

No. 730,437.

PATENTED JUNE 9, 1903.

A. S. DIXON.
HAY PRESS.

APPLICATION FILED MAY 23, 1902.

NO MODEL.

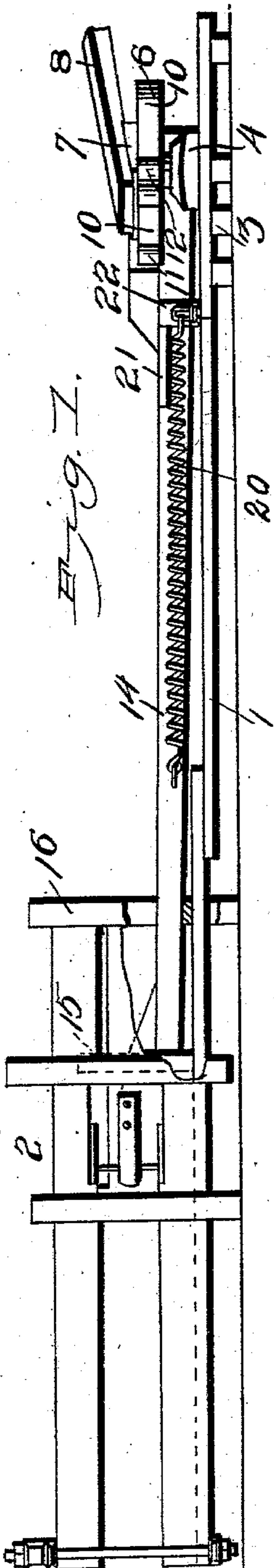


Fig. 1.

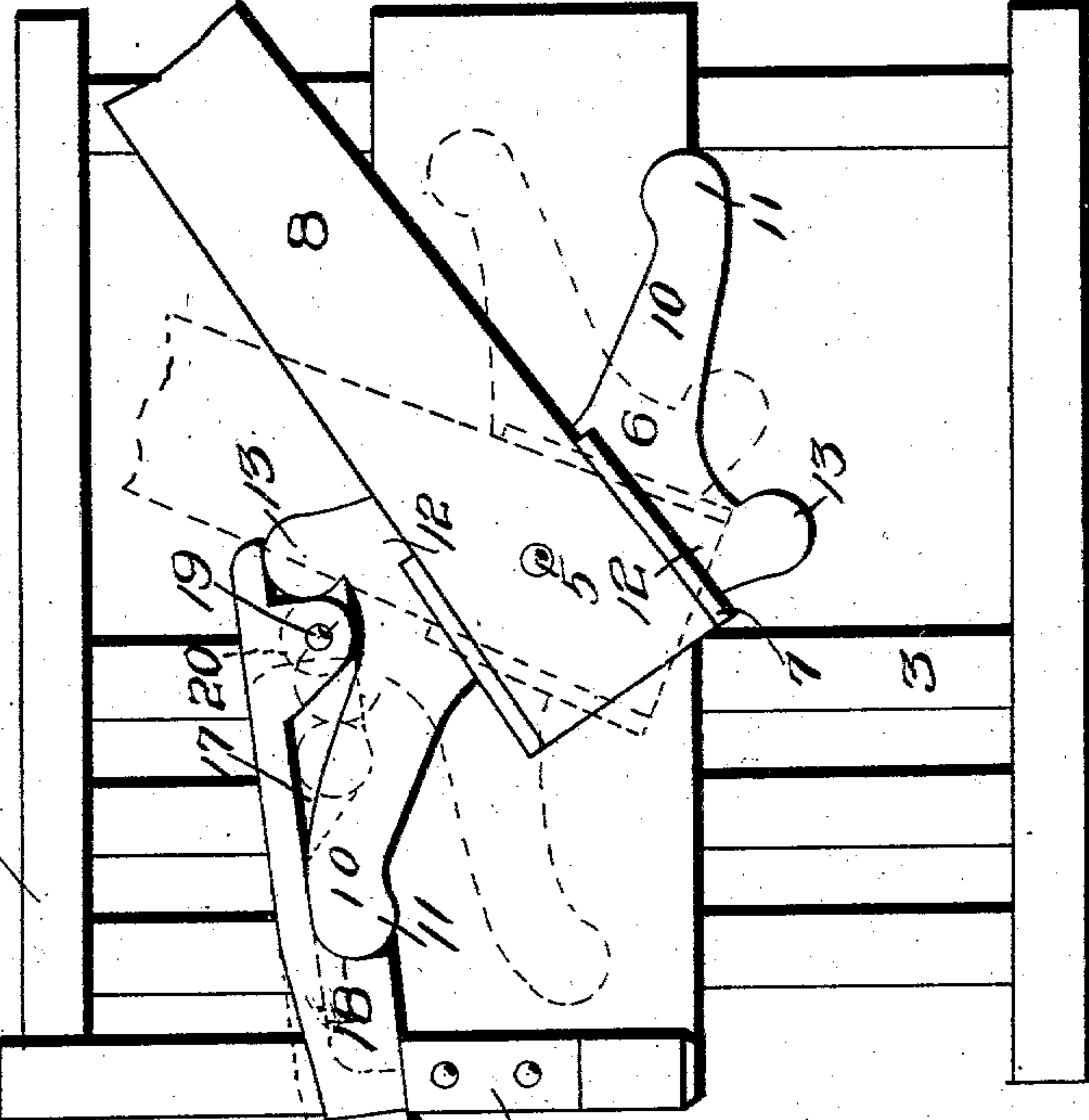
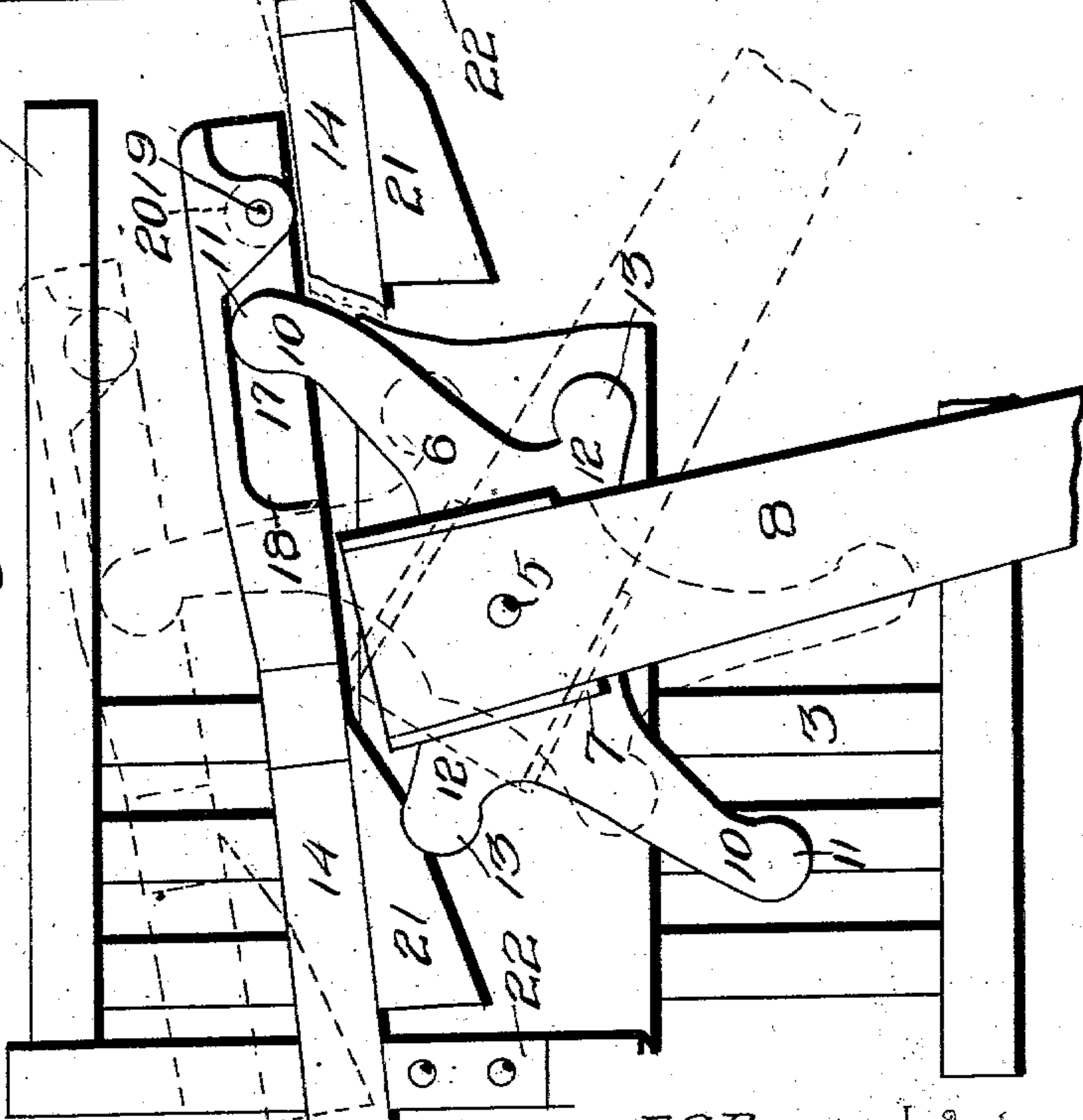


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

ALBERT S. DIXON, OF AUSTIN, TEXAS, ASSIGNOR OF ONE-HALF TO JACOB P. SCHNEIDER, OF AUSTIN, TEXAS.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 730,437, dated June 9, 1903.

Application filed May 23, 1902. Serial No. 108,709. (No model.)

To all whom it may concern:

Be it known that I, ALBERT S. DIXON, a citizen of the United States, residing at Austin, in the county of Travis and State of Texas, have invented a new and useful Hay-Press, of which the following is a specification.

This invention relates to certain improvements in hay-presses, and has for its principal object to improve the construction of the power-head and pitman connection.

A further object is to more accurately guide the pitman on the return stroke and insure its movement to proper position for engagement by the power-head and to prevent the end of the pitman striking the power-head when drawn back by the retracting-spring.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim.

In the drawings, Figure 1 is a side elevation of a hay-press provided with actuating mechanism in accordance with the invention. Figs. 2 and 3 are detail plan views illustrating the construction and arrangement of the power-head, the pitman, and the pitman-cam, the same parts being shown in a number of different positions in said figures in order to more clearly illustrate the operation.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The sills 1 carry at one end a baling-chamber 2 of ordinary construction and at the opposite end serve to support a platform 3. On the platform 3 is secured a base-plate 4, carrying an upwardly-projecting pivot-stud 5, on which is fulcrumed the power-head 6, and to the power-head is secured a clamp-box 7 for the reception of the end of an ordinary form of sweep 8. In order to elevate the outer end of the sweep, where the draft-animals are attached, the clamping-box is preferably wedge-shaped, as indicated in Fig. 1. As the press is of the continuous or full-circle type and imparts a plurality of reciprocating movements to the plunger at each operation, the power-head is provided with duplicate operating-arms for contact with the end of the pitman

and effects an inward movement of the latter in the direction of the baling-chamber twice during each complete rotation of the sweep. The pitman-actuating arms are arranged in sets, each set comprising a long arm 10, having a curved head 11, and a shorter arm 12, having a curved head 13, these arms being adapted to operate successively on the pitman in order that the force exerted to compress the hay or other material may be increased during the latter part of the inward stroke of the pitman without materially decreasing the speed at which the pitman is moved.

The pitman 14 is connected at one end to the plunger 15, the outward movement of said plunger being limited by cross-bars 16, arranged in advance of the feed-chamber and with which the outer face of the plunger makes contact at the completion of the outward stroke. At the opposite end of the pitman is a recess 17, having a curved end wall 18, with which the curved end of the arm 10 makes contact to impart the initial movement to the pitman 14 and effect the greater part of the compression-stroke of the plunger. The outer end of the pitman is provided with integral brackets or lugs for the support of a spindle 19, on which is mounted an antifriction-roller 20, adapted for contact with the curved end of the short arm 12, this arm coming into contact with the roller just before the arm 10 moves from contact with the curved face 18 and at a point where the plunger has completed more than half of its inward movement. In the operation of this portion of the mechanism, the parts being in the position illustrated in Fig. 2 the curved end of the arm 10 makes contact with the inner wall of the recess 15, forcing the pitman outwardly to the position indicated by dotted lines, the curved end of the arm finally coming into contact with the curved wall 18 and starting the initial inward movement of the pitman. On continuing the rotational movement of the sweep the plunger is rapidly forced into the baling-chamber by the longer arm 10 until the position indicated in full lines in Fig. 3 is reached. At this time the curved face of the shorter arm 12 comes into contact with the antifriction-roller 20, both arms acting together on the pitman for

a short portion of the stroke. The shorter arm then becomes the operative member and completes the compression-stroke of the plunger, the latter being forced into the baling-chamber until the shorter arm has reached the position indicated by dotted lines in Fig. 3, at which point the arm moves from contact with the roller and permits the return movement of the pitman under the expansive force of the compressed material and a tension-spring 20. The operation is such that during the first portion of the compression-stroke, where there is but little resistance offered by the material being compressed, the inward movement of the plunger will be comparatively rapid and the greater portion of the stroke will be completed before the shorter arm comes into operative position. As both arms in connection with the sweep form levers of the second class, the placing of the load nearer to the fulcrum-point by the contact of arm 12 with the roller 20 will increase the effectiveness of the power applied to the sweep, rendering the device much easier to operate and less harmful to the draft-animals than where the compression-stroke of the plunger is completed by a single crank or lever.

In order to prevent any contact between the outer end of the pitman and the power-head during the outstroke of the plunger, and thus lessen the liability of breakage from the sudden impact of the pitman under the retractile force of the spring, the pitman is provided with a cam 21, adapted for contact with a fixed block 22, carried by a portion of the frame. The block 22 is situated slightly in advance of the power-head, and the cam 21 is placed on the inner face of the pitman, or that surface nearest the power-head, so that when the pitman is released from contact with the arm 12 and is pulled in the direction of the power-head by the spring 20 the cam will come into contact with the block and the pitman will be forced outwardly or away from the power-head, and all contact between the two will be prevented until on the continued movement of the sweep the opposite pair of levers of the power-head come into play. The spring exercises not only a retractile force on the pitman, but also serves to retain the inner face of the pitman and

cam in contact with the block 22, so that after the cam has passed beyond the outer edge of the block the pitman will be drawn inwardly in the direction of the power-head and its recess 15 located in proper position for the next operative movement, the end of the pitman being stopped in the same position at the end of each movement by the contact of the outer face of the plunger with the stops 16.

While the construction herein described, and illustrated in the accompanying drawings, is the preferred form of the device, it is obvious that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, what I claim is—

The combination in a baling-press, of the power-head having two pairs of arms, the arms forming each pair being of different length and adapted for successive operation, a pitman connected to the compression-plunger of the press and actuated by said arms, a cam 21 secured to one side of the pitman and having an inclined face adapted to operate only during the return movement of the pitman, a stationary block arranged in advance of the arms and adapted to engage the cam for effecting a lateral movement of the outer end of the pitman during the return movement thereof to thereby prevent accidental engagement of the end of the pitman with the arms, the longer arm of each pair being of sufficient length to first move the pitman laterally until the cam is clear of said block and the final thrusting movement of the shorter arm taking place after the cam has passed fully beyond the block, and a spring acting to return the pitman to initial position and serving also to hold the pitman and cam against the face of said block during the return movement.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALBERT S. DIXON.

Witnesses:

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