

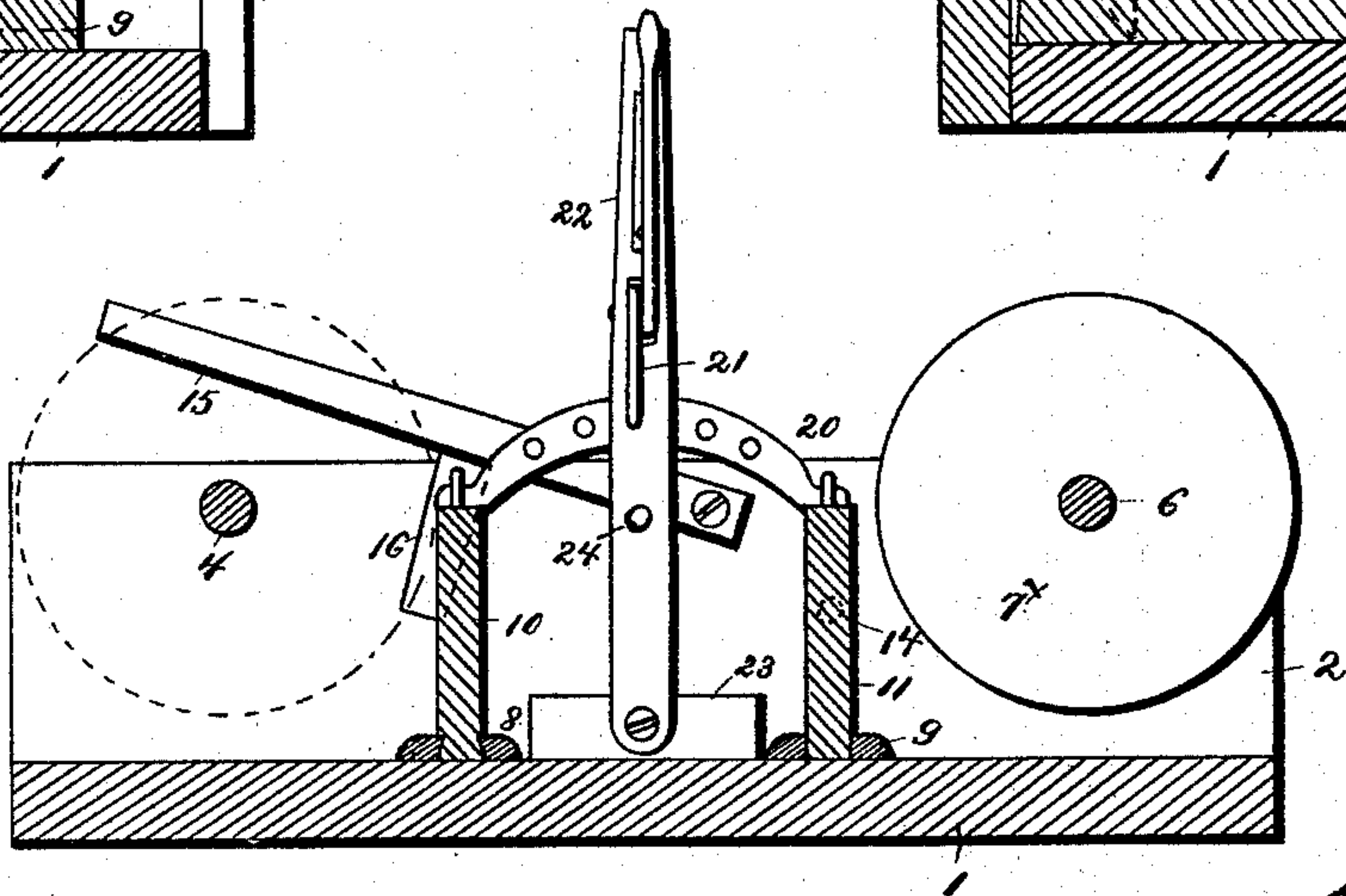
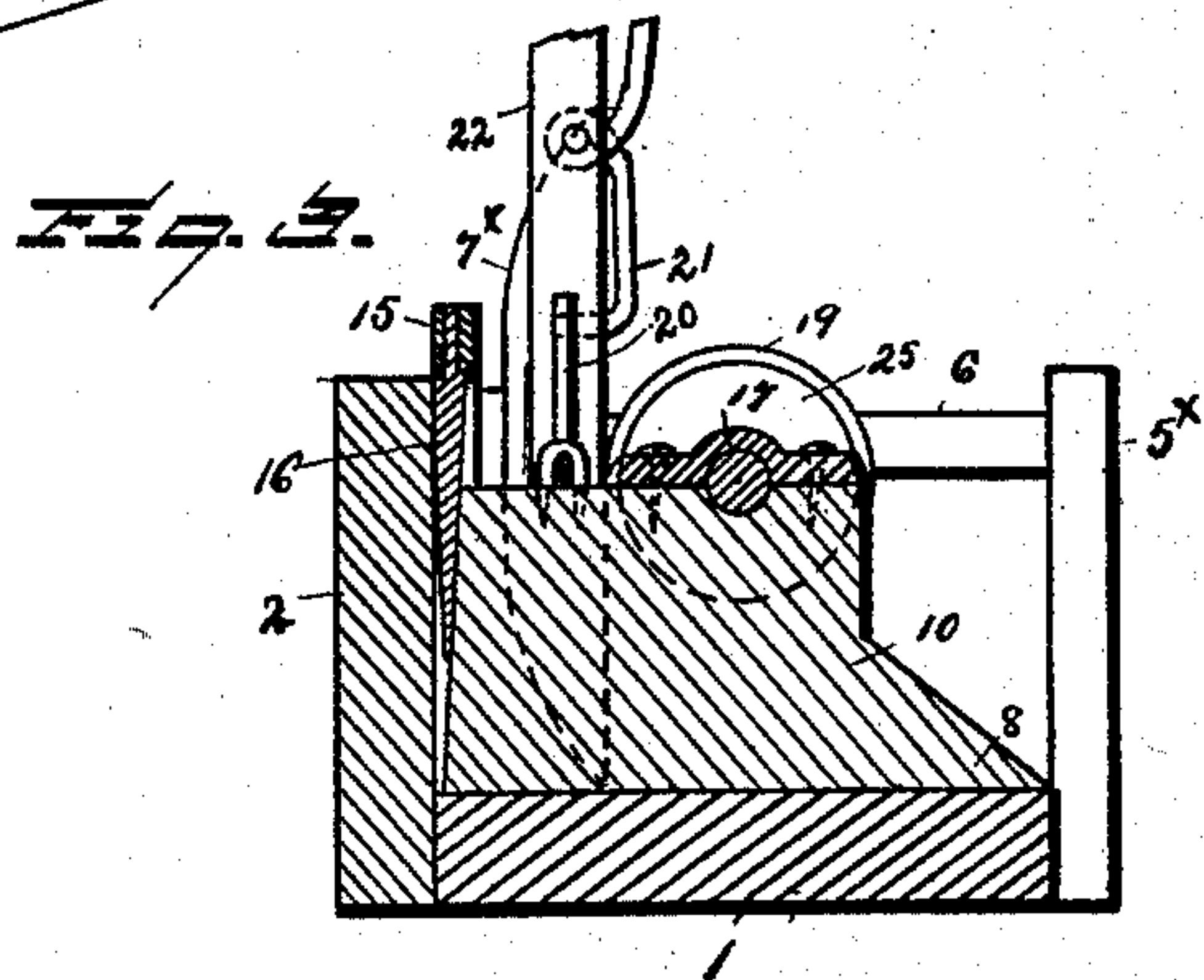
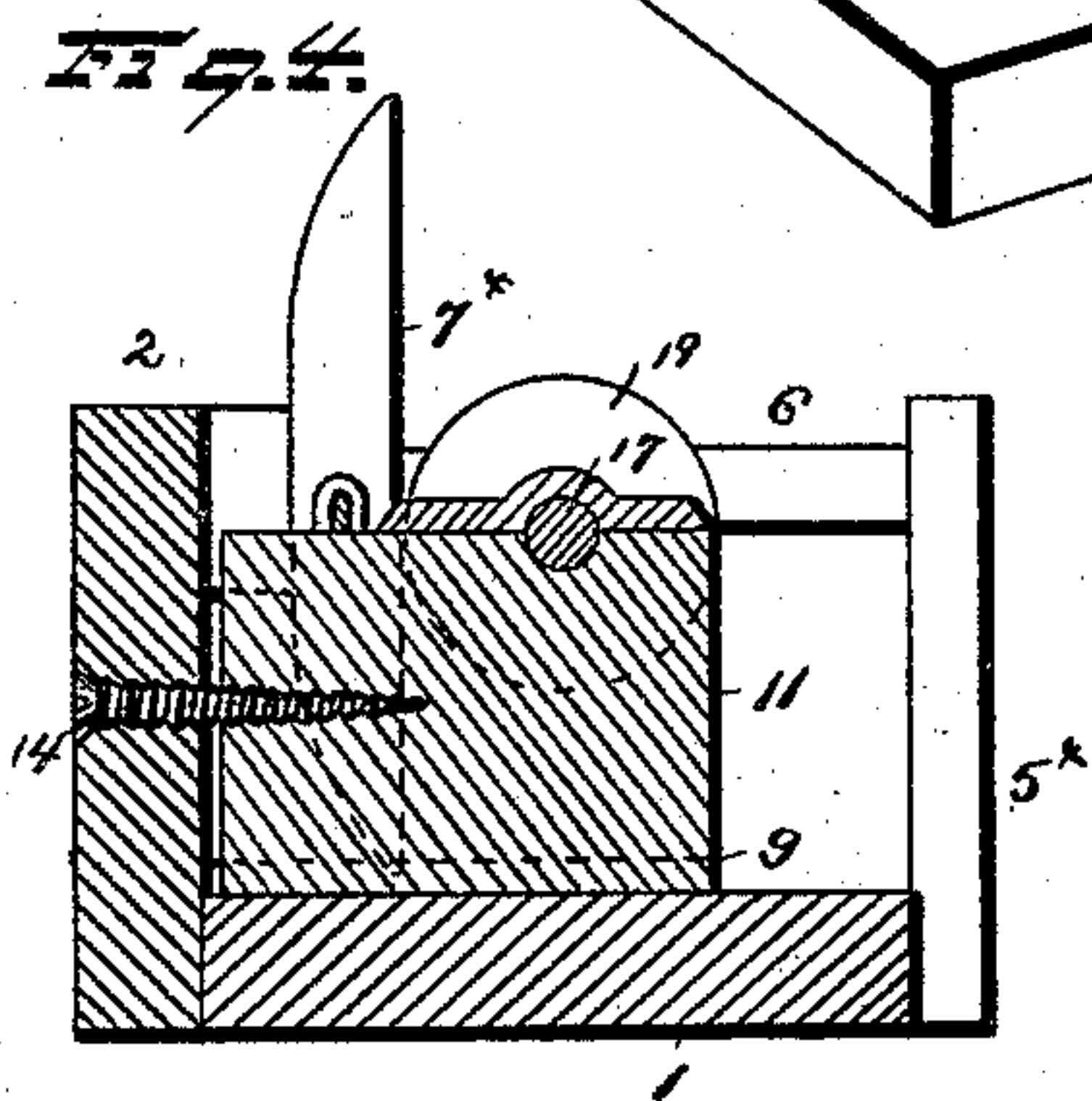
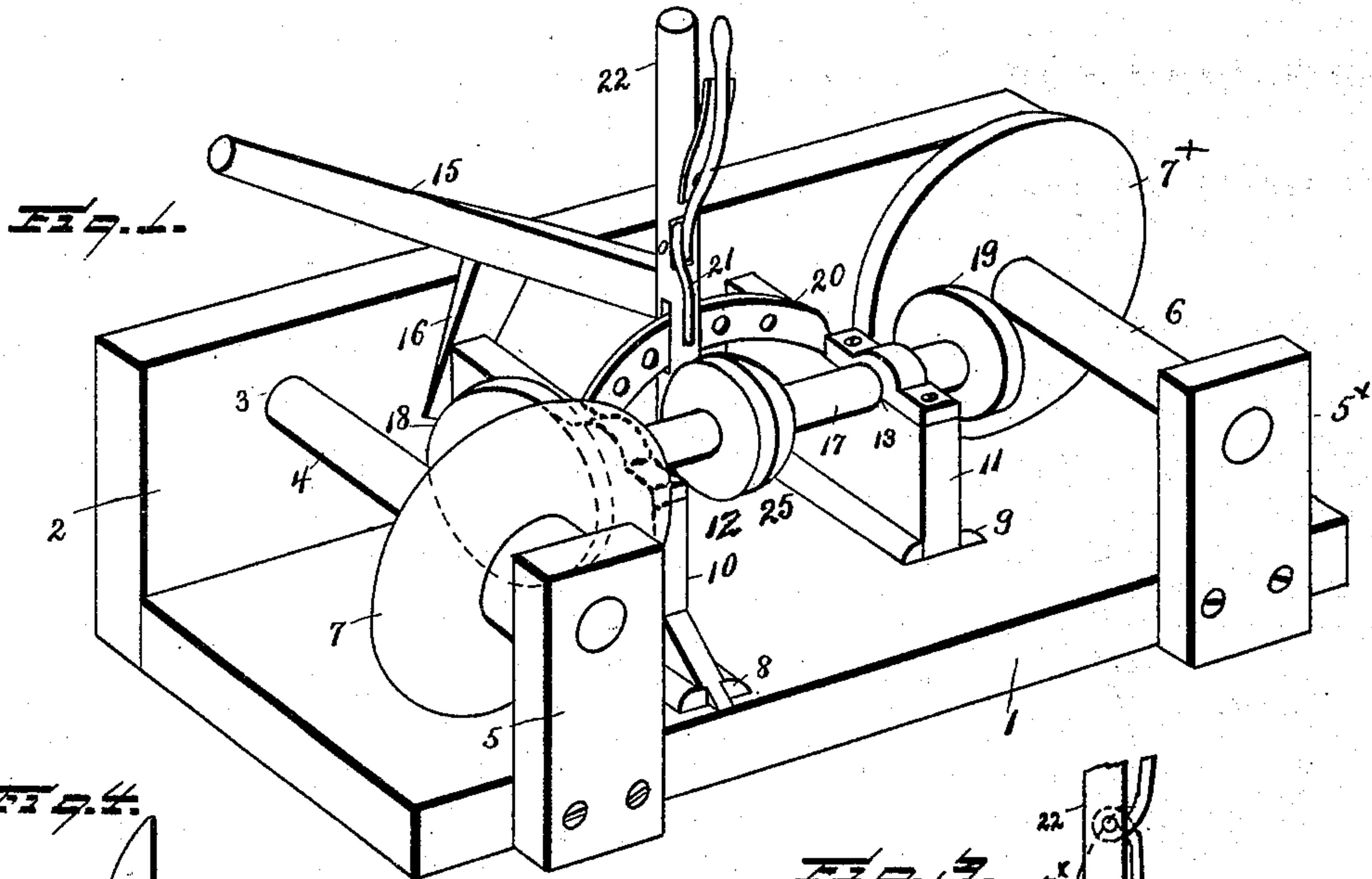
(No Model.)

H. B. STRONG.

MECHANISM FOR GOVERNING THE FEED OF SAW MILLS.

No. 410,337.

Patented Sept. 3, 1889.



Witnesses:

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UNITED STATES PATENT OFFICE.

HORATIO B. STRONG, OF WILKESVILLE, OHIO.

MECHANISM FOR GOVERNING THE FEED OF SAW-MILLS.

SPECIFICATION forming part of Letters Patent No. 410,337, dated September 3, 1889.

Application filed April 19, 1889. Serial No. 307,778. (No model.)

To all whom it may concern:

Be it known that I, HORATIO B. STRONG, a citizen of the United States, residing at Wilkesville, in the county of Vinton and State of Ohio, have invented a new and useful Mechanism for Governing the Feed of Saw-Mills, of which the following is a specification.

This invention has relation to mechanism for governing the feed of saw-mills and other wood-working machinery wherein the variable feed is of advantage by reason of the bringing in contact with the saw or knives of knots or other forms of resistance.

The invention has particular reference to that especial construction of speed-governing mechanism wherein are employed oppositely-mounted disks, motion being conveyed from one disk to another by an intermediate shaft and pulleys having surface-contact with said disk.

Among the main objects in view are to simplify the construction, reduce the number of parts necessary, and consequently the cost, of the machine, and to provide simple and convenient means under the complete control and manipulation of the operator, whereby the feed-carriage controlled by the feed mechanism may be advanced rapidly or slowly, as the nature of the material presented to the cutting agent may permit.

With these general objects in view the invention consists in the provision of opposite counter-shafts—one to receive the power and the other to transmit power from the motor—and to provide these shafts with annular flanges or disks, the working-faces of which are out of line with each other and disposed toward each other, and to provide an intermediate reciprocating shaft arranged at an angle to the counter-shafts and with friction-pulleys in contact with the disks, and also a simple and convenient mechanism for oscillating the shaft, both in the reciprocating and lateral manner.

Referring to the drawings, Figure 1 is a perspective of a feed-governing mechanism constructed in accordance with my invention. Fig. 2 is a longitudinal section. Fig. 3 is a transverse section through one of the adjustable boxes, and Fig. 4 is a similar view through the other box.

Like numerals of reference indicate like parts in all the figures in the drawings.

The frame of the mechanism may be of any desired construction, and in this instance consists of the base 1, having the side wall 2.

At one end of the frame, and having one end journaled in a box 3, is a transverse counter-shaft 4, the opposite end being supported by a standard 5, rising from the base of the frame. At the opposite end of the frame a power-shaft 6 is similarly mounted in a standard 5*, and said shafts are provided with fixed flanges or friction-disks 7 and 7*, respectively, the friction-faces of which are inwardly disposed. Formed upon the base 1, intermediate the shafts 4 and 6, are parallel transverse guides or ways 8 and 9.

Mounted on the guides 8 and 9, and adapted for movement, are sliding blocks 10 and 11, respectively, having journals 12 and 13 respectively formed therein. Passing through wall 2 of the frame into the block 11 is a set-screw 14, by which the block may be adjusted within its way 9, and pivoted to the wall 2, intermediate of the blocks, is a lever 15, carrying a wedge-shaped arm 16, which when the lever is swung downwardly enters between the inner end wall of the block 10 and the wall 2 of the frame, and serves to wedge said block away from the wall 2. Journaled in boxes 12 and 13, formed in the blocks 10 and 11, and adapted to be reciprocated therein, is a shaft 17, having at one end a friction-pulley 18, and opposite a companion pulley 19, the first-mentioned pulley being preferably larger than the last and the former being designed to co-operate in connection with the disk 7 of the shaft 4 and the latter with the disk 7 of the shaft 6.

As thus far described, it is apparent that through the medium of the screw 14 the pulley 19 may be maintained in normal contact with the disk 7* of the shaft 6, and also that through the medium of the lever 15 and its wedge-arm 16 the pulley 18 may be maintained removably in contact with the disk 7 of the shaft 4. The shaft 6 is the power-shaft, and, it will be understood, is provided with a suitable power-pulley and system of belting leading from the motor. It will also be understood that the shaft 4 is properly connected to the

feed-carriage, as is common in this class of machinery. It now remains to provide means for varying the speed of the shaft 4 and consequently decreasing or diminishing the speed of the carriage irrespective of the speed of the shaft 6. Upon the blocks 10 and 11, I mount a perforated curved bar 20, into the perforations of which there is adapted to take a spring-bolt 21, mounted upon the side of a hand-lever 22, pivoted to a block 23, fixed to the base 1. An arm or pin 24 projects laterally from the hand-lever 22 and takes into an annularly-grooved boss or collar 25, fixedly mounted upon the movable shaft 17.

By swinging the hand-lever 22 to the right or left by the mechanism described the shaft 17 will be similarly reciprocated and its friction-pulleys 18 and 19 be carried nearer to or farther from the center of their respective disks, and in either position they will be maintained through the medium of the spring-bolt 21. It is evident that by bringing the pulley 18 toward the center of the disk 7 of the shaft 4 the speed of said shaft will be slackened or diminished and by an opposite movement of shaft 17, the pulley 18 will be brought nearer to the perimeter of the disk 7, and the speed of the shaft 4 will be increased in accordance with the proximity of the pulley 18 to said perimeter.

From the above description it will be seen that not only do I provide a variable speed, but I also provide means for throwing the pulley 18 into and out of contact with the disk 7, thereby stopping or starting the movement of the carriage.

Having described my invention and its operation, what I claim is—

1. In a feed mechanism, a counter-shaft and a feed-shaft parallel therewith, each provided with friction-disks, in combination with parallel sliding blocks, a set-screw for adjusting

one of the blocks, and a wedge adapted for insertion between the end of the other block and a fixed part of the frame-work, a reciprocating shaft mounted in boxes on the blocks and provided with friction-pulleys engaging the disks, and a grooved collar fixed thereon between its bearings, and a lever pivotally connected with the base and provided with an arm constructed to engage said shaft and provided with a spring-bolt, and a curved adjusting-bar having perforations engaged by the bolt and located in rear of the lever, substantially as specified.

2. The combination, with the base 1, having the wall 2, the shafts 4 and 6, and their supports 5 and 5*, the disks 7 and 7*, mounted on their respective shafts, and adjustable blocks 10 and 11, having the reciprocating shaft 17, carrying the friction-pulleys 18 and 19, and the lever 15, pivoted to the wall and provided with the wedge-shaped arm 16, adapted for insertion between the end of the block 10 and the wall 2, substantially as specified.

3. In a mechanism of the class described, opposite shafts provided with friction-disks, in combination with an intermediate reciprocating shaft at an angle to the opposite shafts provided with friction-pulleys adapted for contact with the disks, and means, substantially as described, for reciprocating said shaft, the sliding block 10, for supporting the intermediate shaft, and the lever with a wedge adapted to be inserted between the end of the block and fixed part of the frame-work, for the purpose set forth.

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

HORATIO B. STRONG.

Witnesses:

BENJ. F. WILLIAMS,
CHAS. E. HAWK.