

No. 629,294.

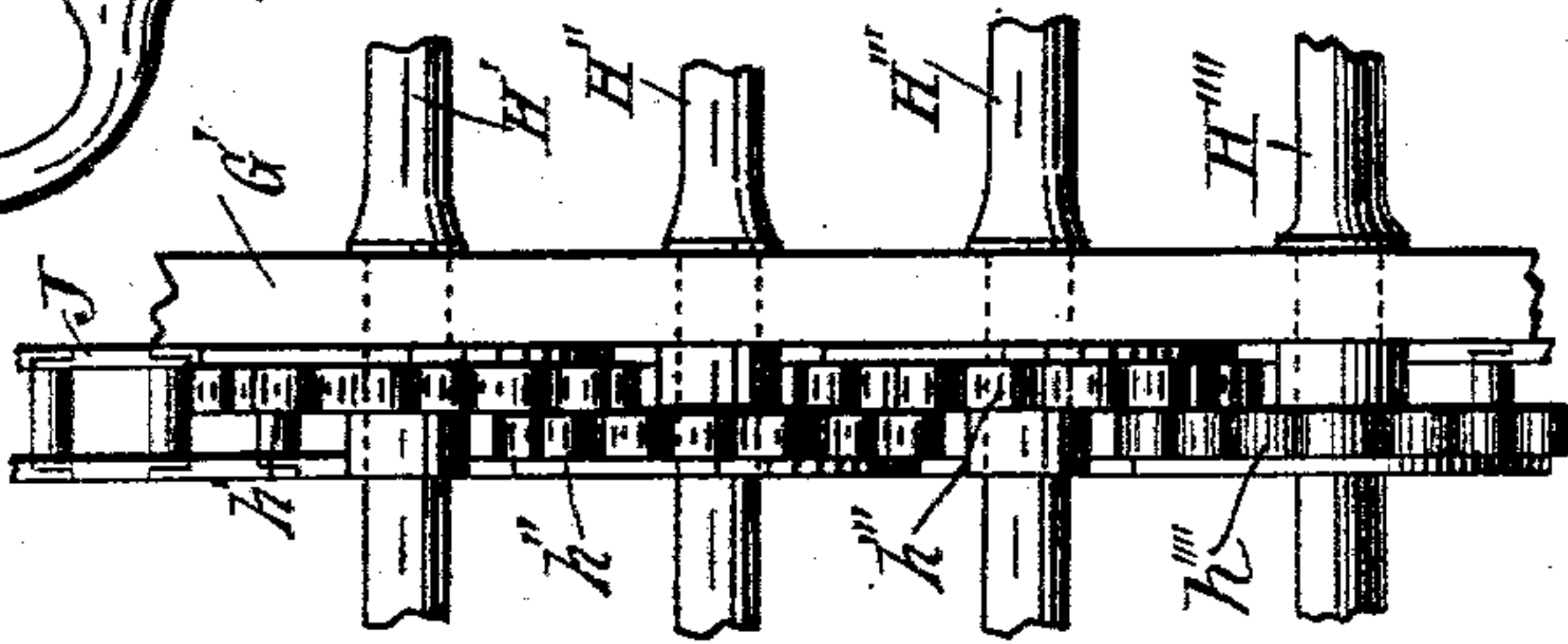
Patented July 18, 1899.

G. H. HEADY.
LOCK MORTISING MACHINE.

(Application filed Nov. 8, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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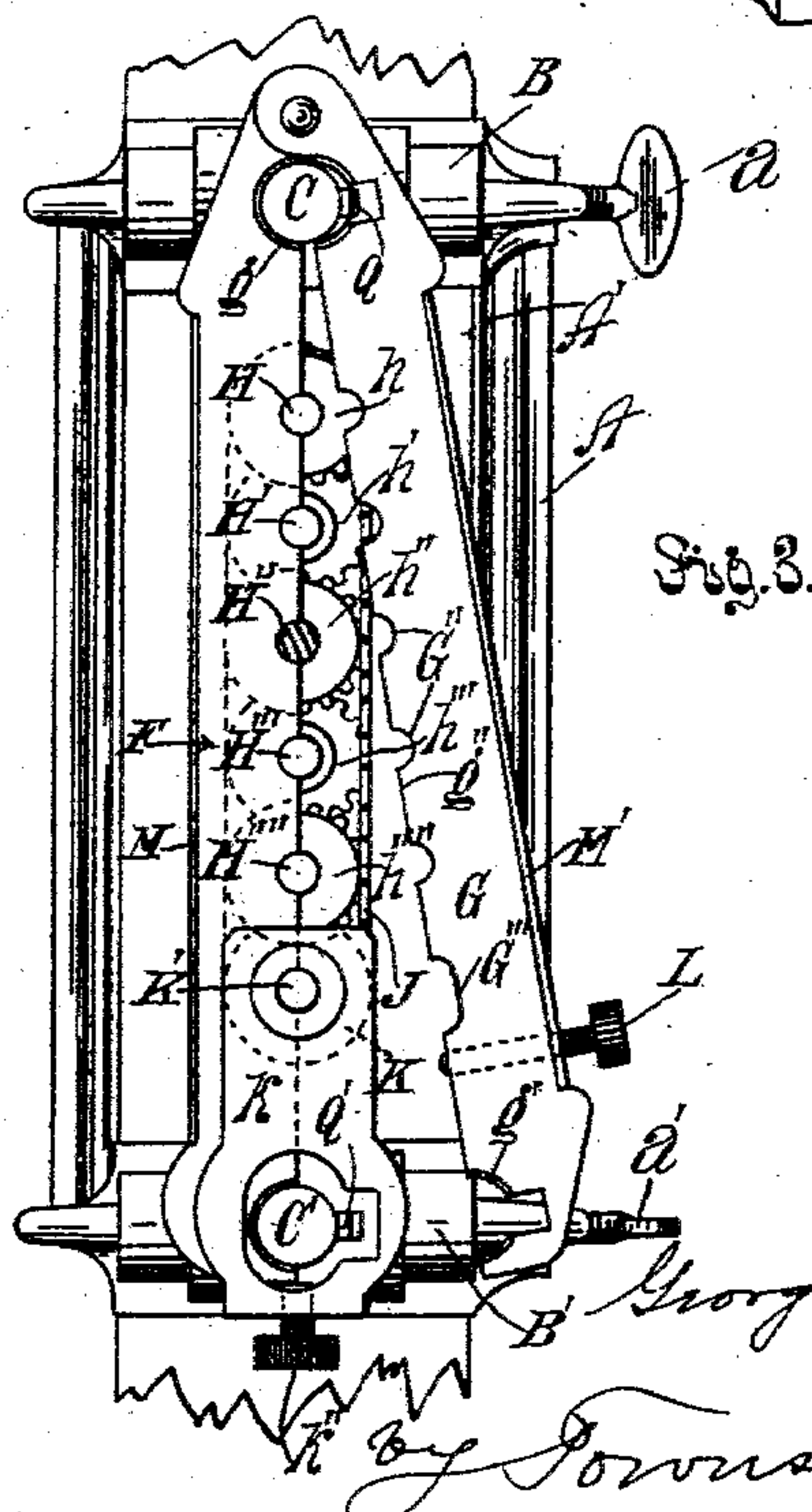
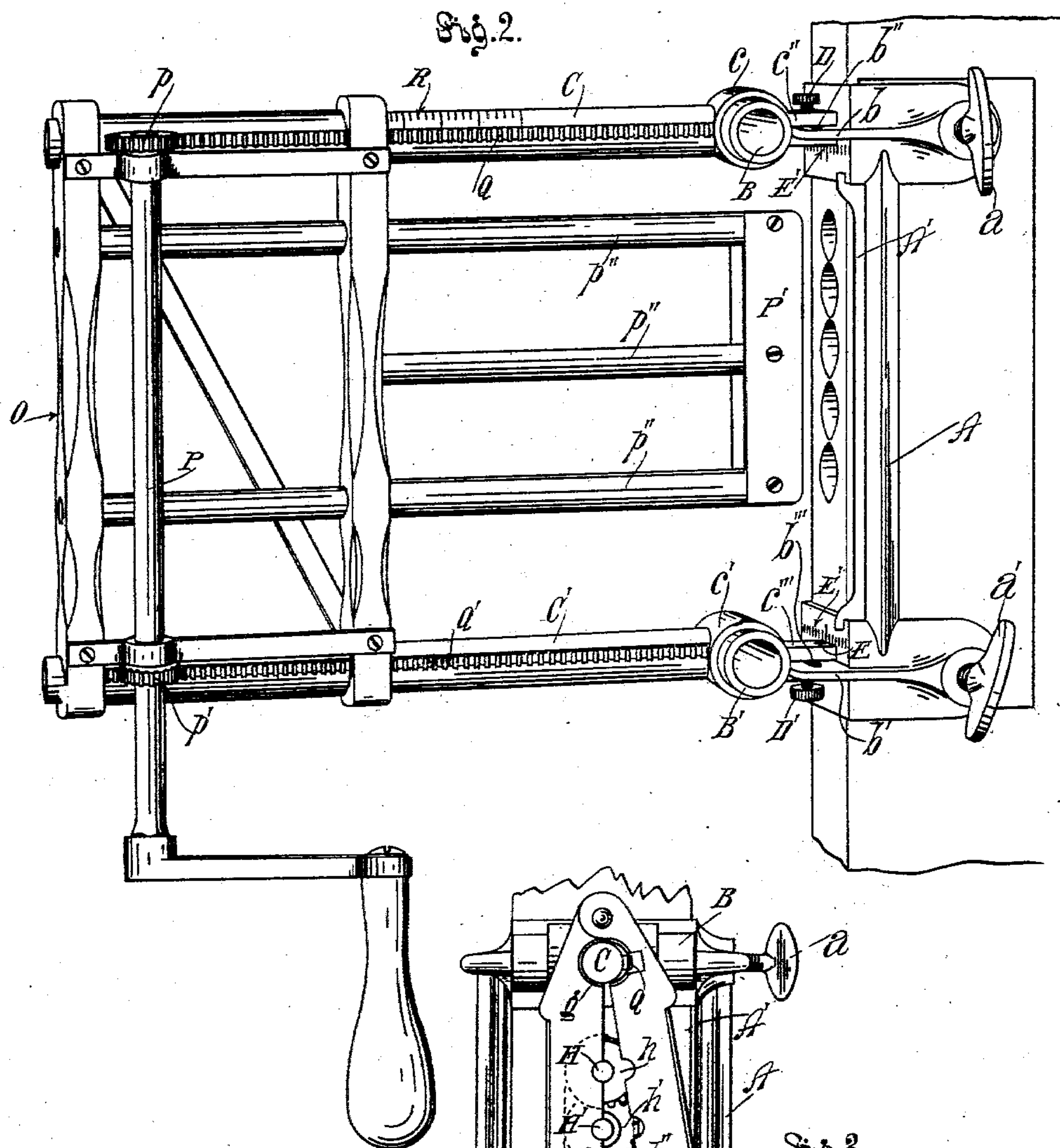
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2 Sheets—Sheet 2.



Witnesses
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Signature

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his attys.

UNITED STATES PATENT OFFICE.

GEORGE H. HEADY, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO ALFRED SOLANO, OF SAME PLACE.

LOCK-MORTISING MACHINE.

SPECIFICATION forming part of Letters Patent No. 629,294, dated July 18, 1899.

Application filed November 8, 1898. Serial No. 695,847. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HENRY HEADY, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Lock-Mortising Machines, of which the following is a specification.

The object of my invention is to provide a device whereby mortises for locks may be quickly made in doors already hung, the boring of all the necessary holes being performed at one and the same time and the chiseling out of all the webs being afterward simultaneously performed, so that upon the completion of the two operations the mortise is fully formed and ready to receive the door-lock.

A further object of my invention is to provide means whereby the power applied to rotate the bits will be applied on opposite sides of the bit and not wholly at one side thereof, as has heretofore been the case. By this means I avoid side strain upon the bearings, and thereby prevent much friction heretofore present in such devices.

My invention comprises the various features of construction and combinations of parts hereinafter fully set forth and claimed, whereby I produce a machine of this character which is simple in construction, practically devoid of side strain upon the bit-shanks, durable, convenient in operation, capable of adjustment to produce mortises of different sizes to suit the size of the lock used, and will be capable of producing the mortise in any particular portion of the door desired, either at the mid-line or near to one side or the other, as may be necessary.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective fragmental side elevation of a device embodying my invention in position ready to produce a mortise in a door. Fig. 2 is a like view of the same, showing the bits and bit-frame removed and the web-cutting chisel in position to be operated to cut the web from the mortise. Fig. 3 is a front view of one of the separable journal-bars whereby the bits are removably journaled in the bit-carrying frame. Fig. 4 is a fragmental side elevation of the bit-shanks,

the sprocket-wheels affixed thereto, and a fragment of the sprocket-chain in place. Fig. 5 is a fragmental view showing the sprocket-chain for driving the sprocket-wheels. Fig. 6 is a front elevation of the sprocket-wheels, showing the sprocket-chain in position for driving the wheels.

A represents a base which is adapted to straddle the door to be mortised and is provided with a clamp-plate A', to which is secured clamp-screws *a a'*, which are screwed through the base and adapted to press the clamp-plate against the door or other piece to be mortised.

B B' are cylindrical guides which are arranged upon the top of and transverse the base, to which each guide is connected by means of a web *b b'*, respectively.

C C' are frame-guides, each comprising a standard having its foot *c (c')* provided with or formed into a circular clip adapted to seat upon and embrace one of the cylindrical guides and to slide therealong. Ears *c'' c'''* project below the clips, and set-screws D D', passing through slots *b'' b'''* in the webs, permit the guides to be adjusted back and forth across the base and to thereby allow the mortise to be produced in the proper position in the door. An index E and a scale E' is provided, one upon the base and the other upon the inner ear of the clip of its respective standard or guide, to thereby indicate the position in which the mortise will be produced in the door.

F represents a frame which is mounted upon and adapted to slide upon the guides C C'. As shown in the drawings, this frame is composed of two journal-bars G G', each provided with journal-openings G'' to receive and journal the bits H H', &c., which produce the mortise, and are also provided with seats *g g'* to receive the guides C C' and slots G''' to receive the stub-stock K'. Each journal-bar is divided longitudinally, the line of division *g''* passing through the journal-seats, so that each bar is composed of two parts having complementary halves of the journal-seats, and when placed together, as shown in the drawings, will embrace in such seats the shanks of the cutting-bits and will embrace in the guide-seats the guides C C'.

Each bit $H H' H'' H''' H''''$ is provided with a sprocket-wheel $h h' h'' h''' h''''$, respectively, and the wheels of the bits which are arranged in contiguous journal-seats are offset upon each other or alternately arranged above and below each other, as shown in Fig. 4. One of the shanks, that of the bits H' , is extended beyond the outer face of the outer journal-bar and is adapted to have a brace I secured thereto, as shown in Fig. 1, whereby the bit may be rotated. A sprocket-chain J is trained around the entire series of wheels $h h'$, &c., and is also trained around a sprocket-wheel K , which is secured to a stub-stock K' , which is journaled in adjusting-bars $k k'$, respectively secured to one-half of the journal-bars of the frame, and each provided with a set-screw k'' , adapted to screw against the frame, to thereby pull the stub-stock outward in the slots G'' , and to thereby tighten the sprocket-chain and to hold it taut. The links of the sprocket-chain are sufficiently wide to engage with both the upper and the lower sprocket-wheels and to rotate them in one and the same direction, thereby rotating all the bits in the same direction.

Thumb-screws $L L'$ are arranged to detachably secure the two halves of the journal-bars $G G'$ together. Guide-plates $M M'$, respectively, are secured to the halves of the lower journal-bar and arranged close to the peripheries of the sprocket-wheels, so as to hold the sprocket-chain from slipping out of engagement with the sprocket-wheels.

N is a gage which is secured to the base and is adapted to be adjusted by means of a telescoping joint N' and a butterfly-nut n , whereby the joint may be locked. This gage is adjusted to produce the mortise at the proper height from the floor in one door, and afterward no further adjustment is needed, the gage automatically holding the mortising-machine at the proper height from the floor, so that all that is required is to rest the bottom of the gage upon the floor and to then clamp the machine upon the door.

In Fig. 2 I have shown the mortising-chisel ready to be operated to cut the webs from the mortise produced by the bits. This mortising-chisel consists of a frame O , which is adapted to slide upon the standards $C C'$ and is provided with a cross-shaft P , which is journaled in the frame and is provided with two pinions $p p'$, respectively, which are adapted to engage with cog-racks $Q Q'$, which are provided upon the standards. A mortising-chisel P' is carried by this frame and is adapted to chisel the web from between the auger-holes produced by the bits. The standards or stocks p'' , which carry this chisel, are each adapted to pass down into one of the holes produced by the bits.

R is a scale provided upon one of the standards, whereby the depth to which the bits enter the wood can be observed and a mortise of the exact depth required produced.

In practical operation the base is clamped

upon a door in proper position to produce the mortise at the desired height from the floor. Then the gage N is adjusted so that its lower end rests upon the floor. Then the bit H' is rotated by means of the brace I , thus driving the sprocket-chain J , and thereby rotating all the bits in the same direction, the sprocket-chain, engaging with opposite sides of each sprocket-wheel, insuring that the motion shall be positive and devoid of side strain. By means of the scale R the operator can see when the bits have reached a sufficient depth, when the brace is then rotated in the reverse direction and the bits removed from the mortise, after which the frame is removed from the standards. Then the chisel-frame O is placed upon the guides, as shown in Fig. 2, with the pinions $p p'$ in engagement with the cog-racks $Q Q'$, and by means of the crank O' the shaft is rotated, thus forcing the chisel down into the mortise and chiseling the web from between the auger-holes, completing the mortise ready for the reception of the lock.

By loosening the set-screws $D D'$ the standards may be adjusted back and forth across the base, the position being indicated by the index E and scale E' .

When it is desired to produce a mortise of less length than that shown in the drawings, the bit-carrying frame may be separated, as shown in Fig. 3, when the bit H'''' may be removed from the device and the mortise produced with the remaining bits. By removing the bit H'''' a still shorter mortise will be produced, one sufficiently small for all practical purposes.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lock-mortising machine, the combination set forth of a base adapted to be clamped upon the piece to be mortised and provided with two cylindrical guides arranged transverse the base and each connected therewith by a web; standards, each provided at its foot with a cylindrical clip to fit upon one of the guides and to be clamped thereupon; a frame arranged to slide upon the standards; bits journaled in the frame; and means for simultaneously rotating all the bits.

2. In a lock-mortising machine, the combination set forth of a base adapted to be clamped upon the piece to be mortised; standards secured upon the base; a frame adapted to slide upon the standards; bit-shanks journaled in the frame and each provided with a sprocket-wheel fixed thereto, alternating sprocket-wheels; a sprocket-chain adapted to engage with all the sprocket-wheels; and means for driving the sprocket-chain.

3. In a lock-mortising machine, the combination set forth of a base adapted to be clamped upon the piece to be mortised; standards secured upon the base; a frame adapted to slide upon the standards and divided longitudinally into two parts, each part having complementary halves of journal-seats for

the bit-stocks; means for detachably securing the halves of the frame together; bits having their stocks adapted to seat in the journal-seats in the frame and each provided
5 with a sprocket-wheel; a stub-stock provided with a sprocket-wheel and having its ends journaled in tightening-bars, each bar being provided with a set-screw bearing against the

frame and adapted to operate to draw the stub-stock outward and to thereby tighten the chain; and means for driving the chain.

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Witnesses:

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