^{15} directly beneath said angle-bar. (See Fig. 4.)

In the bar C^2, beneath the slot c^8, is a transverse slot c^9, which is directly opposite the space between the bars b^{15} and b^{16}. Beneath the slot c^9 and in the bar C^2 opposite the space between the bar b^{16} and the lower angle-bar b^{13} is a slot c^{10}. In the inner side portion of the vertical bar C^3 are transverse slots c^{12}, which are the same in number and directly opposite the respective spaces between the angle-bar b^{12}, the bars b^{17} and b^{18}, and the lower angle-bar b^{14}, and also directly opposite the respective slots c^8 c^9 c^{10} in the bar C^2. In the bars C C' in the baling-chamber B are the slots c^{12}, which are the same in number and are directly opposite the spaces between the angle-bars b b^2 and bars b^6 b^7 on one side of said chamber and the angle-bars b' b^3 and the intermediate bars b^8 b^9 in precisely the same manner as in the bars C^2 C^3.

As illustrated, the baling-press is mounted upon skids, one skid D being placed beneath the end of the feed-chamber A, with which the baling-chamber B is connected, the other skid D' being placed beneath the other end of the chamber A, with which the chamber B' is connected. The press may be mounted upon wheels, as in ordinary cases for transportation when required.

Within the feed-chamber A is a reciprocating plunger E, which extends in length nearly two-thirds the described length of the said chamber and in width from the inner portion of the side a^2 nearly to the inner portion of the side a^3 of chamber A. The frame of the plunger E is composed of separate angle-bars e e' at the top and upper side portions of the said frame, and the angle-bars e^2 e^3 at the bottom and lower side portions of said frame, which angle-bars extend in the longitudinal direction of the plunger. Between the respec-

tive angle-bars $e\,e'\,e^2\,e^3$, at one end of the plunger-frame, is a head-block E', and between said bars, at the other end of said frame, is a head-block E^2, which head-blocks extend in height a little over two-thirds the described distance from the bottom plate b^5 to the top plate b^4 of the chamber B, and the head-block E^2 describes the same height in proportion to the distance between the plates $b^{19}\,b^{21}$ of the chamber B'. Extending from the inner side portion of the angle-bar e to the inner side portion of the angle-bar e' of plunger E is a top plate e^4, which also extends from a position in rear of the inner surface of the head-block E' rearwardly to a point a short distance from the said head-block sufficient to prevent the baling material from entering in rear of said plate. At the other end of the frame E is a plate e^5, which extends from the inner surface of the head-block E^2 the same described distance in length and width as that of plate e^4. Near the inner rear end portion of the plate e^4 on one side of frame E is a vertical brace-bar e^6, which is connected at one end with the inner side portion of the angle-bar e and the lower end with the inner side portion of the angle-bar e^2. Near the inner end portion of the covering-plate e^5 is a vertical brace-bar e^7, which is connected with the inner side of the angle-bars $e\,e^2$. On the other side of the plunger-frame E are vertical brace-bars $e^8\,e^9$, which are directly opposite the respective brace-bars $e^6\,e^7$ and secured to the inner side of angle-bars $e'\,e^3$. On the outer vertical side portion of the angle-bar e', opposite the bar e^6, is journaled a roller e^{10}. In the direction of the other end of frame E and upon the same side of angle-bar e, opposite the bar e^7, is journaled a roller e^{12}. On the outer vertical side of the angle-bar e' and opposite the bar e^8 is a roller e^{13}, and upon the same side of said angle-bar opposite the bar e^9 is a roller e^{14}.

On the outer side portion of the angle-bar e^2, in rear of the plane of the inner surface of the head-block E', is a traction-roller e^{15}, and upon the same angle-bar, in rear of the head-block E^2, is a traction-roller e^{16}. On the other side of frame E and upon the outer side portion of the angle-bar e^3 are traction-rollers e^{17} e^{17}, which are in line transversely with the rollers $e^{15}\,e^{16}$. With the top portion of the angle-bars $e\,e'$, near the head-block E', on one end of frame E, is pivotally connected one end of a material-tucking plate e^{18}, the other end of which plate extends to a position in line with the outer surface of the head-block E'. In the upper end portions of the head-block E' are vertical posts $e^{19}\,e^{19}$, which pass through the openings e^{20} in the forward end of plate e^{18}. On each one of the plates e^{19}, between the head-block and the under side portion of the plate e^{18}, is a spiral spring e^{21}. At the other end of the frame E and connected with the angle-bars $e\,e'$ at the same described distance from the head-block E^2 as described of the plate e^{18} from the head-block E' is pivotally connected a plate e^{22}. In the upper end of the said head-block E^2 are pins e^{23}, which extend through opening e^{24} in the forward end of said plate and are provided with spiral springs e^{25} in precisely the same manner as described of plate e^{18}. In the outer surface of the head-block E^2 and in the direction of the lower end of said head-block is a transverse groove e^{26}, which is also in line transversely with the openings between the lower angle-bars $b^{13}\,b^{14}$ and the T angle-bars $b^{16}\,b^{18}$. Above the groove e^{26} is a groove e^{27}, which is in line transversely with the opening between the angle-bars $b^{15}\,b^{16}$ on one side of the baling-chamber B' and the bars $b^{17}\,b^{18}$ on the other side of said chamber. In the outer side of the head-block B' are the separate transverse grooves e^{28} and e^{29}, which are in line transversely with the openings between the respective angle-bars $b^2\,b^3\,b^7\,b^9$, and also between the angle-bars $b^7\,b^6$ and $b^9\,b^8$, as described between the angle-bars of the baling-chamber B', and for the purpose set forth. In the duplex feed-chamber A of the press, between the respective vertical sides $a^2\,a^3$, and also between the angle-bars $e\,e^2$ upon one side and the angle-bars $e'\,e^3$ upon the other side of the frame E of the reciprocating plunger, are the separate gear-wheels F F', which are of considerable size.

The gear-wheel F is provided with a bearing f or journal extending from one side only of the gear E in the direction of the side a^2 of the feed-chamber A and journaled in said side portion of the press a short distance above the bottom portion a^4 and at a point equidistant from the ends of said chamber. The gear-wheel F' is provided with a separate bearing or journal f', extending from the side of the said gear-wheel in the direction of the side a^3 of the feed-chamber A, and journaled in said side at the same described distance from the opposite ends of the said feed-chamber on the inner side of the gear-wheels F F' and connected with each wheel a short distance from their periphery is a crank-arm f^2, upon which is journaled one end of a pitman G, the other end of which pitman is pivotally connected at g with the inner side portion of the head-block E^2.

Directly above the duplex feed-chamber A of the press is an auxiliary duplex feed receptacle or chamber H, the sides $h\,h'$ of which extend a considerable distance in a vertical direction from the upper edges of the sides $a^2\ a^3$ of the duplex feed-chamber A. The end h^2 of the chamber H extends upwardly from the inner edge of the plate b^4, which partially covers the feed-chamber a', as before stated, and the end h^3 extends upwardly from the inner edge of the plate b^{19} on the baling-chamber B. In the bottom of the receptacle H is an opening for the mechanism hereinafter described and for the passage of the material to be baled, extending from the inner side h to the inner side h' and from the end h^2 to the end h^3 of said receptacle.

Through the sides $h\,h'$ of the receptacle II, a short distance above the periphery of the gear-wheels F F', extends a driving-shaft I, which is also in a vertical line with the journals $f\,f'$ of the separate gear-wheels F F' and which shaft extends a short distance beyond the outer side portion of each of the sides $h\,h'$ of the auxiliary feed-receptacle H, and upon one end of said shaft, opposite the side h of receptacle H, is a belt-pulley i and upon the other end of said shaft, opposite the side h', is a gear-wheel I', which is larger in size than the gear-wheels F F'.

On shaft I, on the inner side of the receptacle H, are separate spur-gears $i^2\,i^2$, which engage, respectively, with the separate gear-wheels F F', actuating the plunger E. A short distance from and in the direction of the end h^3 of the auxiliary feed-receptacle II and through the sides $h\,h'$ of said receptacle extends a shaft K, which is in the same horizontal plane as the shaft I, and the ends of which shaft extend beyond the plane of the outer surfaces of the sides $h\,h'$. Upon one end of shaft K, without the receptacle II, opposite the side h of the said receptacle, is a balance-wheel K', and upon the other end of said shaft, opposite the side h', is a band-wheel L, and between the said band-wheel and the outer portion of the side h' is a small gear M, which meshes with the gear-wheel I' on the shaft I. Between the balance-wheel K' and the outer portion of the side h of the receptacle H' is a small band-wheel k.

Above the shaft I, carrying the small gear i^2, a short distance from and upon one side of a line extending vertically through said shaft in the direction of the end h^2 of the receptacle H', is a horizontal shaft N, which is journaled in the respective sides $h\,h'$ of said receptacle. On said shaft are the sprocket-wheels $n\,n'$, one of which sprocket-wheels is near the inner portion of the side h and the other sprocket-wheel near the inner portion of the side h'. In the same horizontal plane with the shaft N and about two-thirds the described distance from the shaft N to the inner end portion h^2 of the receptacle H is a transverse shaft N', one end of which is journaled in the side h' and the other end journaled in the side h of said receptacle, which end also extends through the side h, and upon said end and near the outer portion of said side h is a small band-wheel n. On the shaft N' and near the inner portions of each side $h\,h'$ of the receptacle H is a sprocket-wheel n^2 of the same size as the sprocket-wheels $n\,n'$. A short distance below the shaft N' in the direction of the lower feed-receptacle a', and also slightly toward the end h^2 of the receptacle H from a vertical line extending through shaft N, is a shaft N^2, which is journaled in the sides $h\,h'$ of the receptacle H as described of the shaft N, and upon which shaft N^2, near the inner portion of each side $h\,h'$, is a sprocket-wheel n^3. Over the sprocket-wheel n on the shaft N is extended one end of a sprocket-chain n^5, the other end of which chain is extended over the sprocket-wheels $n^2\,n^3$, near the side h of the receptacle II, and the two ends connected together in the usual manner. Over the sprocket-wheel n' on shaft N is extended one end of the sprocket-chain n^4, the other end of which chain is extended over the sprocket-wheels $n^2\,n^3$, adjacent to the inner portion of the side h' of the receptacle H, and the two ends connected together in the usual manner. Over the pulley n on shaft N', on the outer side of the receptacle H, is a belt n^6, the other end of which belt is extended over the band-pulley i on the shaft I and the two ends connected together in the usual manner.

Extending from a position directly above the shaft N to a position directly above the shaft N' and beneath the plane of the sprocket-chains $n^4\,n^5$ is a horizontal plate O, which plate is connected at one longitudinal edge portion with the inner portion of the side h and at the other edge with the inner portion of the side h' of the receptacle H. One end portion o of plate O is notched on each side, as at $o'\,o'$, so as to pass the sprocket-wheels $n^2\,n^2$ and $n^3\,n^3$ and also bent at an angle to the horizontal portion of the plate and extended downwardly in the direction of the feed-chamber a' and to a position opposite the shaft N^2, carrying the sprocket-wheels n^3. The other end of plate O is extended over the shaft N in a downwardly-curved line, as at o^2, Fig. 3. With one of the links of the sprocket-chain n^4 is connected rigidly one end of a rod P, the other end of which rod extends in a transverse direction to the plate O and is connected rigidly with one of the links of the sprocket-chain n^5 near the side h' of the receptacle H.

On the rod P and a short distance from the sprocket-chain n^5 is loosely connected a plate p, which is in the shape of a triangle, said plate being perforated transversely near the meeting-point of separate lines of one of the angles of the triangle, said plate p being retained in position from lateral movement by the short thimbles $p^2\,p^2$, which are loose on rod P on opposite sides of the plate p and between the separate plates in the series of plates. A short distance from the plate p on the rod P in the direction of the side h is a separate loosely-connected triangular-shaped plate p^3, which is precisely the same as the plate p and retained from lateral movement in like manner, and a number of plates are connected with said rod as described of the plate p and arranged at equal distances apart one from another. A short distance from rod P is a separate transverse rod connected rigidly with the sprocket-chains $n^4\,n^5$, and a series of rods are connected with said chains at short distances apart in the direction of the said chains, upon each one of which rods are separate triangular plates in a direct line with the plate p on rod P and at the same distance apart.

Directly beneath the shaft N^2, carrying the sprocket-wheels n^3 n^3, is a transverse bar R, one end of which bar is connected with the inner portion of the side h and the other end with the inner portion of the side h' of receptacle H. Upon the upper side portion of the bar R are separate pins or fingers r, which extend upwardly nearly to the said shaft and are arranged in position on said bar in alternate order to the position of the plates p on the sprocket-chains n^4 n^5, so that said plates will pass between the said pins during the rotation of the shafts N N' N^2. Equidistant from the front or outer side portion of the end o of plate O, which inclines downwardly from the position above shaft N' and the inner portion of the end h^2 of the receptacle H, is a material-condensing plate S, which extends in width from the inner portion of the side h nearly to the inner portion of the side h' and corresponds in length to that of the end h^2 of the receptacle H'. In the side h of the receptacle H, a short distance below the line of the upper edge portion of said side and opposite the vertical edge portion of the plate S, is a slot s, which inclines in the direction of the end h^2 of the receptacle H at nearly the same angle of inclination as the end portion o of the plate O and extends downwardly a short distance to permit of the downward movement of the lower end of the plate O within the feed-chamber a' and its withdrawal, as hereinafter described, without impeding the action of the head-block E'. In the other side h' of the receptacle H is a slot s', which inclines in the same angle as the slot s in one edge portion of the plate S. About one-third the described distance downwardly from the upper end of said plate S is a pivot s^2, which extends through the slot s in the side h of the receptacle H and a short distance beyond the outer surface of said side, and with said outer end portion of said pivot is connected the upper end portion of a bar S', the lower end of which bar extends downwardly a short distance below the line of the lower end of the plate S. In the other edge portion of the plate S, opposite the slot s', is a pivot s^3, which extends through said slot and a short distance beyond the outer portion of the side h', and with said end of the said pivot is connected the upper end portion of a bar S^2, (see Fig. 4,) the lower end portion of which bar extends downwardly the same described distance as the bar S'.

With the outer portion of the side a^2 of the feed-chamber A, at a point near the line of the upper horizontal edge portion of the said side and also a slight distance from a vertical line extending through the end of shaft f, carrying the gear-wheels F, and in the direction of the baling-chamber B, is pivotally connected one end of a lever or bar T, the other end of which bar is pivotally connected with the lower end of the bar S', and the lower edge portion t of which bar describes a single curved line of the requisite degree of curvature and which extends in the path of and contacts with the roller e^{10} on the side of the plunger-frame E, and said curvature is sufficient to raise the plate S from its position in the feed-chamber when the head-block E' moves one-half the distance within the feed-chamber a' from its limit of retraction to the entrance of the baling-chamber B. On the end of the lever T which is pivotally connected with the side a^2 of the receptacle is a downwardly-extended cam portion t^2, the inner side portion of which opposite the roller e^{10} is inclined downwardly and forwardly at an angle to the bar T. Upon the other side of the duplex feed-receptacle A is an operating-lever T', which is precisely the same as the lever T, one end being pivotally connected with the side a^3 of the said receptacle at the same distance from the vertical line extending through shaft f in the direction of the baling-chamber B as described of the lever T, said lever T having a cam portion t^2, which is in the path of the roller e^{13} on the plunger-frame E. In the side h of the receptacle H, a short distance above the line of the upper edge of the side a of lower feed-receptacle A, is a horizontal slot s^4, and in the side h' of said receptacle, at a corresponding point to that described of slot s^4, is a horizontal slot s^0. On the outer portion of the side h, in line with slot s^4 and a short distance therefrom toward the shaft I, are the lugs u u, through which extends horizontally the rod U, and around which rod between said lugs u u is extended a spiral spring u^3, and through which rod extends a pin u^3, which bears upon one end coil of said spring. The other end of rod U extends to a position through the slot s^4 toward the end h^3 of the feed-receptacle H and is bent at right angles and extended along the side portion of plate S, which is toward the end h^3 of said receptacle H. Upon the outer portion of the other side h' of the feed-receptacle and near the slot s^5 are the lugs u^5 u^5, through which passes the rod U', and is bent at an angle and extended over the face of the plate S on the same side of said plate as described of the rod U and is arranged to operate in like manner. In the other portion of the duplex feed-chamber H and in the direction of the end portion h^3 of said chamber from the vertical line passing through the shaft I and at the same described distance from said line as described of the shaft N is a shaft N^6, and at the same distance from the end h^3 as described of the shaft N' from the end h^2 of receptacle H is a shaft N^7, both of which are in the same plane as the shafts N N' and journaled in the sides h h' of said receptacle. The end portion of shaft N^7 extends through the side h of the receptacle H, and upon said end, outside of said receptacle, is a band-pulley N^8, over which is extended one end of a belt k', the other end of which belt is extended over the band-pulley k on the shaft K

and the two ends connected together in the usual manner.

Beneath the shaft N^7 and at the same distance from the end h^3 of the receptacle H as described of shaft N^2 is a shaft N^9, which is also journaled in the sides of the receptacle H in the same manner as shaft N^2. On the shaft N^6 are sprocket-wheels n^{10} n^{10}, and on the shaft N^8 are sprocket-wheels n^{12} n^{12}, and on the shaft N^9 are sprocket-wheels n^{14} n^{14}, which are the same in size as the respective sprocket-wheels on the shafts N N' N^2 and over which pass the respective sprocket-chains n^{15} n^{15} in precisely the same manner as the sprocket-chains n^4 n^5, said chains carrying transverse rods n^{16}, provided with the triangular-shaped plates n^{17}, as arranged upon rod P. Beneath shaft N^9 is a cross-bar R' with teeth or fingers r^2, between which the plates n^{17} pass as described of bar R. Beneath the sprocket-chains n^{15} is a plate O', which is the same as the plate O before described and extends to the shaft N^9, between which plate and the end h^3 of the receptacle H is a compression-plate S', which is the same as the plate S, said plate having pivots s^0 s^0 at the upper end, which pass through slots s^5 s^5 in the sides h h' of the receptacle II and with which are connected bars s^6 s^6 on the outer portion of each side h h', as described of the pivots s^2 s^3 and bars S' S^2 on the one end of the receptacle II. With the outer portion of the side a^2 on the side of the vertical line extending through journal f to the gear-wheel F in the direction of the end h^3 of receptacle H is pivoted one end of a lever T^2, which is precisely the same as the bar T, the other end being pivoted to the lower end of the bar s^6, said bar being actuated by the roller e^{12} on the plunger-frame E. On the side h' of the receptacle II is a lever T^3, which is precisely the same as the lever T and is pivotally connected with the lower end of the bar a^6 on said side of the receptacle and is actuated by the roller e^{14} on the plunger-frame E, as described of bar T^2.

On the side h of the receptacle is a spring-actuated bar or rod U^2, which is the same as rod U, which is held adjustably in the lugs w^8 w^8, and the end of which rod extends through the slot s^8 and bears upon the side of the plate S' toward the end h^3 of the receptacle H. On the other side h' of the said receptacle is a spring-actuated rod U^3, which is held adjustably in lugs w^9 w^9 in precisely the same manner as the rod U^2, and the end portion of which rod bears against the same of plate S', as described of the bent portion of the rod U^2. Over the belt-wheel L on shaft K is extended one end of a belt l, the other end of which belt is extended over the driving-wheel of the engine employed to operate the press and connected in the usual manner.

In the side a^2 of the feed-chamber A and near the point of connection with said side with the baling-chamber B is a horizontal slot v, which is directly in line and communicates with the opening $b^\times$ in the side of baling-chamber B between the lower angle-bar b^2 and the T-angle bar directly above said bar. Above the slot v is a slot v', which is directly opposite the longitudinal opening between the T-angle bars b^6 b^7, and above the slot v' is a horizontal slot v^2, which is directly opposite the longitudinal opening between the angle-bar b^6 and the angle-bar b. In the side a^3 of the feed-chamber A are the slots v^3 v^4 v^5, which are in the same horizontal plane of the slots v v' v^2, respectively, in the side a^2.

With the outer portion of the side a^2 of the feed-receptacle A, in line with the lower edge of the slot v, is connected rigidly one end of a longitudinally-grooved guide-plate W, which is semicircular in cross-section, and the other end extended a considerable distance from side a^2. Above the guide-plate W is a guide-plate W' of the same proportion and length as plate W and extending from the side a^2 in line with the lower edge of slot V'. Above the plate W' is a plate W^2, which extends from the lower edge of the slot v^2 as described of the plate W from slot V.

Y (see Fig. 11) represents one of the division-tubes which are employed between the bales for the purpose of tying the separate bales and which consist of a tube of considerable size, which is longitudinally slotted, as at y, and which tube in length is slightly longer than the described distance from the outer surface of side a^2 to the outer surface of the side a^3 of the receptacle A and is preferably made from steel.

Upon the outer end of the guides W' W^2 is a frame Z, (see Fig. 9,) which is rectangular in form and slightly wider than the guide V and is composed of the vertical sides z z' and upper end z^2 and lower end z^3, which end z^3 extends to the upper side of the guide W. On the under side of the upper end of frame Z is a downwardly-extended plate z^4, which is curved on its lower edge and extends within the upper correspondingly-grooved portions of the guide W^2. Between the upper and lower ends z^2 z^3 of the frame Z is a cross-bar z^5, on the under side portion of which is a plate z^6, which is curved on its lower edge to enter the upper grooved portion of the guide W'. On the under side portion of the lower end z^3 of frame Z is a plate z^7, which is curved on its lower edge and extends within the longitudinally-grooved guide W. On the upper side portion of the bar z^5 is an upwardly-extended operating-handle z^8.

At the end of the side a^2 near the entrance to the baling-chamber B' are slots V^4 V^5 V^6, which are in line with the longitudinal openings between the respective angle-bars b^{10} b^{15} and b^{15} b^{16} and b^{16} b^{13}, and with the side a^2 of said chamber, beneath said slots, are connected the respective longitudinally-grooved guide-plates W^3 W^4 W^5, as described of the guide-plates W W' W^2. In the other side a^3 of the feed-receptacle A are slots v^7 v^8 v^9, which are directly opposite the slots v^4 v^5 v^6.

Upon the outer ends of the guide-plates W W′ W² is a frame Z′, which is precisely the same as frame Z and provided with an operating-handle z^{12} in like manner. Upon the frame Z′ are downwardly-curved plates z^8 z^9 z^{10}, which are the same as the plates z^4 z^6 z^7 on frame Z.

In the operation of the improved baling-press power is communicated from the engine through belt *l* to the belt-pulley L on shaft K, which is transmitted to the gear-wheel *l′* on shaft I through the gear-wheels F F′, and thence to the pitman G, and the plunger-frame E is driven with rapidity and caused to describe a reciprocal movement in the direction of the opening in the respective baling-chambers B B′, and the head-blocks E′ E² are caused to traverse the lower receptacle or feed-chamber and enter a short distance within the entrance to said baling-chambers. The power thus transmitted to the shaft I is transmitted to the belt-pulley *n* on shaft N′, and the sprocket-chains n n^5 are set in motion, and the rod P, with the material-conveying plates *p*, is caused to move in the direction as shown by the arrow or that of the compressing-plate S and the receptacle *a′* for the baling material, the lower rear portion of which plates are drawn over the upper surface of the plate O, and thereby retain the front of one angle of each plate in a vertical position, which position is retained in passing over the inclined portion *o* of plate O. In leaving the lower end portion of plate O the accumulated material on the plates *p*, which is condensed between said portion *o* and plate S in rapid succession, is forced within the lower receptacle *a′* and in such quantity as to cause a resistance to the several plates *p* on each rod P, which resistance continues to the point in which the rear end of each plate *p* passes the lower end of the portion *o* of plate O, when the condensed material reverses the position of each plate, as seen in Fig. 3, and the plates travel with the other angle in an upright position until the end portion of plate O above shaft N is reached, and in contacting with the said end of said plate the plates *p* are again reversed in position, as seen in the drawings above the plate O. In this manner there is no loose material carried by the plates *p* from the lower receptacle *a′*. Power is also communicated from the shaft K to the pulley N⁸ on shaft N⁷, and the sprocket-chains n^{15} n^{15} are set in motion and in the direction as shown by the arrow or that of the plate S′ and the feed-chamber beneath said plate S′. The material to be baled is placed in large quantities in the upper receptacle for the material, which, falling upon the triangular plates *p* upon the sprocket-chains n^4 n^5, is carried in one direction and that falling upon the plates n^{17} on the sprocket-chains n^{15} n^{15} is carried in an opposite direction in the direction of the condensing devices, the operation which is described being in repetition at each end of the duplex feed-chamber A. The material which falls upon the plates *p* on the sprocket-chains n^4 n^5, which act as conveyers of the material, is carried to a position on the end *o* of plate O directly opposite the compression-plate S. During the reciprocal movements of the plunger-frame E the levers T T′ T² T³ ride upon the respective rollers e^{10} e^{13} e^{12} e^{14} on said plunger-frame, and at the limit of retraction from the baling-chamber said rollers strike the cam l^2 on each lever and with force exerted to draw the bars s' s^2 and s^6 s^6 downwardly with corresponding energy and also condensing-plates S S′. The material which is presented to the condensing-plate S during the interval in which the head-block E is at the greatest distance from the opening in the baling-chamber B, in the position as seen in Figs. 1 and 3, and upon the forward movement of the head-block E′ in the direction of said baling-chamber B the rollers e^{10} e^{13} on the plunger-frame come in contact with the curved under side portion *l* of each lever T T′ and the plate S is forced in an upward direction and also forward by the pivots S² S³ in the slots S S′ in the sides *h h′* of the receptacle H, thus bringing said plate S opposite the inclined end *o* of the pate O and the lower end of said plate above the plane of the upper edge of the lower receptacle A, and remains in position until the position of the head-block E is reversed, in the reversal of which movement of said head-block the condensed material is carried down by the conveyers *p* under the end of the plate S, and the lower end of said plate coming in contact with this condensed material forces it still farther into the receptacle *a* for the action of the head-block E, which head-block forces the condensed material into the baling-chamber B to form the bale. The material is further prevented from being crowded from the receptacle *a* by the pins *r* on the transverse bar R, between which the separate plates *p* pass in successive order. At the other end of the upper receptacle H the material falls upon the endless material-conveying plates p^{17} and is carried to a position opposite the plate S′ and is compressed between said plate and the opposing inclined surface of the plate O′ and is compressed also in the space in the lower receptacle or, as described, between the movable and fixed plates S and *o* at the other end of the chamber H. In the compression of the material, as before described, by plates S S′ the respective spring-actuated rods U U′ and U² U³ act to drive the lower end of the respective plates S S′ to a position near the inner end of the respective slots S⁴ S⁶ S⁷ S⁸, and in the upward movement of the said plates S S′, which is also forward toward the respective conveyers of the material, the position of the said compressing-plates is retained in the same plane as the opposing surfaces of the plates O O′, and upon the descent of said plates yield sufficiently to permit of the passage of the condensed material. Following the ac-

tion of the respective head-blocks in the formation of the first bale in the baling-chamber B a slotted tube Y is placed in each one of the longitudinally-slotted guides W W′ W² and W³ W⁴ W⁵ with one end inserted in the respective grooves *v v′ v²* and the frames Z Z′ arranged in position opposite the other end of each tube, with the curved plates Z⁷ Z⁶ Z⁴ on frame Z and the plates Z⁸ Z⁹ Z¹⁰ on frame Z′ opposite said ends of said tubes, respectively, the slot Y on said tube being arranged toward the delivery end of the chamber B. The handle *z*⁸ of said frame Z is then seized by the hand, and at the movement the head-block E approaches a position within the entrance to the baling-chamber B and the grooves *e*²⁸ *e*²⁹ are opposite the slots V V′ in the side *a*² of the receptacle A. The frame Z is moved rapidly toward the side *a*² of said receptacle and the plates Z⁴ Z⁶ Z⁷ force the separate tubes Y forward, the tubes in the slots V V passing within the grooves *e*²⁹ *e*²⁸ through the head-block E′ and guided by said grooves enter the slots *v*⁸ *v*⁹, respectively, in the side *a*³ of the feed-chamber A and are retained in said slots upon the retraction of the head-block E′, the uppermost tube Y, which extends within slot V², being guided by and extending over the top portion of said head-block beneath the plate *e*¹⁸ and outside of the pins *e*¹⁹ and enters the slot V⁷ in the side *a*³ of receptacle A. Upon the return movement of the head-block E′ the material which has accumulated in the feed-chamber *a′* is forced within the baling-chamber B and that accumulated in the feed-chamber near the baling-chambers B B′, the head-block E′ in one direction of movement being retracted, while the head-block E² is forced within the opening to the baling-chamber B′ in the other direction, in which alternate movements of the respective head-blocks E′ E² the accumulated material is forced into each baling-chamber and causing the slotted tubes Y to move from their position in the direction of the delivery end of each baling-chamber, which tubes pass along with the baled hay toward the delivery end of the baling-chamber. During the formation of the first bales the separate bale-tying wire is passed around the outer ends of the bale and thence through each tube in rear of the first bale and then tied. The tool Y′, as seen in Fig. 13, is placed in position, with the pointed end *y*² in the slot of the tube Y, and a half-turn given the several tubes Y and the tubes reversed in position for the tying of the next bale. When the material compressed by the head-blocks is sufficient to form a second bale, the guides W W′ W² W³ W⁴ W⁵ on both ends of the feed-receptacle A are supplied with the bale-dividing tubes, as before described, and upon the forward movement of the head-block E′ toward the opening on the baling-chamber B the frame Z is caused to insert the tubes within the feed-receptacle, as before described, and in the slots in the side of said feed-receptacle, and the conditions being the same as respects the formation of the bale in the chamber B′ the frame Z′ is operated to insert the tubes Y in the slots in the other feed-receptacle when the head-block E² approaches the opening in the baling-chamber B′, which tubes are carried along with the continuous passage of the baled material, as heretofore described in the movement of the tubes on the chamber B. When the second series of division-tubes are near the center of the baling-chamber, in rear of the second bale so formed in each baling-chamber, one end of the separate baling-wires is extended through the respective tubes in rear of the first bale and the first series of baling-tubes, thence through the series of tubes in the rear of the second bale, and the ends twisted together, as in the ordinary mode of fastening the ends of the baling-wire, and the operation of tying the bales repeated. As soon as the bales have been secured by the baling-wires a half-turn is given the second series of tubes Y, thus leaving the slot in position for the tying of the next bale. As soon as the first bale emerges from the delivery end of the baling-chamber the separate tubes Y fall from the bale. During the passage of the division-tubes from the delivery end of the baling-chambers the slots *c*⁵, *c*⁶, *c*⁷, and *c*¹² in the clamping-plates C² C³ and also in the clamping-plates C C′ afford space for the uninterrupted passage of the ends of the division-tubes, which may extend past the outer surfaces of the angle-irons in the side of the baling-chamber. During the passage of the bales of compressed material through each one of the baling-chambers the compactness of the bale is effected by the adjustment of the nuts *c*² *c*⁴ on the clamping-plates C C′ and the nuts *c*⁷ on the clamping-plates C² C³ and the sides of the chamber brought closer together. In order to save turning of the division-tubes between the bales, I employ an alternate form of tube, as above at X in Fig. 14, which consists of a tube of the same length as tube Y, but separated longitudinally into two separate parts *x x*. Upon each side of the tube at the dividing-line the opening *x*² is nearly of the same width of slot *y* in the tube Y and extends from each end of the tube X toward the central part of the tube and about two-thirds the distance from each end, the remaining central portion of the tube having the separate parts coming together, as at X³. The exterior part of the tube X at one end is screw-threaded, as at *x*⁴, and upon said end is an internally-screw-threaded clamping-sleeve *x*³, having a transverse opening *x*⁸. Upon the outer side portion of the sleeve *x*⁵ are separate lugs *x*⁶ *x*⁶, which extend a short distance outwardly from the outer edge portion of the sleeve and in the plane of the said side of the sleeve or clamp, with which lugs is pivotally connected one end of a flat bar *x*⁷, which extends within the slots *x*² *x*² of the said tube.

In operation the tubes X are placed in the guides upon the side of the receptacle A as

described of the division-tubes Y and inserted in position within the said receptacle in the same manner as described of the said tube Y, with the slots x^2 x^2 in each tube in a horizontal plane within the other and the lever x^7 extended in the direction of the delivery end of the baling-chamber. As soon as the tubes X have moved in the baling-chamber along with the baled material a sufficient distance to make a bale the lever x^7 is thrown out from slot x^2 and the clamp x^5 reversed in a horizontal position, so as to register the slot x^2 in the tube X with the slot or transverse opening x^8 in the clamp. A second series of tubes X are then inserted in rear of the bale described, and after traveling a short distance with the bale the lever x^7 of this last series is thrown out of the slot in the tube X and the baling-wires passed through the tubes and tied, as before described. These clamps x^5 on the last series of tubes described are then reversed in position for the tying of the succeeding bale. After tying the first bale alluded to the lever x^7 is thrown between the separate parts of the tube X in slot x^2, thereby clamping the separate parts of the tube and keeping them from falling apart when discharged at the delivery end of the baling-chamber. In parting from the bale the baling-wire slips through the contacting parts x^3 of tube X, which parts are yielding, so as to permit of this result.

In the baling-chamber B′ the introduction of the division-tubes and the tying of the separate bales are accomplished in precisely the same manner as heretofore described in chamber B. The press may be constructed with a single baling-chamber when required and the parts operated in the same manner as in the duplex baling-press before described.

Instead of permanently connecting the guides for the division-tubes with the side of the receptacle A, I may employ a separate device, as seen in Fig. 18, in which Z is an upright thrusting-plate, upon one face portion of which are separate fixed sockets or keepers z^{13} z^{14} z^{15}, each of which extends a short distance outwardly from plate Z^2 and are arranged one beneath the other in line with the slots in the side of receptacle A and in which one end of the division-tube is inserted. A handle z^{16} on the other side of plate Z^2 enables the outer end of the division-tubes, which are inserted a short distance within the slots in the side of receptacle A, to be thrust in position at the proper time and as heretofore described.

Having fully described my invention, what I now claim as new, and desire to secure by Letters Patent, is—

1. The combination in a baling-press with the baling-chamber and the lower receptacle for the material to be baled, of an auxiliary upper receptacle having an opening therethrough for the passage of the material to be baled, a head-block and a pitman having a suitable source of power in the lower receptacle, a fixed transverse plate upon one side of said opening in the upper receptacle and separate wheels and endless traveling chains upon said wheels extending over and contiguous with said fixed plate, transverse rods connected with said separate chains, and separate angular material-conveying plates, pivotally connected with each rod and adapted to contact with and be thrown into position by the opposing surface of said fixed plate.

2. The combination in a baling-press with the baling-chamber and the lower receptacle for the reception of the material to be baled having a longitudinal opening in the sides thereof, of an auxiliary upper receptacle having an opening therethrough for the passage of the material a head-block and a pitman having a suitable source of power in the lower receptacle, a fixed transverse compressing-plate upon one side of the said opening in the upper receptacle and a movable compressing-plate upon the other side of said opening and opposite the said fixed plate in the upper receptacle and pivots in suitable guides upon said upper receptacle connected with said movable plate separate wheels journaled upon the inner side of the said upper receptacle and separate endless traveling chains upon said wheels extending between said movable and said fixed compressing-plates and contiguous with said fixed plate, material-conveying devices upon said chains and bars connected with the pivots on said movable compressing-plate at one end and supporting said plate and a bar-actuating lever pivotally connected with the lower end of said bars and the side of said lower receptacle and devices upon said head-block extending through the opening in the sides of said lower receptacle adapted to contact with and operate said levers.

3. The combination in a baling-press with the baling-chamber, and the lower receptacle for the reception of the material to be baled, of an auxiliary upper receptacle having an opening therethrough for the passage of the baling material, a fixed transverse plate, in the upper receptacle, and a movable compressing-plate opposite the fixed plate in the said upper receptacle and separate wheels and endless traveling chains upon said wheels extending between said movable and said fixed compressing-plates and contiguous with said fixed plate transverse rods connected with said separate chains, and separate angular material-conveying plates pivotally connected with each rod and adapted to contact with and be thrown into position by the opposing surface of said fixed plate.

4. In a baling-press the combination with the baling-chamber, and the lower receptacle for the material to be baled, of an auxiliary upper receptacle for the baling material directly above the lower receptacle, and having an opening therethrough for the passage of the said material, a head-block and a pitman having a suitable source of power in the

lower receptacle, a fixed transverse plate in the upper portion of the upper receptacle having a portion bent at an angle thereto and inclined downwardly in the direction of the entrance to the lower receptacle, transverse shafts at each end, and at the angle in said transverse plate, and separate sprocket-wheels on said shafts, and separate sprocket-chains extending over said wheels, and transverse rods connected with said separate sprocket-chains, and material-conveying plates on said rods, and a transverse bar connected with the sides of the said auxiliary or upper receptacle near the entrance to the lower receptacle beneath the endless sprocket-chains having pins extending upwardly and at one side of the plane of rotation of the said material-conveying plates.

5. An initial compressor for baling-presses, comprising a receptacle for the material to be baled, having an opening therethrough for the passage of the material, and slots in the upper portion of the sides of said receptacle, a fixed downwardly-inclined compression-plate in said receptacle, and a movable compressing-plate opposite said fixed plate and having pivots extending through the said slots in the sides of said receptacle, levers connected with the said pivots for actuating the upper end of said plate, and spring-actuated bars on said receptacle connected with the lower end of said movable plate.

6. In a baling-press, the combination with the baling-chamber and the lower receptacle for the material to be baled having longitudinal openings in the sides thereof, of an auxiliary upper receptacle having an opening therethrough for the passage of the material to be baled, and slots in the upper portion of the sides of said receptacle, a reciprocating head-block and a pitman having a suitable source of power in the lower receptacle, and antifriction devices on the sides of said head-block extending through the openings in the sides of the lower receptacle, separate fixed and movable material-compressing plates in the upper receptacle, and pivots upon the upper portion of said movable plate extending through said slots in the upper receptacle, and bars on the outer side of said receptacle connected at their upper end with said pivots, a horizontal lever pivotally connected at one end with the outer side portion of the lower receptacle, having a curved lower edge portion adapted to contact with the antifriction devices on the side of said head-block, and also pivotally connected at the other end with the lower end portion of said bars, and self-retracting devices upon said upper receptacle connected with the lower end of said movable compressing-plate.

7. In a baling-press the combination with the baling-chamber and the lower receptacle for the material to be baled, having longitudinal openings in the sides thereof, of an auxiliary upper receptacle having an opening therethrough for the passage of the material, and slots in the upper portion of the sides of said upper receptacle, a reciprocating head-block and a pitman having a suitable source of power in the lower receptacle and antifriction devices on the sides of said head-block extending through the openings on the sides of said lower receptacle, a movable material-compressing plate in the upper receptacle, and pivots connected with the upper end portion of said plate extending through the slots in the sides of the upper receptacle, and bars upon the outside of said receptacle connected with said pivots at the upper end, a horizontal lever pivotally connected at one end with the outer side portion of the lower receptacle, and at the other end with the lower end of said bars, and having a curved lower edge portion in the path of the antifriction devices on said head-block, and a cam also in the path of said antifriction devices at the pivotal point of connection of said lever with the said lower receptacle.

8. A bale-dividing tube having separate detachable parts and a slot upon the dividing-line of said parts and a rotatable sleeve extending around and uniting said separate parts at one end of said tube having a transverse slot adapted to register with the slot in said tube.

9. A bale-dividing tube having separate detachable parts and a slot upon the dividing-line of said parts a rotatable sleeve extending around and uniting said separate parts at one end of said tube having a transverse slot adapted to register with the slot in said tube and means for securing said sleeve in position upon said tube.

10. A bale-dividing tube having separate detachable parts and a slot upon the dividing-line of said parts, said tube having an externally-screw-threaded portion at one end and an internally-screw-threaded sleeve having a transverse slot adapted to register with the slot in said tube.

11. A bale-dividing tube for the baling-chamber of baling-presses having separate detachable parts and a slot upon the dividing-line of said parts, a sleeve uniting the separate parts at one end of said tube, and a lever upon said tube extending, within said slots in said tube.

12. A bale-dividing tube for the baling-chamber of baling-presses having separate longitudinal detachable parts, and a slot upon the dividing-line of said parts, said tube having an externally-screw-threaded portion at one end, an internally-screw-threaded sleeve having a transverse opening upon the screw-threaded end of said tube said sleeve having a lug and a lever pivotally connected with said lug and extending within the slots of said tube.

13. In a baling-press the combination with the baling-chamber having longitudinal openings in the sides thereof, and with the receptacle for the material to be baled having slots in line with the openings in the side of said

baling-chamber, of horizontal guide-plates connected with and extending at right angles to the outer side portion of said receptacle and in line with the lower edge of the slots in the side of said receptacle and adapted to support and guide the bale-dividing tubes described, when entering said receptacle.

14. The combination with separate bale-dividing tubes for baling-presses, of a movable tube thrusting-plate having separate carriers for the tubes.

15. In a baling-press the combination with the baling-chamber having longitudinal openings in the sides thereof and with the receptacle for the material to be baled having slots in line with the openings in the side of said baling-chamber of horizontal guide-plates connected with and extending at right angles to the outer side portion of said receptacle and in line with the lower edge of the slots in the side of said receptacle and adapted to support and guide a series of bale-dividing tubes for the purpose described.

16. In a baling-press the combination with the baling-chamber having longitudinal openings in the sides thereof and with the receptacle for the material to be baled having slots in line with the openings in the sides of said baling-chamber, and with the material-compressing head-block and pitman having a suitable source of power in said receptacle, of separate horizontal grooved guide-plates connected at one end with the outer side portion of said receptacle and in line with the lower edge of the slots in the side of said receptacle adapted to receive a series of bale-dividing tubes, and a frame having separate downwardly-extended plates adapted to contact with the outer end portion of the respective division-tubes in each guide-plate.

17. In a baling-press the combination with the baling-chamber having longitudinal openings in the sides thereof, and with the receptacle for the material to be baled having slots in line with the openings in the side of said baling-chamber of separate horizontal grooved guide-plates connected at one end with the outer side portion of said receptacle and in line with the lower edge of the respective slots in the sides of said receptacle and adapted to support and guide a series of bale-dividing tubes, a reciprocating head-block in said receptacle having transverse grooves in the plane of the slots in the side of said receptacle adapted to come into line with said slots and a pitman having a suitable source of power.

18. In a baling-press the combination with the baling-chamber and with the lower receptacle for the reception of the material to be baled having longitudinal openings in the sides thereof, of an auxiliary upper receptacle having an opening therethrough for the passage of the baling material, and slots in the upper portion of the sides of said upper receptacle inclined at an angle to the perpendicular, and slots extending in the lower part of said receptacle, a movable compression-plate in said upper receptacle having pivots extending through the said inclined slots, and bars upon the outer side portion of said receptacle connected with said pivots, and a spring-actuated bar in suitable lugs upon said receptacle having a bent portion extending through said horizontal slots in the sides of said upper receptacle, a horizontal plate in said upper receptacle having a portion inclined downwardly at an angle and opposite in position to the movable compressing-plate, a head-block in the lower receptacle and a pitman power actuating devices upon said press actuating said pitman, and antifriction devices on the sides of said head-block extending through the opening in the sides of the lower receptacle and a lever pivotally connected at one end with the outer side portion of the lower receptacle having the lower edge curved downwardly in the arc of a circle, and contacting with the antifriction devices on the side of the head-block and the other end of said lever pivotally connected with the lower end of said bars on the side of the upper receptacle connected with the movable compressing-plate, and a downward inwardly-curved extension of said lever at the pivotal point of connection with the lower receptacle.

19. In a baling-press the combination with the baling-chamber and the lower receptacle for the reception of the material to be baled, of an auxiliary upper receptacle having an opening therethrough for the passage of the baling material, separate transverse shafts in the upper part of said upper receptacle and also near the entrance to the lower receptacle and extending through the sides of said receptacle, sprocket-wheels upon said shafts and sprocket-chains extending over said sprocket-wheels, transverse rods connected with said sprocket-chains and material-conveying devices upon said rods, and a belt-pulley upon one of the shafts carrying said conveyers, a head-block in the lower receptacle and a pitman, power-conveying wheels in the lower receptacle having crank-wrist connected with said pitman and a belt extending over one of said wheels and also over the belt-pulley on the shaft carrying said sprocket-wheels, and chains.

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