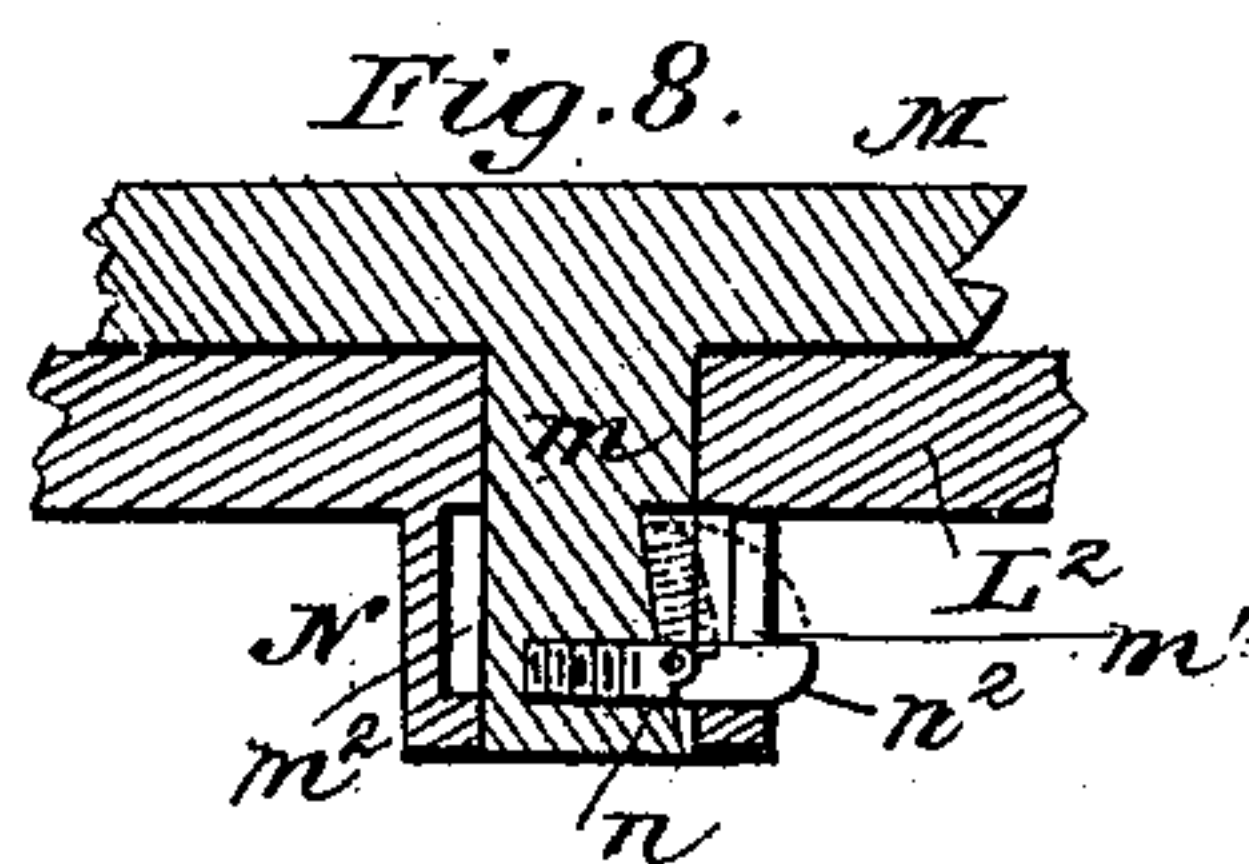
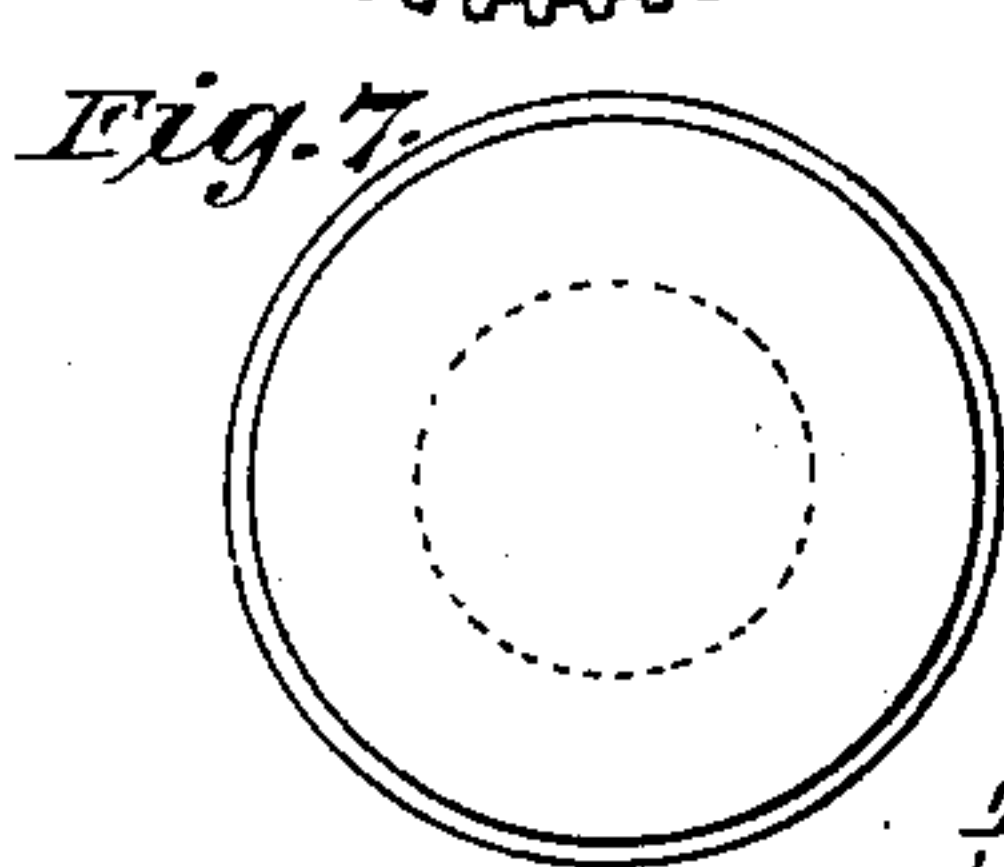
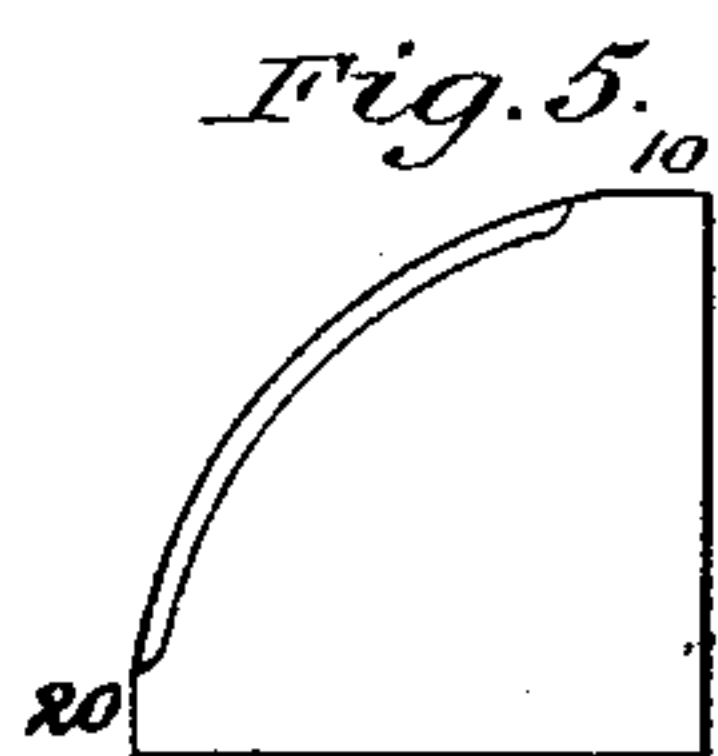
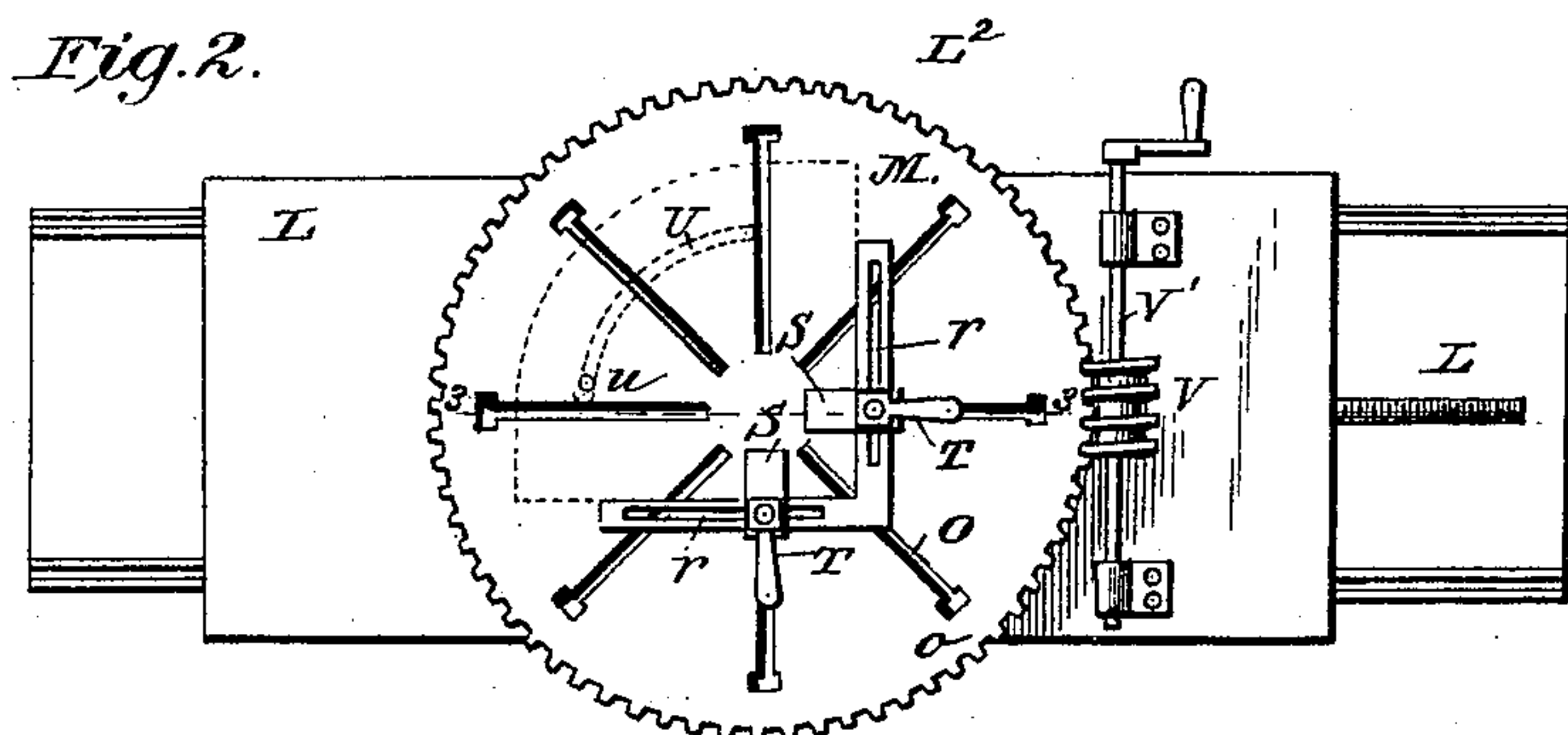
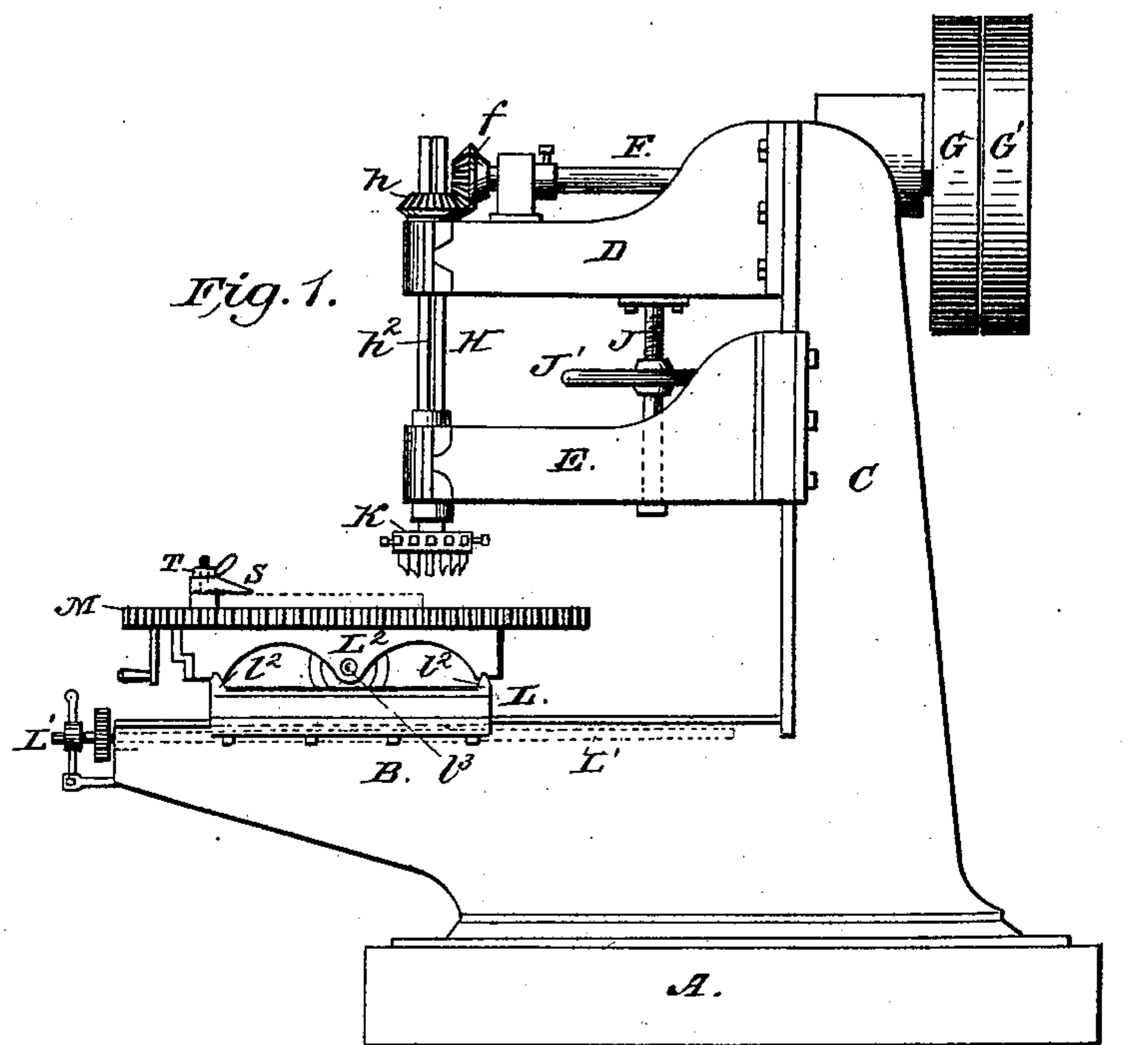


(No Model.)

G. W. COFRAN.
MACHINE FOR MOLDING STONE SLABS.

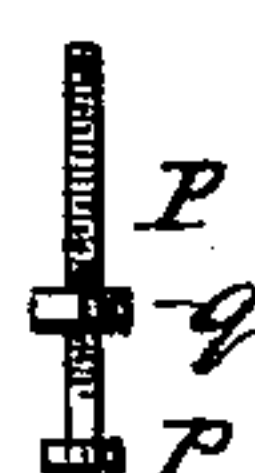
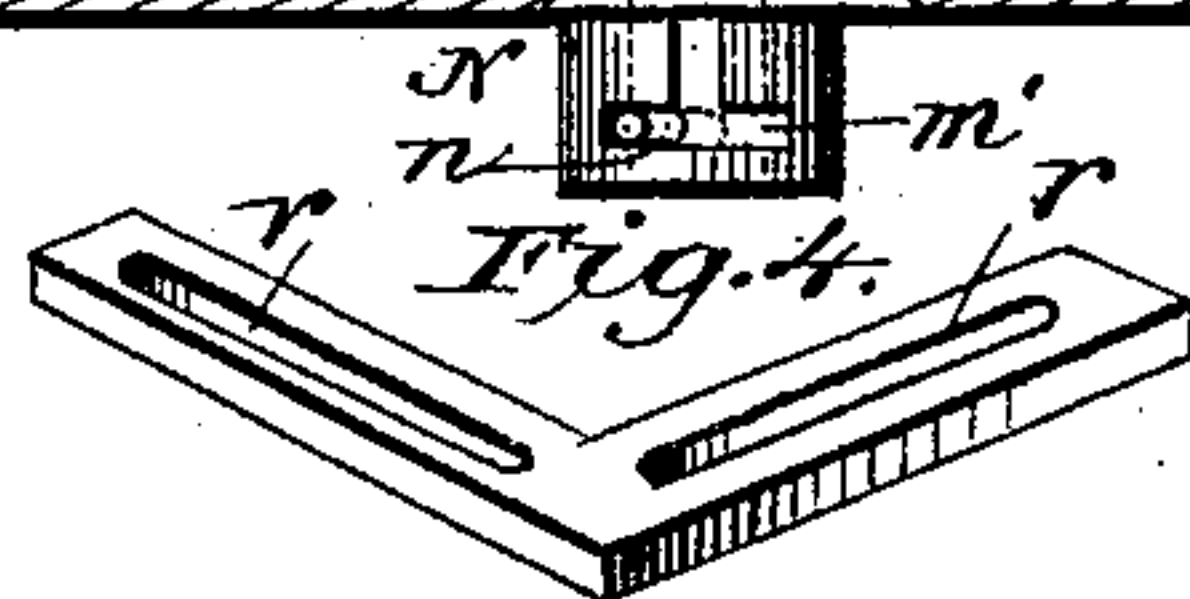
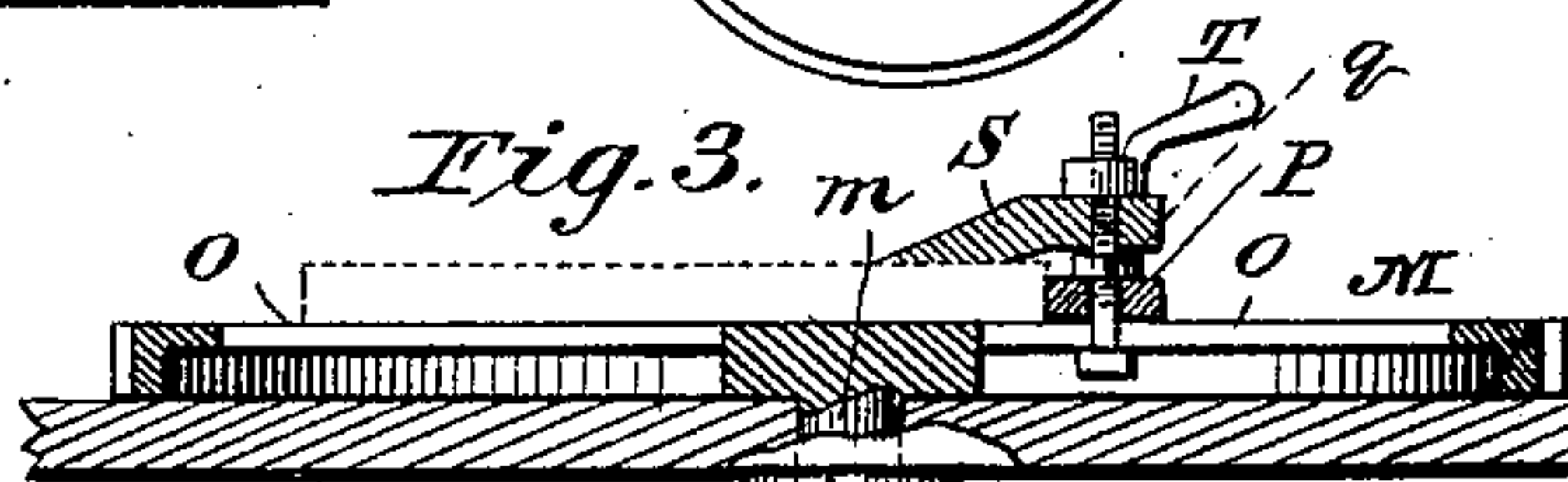
No. 583,875.

Patented June 1, 1897.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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MACHINE FOR MOLDING STONE SLABS.

SPECIFICATION forming part of Letters Patent No. 583,875, dated June 1, 1897.

Application filed December 29, 1896. Serial No. 617,376. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. COFRAN, residing at Baltimore city, in the State of Maryland, have invented a new and Improved Machine for Molding Stone Slabs, of which the following is a specification.

My invention has for its purpose to provide a machine adapted to dress the edge of a slab having a partial or complete circular form; and it consists in a machine of this character embodying the peculiar combination and novel arrangement of parts, such as will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a molding-machine having my improvements applied. Fig. 2 is a plan view of the rotary carriage and sliding table on which it is mounted. Fig. 3 is a transverse section thereof, taken on the line 3 3 of Fig. 2. Fig. 4 is a detail view of the adjustable chuck, hereinafter referred to. Figs. 5, 6, and 7 are views of molded slabs such as are produced by my invention, and Fig. 8 is a detail view of the stop-lug.

In the accompanying drawings I have illustrated my improvements as applied to a common form of molding-machine, and which comprises, generally, a base A, a bed-frame B, an upright C, a neck D, and an adjustable bracket E.

F indicates the main driving-shaft, journaled on the top of the supporting-frame, which has at the outer end the usual fast and loose pulleys G G' and at the inner end a bevel-pinion f, which meshes with a pinion h on the cutter-head shaft H, which is held from longitudinal movement in the bracket E, but has longitudinal movement in the bracket D, it having a spline h² to receive the feather on the pinion h.

J and J' indicate the adjusting devices for raising and lowering the adjustable bracket E.

K indicates the cutter-head, having cutters secured thereto in any well-known manner.

The bed B has mounted thereon the sliding table L, which is adapted to traverse longitudinally of the bed by means of the screw L', and such table has ways l², upon which is mounted the sliding table L², having the usual

operating-screw l³, by means of which it may be slid longitudinally on the table L and transversely of the bed B.

The arrangement of the reversely-adjustable sliding tables is of the ordinary construction and forms, *per se*, no part of my invention.

My invention relates, essentially, to the means for holding the slab, rotating the same partially or entirely in relation to the cutter-head, and in simple and easily-manipulated devices for holding such slab and adapting it to the various manipulations, such as will hereinafter appear.

Referring now more particularly to Fig. 2, M indicates a rotary carrier, which is in the nature of a worm-gear. This gear M has a pendent shaft or gudgeon m, which is fitted into a hub N, projected down from the top table L², as clearly shown in Fig. 3. The worm-gear or carriage M, which is centrally mounted on the table L², is held for either a partial rotary movement or a complete rotation. Thus when a slab having a substantial or a full quadrant shape is to be cut the carriage M is adjusted to rotate a quarter of a revolution, but when a slab of a full circular form is to be cut then such carriage is adjusted to have a complete rotation on its axis.

For adjusting the carriage M for the several movements stated I have provided the hub N with a segmental slot m', through which a lug n, secured to the stub-shaft m, projects, and which forms the stop to limit the rotation of the carriage M when it is desired it should make but a partial rotation. This lug is, however, fixedly held to the shaft m and is made in sections having a pivotal connection, the outer section n² being adapted to close up and seat in an annular groove m² in the hub m.

By providing an adjustable stop-lug of the character described it will be readily seen that when the lug is turned out it will seat in the slot m' and form a stop to limit the rotation of the carrier M, but when folded up it will be held out of engagement and permit an entire rotation of the carrier M.

The carrier M is provided with a series of radial slots O, having enlarged outer ends o to admit of the free passage of the heads p of

screw-bolts P P, which are adapted to pass up through elongated slots *r* in the angle-plate or chuck, formed of two members disposed at right angles to each other.

5 The bolts P have their upper ends extended and threaded to receive the binding-nuts *q*, which hold the chuck to their adjusted positions on the carrier. The upper ends or extensions of the bolts P, it will be seen, project above the slab and form guides to receive the clamping-blocks S, and also to receive the clamping-screws T.

15 By providing the carrier M with a series of radial slots extended entirely around the same and connecting a chuck therewith in the manner shown the slab can be readily held down on the table at any position desired, it being obvious that by simply loosening the nuts *q* the chuck can be quickly set to the position desired, according to the size of the slab to be cut.

By extending the bolts P the use of special clamping devices for holding the slab is avoided.

25 Instead of providing a stop-lug at the hub of the carrier M the same may have a segmental slot U, as shown in dotted lines in Fig. 2, to receive a lug *u*, projected up from the table L². In this form of stop-lug the same would also be made either detachable or of a folding nature, so as to be set to admit of a complete rotation of the carrier when necessary.

35 V indicates a worm on a hand-operated shaft V', which meshes with the carrier or worm-wheel M. The manner in which my invention operates is best explained as follows:

The slab having the proper outline is laid and clamped on carrier when of a quadrant shape, it being held by a single chuck, the angle portion fitting the chuck, while its curved portion is held coincident with the axis of rotation of the carrier, so as to travel in proper relation to the cutter-head.

45 If a slab of the shape shown in Fig. 5 is in position, the upper table is adjusted to move the straight part 10 longitudinally to engage with the cutters until the beginning of the curve is reached. The tables are then held stationary and the carrier rotated until the end of the curved part is reached, when such carriage is stopped and the slab and table again moved in a straight line until the part 20 is molded.

55 In case a circular slab is on the carrier the tables are both held immovable and the stop-lugs thrown out of position and the carrier moved in a complete circle, the slab being held on the carrier by any suitable means.

60 Among the advantages claimed for my invention is that a circular slab can be molded, a quadrant slab quickly set and clamped in position, the economical and easily-manipulated means for clamping the slab onto the carrier, and the simple manner in which the carrier can be set for a partial or complete rotation. 65

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is— 70

1. In a stone-molding machine the combination of a supporting-frame, the transversely and longitudinally movable tables mounted one above the other on the supporting-frame, a hub depending from the upper table; cutting mechanism; a rotary carrier provided at its entire periphery with teeth and having a depending stub-shaft arranged in said hub, gearing meshing with the carrier to rotate the same a complete or a partial revolution, and a device mounted on the stub-shaft and arranged to engage the hub, to limit the rotation of the carrier, substantially as described. 75 80

2. In a stone-molding machine, the combination of a supporting-frame, the transversely and longitudinally movable tables mounted one above the other on the supporting-frame, a hub depending from the upper table and provided with a vertical slot and a horizontal slot, cutting mechanism, a rotary carrier provided at its entire periphery with teeth and having a depending stub-shaft arranged in said hub and provided with a recess, a lug hinged to the stub-shaft, arranged in said slot to limit the rotation of the carrier and adapted to be swung into said recess to permit the carrier to make a complete revolution, and gearing meshing with said teeth for rotating the carrier, substantially as described. 85 90 95 100

3. In a machine of the class described, the combination of rotary carrier provided at its periphery with teeth and having a series of radial slots terminating short of its center and its periphery and having enlarged ends, an L-shaped clamp having slotted arms, bolts passing through the slots of the carrier and the clamp and having heads of a size to pass through the enlarged terminals of the slots of the carrier, nuts *q* engaging the carrier and interposed between the same and the clamp-block for engaging a stone, clamp-nuts for holding the clamp-blocks, and gearing engaging said teeth, substantially as described. 105 110

GEORGE W. COFRAN.

Witnesses:

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C. LEE MULLEN.