

(No Model.)

A. DODDS.
RUBBING MACHINE.

No. 418,606.

Patented Dec. 31, 1889.

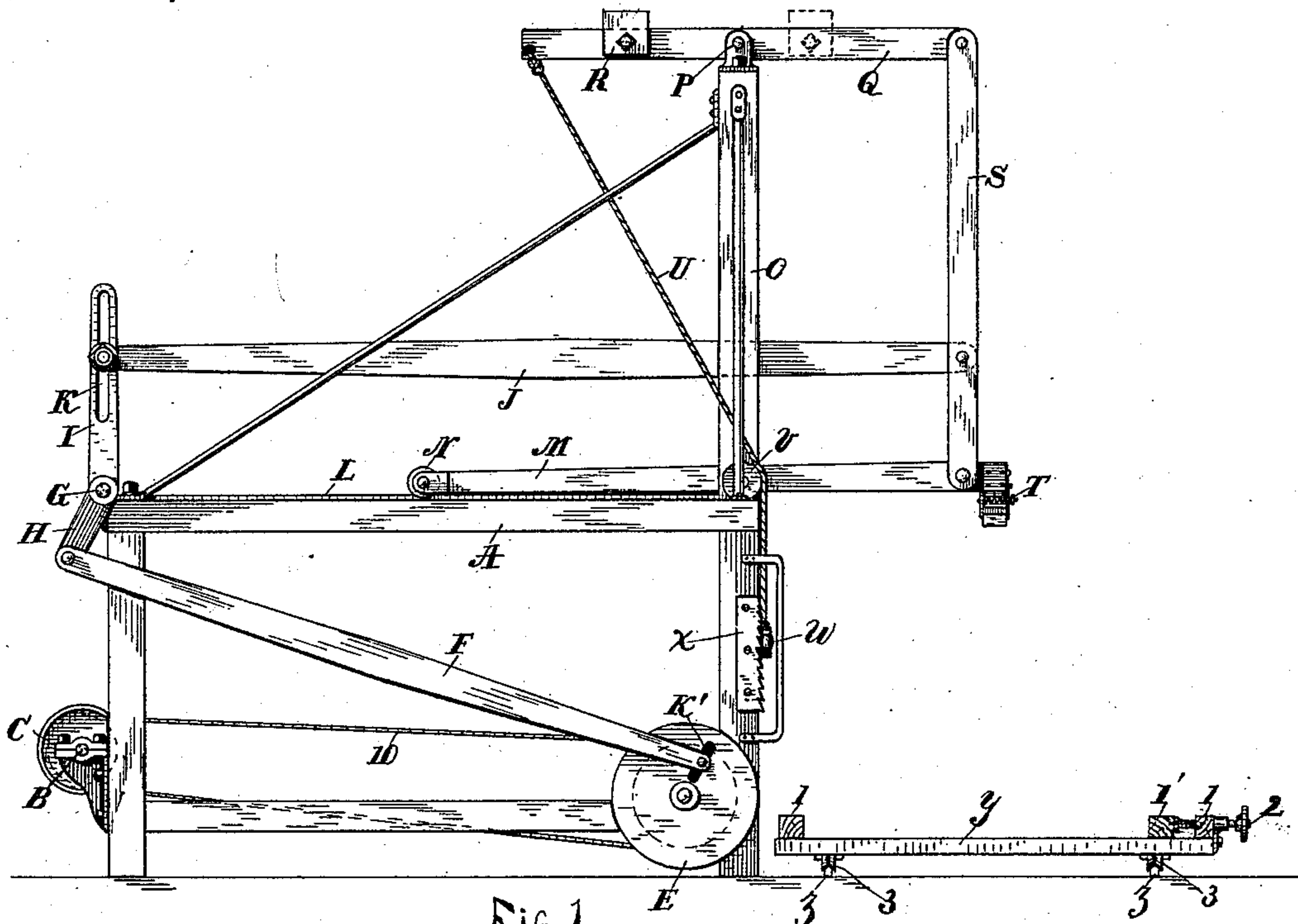


Fig. 1.

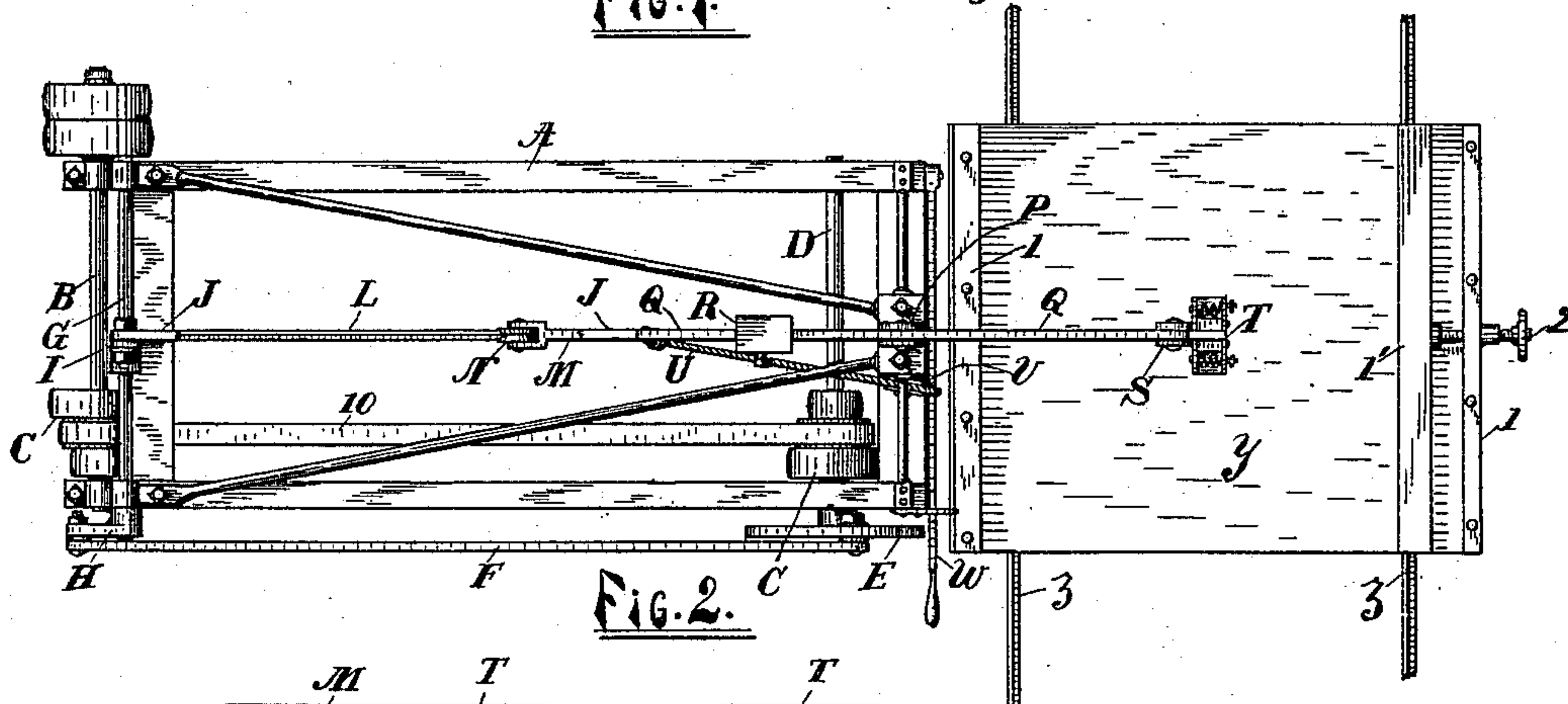


Fig. 2.

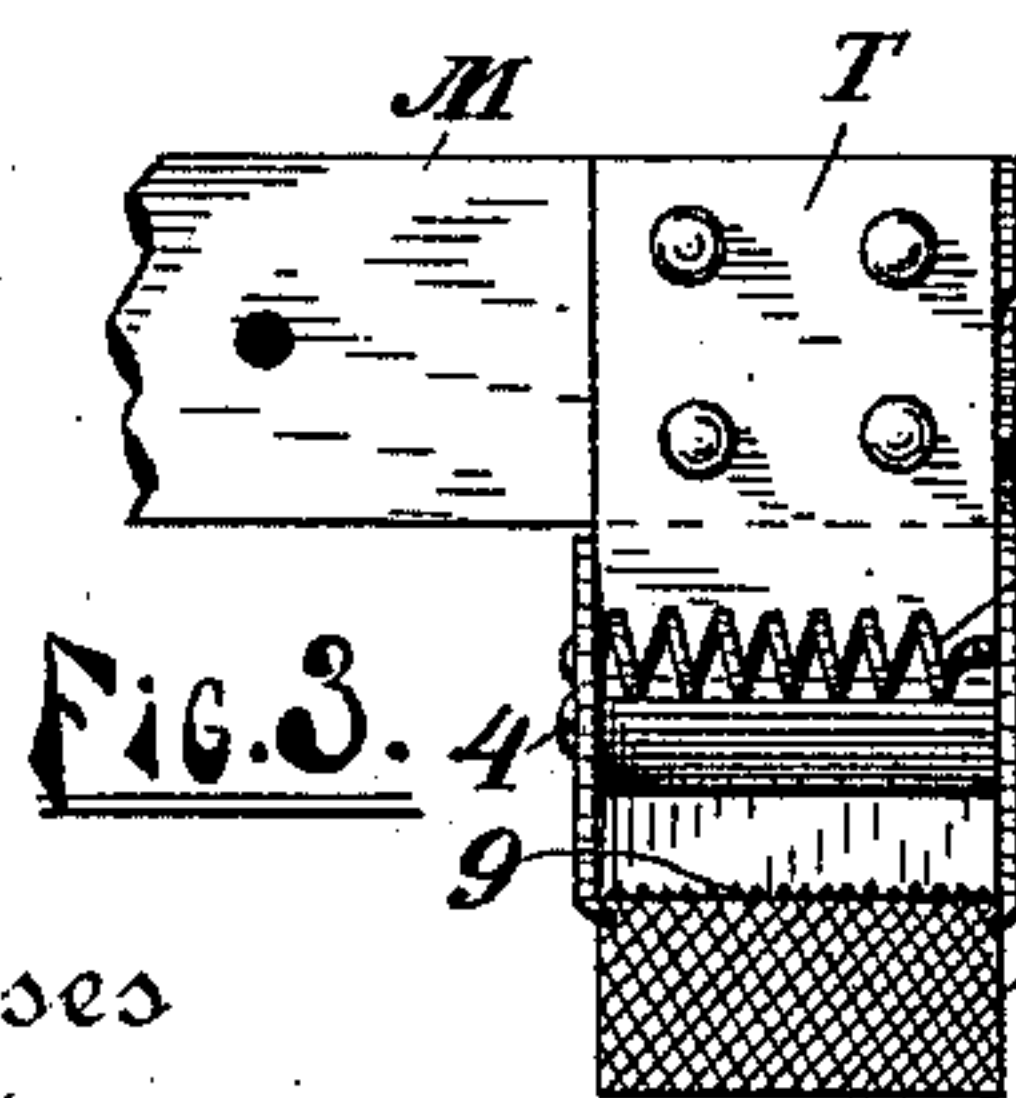


Fig. 3.

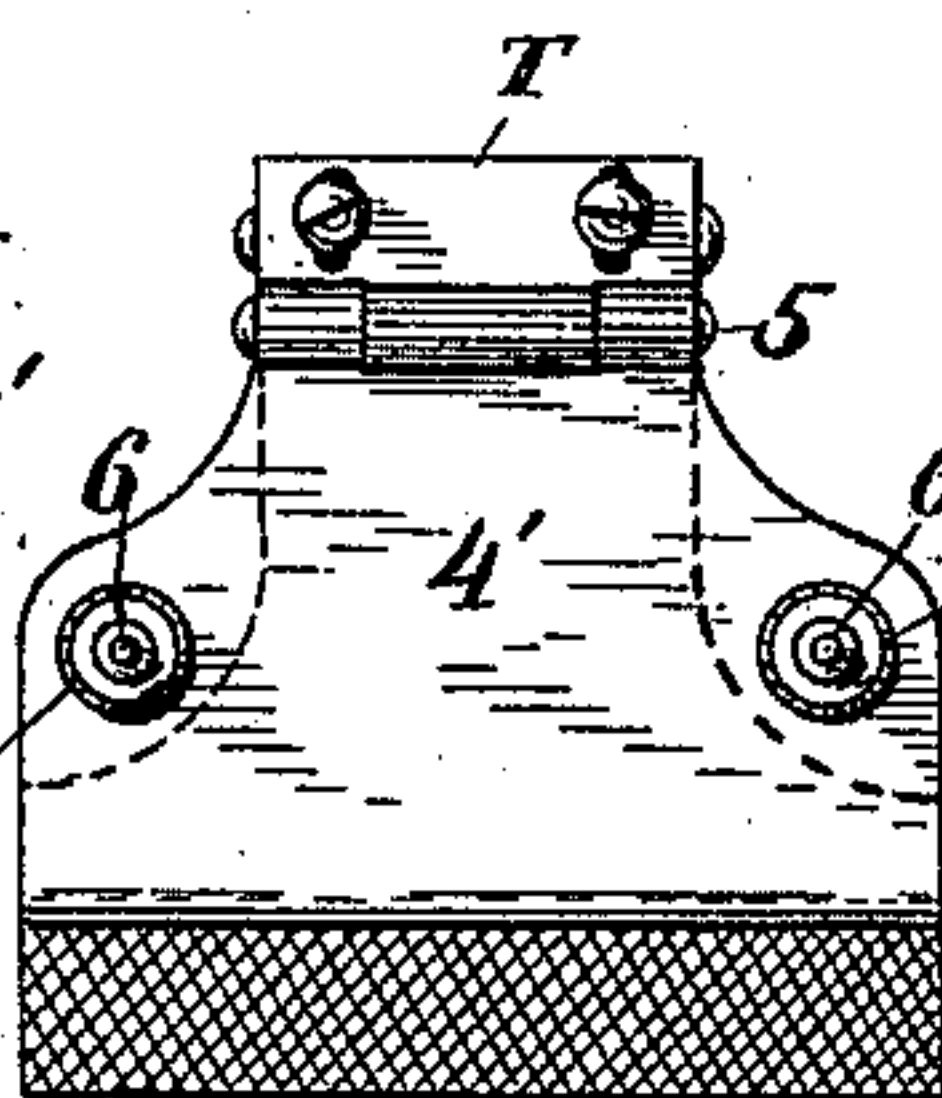


Fig. 4.

Witnesses

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ALEXANDER DODDS, OF GRAND RAPIDS, MICHIGAN.

RUBBING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 418,606, dated December 31, 1889.

Application filed December 22, 1888. Serial No. 294,366. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER DODDS, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Rubbing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in machines for rubbing various kinds of wood-work in the process of finishing the same; and it consists in the construction, combination, and arrangement of the various parts, hereinafter described, and particularly pointed out in the claims, reference being had to the accompanying drawings, like letters and figures referring to corresponding parts in each of the figures.

Figure 1 is a side elevation of a machine embodying my invention; Fig. 2, a plan view of the same; and Figs. 3 and 4 enlarged views, in front and side elevation, of the holder T.

Like letters and figures refer to like parts in all the figures.

A is a suitable rectangular frame having two vertical parallel posts O at the middle of one end connected at the top by a plate, to which is attached the beam Q by means of the pivot P. To the outer end of said beam is pivoted the pendulum-bars S at their upper ends, their lower ends being pivoted to the rubber-arm M near its outer end, where is attached the rubber-holder T. The inner end of said arm M is provided with a grooved wheel N, which engages with and traverses a track L upon the frame A. The pendulum-bars S are vibrated by means of the rocker-arms I, to which they are connected by the rod J, which is pivoted to each at its respective ends.

G is the rocker-shaft operated by the arm H, pitman F, crank-wheel E, shaft D, cone-pulleys C C, belt 10, and driving-shaft B, connected and arranged substantially as shown.

K and K' are radial slots in the crank-wheel and rocker-arm for adjusting the points of connection of the said wheel and arm with the pitman F and rod J. The arm M and rod J pass between the posts O, which

prevent any lateral movement of the same, while allowing free movement in all directions in a vertical plane.

R is an adjustable weight attached to the beam Q to determine the pressure upon the rubber. U is a cord attached to the inner end of said beam, which passes downward and forward over the pulley V, and is attached at its lower end to the pivoted lever W, which, when depressed, is held by the notched plate X.

Y is a carriage provided with clamps consisting of stationary bars 1 1 and a movable bar 1', operated by a screw 2, for holding the work. Said carriage is provided with wheels 3, engaging with tracks Z Z, upon which it moves at right angles to the stroke of the rubber.

The rubber-holder consists of a block T, of suitable form, which may be provided with corrugations or points 9 on its lower surface. This block is secured to the arm M, and is provided with gripping-plates 4 4' at its opposite sides, the lower edges of which extend below the block T, turn inward, and engage with the sides of the rubber 7 to hold the same in place. The lower edges of 4 4' may be toothed to make them more effective. One of said plates is rigidly secured to the block and the other is provided with a hinge 5, which allows the lower edge of said plate to swing outward and release the rubber. Said plates are connected and forced toward each other by means of springs 6 6, having nuts 8 8, for adjusting their tension. For these springs bolts may be substituted; but I prefer the springs, as being more expeditious in operating the device. The said plates may also be made vertically adjustable by means of slotted holes for the screws which attach them to the block.

The rubber 7 may consist of felt, rubber, wood, or any suitable material, and may have applied to it oil, pumice-stone, sand-paper, hair-cloth, or any other suitable material, as occasion requires.

The operation of my device is as follows: The work to be rubbed is secured to the carriage by means of the clamps, the lever W released from engagement with the notched plate X, which lowers the rubber into contact

with the surface of the work. The pressure is adjusted by moving the weight R along the beam Q, and the stroke of the rubber adjusted to the size of the work by moving one or both of the pivot-pins in the slots K K'. The speed is regulated by shifting the belt upon the cones C C. By moving the carriage upon the tracks the work can be laterally adjusted under the rubber and all parts of it operated upon. In passing from one part to another, or when done, the rubber can be elevated by depressing the lever W without stopping the machine. The rod J acts substantially in a horizontal direction and at the same angle on both the forward and backward stroke. So, also, the various parts that contribute to the downward pressure upon the rubber are at all parts of the stroke supported at the same points. Should the work be slightly curved or of uneven surface, the rubber will follow such irregularity of surface and polish the low and high parts alike.

By pulling forward upon the rubber until the springs yield the back side of the rubber can be disengaged from the plate 4, and dropping downward pass under the same and be removed, and by reverse movements as quickly replaced.

What I claim, and wish to secure, is as follows:

1. In a rubbing-machine, the combination, with a suitable frame, of paired vertical parallel posts arranged at the middle of one end of said frame, a beam pivoted to the top of said posts, pendulous bars pivoted to said beam at its outer end, a rubber-bar adapted to move horizontally upon said frame, pivoted to said pendulous bars near its outer end, and a rubber secured to said bar at its outer end, substantially as described.

2. In a rubbing-machine, the combination, with a suitable frame, of paired vertical parallel posts arranged at the middle of one end of said frame, a plate connecting the tops of said posts, a beam pivoted to said plate, pendulous bars pivoted to said beam at its outer end, a rubber-bar adapted to move horizontally upon said frame, pivoted to said pendulous bars near its outer end, and a rubber secured to said bar at its outer end, substantially as described.

3. In a rubbing-machine, the combination, with a suitable frame, of paired vertical parallel posts arranged at the middle of one end thereof, a beam pivoted to the top of said posts provided with a weight, an adjusting-lever and a cord connecting said beam and adjusting-lever for vertically adjusting said beam, substantially as described, pendulous bars pivoted to the outer end of said beam, a rubber-bar adapted to move horizontally upon said frame, pivoted to said pendulous bars near its outer end, and a rubber secured to said bar at its outer end, substantially as described.

4. In a rubbing-machine, the combination,

with a suitable frame having paired vertical parallel posts arranged near the middle of one end thereof, of a beam pivoted to the top of said posts, provided with a weight, an adjusting-lever, and a cord connecting said lever and beam for vertical adjustment, substantially as described, pendulous bars pivoted to the outer end of said beam, a rubber-bar adapted to move horizontally upon said frame, pivoted to the lower end of said pendulous bars near its outer end, and having a rubber secured to said bar at its outer end, a rock-shaft journaled to said frame, and a pitman and rod connected to said pendulous bars, arranged to operate substantially as described.

5. In a rubbing-machine, the combination, with a suitable frame having a pair of parallel vertical posts arranged near the middle of one end thereof, provided with a plate connecting said posts together at their tops, of a beam pivoted to said plate provided with a weight adapted to move along said beam, an adjusting-lever, and a cord connecting said beam and adjusting-lever for vertical adjustment of said beam, substantially as described, a rubber-bar provided with a grooved wheel adapted to travel along a horizontal track arranged in said frame, pivoted to said pendulous bars near its outer end, and provided with a rubber secured thereto at its outer end, a rock-shaft journaled to said frame having a pitman provided with an adjusting-slot, and a rod pivoted in said slot connecting said pitman and pendulous bars, arranged to operate substantially as described.

6. In a rubbing-machine, the combination, with a suitable frame having a pair of parallel vertical posts arranged near the middle of one end thereof, provided with a plate connecting said posts together at their tops, of a beam pivoted to said plate, paired pendulous bars arranged one upon each side of and pivoted to said beam at its outer end, a rubber-bar arranged to horizontally vibrate between said vertical posts having its inner end provided with a grooved wheel adapted to travel upon a horizontal track arranged on said frame and pivoted between said pendulous bars near its outer end, and provided with a rubber secured to said outer end, substantially as described.

7. In a rubbing-machine, a holder consisting of a block having attached plates extending below its lower surface and engaging with opposite sides of the rubber, one of said plates being hinged, and said plates connected with springs provided with adjusting-nuts, substantially as described.

8. In a rubbing-machine, the combination, with a suitable frame having paired parallel vertical posts connected together by a plate secured to their tops, of a beam provided with an adjustable weight and having an adjusting-lever connected therewith by a cord for vertical adjustment, substantially as described, paired pendulous bars pivoted to said beam

at its outer end, a rubber-bar having a rubber
secured to its outer end and adapted to travel
horizontally in said frame and between said
vertical posts, pivoted to said pendulous bars,
5 a rock-shaft journaled to said frame, a bar
arranged between said vertical posts, pivoted
to said pendulous bars at its outer end, and
connected to said rock-shaft by a pitman, and
a crank-wheel connected to said rock-shaft

and arranged to operate substantially as de- 10
scribed.

In testimony whereof I affix my signature
in presence of two witnesses.

ALEXANDER DODDS.

Witnesses:

LUTHER V. MOULTON,
MARK M. POWERS.