

No. 868,577.

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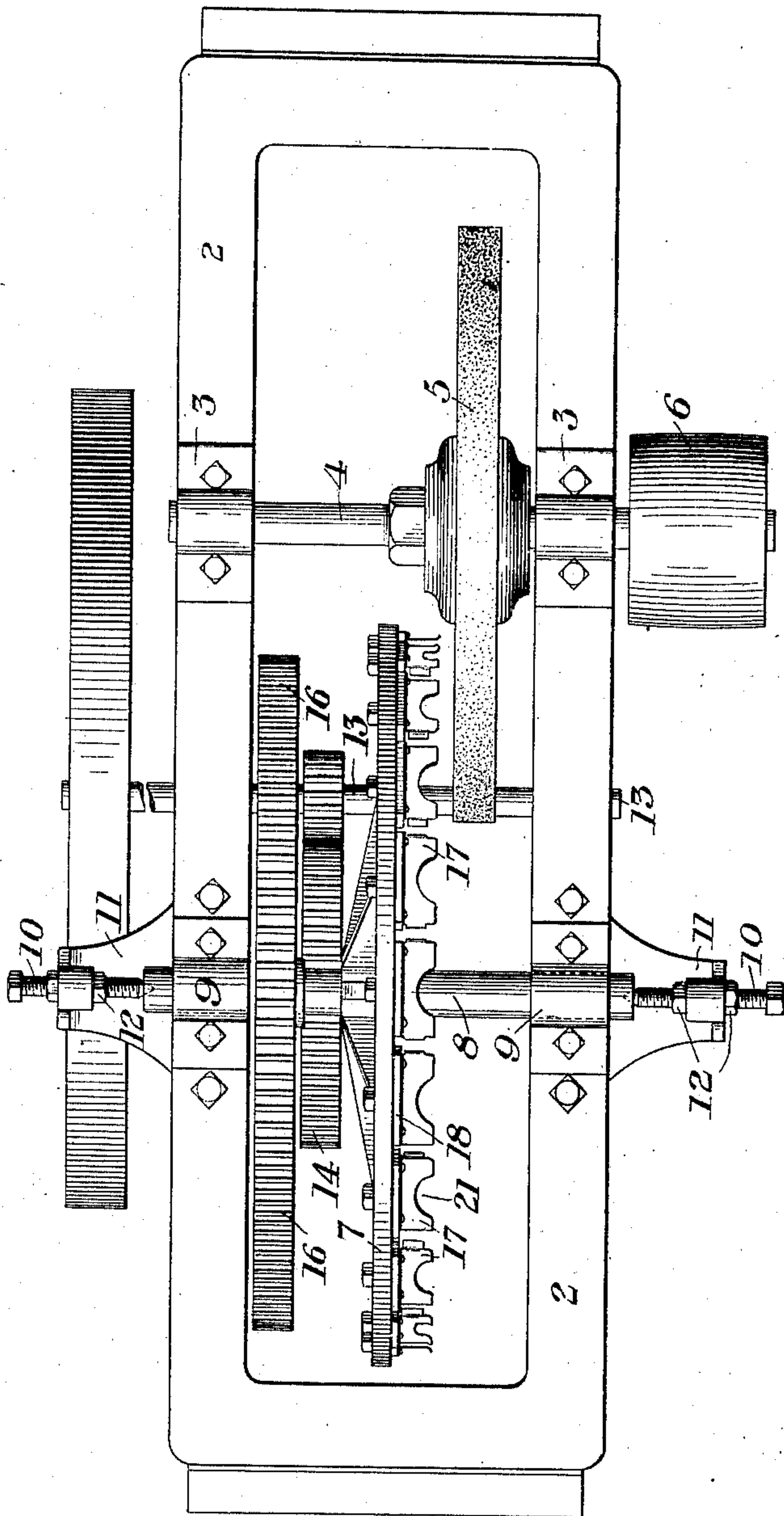
W. T. NICHOLLS.

MACHINE FOR GRINDING AND FINISHING TILES AND OTHER ARTICLES.

APPLICATION FILED OCT. 20, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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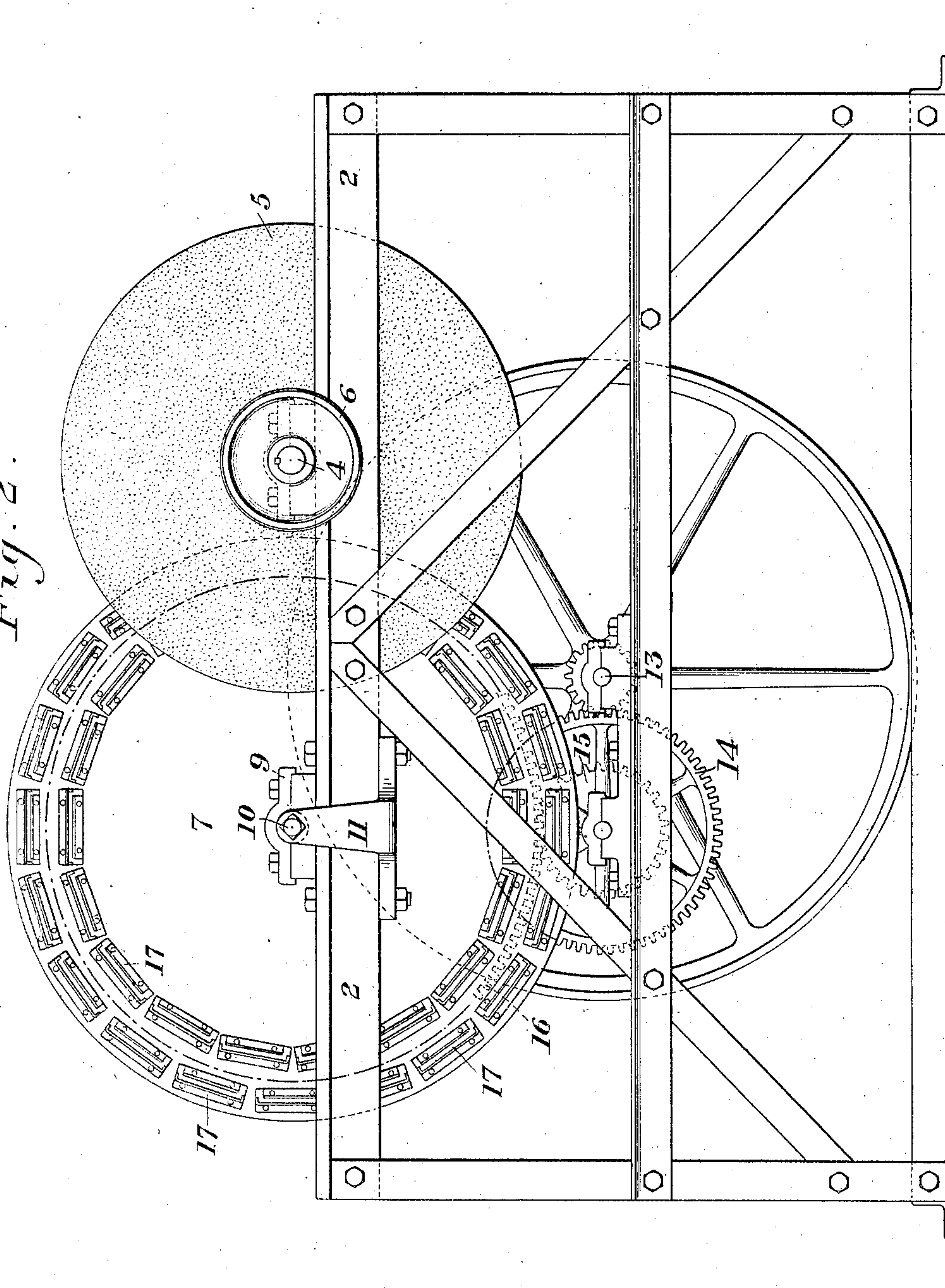
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3 SHEETS—SHEET 2.

Fig. 2.



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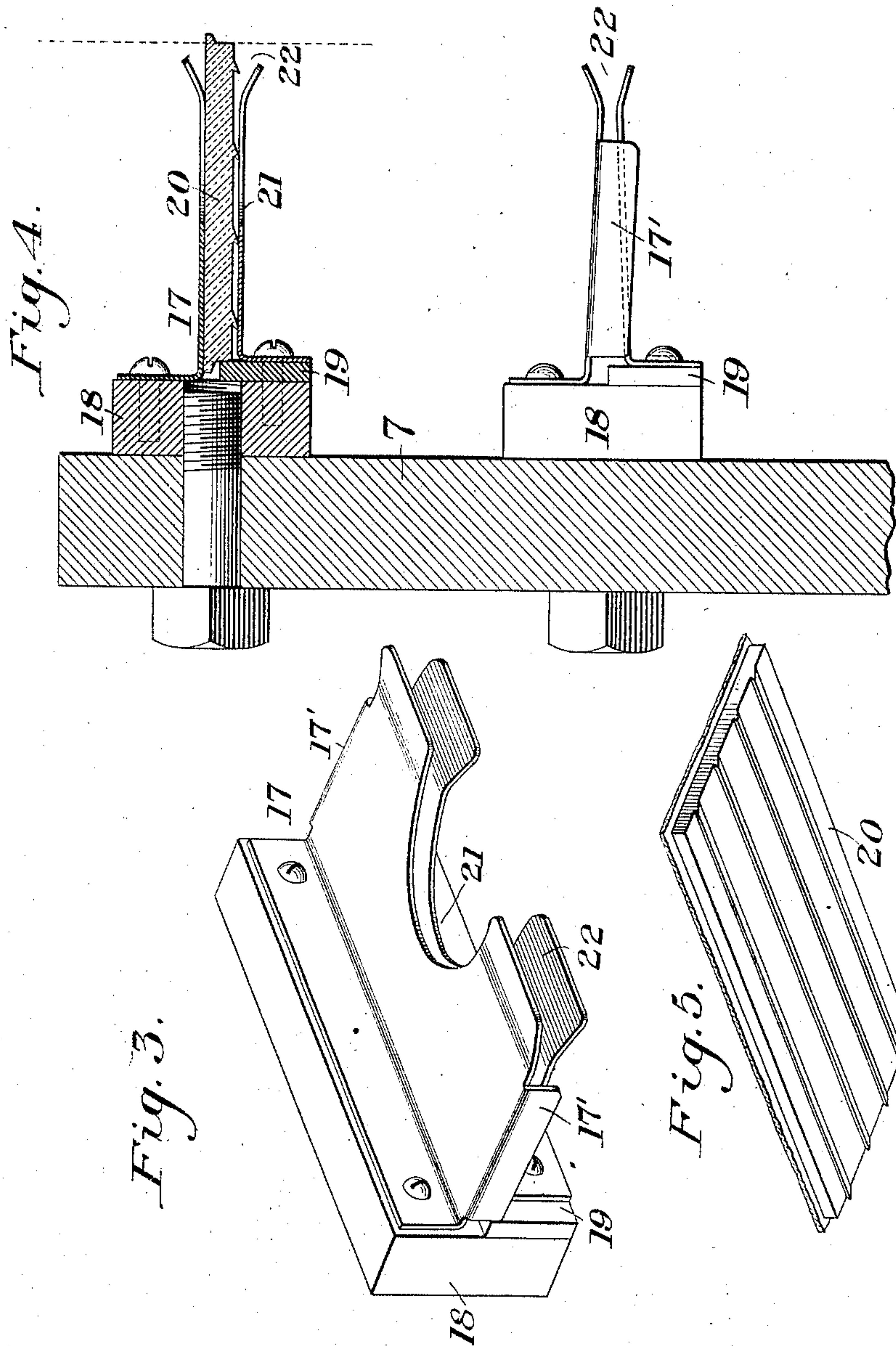
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM T. NICHOLLS, OF WELLSBURG, WEST VIRGINIA, ASSIGNOR TO THE MONARCH TILE COMPANY, OF WESTON, WEST VIRGINIA, A CORPORATION OF WEST VIRGINIA.

MACHINE FOR GRINDING AND FINISHING TILES AND OTHER ARTICLES.

No. 868,577.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed October 20, 1905. Serial No. 283,620.

To all whom it may concern:

Be it known that I, WILLIAM T. NICHOLLS, of Wellsburg, Brooke county, West Virginia, have invented a new and useful Machine for Grinding and Finishing Tiles and other Articles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a machine embodying my invention; Fig. 2 is a side elevation of the same; Fig. 3 is a detail perspective view of one of the tile holders; Fig. 4 is a detail view of a portion of the carrier showing one of the tile holders in section, with a tile in position therein; and Fig. 5 is a perspective view of one of the unfinished tiles, and illustrating the work to be done by the machine.

My invention is designed to provide a grinding machine by means of which the edges of tiles and other articles may be rapidly and accurately finished, and which is so arranged that a single operator may readily and conveniently handle the tiles in placing them into and removing them from the machine.

My invention consists in the combination with a rapidly revolving grinding wheel or disk, of a slow-moving rotating carrier which is journaled in such relation to the grinding wheel or disk that portions of their faces overlap each other, said carrier having a plurality of holders or clips secured to its face and projecting towards the said wheel or disk. These holders or clips are so constructed that the tiles or other articles may be quickly placed therein and brought successively into contact with the grinding wheel and then removed. Means are also provided for accurately fixing the tiles or other articles in the clip or holder so that each will be perfectly ground, and provision is also made for adjusting the carrier with reference to the grinding disk or wheel.

In the drawings, 2 designates the frame of the machine having bearings 3 in which are journaled a shaft 4 to which is fixed a grinding wheel 5 designed to be rapidly rotated by means of a pulley 6 on the shaft 4, or by any other suitable means.

7 designates the rotary carrier, which is preferably in the form of a large circular disk rigidly secured to a shaft 8 mounted in bearings 9 on the frame 2 in such relation to the shaft 4 that a relatively small proportion of the carrier will extend by or overlap the wheel 5. The shaft 8 is capable of an endwise movement in its bearings 9 and is accurately held in proper lateral adjustment by means of the adjusting screws 10 having bearings in brackets 11 and secured by jam-nuts 12. The shaft 8 is designed to be slowly rotated. This may be effected by means of any suitable gearing. In the drawing I have shown said shaft as being driven

from a counter-shaft 13 through the intermediate reducing spur-gear 14, 15 and 16.

Secured to that face of the carrier 7 which is opposed to the face of the grinding wheel 5 are a plurality of holders or clips 17 for the tile or other article to be ground. These clips or holders are preferably arranged in two or more concentric circular series, as shown in Fig. 2. They preferably consist each of two oppositely arranged spring clamping pieces or plates which are secured to a block 18 fastened to the disk 7, as shown in Fig. 4. A block 19 is interposed between the flange of one of the clip members and the block 18, with its edge portion projecting upwardly between the two clip members to form a stop for the shouldered edge of the tile 20. By means of these stops 19 the tile is accurately fixed with reference to the grinding face of the stone. In order to prevent the tiles falling out of the clips or holders as they are rotated with the disk 7, and also to prevent their being pushed out by the pressure of the grinding wheel, one of the members 17 of each clip is provided with the flanges or lips 17' which close the edges of the space in which the tile is held. The clip-forming members are also preferably slotted, as indicated at 21, in order to enable the tile therein to be more readily grasped by the hand in removing it.

In operation, the grinding wheel and carrier being respectively rotated in the directions indicated by the arrows, Fig. 2, the operator inserts the tiles or other articles to be ground, in the clips or holders 17, and the rotation of the carrier brings the tiles successively into contact with the grinding wheel. After each tile has been ground on one edge, it is taken out and reversed so that its opposite edge will be ground and finished in a similar manner.

It will be readily seen that owing to the comparatively small overlap of the carrier and grinding wheels, the operator has convenient access to the carrier for the purpose of inserting and removing the tiles; also that these operations may be very quickly performed inasmuch as the tiles are held solely by the spring-clamping action of the clips. To facilitate the insertion of the tiles, the outer edges of the clips are preferably bent or flared away from each other, as indicated at 22.

The advantages of my invention result from the construction and arrangement, by means of which the tiles may be rapidly ground or finished with great accuracy.

It will be obvious that other forms of the tile-holding clips may be used and that various other changes may be made in details of construction and arrangement without departing from my invention, since

What I claim is:—

1. In a grinding machine for the purpose described, the combination with a grinding wheel or disk, of a relatively slow-moving carrier having upon one face a plurality of

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spring clips or holders secured thereto and composed of resilient clamping members, having an edge stop for the articles held therein; substantially as described.

5 2. In a grinding machine for the purpose described, a carrier having a spring clip or holder secured thereto and consisting of two oppositely arranged spring clamping pieces or plates, and an edge stop projecting between the said members; substantially as described.

3. In a grinding machine, a rotary carrier for the arti-

cles to be ground, having a plurality of clips or holders 10 secured thereto in two concentric circles, said clips or holders having each a resilient member and an edge stop; substantially as described.

In testimony whereof, I have hereunto set my hand.

WILLIAM T. NICHOLS.

Witnesses:

JOHN MILLER,

H. M. CORWIN.