

(No Model.)

3 Sheets—Sheet 1.

W. H. & W. J. CLARK.
MORTISING MACHINE.

No. 524,192.

Patented Aug. 7, 1894.

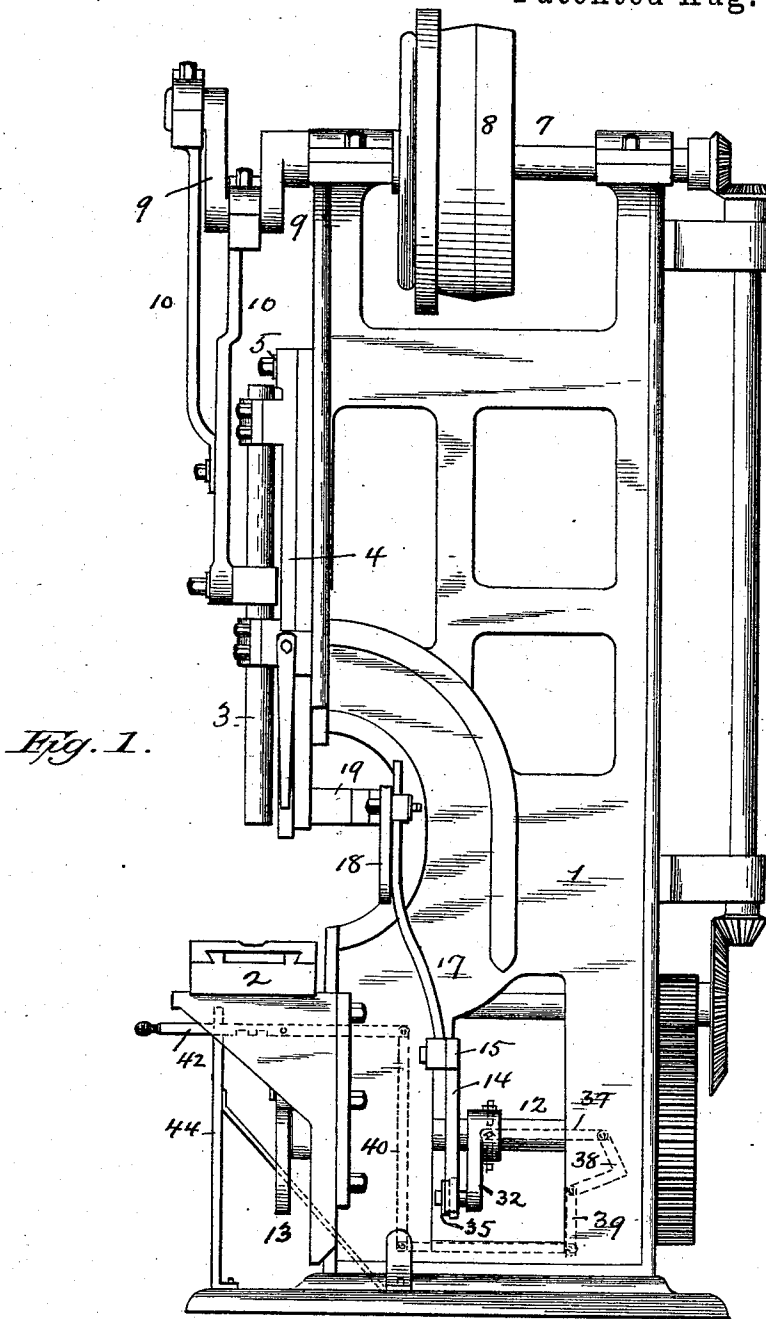


Fig. 1.

WITNESSES:
H. L. Oursaud
J. A. Coombs

INVENTORS:
William H. Clark, Jr.
William J. Clark,
By James Hagen & Co.
Attorneys.

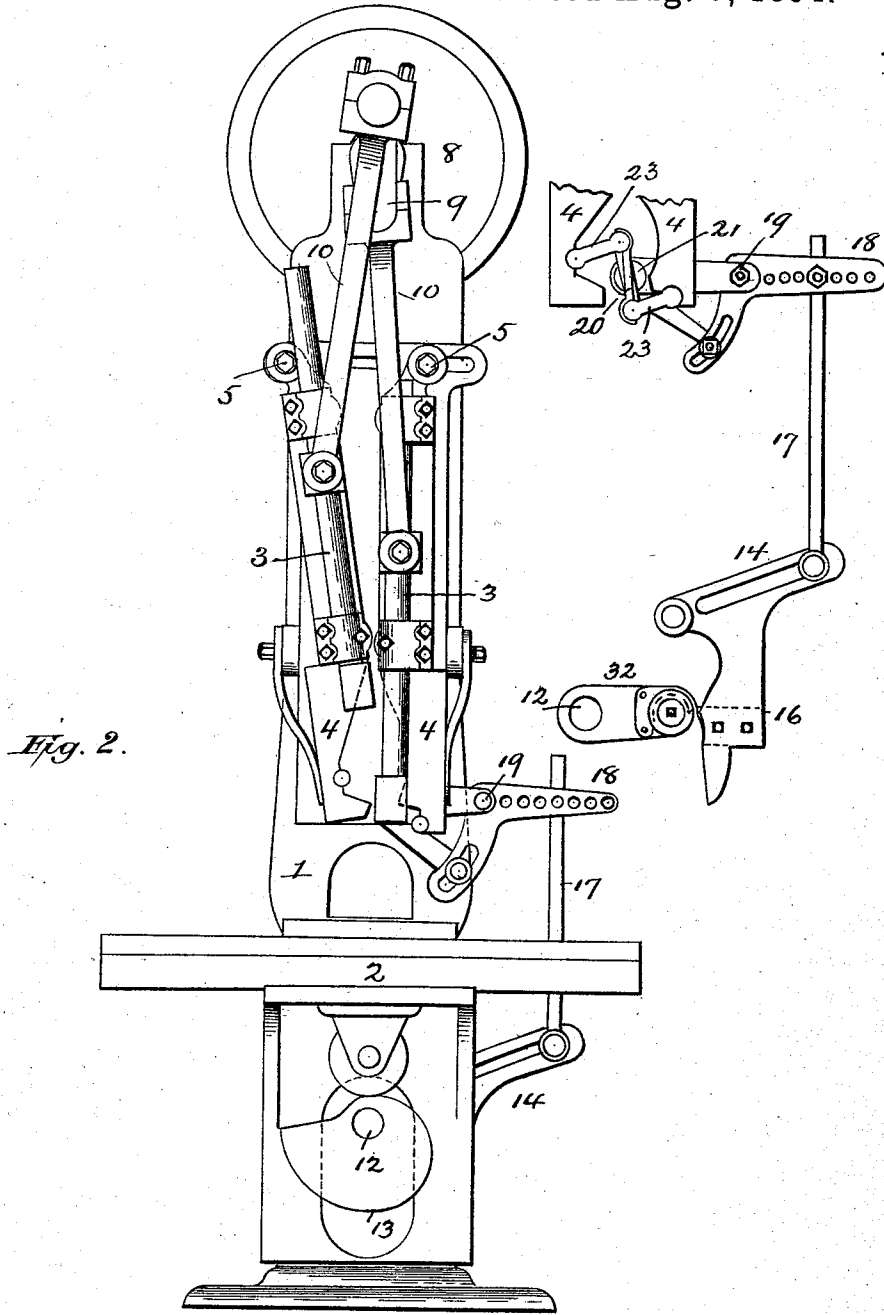
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3 Sheets—Sheet 2.

W. H. & W. J. CLARK.
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WITNESSES:
F. L. Ouraud
J. H. Coombs

INVENTORS:
William H. Clark & W. J. Clark,
J. H. Rogers, Attorneys.

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3 Sheets—Sheet 3.

W. H. & W. J. CLARK.
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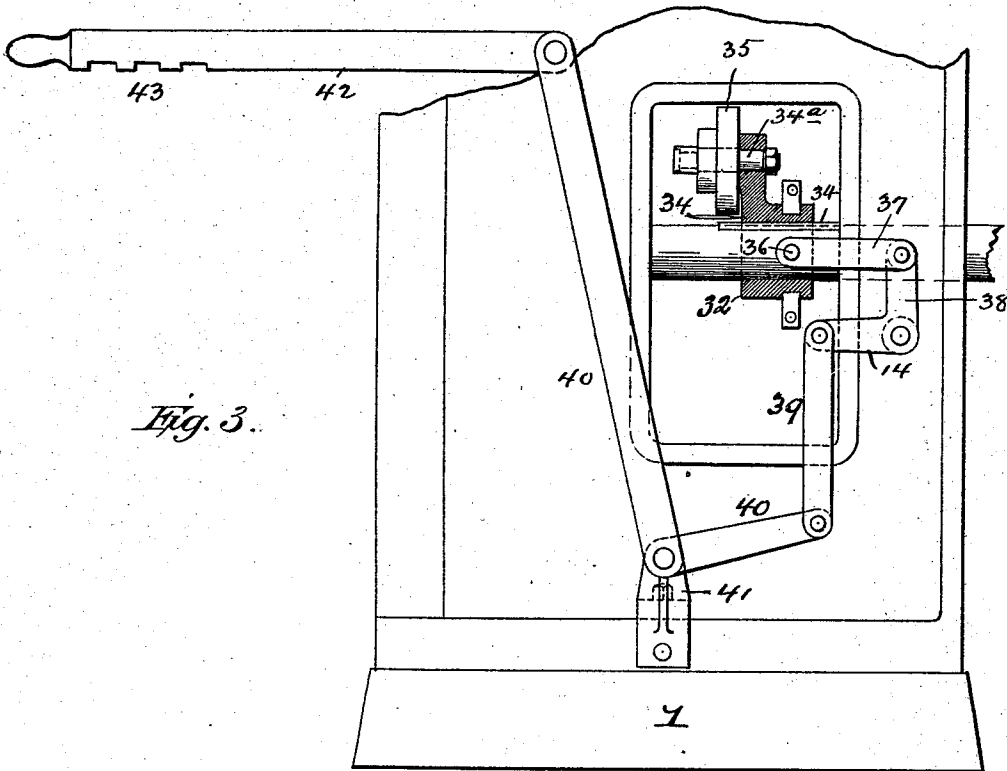


Fig. 3.

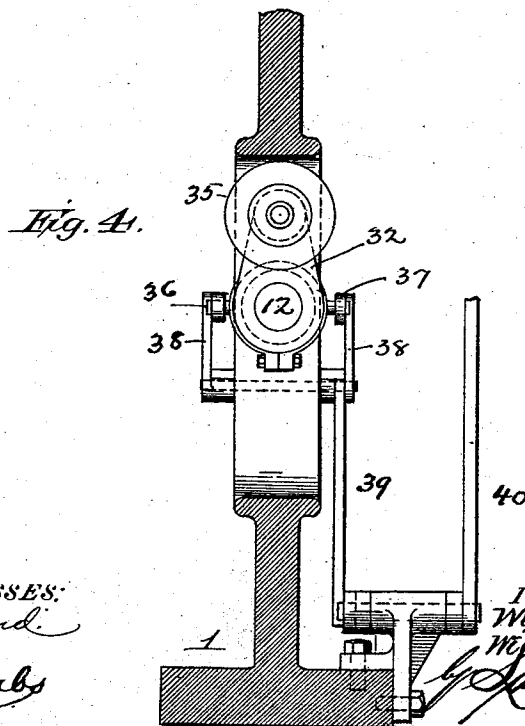


Fig. 4.

WITNESSES:
F. L. Curand.
J. L. Brooks

INVENTORS:
William H. Clark & *W. J. Clark*,
By James Duggan
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM H. CLARK AND WILLIAM J. CLARK, OF SALEM, OHIO.

MORTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 524,192, dated August 7, 1894.

Application filed February 27, 1894. Serial No. 501,705. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. CLARK and WILLIAM J. CLARK, both residents of Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Mortising-Machines; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to improvements in mortising machines of that class or description in which a pair of vertically reciprocating chisels are employed, which are automatically spread apart while making a mortise and contracted when the mortise is complete.

The object of the present invention, is to provide an improved means whereby the spread of the chisels may be regulated instantaneously at the will of the operator without stopping the machine, to produce mortises of varying lengths.

The invention consists in the novel construction and combination of parts, as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a side view of a mortising machine with our improvements applied thereto. Fig. 2 is a front view of the same. Fig. 3 is a detail elevation. Fig. 4 is a detail sectional view.

In the said drawings, the reference numeral 1 designates the frame which supports the working parts of the machine; 2 the bed or table upon which the work to be operated upon is secured. 3, 3, designate the chisel bars, in the lower ends of which, the chisels, (not shown) are inserted.

The numerals 4, 4, designate the chisel bar bed plates hung upon pivots 5, on the front of the machine, and provided with suitable bearings in which the chisel bars reciprocate.

The numeral 7 denotes the drive-shaft journaled in the top of the frame and provided with a drive-pulley 8, and double cranks 9, 9, with which the chisel bars are secured by means of connecting rods 10, 10.

In the lower part of the frame is journaled a cam-shaft 12, provided with a cam 13, for

raising and lowering the table, which works in suitable vertical guides.

The numeral 14 designates a bell-crank lever, fulcrumed at 15, to any convenient part of the frame, and provided at its lower end with an arm 16. Adjustably secured to the other end of said lever is a connecting rod 17, also adjustably connected at its upper end with a lever 18, which is fulcrumed upon the shaft or pivot-pin 19.

The numeral 20 designates a cross-bar secured to the pivot-pin 21, and 23 are elbow levers pivotally secured to the ends of the cross-bar 20 and engaging with the lower ends of the chisel bar bed-plates, respectively, thereby controlling the spreading of said plates.

Motion is conveyed from the drive-shaft to the shaft 12 by means of a suitable drive-connection.

The parts so far described, form no part of our present invention and are not claimed, except in combination with our improvements.

Carried by the shaft 12, is a slidable crank 32, having a groove in which fits a feather 34, on said shaft for the purpose of causing said crank to rotate therewith. Journaled on a pin 34^a, is a step roller 35, formed by cutting away the periphery thereof. Connected with the crank 32 is a yoke 36, connected by a bar 37 with one arm of a bell-crank lever 38, pivoted to the machine frame. The other arm of this lever is connected by a rod or bar 39 with a two-armed lever 40 fulcrumed in lugs 41 secured to the machine frame. The long arm of this lever is connected with an operating handle 42, provided with notches 43 adapted to engage with a stud on a vertical bar 44, whereby said parts are held in position.

In operation, as the chisel bars are reciprocated up and down, the step-roller on the crank will engage with and actuate the arm 16 of the lever 14, and by means of the connections spread the chisels apart while making a mortise. As the said roller is disengaged from the arm by the movement of the crank, the chisels will contract. This latter movement should commence just as the chisels have completed the mortise. When it is desired to vary the spread of the chisels to

vary the length of the mortise, the crank is shifted back or forth on its shaft by the handle 42 and its connections, so as to bring one or the other of the steps of roller 35, into coincidence with the arm 16 of lever 14. It is obvious that when the largest diameter of the said step-roller engages with said arm the chisels will be spread farther apart than when a smaller diameter or step engages therewith.

The crank can be shifted without stopping the machine, whereby the usual labor and delay in the machines in use are avoided.

It is obvious that instead of a single step-roller being employed, two or more rollers of different diameters may be used instead. It is also obvious that the lever 14 may be made slidable (instead of the crank 32) upon its fulcrum 15, the latter being lengthened to suit that purpose, and the shifting device 36, 37, 38, 39, 40, 41, 42, 43, and 44 modified to connect therewith, and in which case the chisel spreading connections 17 and 18 would also be modified to permit this sliding motion of the lever 14. It is also obvious that a plain single roller may be employed, and the steps be formed on the arm of the bell-crank lever with which it engages without departing from the spirit of our invention. It is also obvious that when a plain single roller is employed the arm 16 may be hinged upon the lever 14 and a wedge, cam or other suitable device connected therewith to project or retract the arm 16, and according as the arm 16 is thus projected or retracted, the motion of the lever 14 (and its chisel spreading connections) will vary when the arm 16 engages with and

is actuated by the roller of the crank 32. In this case, neither the crank 32 nor the lever 14 is slidable.

Having thus described our invention, what we claim is—

1. In a mortising machine of the character described, the combination with the slidable crank carried thereby, and means substantially as specified for varying the spread of the chisels by the shifting of said crank.

2. In a mortising machine of the character described, the combination with the shaft, the slidable crank carried thereby, provided with a step-roller, the bell-crank lever with which said roller is adapted to engage, and means for spreading the chisels apart by the movement of said lever, substantially as and for the purpose set forth.

3. In a mortising machine of the character described, the combination with the shaft, the slidable crank carried thereby, the yoke connected therewith, the connecting rods and levers for shifting said crank, the step-roller carried by the crank, the bell-crank lever with which said roller engages and the connections for spreading the chisels apart by the movement of said lever, substantially as described.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

WILLIAM H. CLARK.
WILLIAM J. CLARK.

Witnesses:

J. FAUCETT,
C. TOWNSEND.