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W. S. LIVENGOOD.

BALING PRESS.

No. 575,843. Patented Jan. 26, 1897.

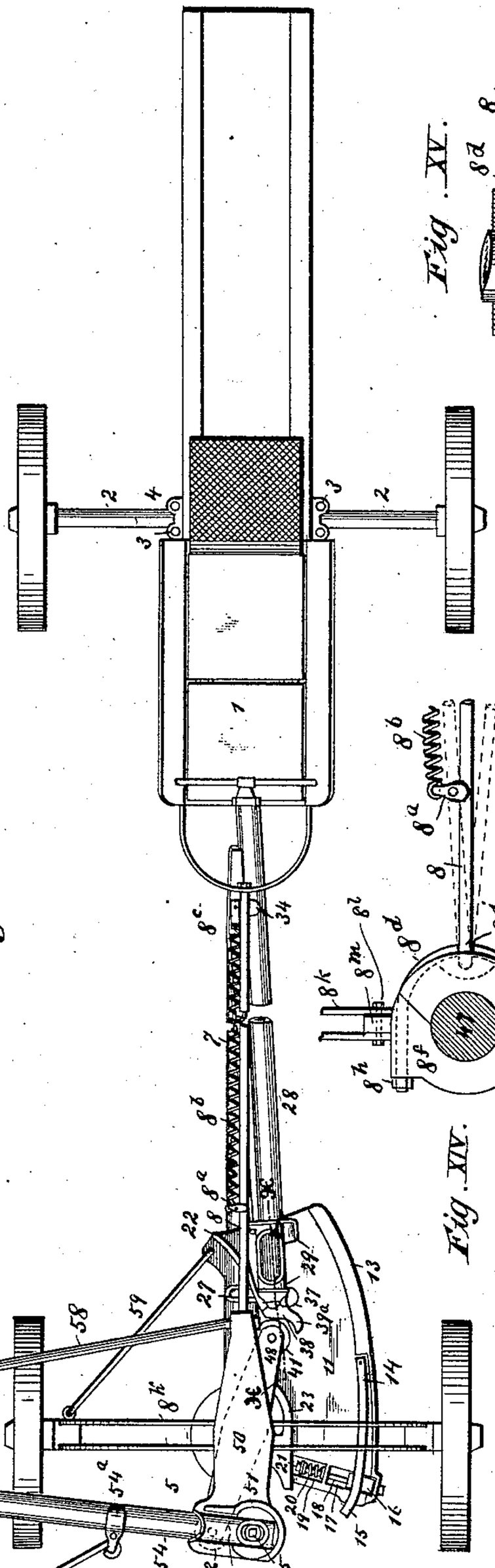

Fig. I.

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Jessie Edmunds

Fig. XIV.

Fig. XV.

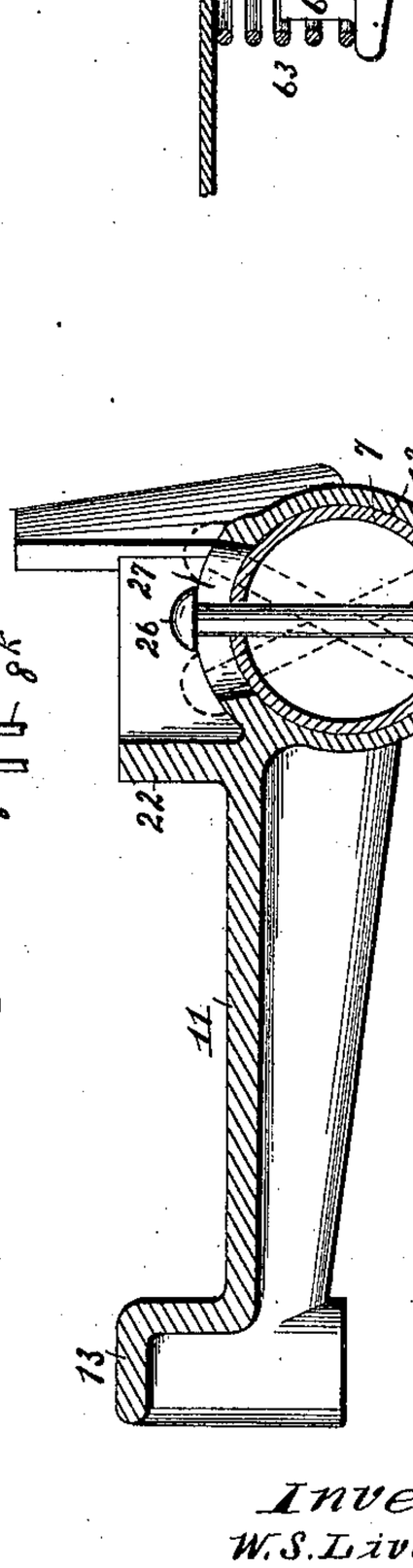

Fig. XIII.

Fig. II.

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Fig. III.

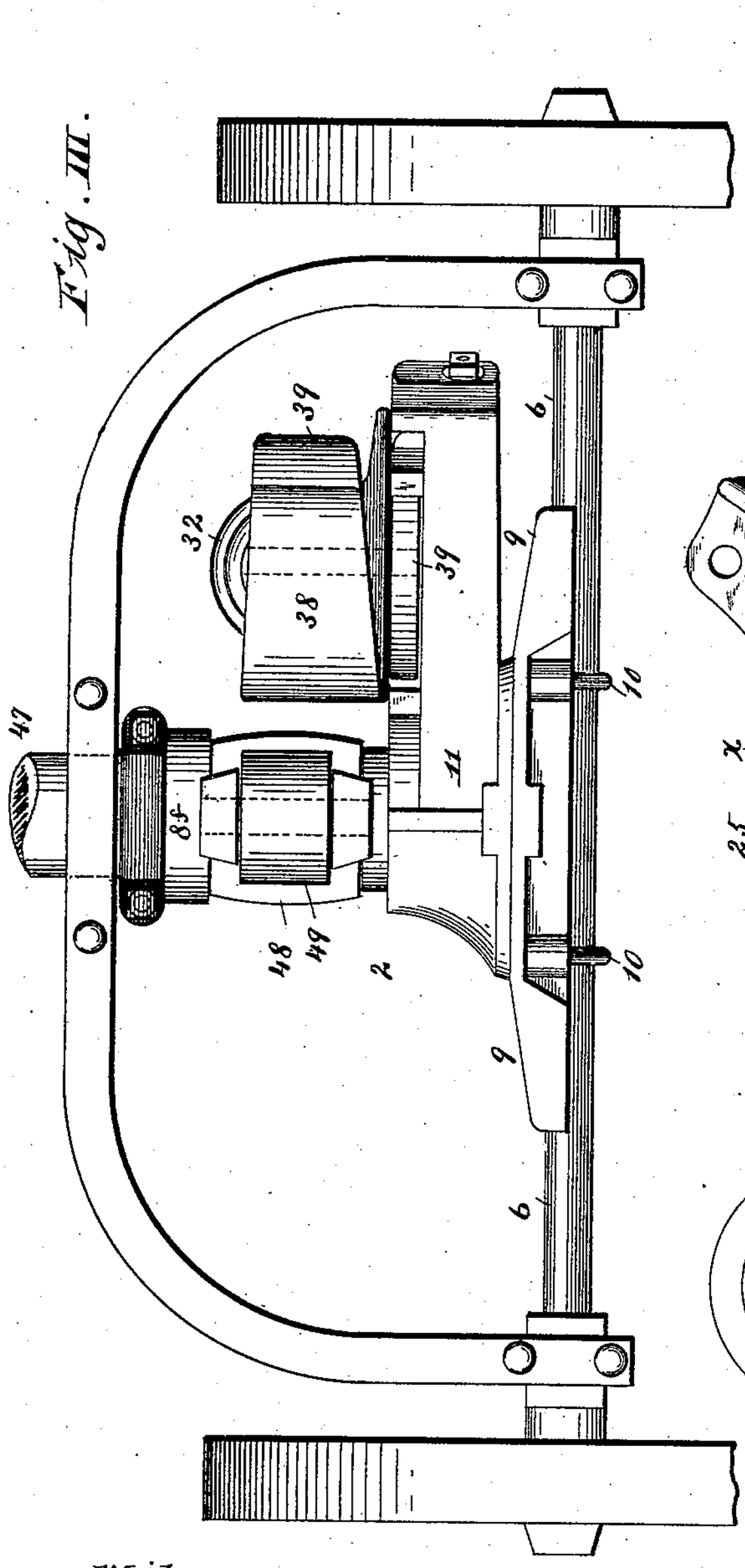
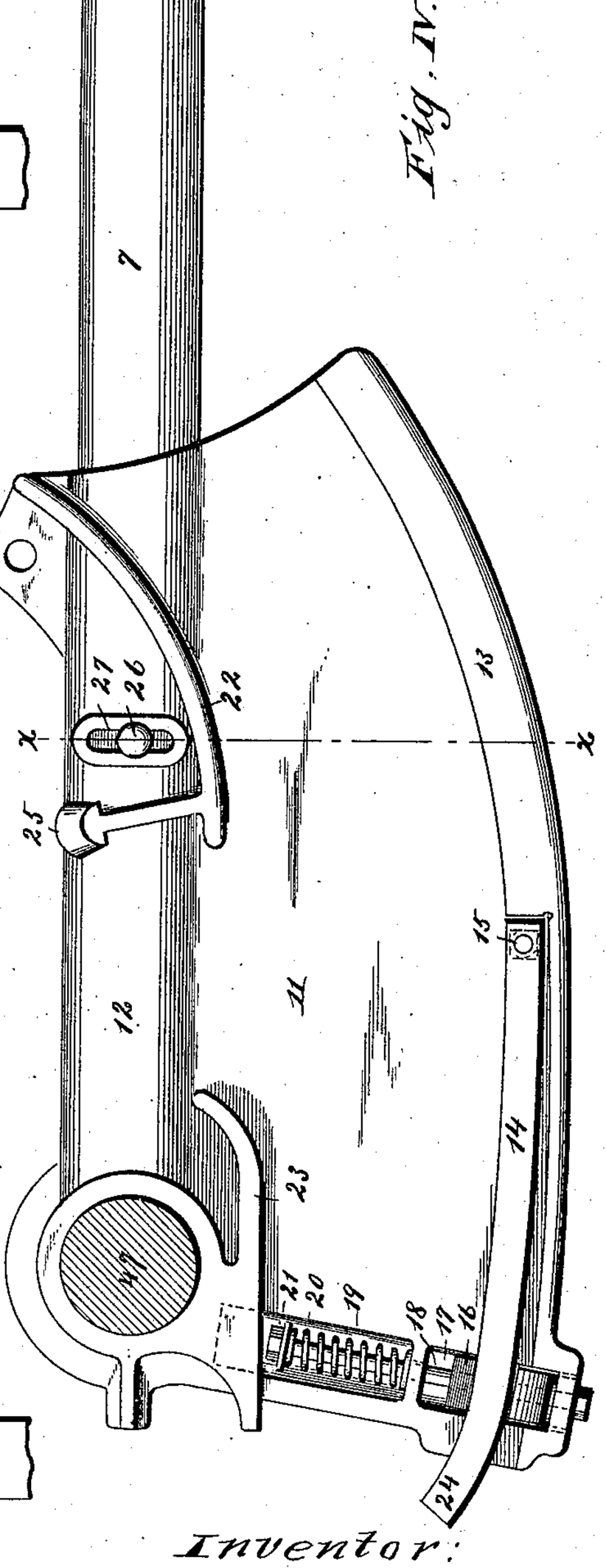


Fig. IV.



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W. S. LIVENGOOD.

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Fig. V.

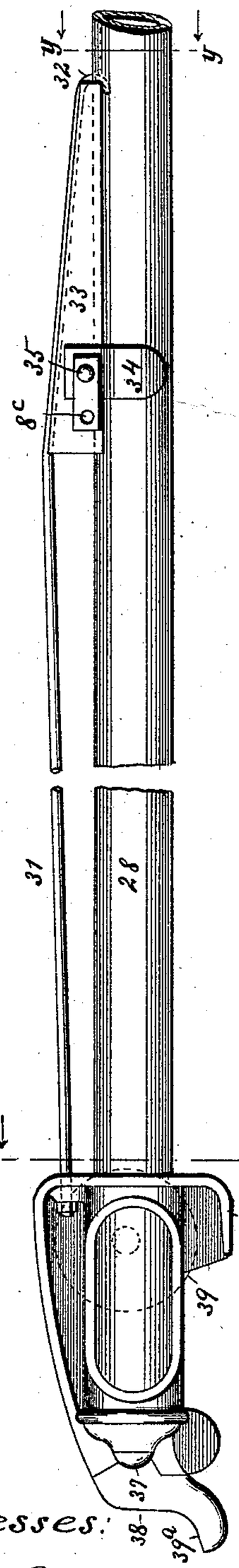

Fig. VI.

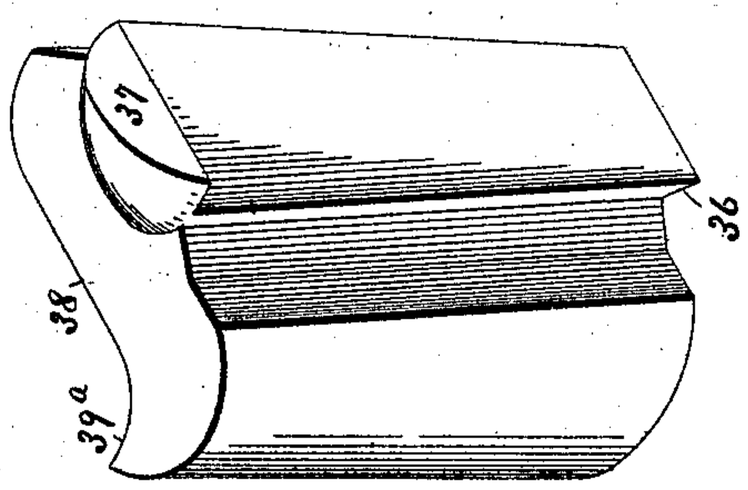

Fig. VII.

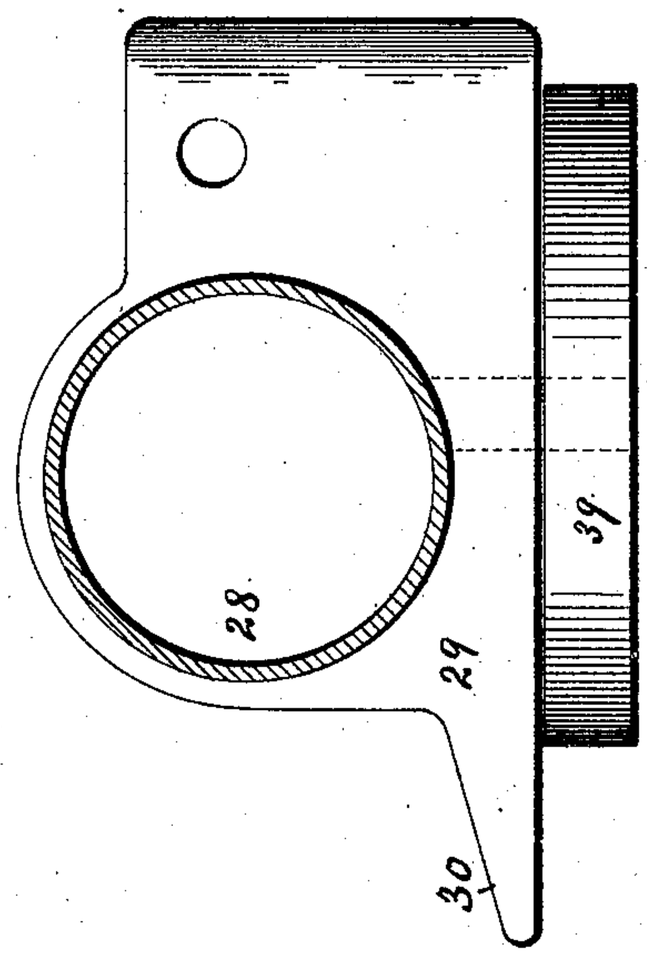

Fig. VIII.

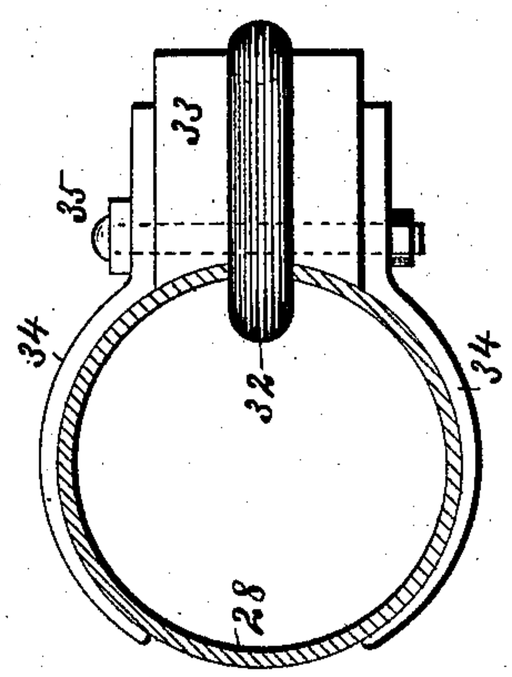

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Fig. IX.

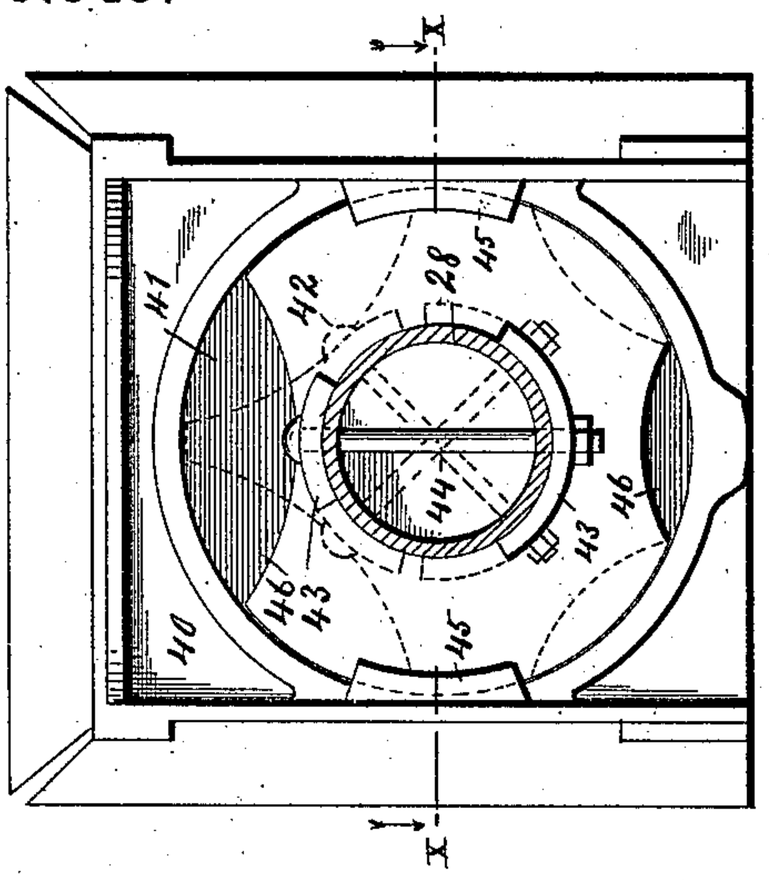


Fig. X.

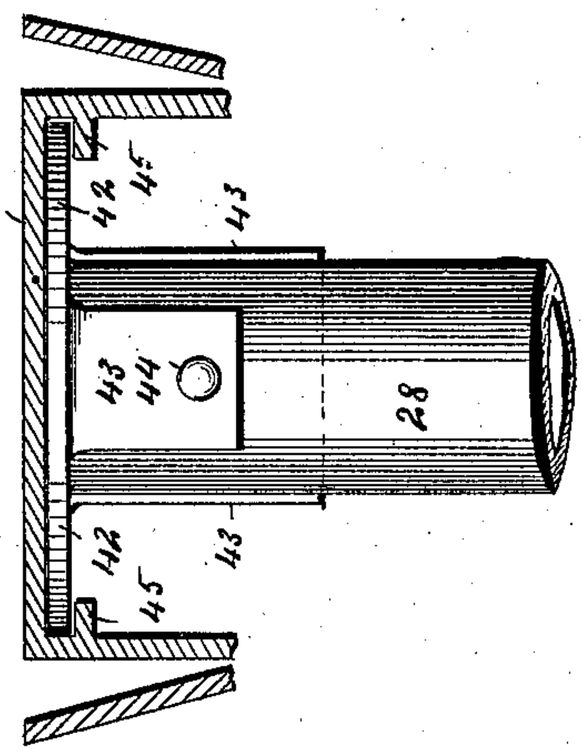


Fig. XI

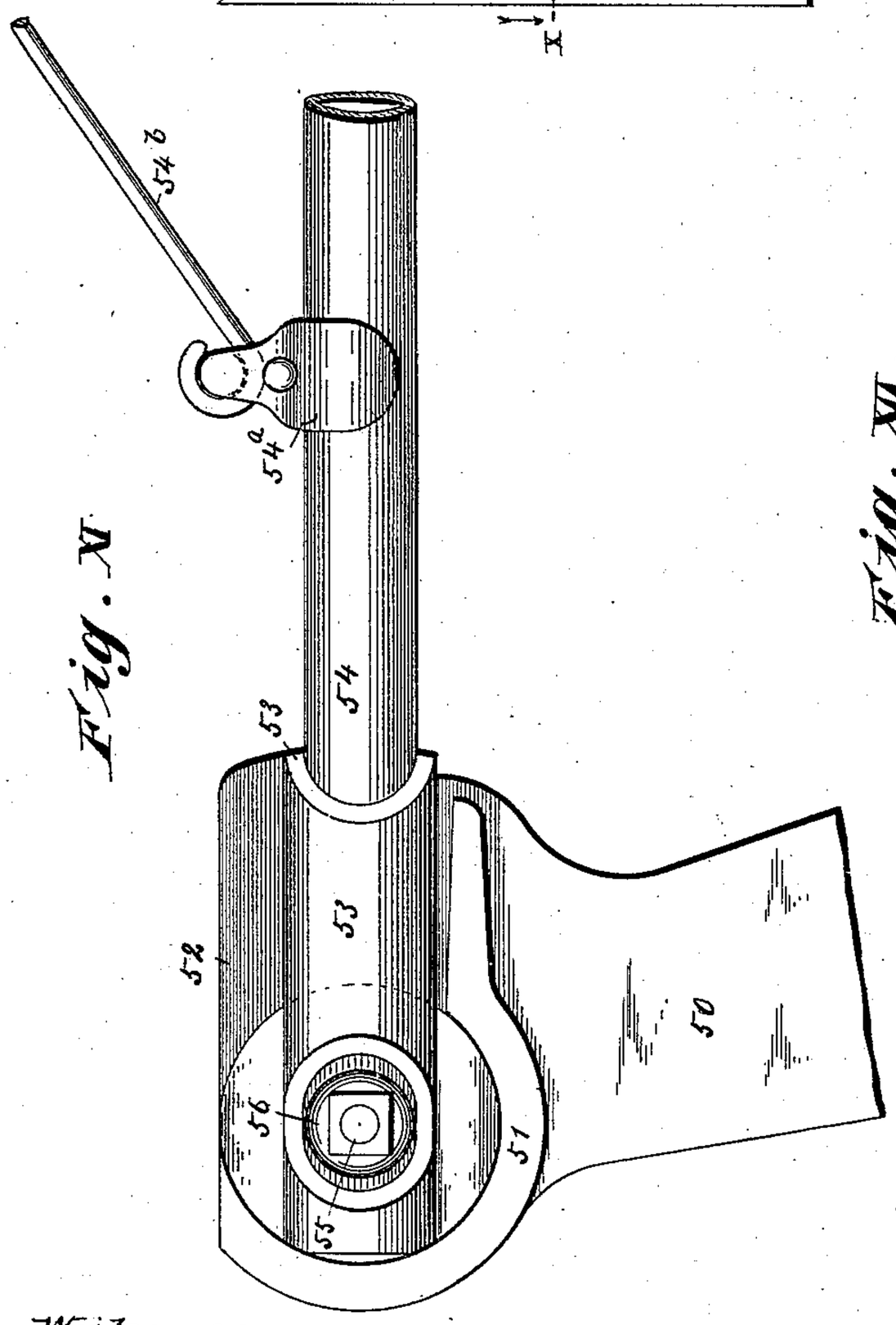
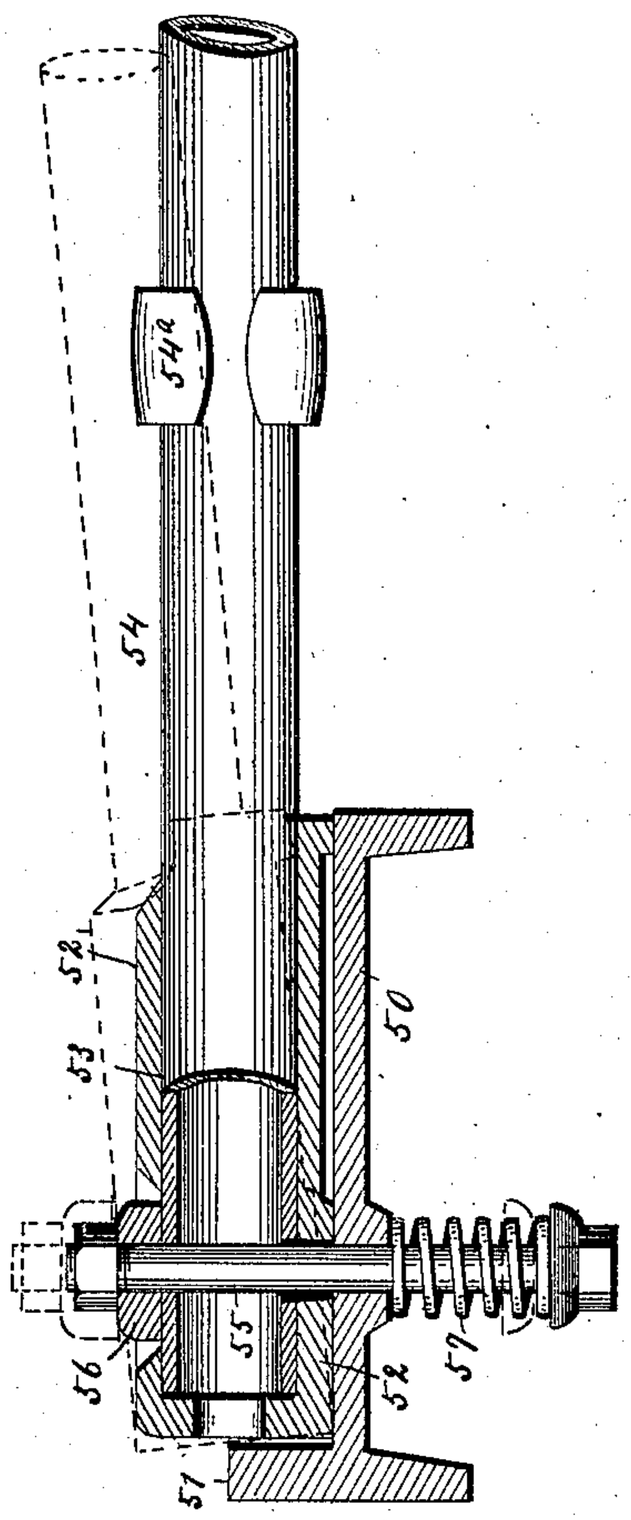


Fig. XII.



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W. S. LIVENGOOD.

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No. 575,843. Patented Jan. 26, 1897.

Fig XVII

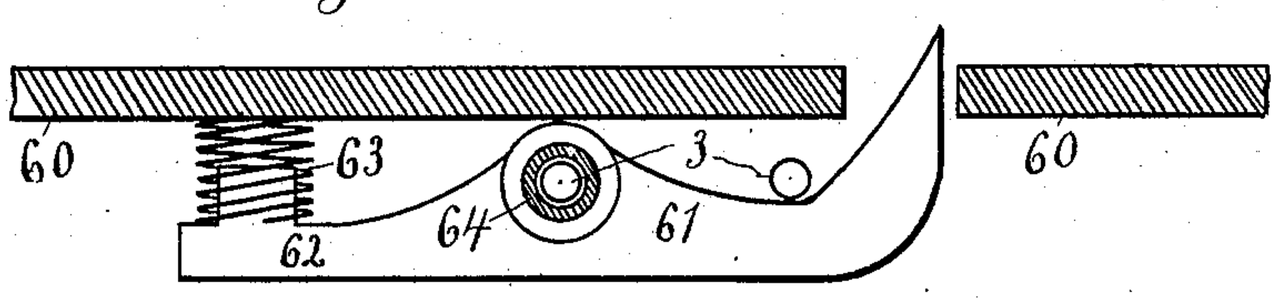
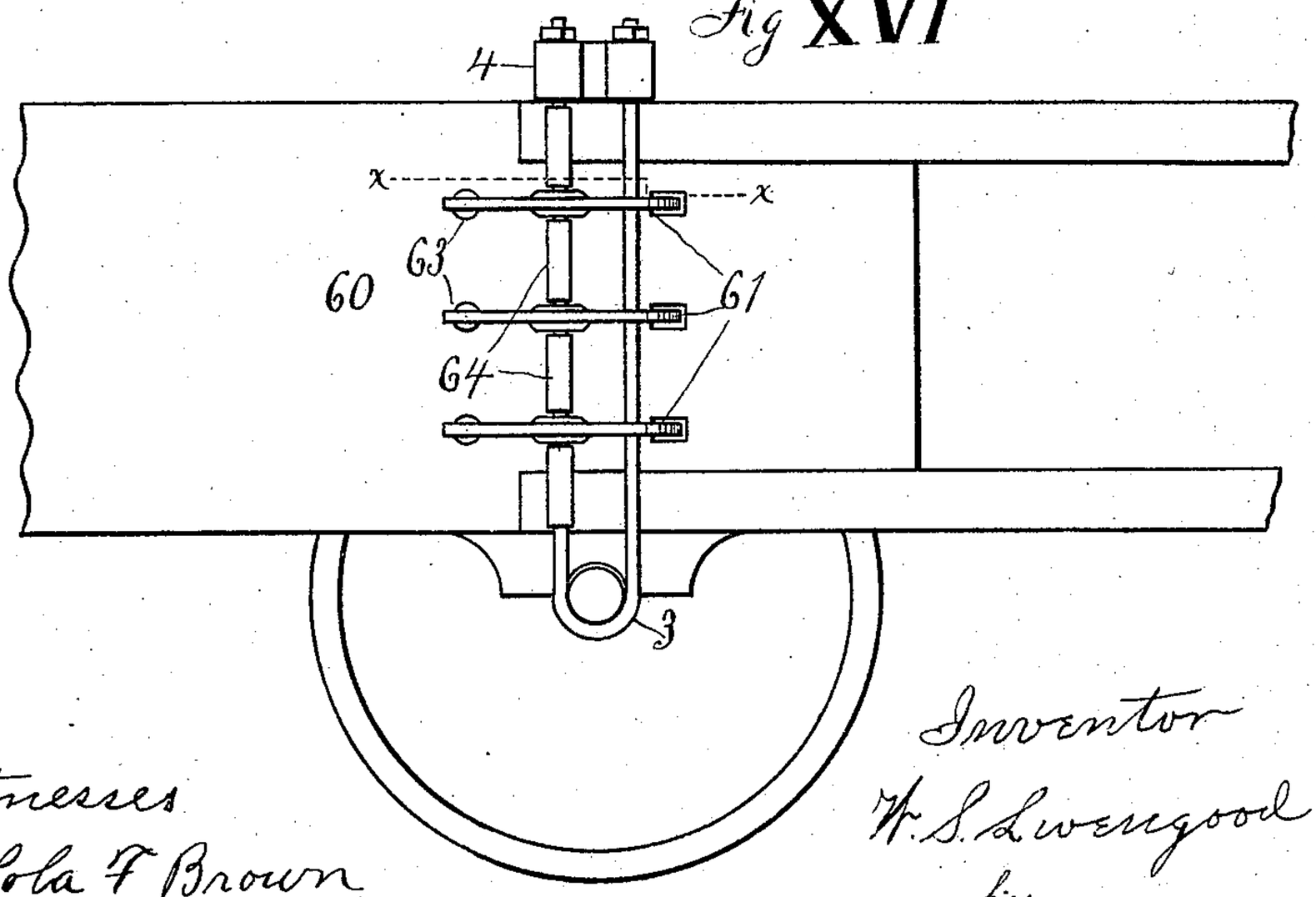


Fig XVI



Witnesses
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W. C. Brown.

Inventor
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by
Knight Bros
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UNITED STATES PATENT OFFICE.

WINFIELD S. LIVENGOOD, OF KANSAS CITY, MISSOURI, ASSIGNOR TO THE DEVOL-LIVENGOOD MANUFACTURING COMPANY, OF SAME PLACE.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 575,843, dated January 26, 1897.

Application filed April 17, 1895. Serial No. 546,087. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD S. LIVENGOOD, of Kansas City, in the county of Jackson, and in the State of Missouri, have invented certain new and useful Improvements in Baling-Presses, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in baling-presses, having more particular reference to improvements in the power by which the press is actuated; and my invention consists in certain features of novelty hereinafter described, and pointed out in the claims.

Figure I represents a plan view of a baling-press embodying my improvements. Fig. II represents a cross-section of the power end of the press on the line X X of Fig. IV. Fig. III represents a front elevation of the power end of the press. Fig. IV represents a plan view of the bed-plate and a portion of the reach. Fig. V represents a detail plan view of the front portion of the pitman and its tie-rod. Fig. VI represents a detail perspective of the pitman-head. Fig. VII represents a sectional view on the line X X of Fig. V. Fig. VIII represents an end view on the line Y Y of Fig. V. Fig. IX represents a front view of the traverser, showing the manner in which the pitman is connected therewith. Fig. X represents a sectional view of the same on the line X X of Fig. IX. Fig. XI represents a plan view showing the manner in which the draft-pole is connected with the yoke. Fig. XII represents an elevation, partly in cross-section, of the same. Fig. XIII represents a plan view of my retainer-fastenings. Fig. XIV represents a detail plan view showing the manner in which the tie-rod is connected with the power-shaft. Fig. XV represents an elevation of the loop-and-stirrup connection of the same. Fig. XVI represents a side view of the press-box, showing the U-shaped rod, the retainers pivoted on one member thereof and withheld by the other member, the lug and spring, and the collars between the retainers to retain the same in position. Fig. XVII represents a cross-section on the line X X of Fig. XVI.

Similar numerals refer to similar parts throughout the several views.

1 represents the baling-press, mounted on the rear truck 2, the same being secured to the rear axle by the U-shaped rods 3, passing under the axle and secured to the cross-piece 4 of the baling-press frame.

5 represents the power, mounted on the front truck 6 and connected with the baling-press by the tubular reach 7 and the tie-rod 8.

8^a represents a bracket, secured adjustably to the tie-rod 8 by clamping thereon. To said bracket is connected one end of the coil-spring 8^b, the other end of said spring being connected with the pitman, toward the rear end thereof, by attachment to the plate 8^c on the clamping-bracket 34. Said spring performs the usual function of retracting the pitman, the tension thereof being adjustable by adjustment of the bracket 8^a on the tie-rod. Said tie-rod is connected at its forward end by the loop 8^i to the stirrup 8^d, secured to the head-block 8^e, which forms the upper journal-bearing of the vertical power-shaft. Said head-block is formed in two sections, to the front section 8^f of which said stirrup is attached by passing through the same and secured by nuts 8^h on the forward face thereof, said rear section, being retained in position by said stirrup, is recessed to admit the engagement of the loop 8^i with the stirrup. Said head-block is supported upon the arch 8^k, carried on the front axle, and is secured thereto by the bolts 8^l, passing through the arch and through the ears 8^m on the head-block.

9 represents a turn-table, mounted upon the front axle and secured thereto by the stirrup 10. Upon said turn-table is mounted the bed-plate 11, formed with the hollow cylindrical portion 12 for the admission of the reach. Along its outer edge said bed-plate is formed with the curved flange 13, said flange being cut away toward the forward part for the admission of the curved bar 14, pivoted to the bed-plate at 15, the inner edge of said bar forming with the inner edge of said flange to the rear thereof a continuous curved surface. Said bar near its forward end rests upon and is secured to the block 16, received in the recess 17 in the bed-plate.

18 represents a bolt passing through the outer face of the bed-plate, through said block 16, and into the recess 19 in the bed-plate, where it is provided with the tension-spring 20, retained thereon by the screw-cap 21.

22 represents a curved flange formed on the bed-plate at its rear inner portion extending across the line of the reach.

23 represents a flange formed on the bed-plate, inwardly curved at its rear and slightly inclined outwardly at its front extremity, said flanges 23 and 22 forming with the flange 13 and bar 14 a guideway for the travel of the pitman-roller, the front portion 24 of said bar 14 terminating in an abrupt curve and forming with the inclined front portion of flange 23 a brake to check and gradually stop the pitman on its rebound and relieve the jar incident thereto.

25 represents a lug formed on the bed-plate forming a stop-block to determine the lateral movement of the pitman and release the same from the trip-lever before or about the point of reaching the dead-center. The reach 7 at its front end is inserted in the hollow cylinder 12, formed on the bed-plate, and is secured therein by the bolt 26, operating in the slots 27, whereby the reach is permitted to rotate within the limit of said slot without affecting the bed-plate or the power, whereby if the power and the press be set on a wind or not on the same lateral level the strain on the parts incident to such inequality of setting will be relieved and accommodated by such rotation of the reach in the bed-plate.

28 represents the pitman, provided at its front end with the cap 29, loosely mounted thereon, having the inclined or wedge-shaped operating-face 30 and retained on the pitman by the tie-rod 31, connected with said cap, and secured to the pitman by the hooked extremity 32, engaging the wall thereof, as shown in Fig. VIII. Between said tie-rod at its rear portion and the pitman is interposed the wedge-shaped block 33, secured to the pitman by the clamping-plates 34, secured to said block by the bolt 35. Said cap is formed at its front end portion with a recess adapted to receive the wedge-shaped flanges 36 of the pitman-head, as shown in Fig. VI, whereby said head is secured to the pitman, the same being removable therefrom, the cap 37 limiting and retaining said head in position. Said head is formed with the concave end portion 38, adapted to be engaged by the trip-lever rollers, and has the curved extension at its outer corner to retain the same in operative engagement. 39 represents the pitman-roller mounted on the under side thereof. The pitman is connected with the traverser, as shown in Figs. IX and X, in which 40 represents the traverser, having in its front face the cylindrical opening 41, adapted to receive the pitman foot-plate 42, which is secured to the pitman by the bolt 44, passing through the flanges 43 on said plate and through the pitman. Upon said traverser, in front of said opening 41, are formed the flanges 45, extending over said opening sufficiently to retain the plate 42 therein, said plate being formed with the recesses 46 to permit its introduction past said flanges, when by giving said plate a turn it is engaged by the flanges and retained thereby. The connection thus effected renders the traverser independent of the pitman, and it may be operated without binding or strain however the power may be set with relation to the press. This independent relation of the reach and the pitman to provide against binding and strain is of the utmost importance in the operation of the press on hill sides or uneven ground, where it is often difficult if not impossible to obtain such a level for power and press as will permit of satisfactory operation.

47 represents a vertical power-shaft journaled in the usual and ordinary manner. 48 represents the trip-lever mounted on said shaft and provided at its ends with the anti-friction-rollers 49.

50 represents a yoke mounted on the upper end of the power-shaft. Said yoke at one end is enlarged and is provided with the upwardly-extending flange 51, forming a recess upon the upper face of the yoke. Upon the yoke, within this recess, is seated the draft-pole bearing-block 52, formed with the hollow portion 53 for the admission of the draft-pole 54. The draft-pole is secured to the bearing-block, and both are secured to the yoke by the bolt 55, passing therethrough. As shown, the bearing-block is cut away, leaving an opening for the admission of a washer 56 on the bolt bearing on the draft-pole, but I would not limit myself to this construction, as the function is performed equally well with or without such opening and washer. Said bolt is provided below the yoke with the spring 57. Thus is provided a yielding connection between the draft-pole and the yoke, the bearing-block lessening the friction of the draft-pole on the yoke and preventing the wear incident thereto, and the spring 57 providing for the vertical vibration of the draft-pole, as shown in dotted lines in Fig. XII.

54^a represents a bracket adjustably secured by clamping to the draft-pole and supporting the inner end of the lead-rod 54^b, to the outer end of which the leading-straps of the horse or horses is attached.

58 represents a stay-rod connecting the opposite end of the yoke to the draft-pole at or near its outer end for the purpose of securing adequate rigidity of the same.

59 represents a brace-rod connecting the rear part of the bed-plate with the front axle, near the outer extremity thereof, to more effectually retain the parts in operative position when the press is set up for operation.

Fig. XIII illustrates my improved retainer-fastening, in which 60 represents the side of the baling-chamber. 3 represents the U-shaped rod by which the baling-press frame is secured to the rear axle. 61 represents the

retainer pivoted upon one arm of said U-shaped rod and provided with the lug 62, carrying the spring 63, bearing against the side 60 of the baling-chamber, and its entrance therein is limited and determined by the other member of the U-shaped rod. Between the retainers on either side of the press are interposed the collars 64, to keep the retainers the requisite distance apart and in alinement with the opening therefor in the walls of the baling-chamber. By this construction I do away with the use of retainer-castings by so much simplifying and cheapening the construction and obtain a better result in the action of the retainers.

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

1. The combination with a pitman and a recessed foot-plate connected therewith, of a traverser independent of the pitman having a hollowed forward face, adapted to receive said foot-plate on the pitman, and overreaching flanges on the traverser to retain the foot-plate in engagement with the traverser and permit a rotary movement of the pitman upon the traverser, substantially as set forth.

2. The combination with a pitman of a cap loosely mounted on the forward end thereof, means for retaining said cap on the pitman and a pitman-head adapted to be removably connected with said cap, substantially as set forth.

3. A bed-plate having upwardly-extending flanges forming a guideway for the pitman, a curved guide-bar pivoted to the bed-plate and forming with one of the flanges a continuous curved surface and terminating at its forward end in an abruptly-curved surface and a tension-spring connected with said bar, substantially as set forth.

4. The combination with a bed-plate, flanges on the bed-plate forming a guideway for the pitman, a curved guide-bar pivoted to the bed-plate and forming with one of said flanges a continuous curved surface and terminating at its forward end in an abruptly-curved surface, a tension-spring connected with said bar and a vertical power-shaft having oppositely-projecting power-arms provided with antifriction-rollers at their ends; of a pitman carrying an antifriction-roller at its vibratory end adapted to travel along said guideway, substantially as set forth.

5. The combination with a bed-plate, flanges on said bed-plate, a curved guide-bar pivoted to the bed-plate and forming with one of said flanges a continuous curved surface and terminating at its forward end in an abruptly-curved surface, said bar and flanges forming a guideway for the pitman, and a vertical power-shaft having oppositely-projecting power-arms provided with antifriction-rollers at their ends, of a pitman carrying an antifriction-roller at its vibratory end adapted to travel along said guideway, a cap loosely mounted on the vibratory end of the pitman having its inner side formed with a beveled surface, means for securing said cap to the pitman and a pitman-head adapted to be removably connected with said cap and formed with a concave forward face with an extension at its outer corner.

6. The combination with a vertical power-shaft, a yoke mounted thereon and a flange on said yoke forming a recess at one end thereof, of a bearing-block mounted in said recess, a draft-pole connected to said bearing-block, means for securing said draft-pole and bearing-block to the yoke and a stay-rod connecting the opposite end of the yoke with the draft-pole, substantially as set forth.

7. The combination with a vertical power-shaft, a yoke mounted thereon and a flange on the yoke forming a recess at one end thereof, of a bearing-block mounted in said recess, having an opening adapted to receive the draft-pole, a draft-pole engaged in said opening, means for yieldingly securing said draft-pole and bearing-block to the yoke and a stay-rod connecting the opposite end of the yoke with the draft-pole, substantially as set forth.

8. The combination with a vertical power-shaft, a yoke mounted thereon and a flange on the yoke forming a recess at one end thereof, of a bearing-block mounted in said recess having an opening adapted to receive the draft-pole, a draft-pole engaged in said opening, a bolt passing through said draft-pole and bearing-block and through said yoke, a spring on said bolt bearing against the yoke, and a stay-rod connecting the opposite end of the yoke with the draft-pole, substantially as set forth.

9. The combination with a pitman of a cap loosely mounted on the forward end thereof, a rod connecting said cap with the pitman toward the rear end thereof, a wedge-shaped block interposed between said rod and the pitman and plates secured to said block and adapted to clamp upon the pitman to secure said block to the pitman, substantially as set forth.

10. The combination with a pitman having a cap provided with suitable flanges on its forward end, of a pitman-head having suitable flanges adapted to engage said flanges on said cap and thereby removably connected with the pitman, substantially as set forth.

11. A pitman-head consisting of a body, flanges thereon adapted to engage suitable flanges on the forward end of the pitman, a cap on said head overlapping the recesses formed by the flanges thereon, and adapted to retain the engagement of the flanges on the head with the flanges on the forward end of the pitman, a concave forward face thereon and an extension at the outer corner thereof, substantially as set forth.

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