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PATENTED JUNE 5, 1906.

W. F. CURRIER.

MACHINE FOR SIZING AND CUTTING STONE AND OTHER MATERIALS.

APPLICATION FILED AUG. 7, 1905.

2 SHEETS--SHEET 2.

Fig. 4.

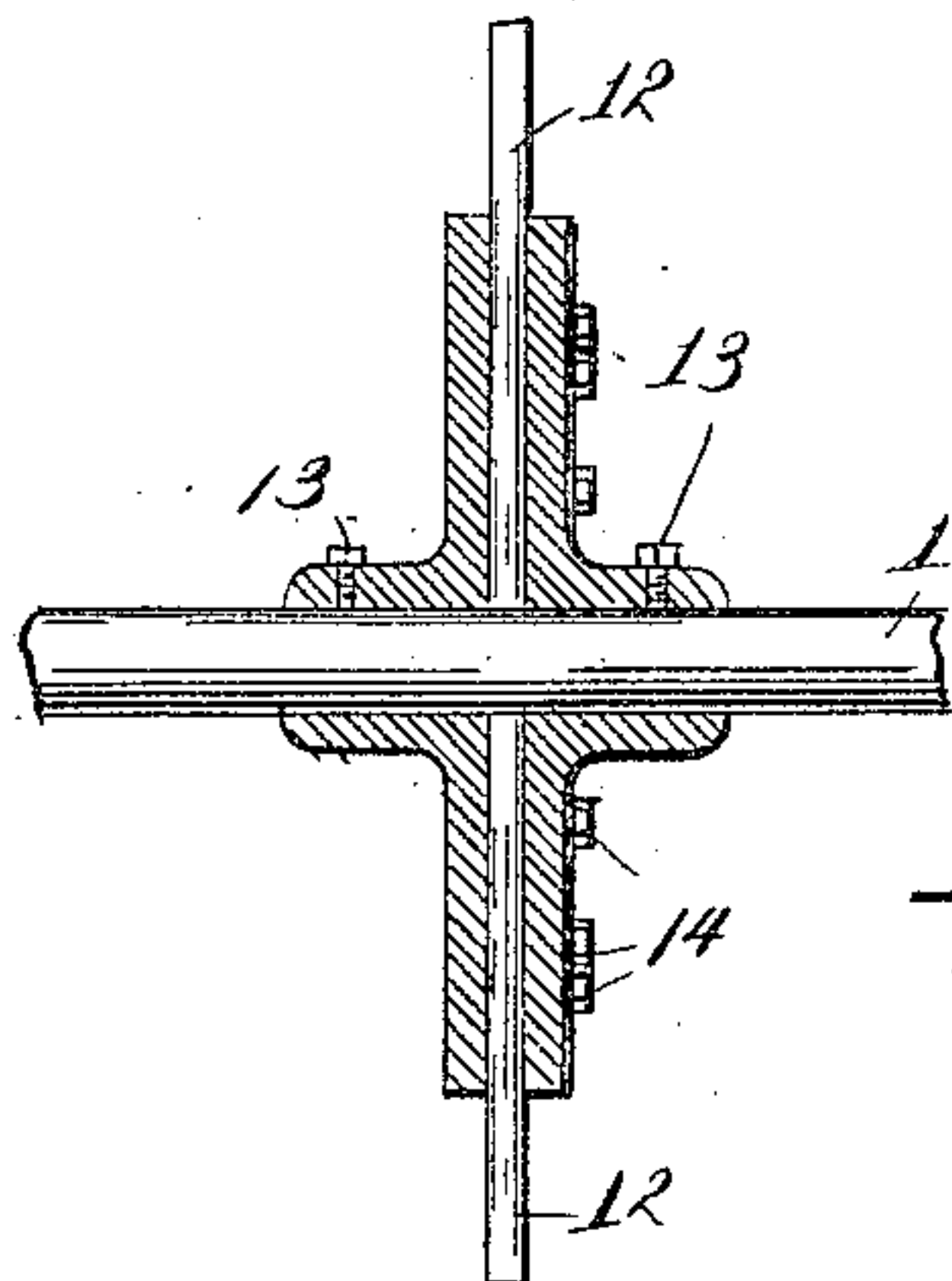


Fig. 5.

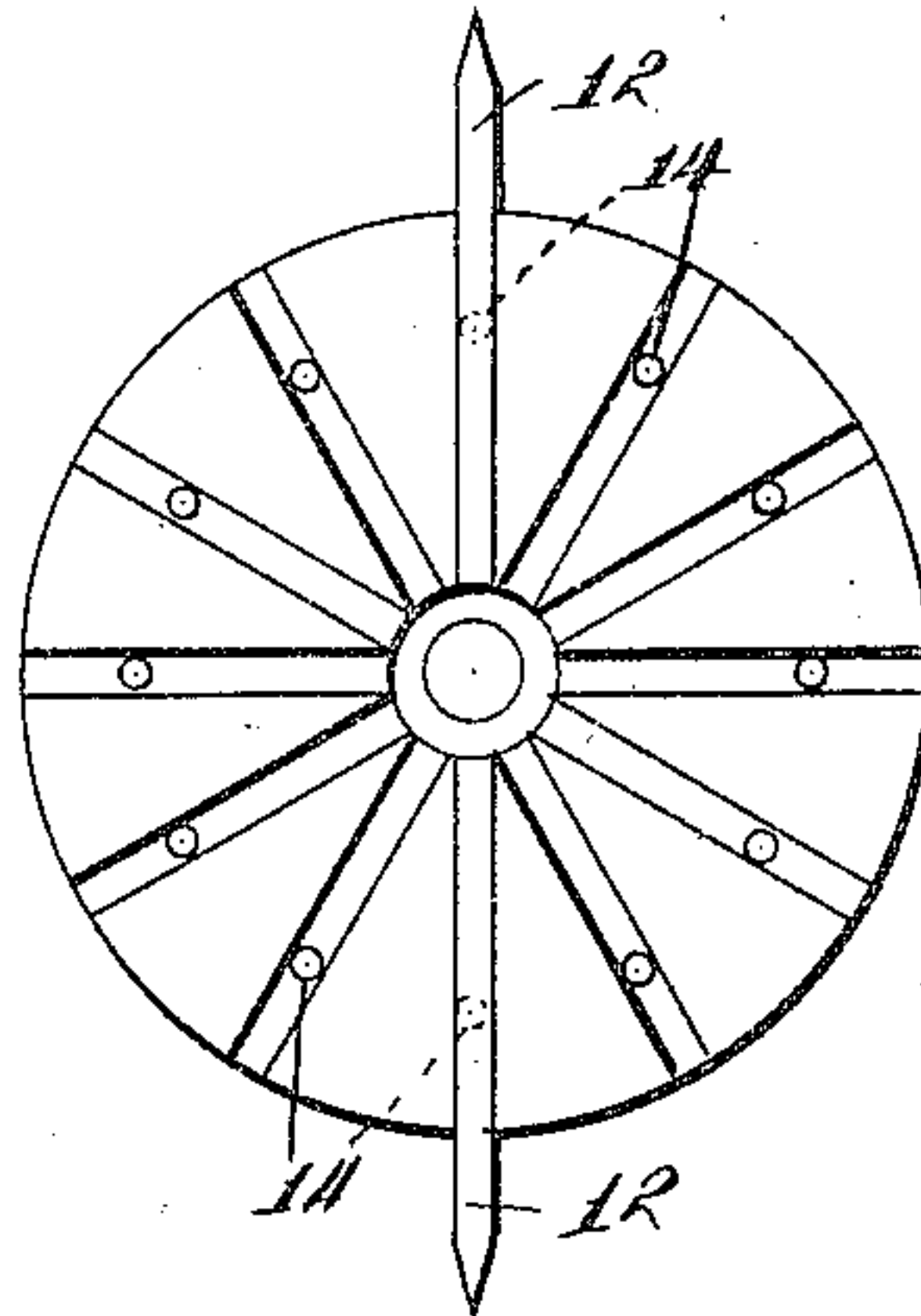


Fig. 6.

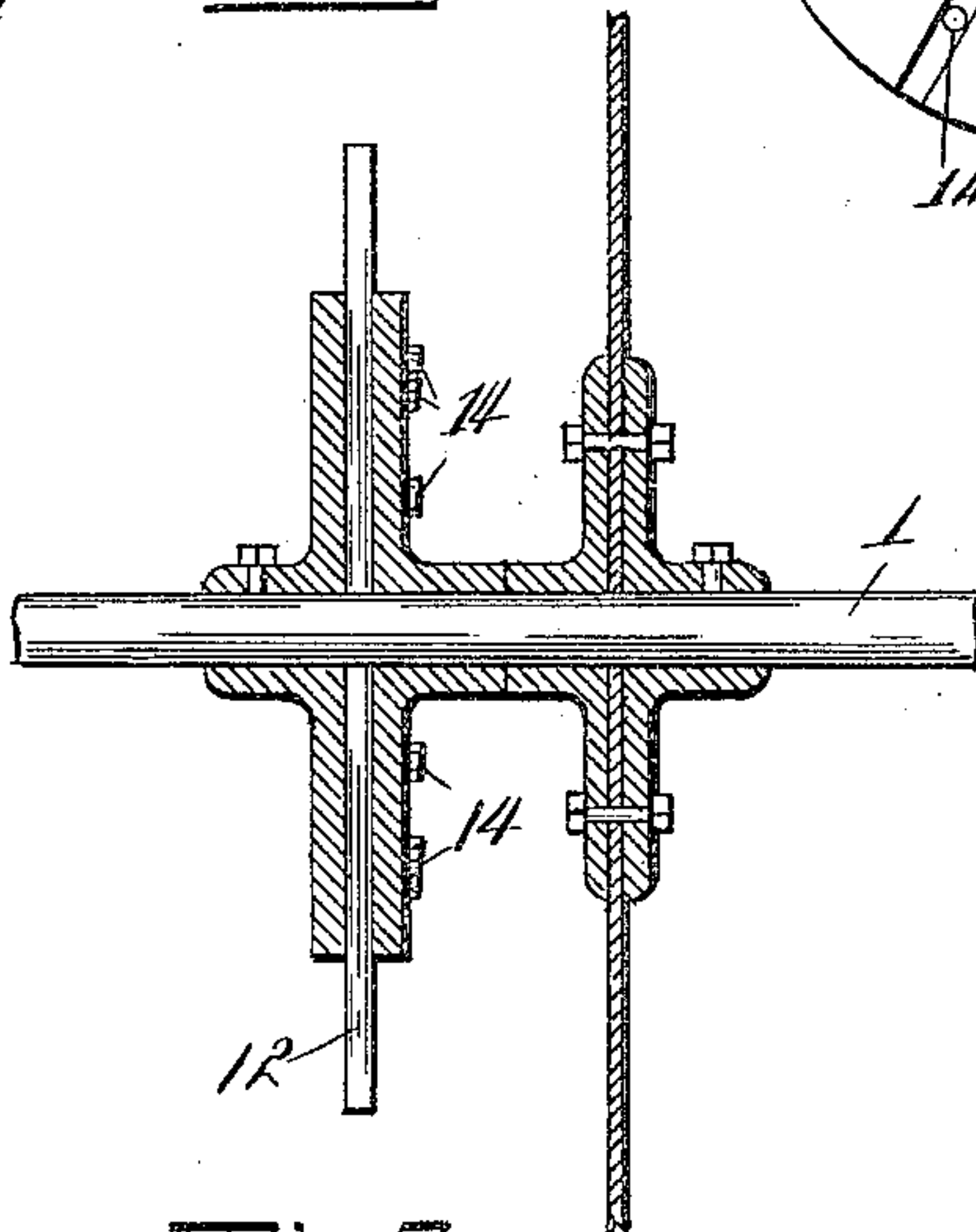
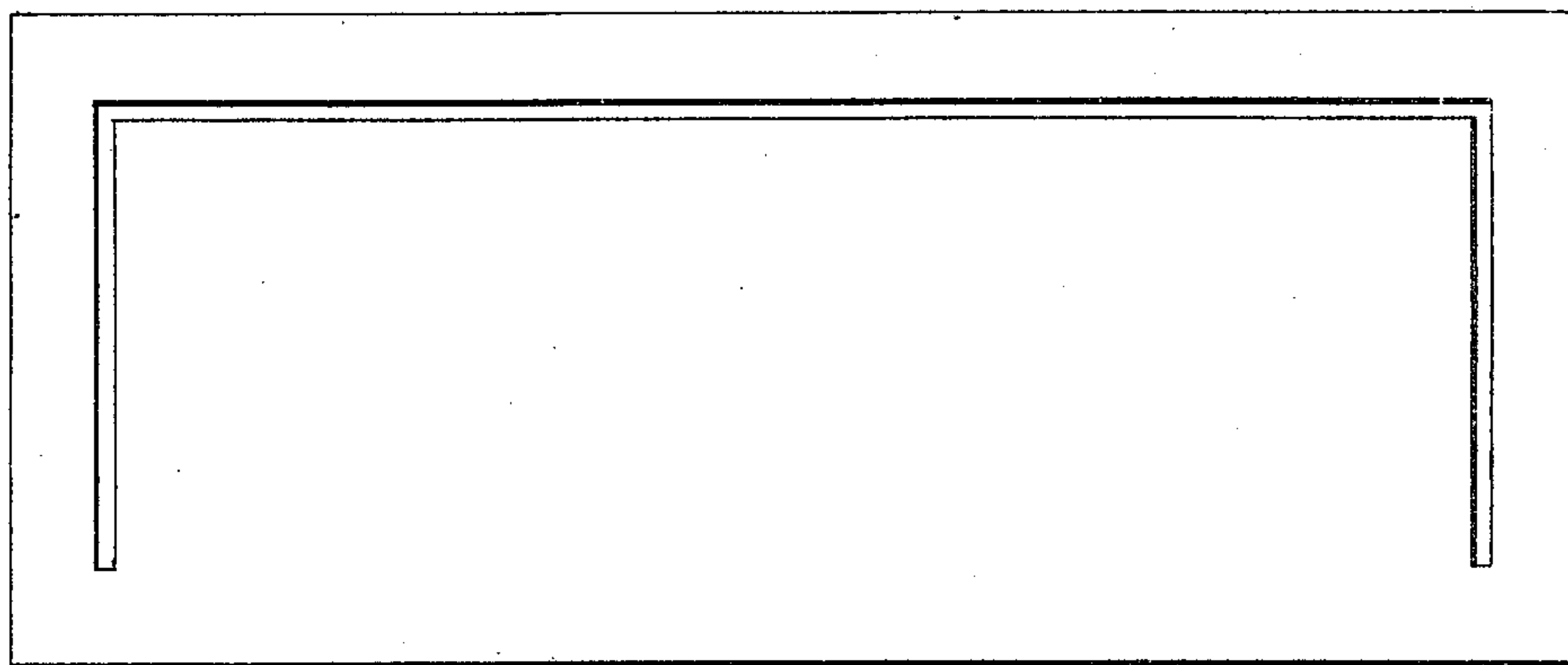


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

WALKER F. CURRIER, OF VARIETY MILLS, VIRGINIA, ASSIGNOR OF ONE-EIGHTH TO THE NATIONAL SOAP STONE CO., OF NEW YORK, N. Y.

MACHINE FOR SIZING AND CUTTING STONE AND OTHER MATERIALS.

No. 822,724.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed August 7, 1905. Serial No. 273,207.

To all whom it may concern:

Be it known that I, WALKER F. CURRIER, a citizen of the United States, residing at Variety Mills, in the county of Nelson and State of Virginia, have invented certain new and useful Improvements in Machines for Sizing and Cutting Stone and other Materials, of which the following is a specification.

My invention relates to an improvement in machines for sizing, cutting, and grooving stone and other material.

The object of this invention is to provide a machine which will measurably increase the output of work with a relative decrease in the amount of labor or work to accomplish the results—in other words, to produce a machine of greatly-increased or maximum capacity, with a minimum amount of attendance or labor to run it and handle the material upon which it operates.

With these objects in view my invention consists in a rotatable shaft upon which are adjustably secured one or more saw or groover heads, with means for regulating the speed of the cutters to suit the requirements of the work.

It likewise consists in a rotatable shaft with cutters thereon, in connection with means for moving the shaft bodily, whereby to regulate the depth of cut, especially in grooving, so that it is within the control of the operator at all times.

In the accompanying drawings, Figure 1 is a view in perspective of my improved machine. Fig. 2 is a plan view of the bearing, partly in section. Fig. 3 is a detail of one of the cutters. Fig. 4 is a similar view of one of the groover-heads. Fig. 5 is an interior view of one of the heads. Fig. 6 is a view illustrating a double groover or cutter head, and Fig. 7 shows a grooved slab.

The letters A A represent two posts, which may extend from the floor to the ceiling of the building or be otherwise located and secured. These posts may be placed any distance apart to suit the requirements. A shaft 1 extends across from one post to the other and is journaled in bearings attached to each post. These bearings while capable of variation are preferably of special construction, and in the illustrated form a block of metal 2 is secured vertically to each post, one of which will now be described. The block preferably has undercut edges 3 3, and

the bearing-plate 4 has corresponding flanges 5 5, which embrace the edges 3 3, whereby the block and plate are dovetailed together with sufficient play, so that the plate is capable of sliding or being slid up and down upon the block as a guide. The journal 6 is formed on the outer face of the plate, and the shaft 1 turns in Babbitt metal held in the journals on each post. The purpose of this sliding connection is to make provision for feeding the cutters down to their work and to regulate the depth of cut. As a convenient means for simultaneously raising or lowering the bearings a shaft 7, journaled in suitable bearings and parallel with shaft 1, is provided, and on this shaft are keyed as many eccentrics 8 8 as there are journals for the main shaft 1. Links 9 9 are mounted on and carried by these eccentrics, and these links are pivotally connected at their lower ends with the journal-plates 4 4 by means of pins or bolts 10 10.

By turning the shaft 7 a half-revolution one way or the other—for example, by means of an ordinary crank applied to its end—the shaft 1 is bodily raised or lowered in accordance with the requirements and a greater or less degree of the half-turn in accordance with the depth of groove or cut required.

The saws or groover-heads, or both, are adjustably secured to the main shaft 1. These may be of any approved design—as, for instance such as shown in the drawings in which flanged hubs 12 12 are employed—with set-screws 13 13 to secure them to the shaft and for holding the cutters and bolts 14 14 for holding the saws in place. Of course any number of these saws or groovers may be employed, or they may be adjusted various distances apart to suit the position of the grooves to be made or the size of slabs to be cut.

While saws are generally preferred to cut the slabs into sizes, combined or double groover-heads might be employed for cutting or trimming off the edge of the slab, while at the same time cutting a groove parallel with the edge, as shown in Fig. 7 of the drawings.

Any gearing may be employed for driving the shaft 1, which may be termed the “main cutter-shaft,” such as the large and small gears 17 and 18, the latter being keyed on a counter-shaft 19, and cone-pulleys 20 may be provided for varying the speed.

From the foregoing it will be seen that I

am enabled to cut the slabs into sizes and groove them one or any number at a time, according to the size and capacity of the machine, during a single passage through, thus
5 saving the necessity of employing several men to mark out the blocks where they are to be cut and accomplishing in a single passage through a machine what has heretofore required several passes through to do the same
10 work, so that the capacity and efficiency of the machine is greatly increased, and a greatly-reduced amount of work or labor suffices to accomplish a given output.

While the machine is especially adapted to
15 cutting, sizing, and grooving stone, it is evident that it has a wide range of adaptability, such as wood or metal working, as it would work equally well in either.

I do not wish to be limited strictly either
20 to what I have shown or described, as the invention is susceptible of modification in greater or less degree without in any wise departing from its intended scope.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is— 25

The combination with a suitable work-support and posts on opposite sides thereof, of a shaft extending across from post to post over the work-support, cutters secured on the
30 shaft and adapted to be adjusted in different positions along the shaft, sliding blocks in which the shaft is journaled, the said blocks being engaged with the posts, a second shaft journaled in suitable supports on the post
35 and provided with eccentrics, and links embracing the eccentrics and attached to the sliding blocks whereby the cutter-shaft and cutters thereon may be raised and lowered at pleasure to vary the depth of cut. 40

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

WALKER F. CURRIER.

Witnesses:

GEO. P. JOHNSON,
VERNON E. HODGES.