

No. 616,341.

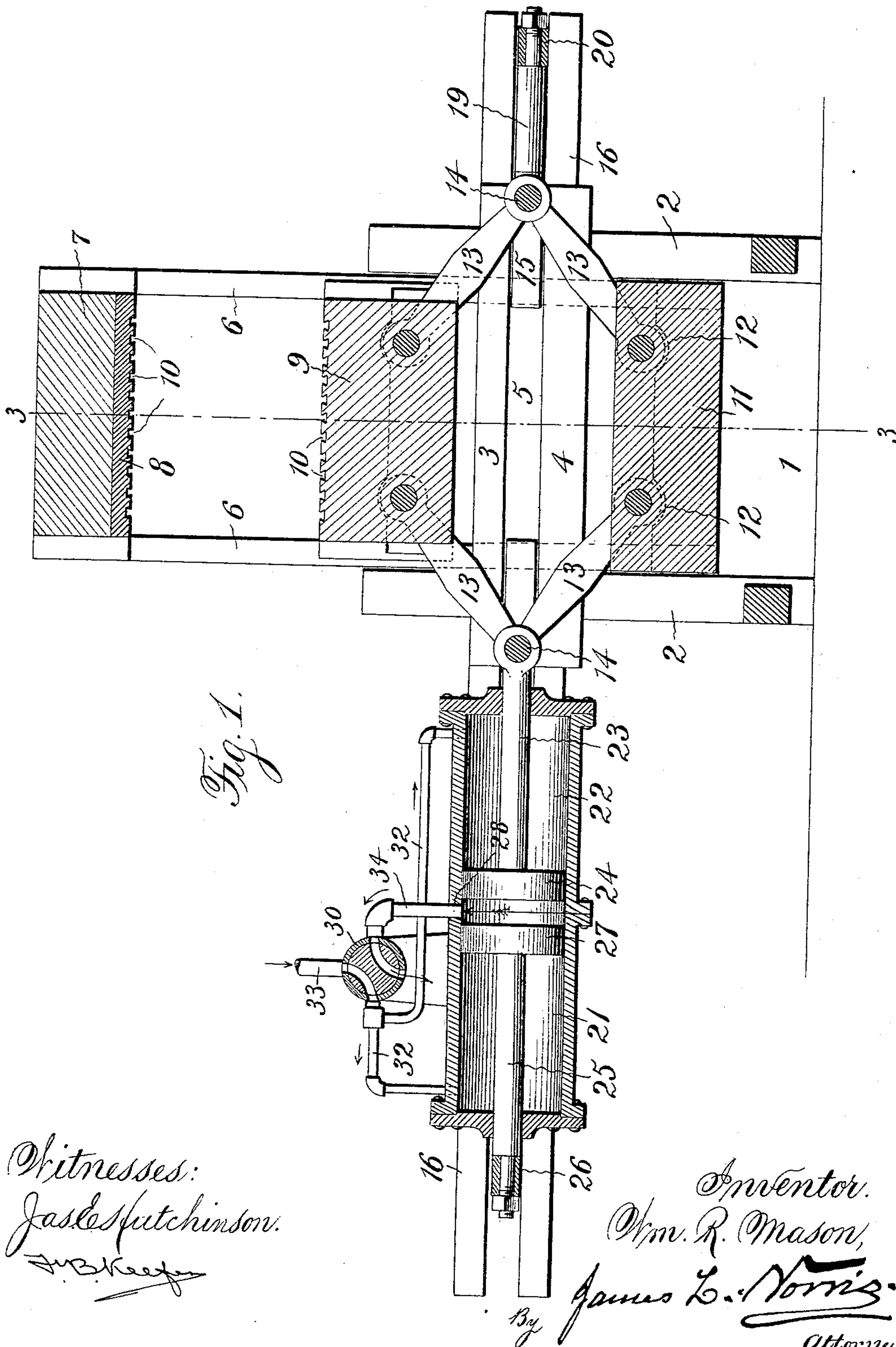
Patented Dec. 20, 1898.

W. R. MASON.  
COTTON PRESS.

(Application filed Mar. 16, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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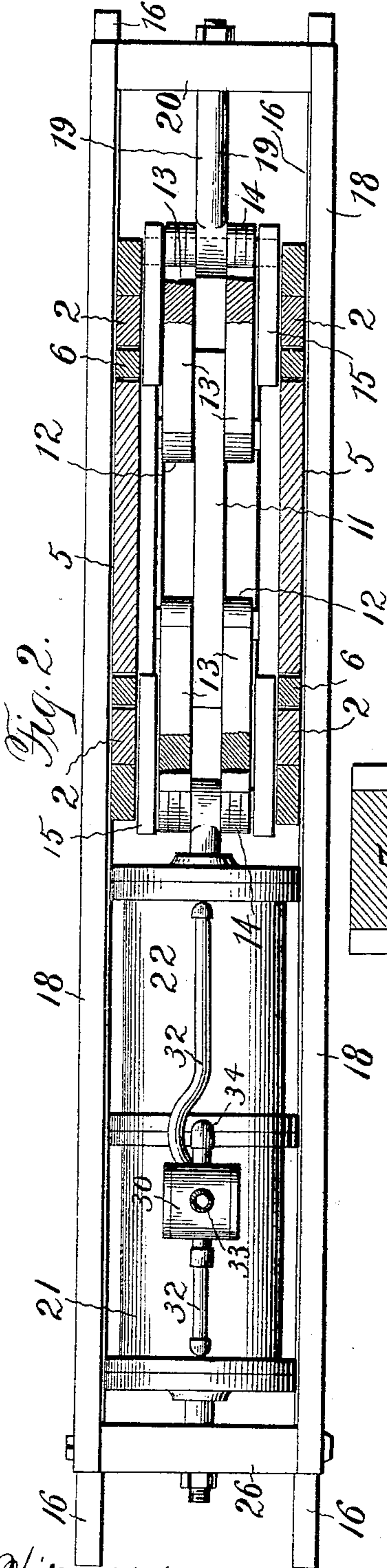


Fig. 2.

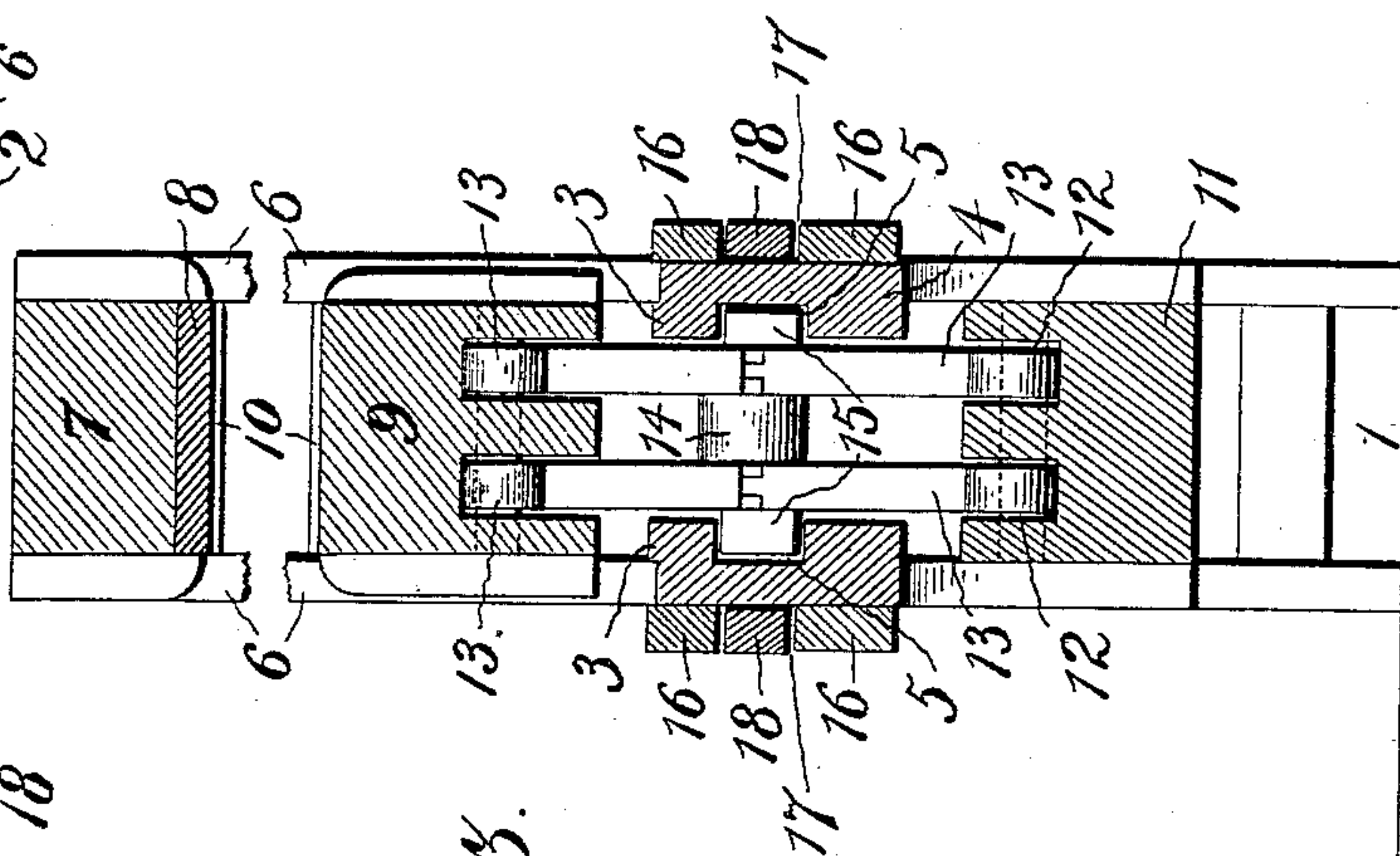


Fig. 3.

Witnesses  
Jas. Hutchinson.  
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Inventor.  
Wm. R. Mason,  
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Attorney.



# UNITED STATES PATENT OFFICE.

WILLIAM R. MASON, OF HILLSBOROUGH, TEXAS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF THREE-FOURTHS TO S. M. CARLTON, SCOTT WALKER, D. E. MORRIS, A. M. WALKER, E. S. CRUMLEY, AND J. B. LOFTIN, OF SAME PLACE.

## COTTON-PRESS.

SPECIFICATION forming part of Letters Patent No. 616,341, dated December 20, 1898.

Application filed March 16, 1898. Serial No. 674,089. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM R. MASON, a citizen of the United States, residing at Hillsborough, in the county of Hill and State of Texas, have invented new and useful Improvements in Cotton-Presses, of which the following is a specification.

My invention relates to cotton-presses, and has for its object improvements in the means for operating the compressing mechanism in devices of this character whereby to secure a positive and powerful operation of the parts with a minimum amount of friction.

Other objects of the invention relate to certain details of construction and arrangement of parts, which will be more fully hereinafter described and claimed.

In the accompanying drawings, illustrating the invention, Figure 1 is a longitudinal vertical section. Fig. 2 is a horizontal section, and Fig. 3 is a transverse vertical section on the line 3 3 of Fig. 1.

In the drawings the reference-numeral 1 indicates the base of the machine, upon which are secured vertically-disposed uprights 2, four of which are shown, constituting the main supporting-frame of the machine. Secured near the upper ends of these uprights 2, on opposite sides of the machine, are two brace-beams 3 4, affording between them grooves or ways 5 for a purpose to be presently described. Slidably supported adjacent to the uprights 2 and the brace-beams 3 4 are uprights 6, four of which are shown, two on each side of the machine. At their upper ends these uprights are firmly secured to an upper presser-head 7, preferably at the four corners of the latter, which are suitably mortised to receive said uprights. The presser-head 7 may have secured on its under surface a face-plate 8 of metal or of a material harder than the body portion of said presser-head. Slidably supported on the uprights 6 beneath the upper presser-head 7 is a lower presser-head 9, the corners of which are suitably mortised or grooved to engage and slide on said uprights, which thereby serve to confine and form a guide for the said presser-head. The opposing surfaces of the presser-heads 7

and 9 are provided with a series of cross-grooves 10, by means of which suitable binders may be applied to the bales of cotton being compressed. At their lower ends the uprights 6 are firmly secured to a bearing-block 11, which has provided on its upper surface longitudinal slots 12, in which are pivotally supported the lower ends of toggle-levers 13, which in their central part are mounted on trunnions 14, having at their opposite ends cross-heads 15, which are adapted to slide in the ways 5. The upper ends of toggle-levers 13 are pivotally mounted in longitudinal slots formed in the under side of presser-head 9.

The numeral 16 indicates a rectangular frame which is secured at its sides on the uprights 2 and may be otherwise braced and supported, if desired. In the sides of this frame are provided guideways 17, in which are slidably mounted the side members of a yoke-frame 18. The frames 16 and 18 extend outwardly at one end of the machine a greater distance than at the other. The toggle-levers 13 are arranged in pairs, as shown. Extending from one pair of these levers is a connecting-rod 19, which at its outer end is secured to the end member 20 of frame 18. In the long extension of frame 16 is supported a pair of cylinders 21 22, which, however, may be in the form of a single elongated cylinder. From the cylinder 22 extends a piston-rod 23, which is pivotally connected to the pair of toggle-levers opposite those to which the connecting-rod 19 is attached. The piston-rod 23 is connected to a piston 24 within the cylinder 22. From the cylinder 21 extends a piston-rod 25, which at its outer end is connected to the end member 26 of frame 18 and at its inner end to a piston 27 within cylinder 21. The heads of the two cylinders abut and are joined together in such manner as to form practically a continuous cylinder. At the point of connection of these cylinders is provided a port 28, having communication with the interior of the two cylinders. Suitable valve mechanism is provided for controlling the supply and exhaust of the motive fluid to the cylinders. This valve mechanism comprises a valve-casing 30, inclosing



a four-way valve 31 and communicating with steam-pipes 32, leading to the ends of cylinders 21 22 behind the pistons 24 27, respectively. Said casing also has communication  
5 with an inlet-pipe 33, leading from the source of steam-supply, and with a steam-pipe 34, communicating with the port 28.

The operation is as follows: The parts being in the position shown in Fig. 1, the cotton to be compressed into a bale is placed  
10 between the heads 7 and 9. Steam or other motive fluid is admitted through the inlet-port 28 to the cylinders. This will operate to move the pistons 24 and 27 outward in  
15 their respective cylinders. The piston-rod 23 will operate directly upon one pair of toggle-levers 13, and the piston-rod 25 will operate to move the frame 18 outward in the guideways 17, which through the medium of  
20 connecting-rod 19 will operate on the opposite pair of toggle-levers, the two pairs of toggle-levers being thus pressed inward simultaneously. This will cause the lower presser-head 9 to be moved upward. At the same  
25 time as the toggle-levers 13 are straightened the bearing-block 11 will be moved downward, thereby through the medium of uprights 6 drawing the upper presser-head 7 downward. The presser-heads are thus simultane-  
30 ously moved toward each other to press the cotton between them. When the requisite amount of pressure has been exerted, the binders are applied to the bale and the valve 31 is turned to permit the steam to exhaust  
35 through pipe 34 and to enter at the ends of the cylinders through pipes 32, whereby the piston-rods 23 and 25 are driven inwardly and the parts actuated to move the sets of toggle-levers 13 outwardly from each other, thereby  
40 lowering presser-head 9 and raising presser-head 7. The bale may now be removed.

By the arrangement described it will be seen that the piston-rods will be moved simultaneously in opposite directions. It will  
45 further be seen that I secure a powerful leverage, while the operation is positive and may be quickly and easily controlled. At the same time I reduce the friction of the parts to the minimum, thereby securing the full  
50 benefit of the motive power employed.

It is apparent that many minor changes in the details of construction and arrangement of the several parts might be made and substituted for those shown and described with-  
55 out in the least departing from the spirit or nature of the invention.

Having thus described my invention, what I claim is—

1. In a cotton-press, the combination with the frame of uprights slidably supported  
60 therein, a presser-head secured to said uprights at their upper ends, a bearing-block secured to said uprights at their lower end, a lower presser-head slidably supported on said uprights, opposite pairs of toggle-levers con-  
65 necting said bearing-block and lower presser-head, a yoke-frame slidably supported in the frame of the machine, a connecting-rod secured to one end of said yoke-frame and pivotally attached to one pair of said toggle-le-  
70 vers, a pair of cylinders having pistons therein and piston-rods projecting from the outer ends thereof, one of said piston-rods being secured to the opposite end of said yoke-frame and the other being pivotally attached to the  
75 other pair of toggle-levers, substantially as described.

2. In a cotton-press, the combination of a supporting-frame comprising standards connected by brace-beams affording ways on their  
80 inner sides, of uprights slidably supported in said frame, a presser-head secured to said uprights at their upper end, a bearing-block secured to said uprights at their lower end, a lower presser-head slidably supported on said  
85 uprights, opposite pairs of toggle-levers, connecting said bearing-block and lower presser-head and having trunnions carrying cross-heads adapted to slide in said ways, a longitudinally-extending rectangular frame se-  
90 cured on said main frame and affording on its outer sides guideways, a yoke-frame slidably supported in said guideways, a connecting-rod secured to one end of said yoke-frame and pivotally attached to one pair of said  
95 toggle-levers, a pair of cylinders supported in said rectangular frame, having pistons therein and piston-rods projecting from the outer ends thereof, one of said piston-rods being secured to the opposite end of said  
100 yoke-frame and the other being pivotally attached to the other pair of toggle-levers, the combination operating substantially as described.

In testimony whereof I have hereunto set  
105 my hand in presence of two subscribing witnesses.

WILLIAM R. MASON.

Witnesses:

M. F. WINFREY,  
R. M. VAUGHAN.