

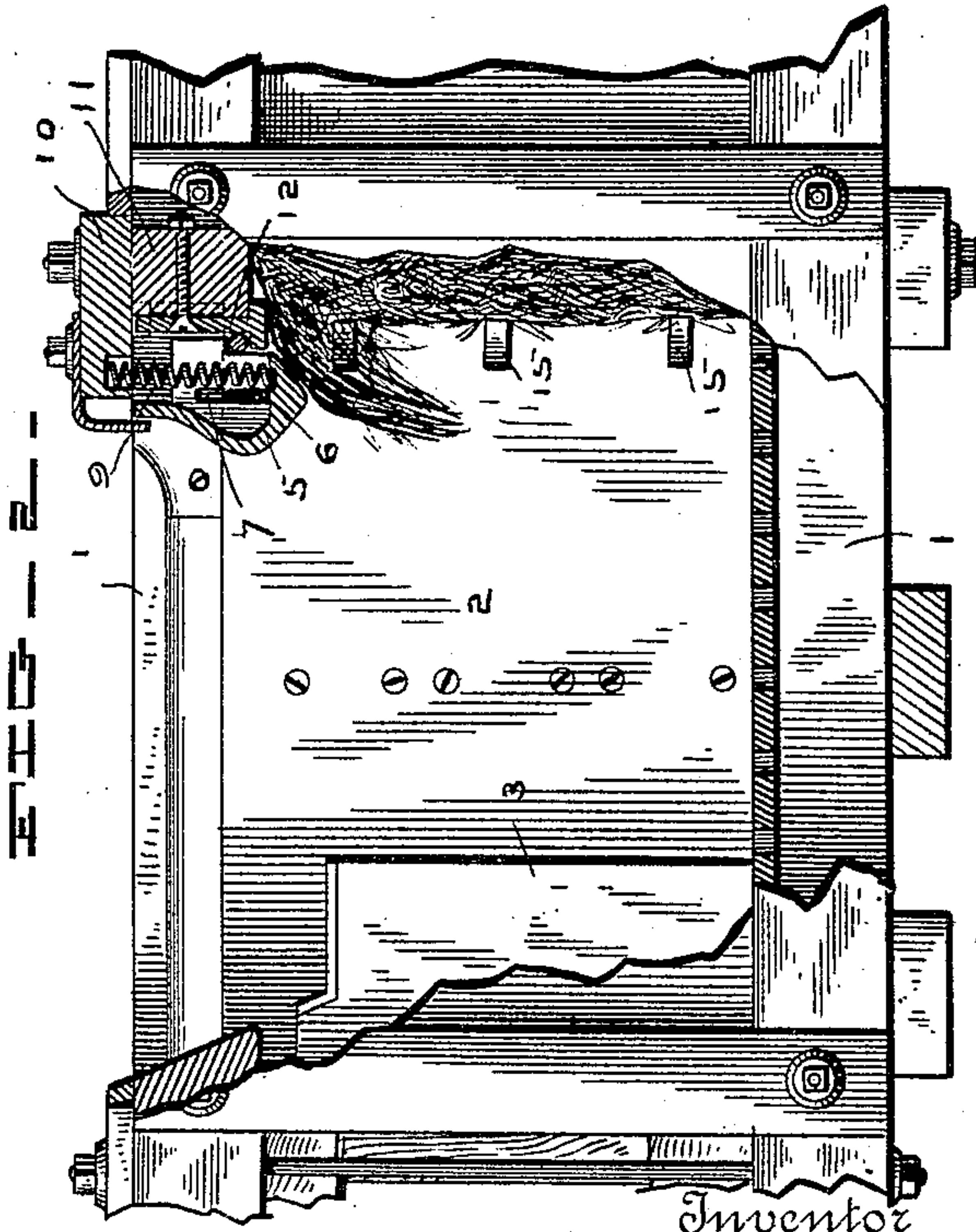
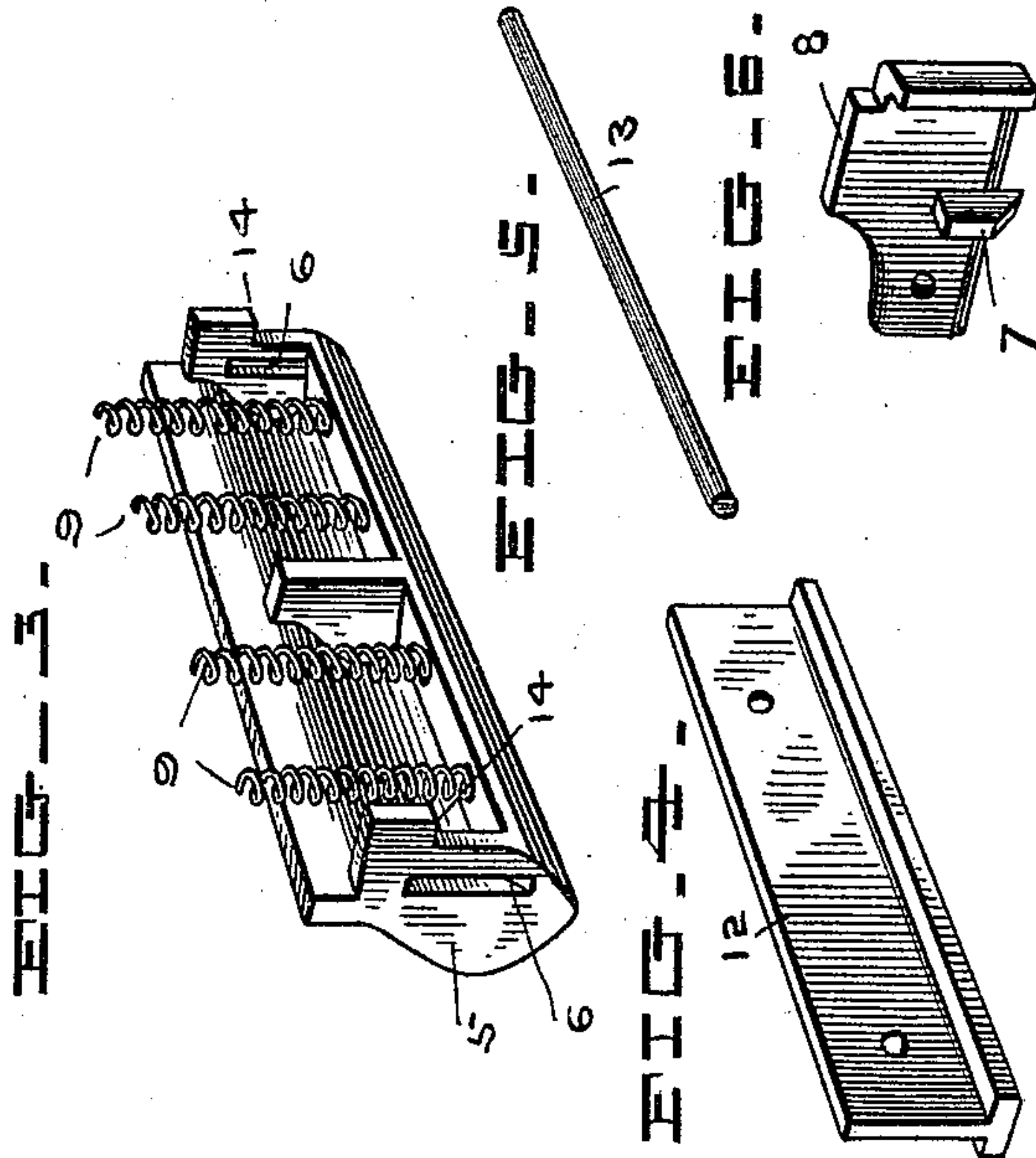
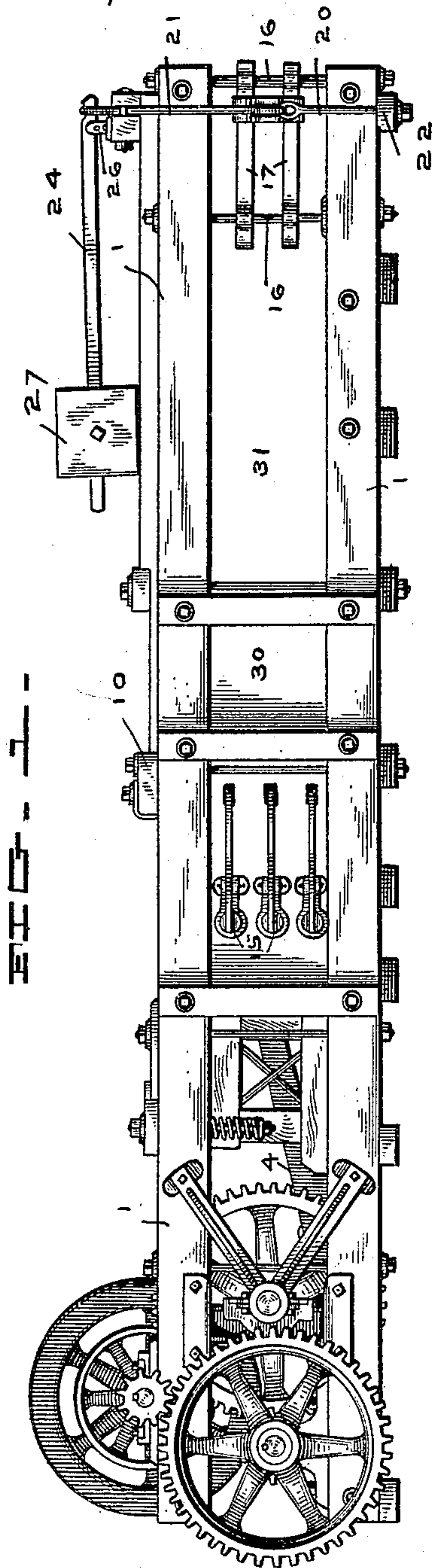
(No Model.)

2 Sheets—Sheet 1.

J. B. JOHNSON.
BALING PRESS.

No. 464,613.

Patented Dec. 8, 1891.



Witnesses

H. D. Neely,
C. P. Griffith

Jesse B. Johnson,
By his Attorney
C. P. Jacobs,

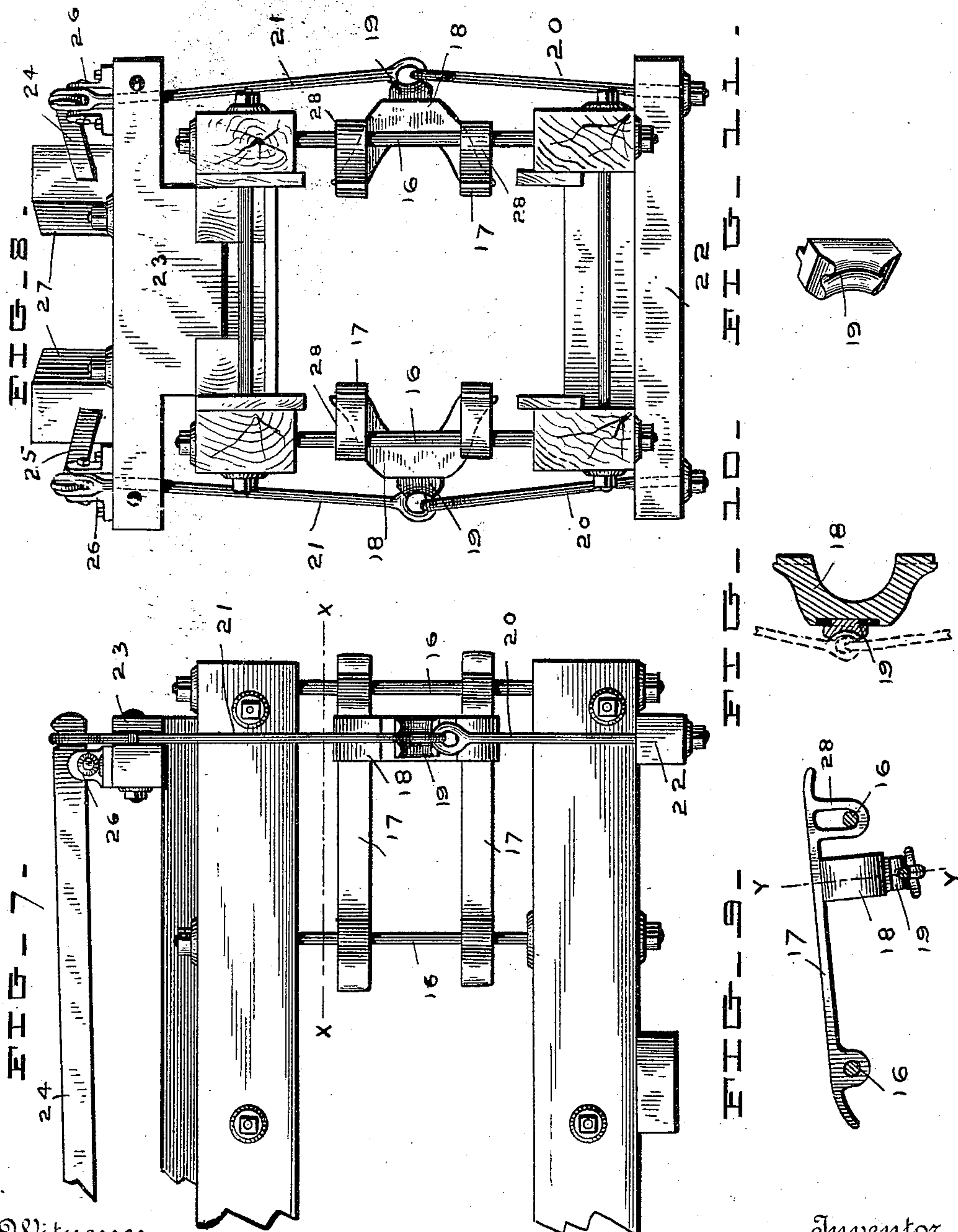
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UNITED STATES PATENT OFFICE.

JESSE B. JOHNSON, OF INDIANAPOLIS, INDIANA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 464,613, dated December 8, 1891.

Application filed May 4, 1891. Serial No. 391,444. (No model.)

To all whom it may concern:

Be it known that I, JESSE B. JOHNSON, of Indianapolis, in the county of Marion and State of Indiana, 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 thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The first object of my invention is to provide a baling-press with a folding mechanism which will force the material that projects out of the bale when the plunger rebounds downward into the path of the plunger, so that upon its return movement it will press it into the mass, thereby forming a bale with a smooth surface, and, second, to provide mechanism for bringing a uniform pressure on the sides of the bale after it has been tied, thereby producing bales of substantially uniform density, the latter mechanism being an improvement on the means shown in Letters Patent No. 361,013, issued to me April 12, 1887.

In the drawings, Figure 1 is a side elevation of a baling-press with my improvement thereon. Fig. 2 is an enlarged detail sectional view through a part of the same, showing the folder. Fig. 3 is a detached perspective view of the folder-head and its tension-springs. Fig. 4 is a similar view of the casting which forms the backing for the folder. Fig. 5 is a detail view of the anti-friction roller which is interposed between the backing and the folder. Fig. 6 is a detail view of one of the side guide-plates of the folder. Fig. 7 is an enlarged side view of one end of the press, showing the arrangement of parts for pressing the bale. Fig. 8 is an end view of the same. Fig. 9 is a sectional view on the line *xx*, Fig. 7. Fig. 10 is a sectional view on the line *yy*, Fig. 9. Fig. 11 is a detail view of the sliding pressure-block or knuckle.

In detail, 1 represents the frame-work, and 2 the hopper or feed-chamber, of the press, in which moves horizontally the plunger 3, connected to the plunger-bar 4, operated in the usual manner by wheels mounted on the frame-work at the end of the press. The hopper 2 is open at the top and bottom, and at one end is an automatic folder-head 5, having a beveled

or rounded end and provided with slots 6 in its ends, through which pass the lugs 7, formed on the plates 8, secured to the sides of the machine. Inside the folder-head are coiled springs 9, whose upper ends rest in mortises in a cross-piece 10, bolted to the top of the frame-work. To the under side of this cross-piece is bolted a similar piece 11, somewhat narrower, and to this is bolted a plate 12, which forms a backing for the folder, having flanges on its lower end. Between this backing-plate and the rear of the folder is interposed an anti-friction roller 13, which is prevented from dropping out by the flange of the backing-plate 12. The downward movement of the folder is limited by shoulders 14, which come in contact with and rest upon this roller.

At the opposite end of the press, on either side and rigidly attached to the frame-work, are pairs of vertical rods 16, and to the inner one are hinged arms 17, provided at their opposite ends with extensions 28, having slots therein, through which pass the rods 16. The arms 17 are connected by brackets 18, the outer faces of which are provided with a groove in which works the sliding knuckle-block 19. On this block rests the hinge or link which connects the tension or pressure links 20 and 21, the first passing through the cross-beam 22 at the base of the press and held by a nut, the latter passing through a slot in the cross-beam 23 at the top of the frame-work, its upper end being attached to the lever 24, pivoted at 25 to a bracket 26, mounted on the cross-bar 23, having an adjustable weight 27 on its outer end.

The material to be baled is first introduced into the hopper and is forced forward by the plunger of the press, and the end of the plunger coming in contact with the material to be baled forces it under the beveled face of the folder-head and raises the latter against the tension of the springs 9. As the plunger rebounds, the material is held in place by the spring-hooks 15, common on presses of this kind, and the folder-head, being released from pressure of the plunger, is by the tension of the springs 9 forced downward, turning down and in line with the plunger any material that may not have been caught by the plunger in its previous forward movement, and as the next charge is inserted in the hopper it is

carried forward by the plunger, turning this material into the bale, making the latter smooth and solid, and when the plunger rebounds the folder operates as before. The compressed material is carried forward in the press by the material that is being pressed into the baling-chamber 30 and thence onward to the larger open chamber 31, where it is tied, and thence it is carried onward and passes between the arms 17, and if the proper bulk of material has been introduced and the bale is sufficiently dense it will pass on between these arms; but if the bale be too hard these arms will be forced outward, actuating the links 20 and 21, raising the weight 27, thus relieving the strain on the press and gearing, and if the bale is slightly softer than desired the weight 27 on the levers 24 will operate through the links 20 and 21 to force the pressure-arms inward, thus giving the bale additional pressure. The weights on the levers 24 being adjustable, the pressure on the bales can be readily regulated, and the bales may be either pressed tight or loose, as may be desired, and when the weights are set at any point on the levers the bales will be all of the same compactness until the weights are changed.

It is obvious that the relative position of the slot 6 in the folding-head and the lug 7 on the plate 8 might be changed—that is, the lug could be formed on the folding-head and the notches in the plate; but this would be the equivalent of the arrangement shown, these devices being only provided to guide the vertical movement of the folding-head and prevent it from falling out.

The weight-controlling mechanism at the rear of the machine, as will be observed, operates automatically, and its action is direct, and the parts are easily managed and not liable to get out of order.

What I claim as my invention, and desire to secure by Letters Patent, is the following:

1. In a baling-press, a folder composed of a recessed head having slotted ends, projections connected to the frame-work entering such slots for guiding such head, the latter movable vertically the length of such slots, coiled springs bearing against the inner face of such head at one end and against a projection secured to the frame-work at the other end, the tension of such springs normally resisting the upward movement of the head, such folding mechanism located at one end of the feed-chamber and bearing against a plate secured to the frame-work, and a friction-roll interposed between such plate and the folder, such roll held in place by a projection upon the lower end of such plate, in combination with a plunger, the latter as it travels forward operating to strike the material and thereby lift the folding-head against the ten-

sion of its springs, substantially as shown and described.

2. A baling-press having the usual feed-chamber, a plunger for pressing hay moving therein, a folding mechanism comprising a vertically-movable head recessed for the insertion of coiled springs located at one end of the feed-chamber and adapted to be lifted by the material thrust beneath it by the plunger in its forward movement, such head normally held downward by its own gravity, and a series of springs, in combination with an anti-friction roller held in place between the head and the plate connected to the frame-work by a projection on the lower end of such plate, substantially as shown and described.

3. A baling-press comprising a frame-work, a feed-chamber, a plunger movable therein for compressing the material, and a spring-controlled folding-head located at the one end of and movable vertically in the feed-chamber, its lower lip adapted to fold the loose ends of the material downward as the plunger is withdrawn, such head provided with a series of springs co-operating with its gravity for actuating the same, the inner face of the folder notched and bearing upon an anti-friction roller supported on the frame-work, all combined substantially as shown and described.

4. In a baling-press, a chamber for receiving the bales after they have been formed and tied, a pair of jointed links connected to the sides of the frame-work, their joints bearing against the knuckle connected to bars hinged to rods passing through the frame-work, such bars provided with slotted projections for allowing a lateral movement of the knuckle and its connections for compressing the bale, and a lever connected to the upper end of such jointed links carrying an adjustable weight for regulating the tension, whereby an equal density is given the bales as they pass through the bale-chamber, all combined substantially as shown and described.

5. In a baling-press, a pressure-equalizing chamber, a knuckle-joint-link mechanism connected on each side of the rear end thereof, pairs of pressure-arms connected to and operated laterally for compressing the bale by such jointed links, and an adjustable weighted lever connected at the upper ends of the knuckle-joint levers for controlling the pressure, whereby the bales as they successively pass through such chamber are compressed to a uniform density, all combined substantially as shown and described.

In witness whereof I have hereunto set my hand this 24th day of February, 1891.

JESSE B. JOHNSON.

Witnesses:

H. D. NEALY,
C. P. JACOBS.