

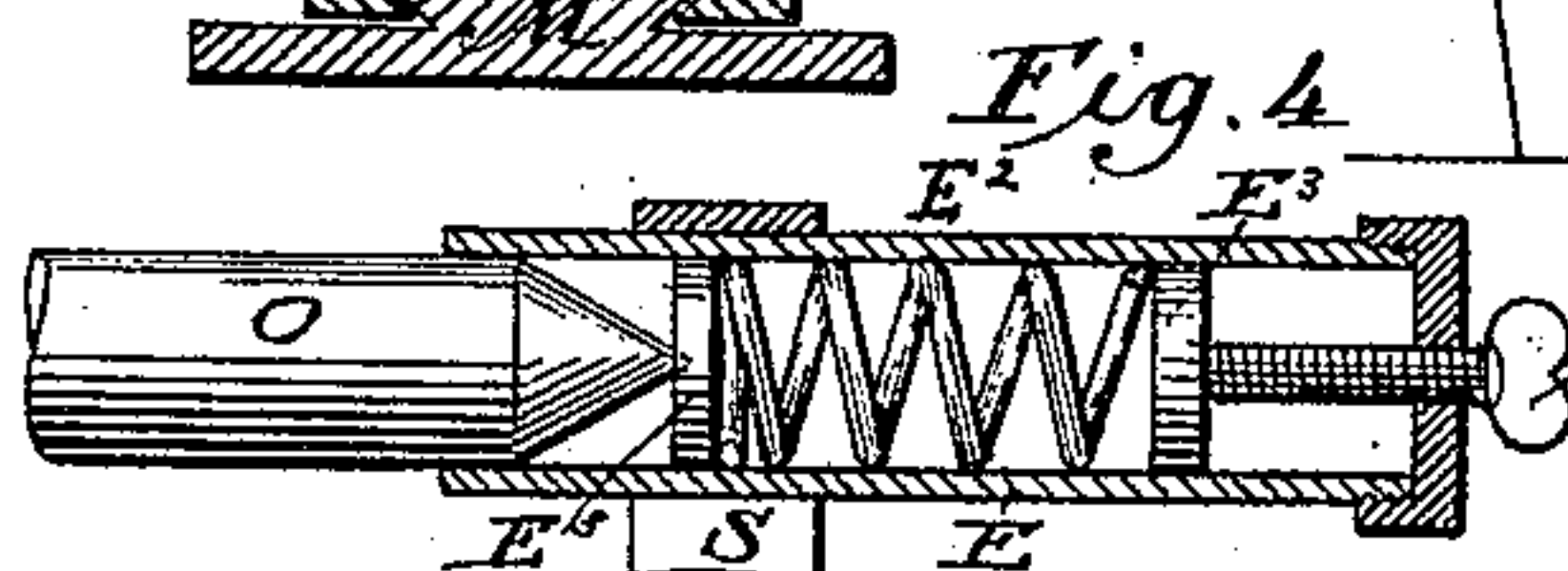
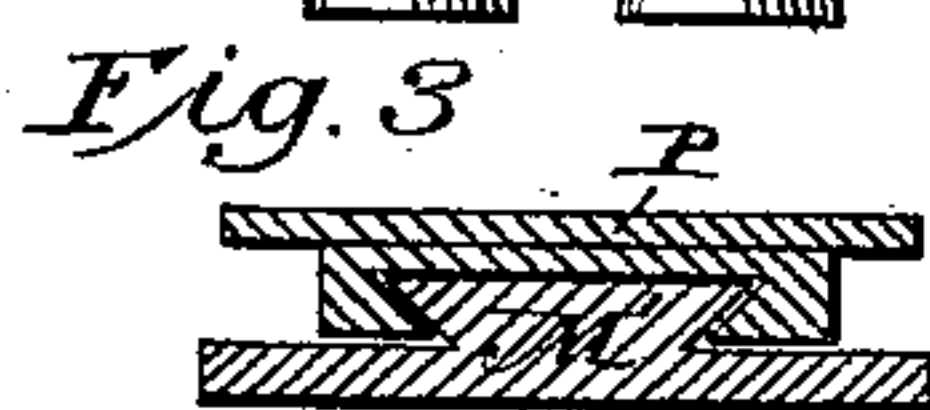
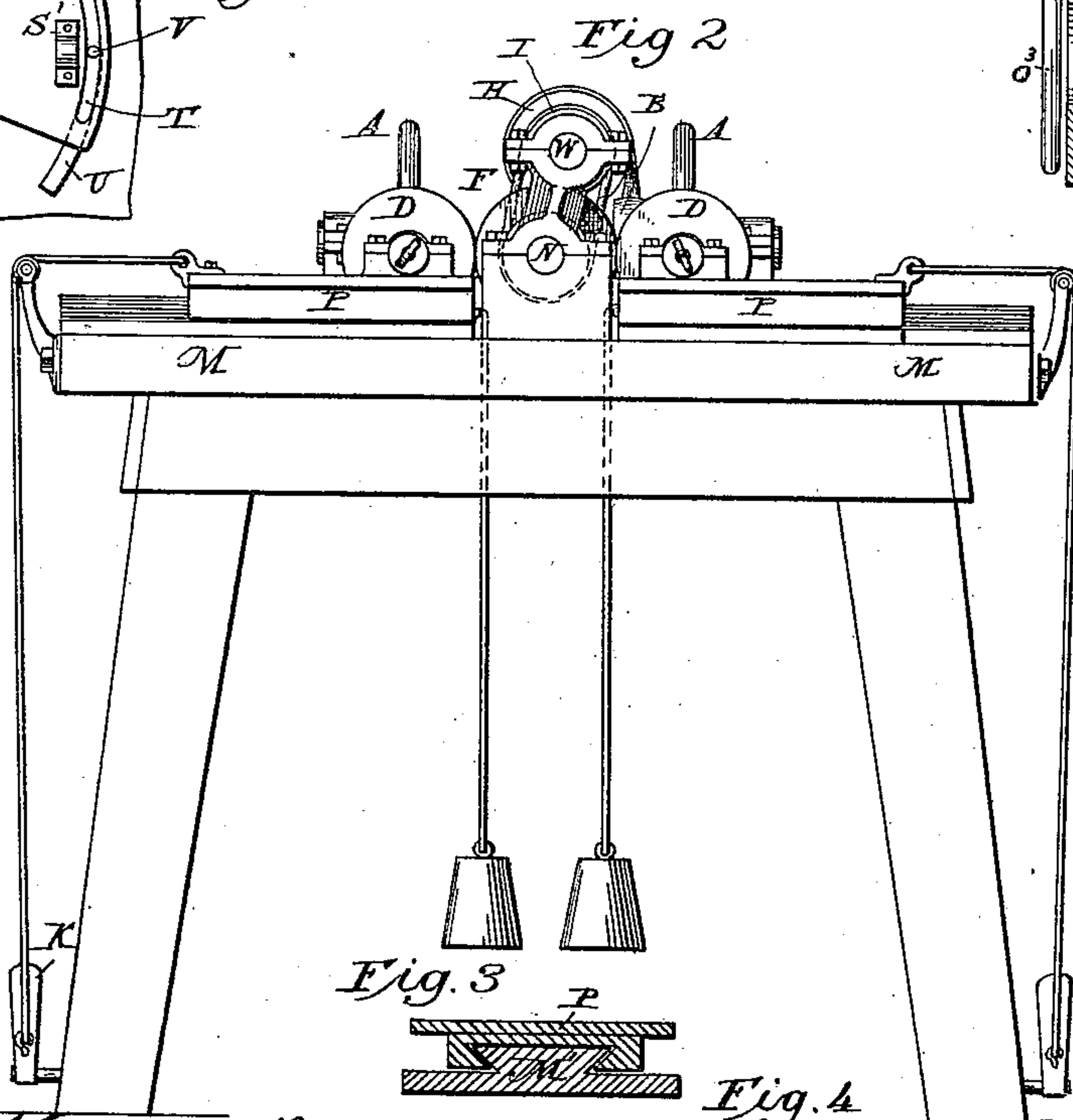
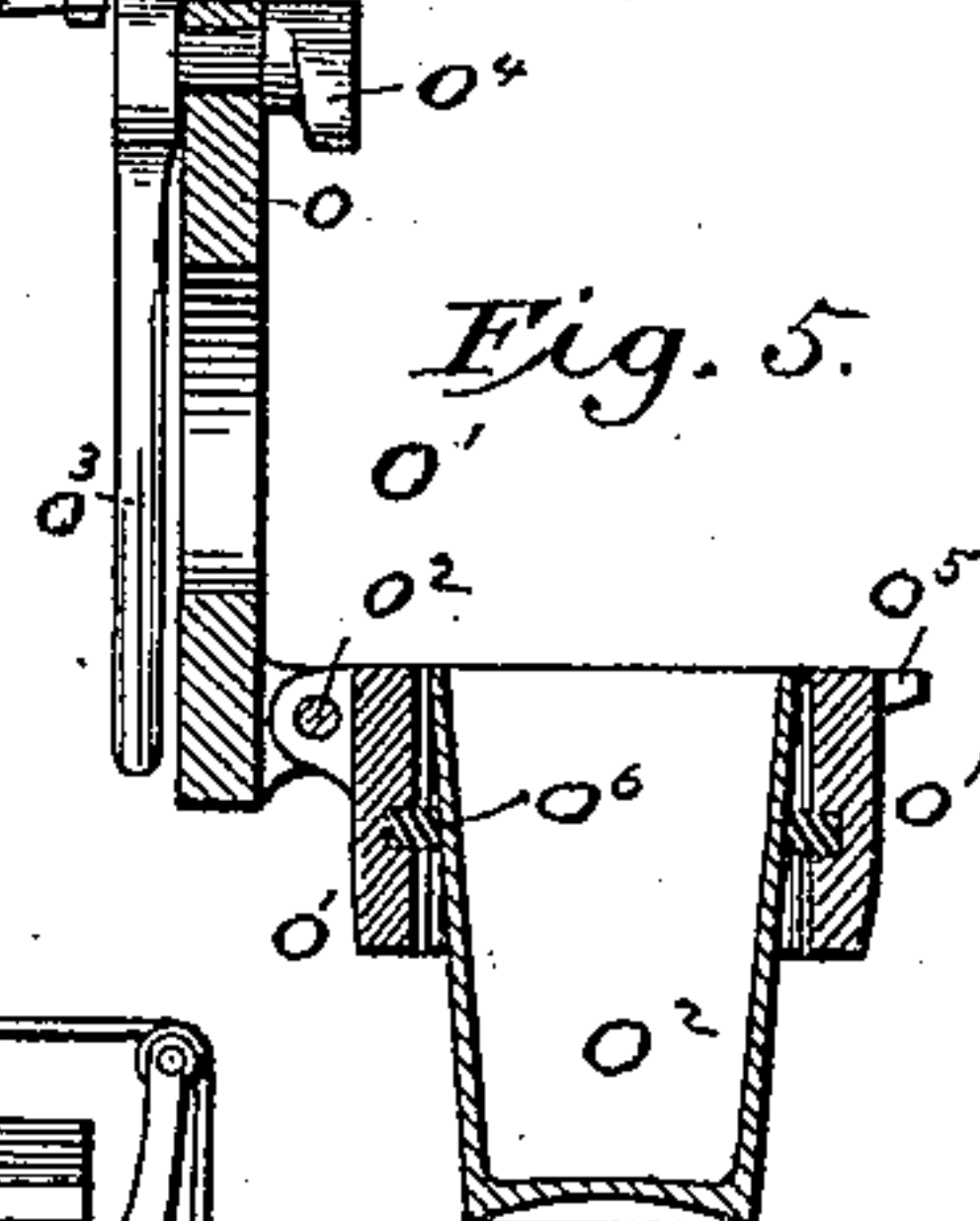
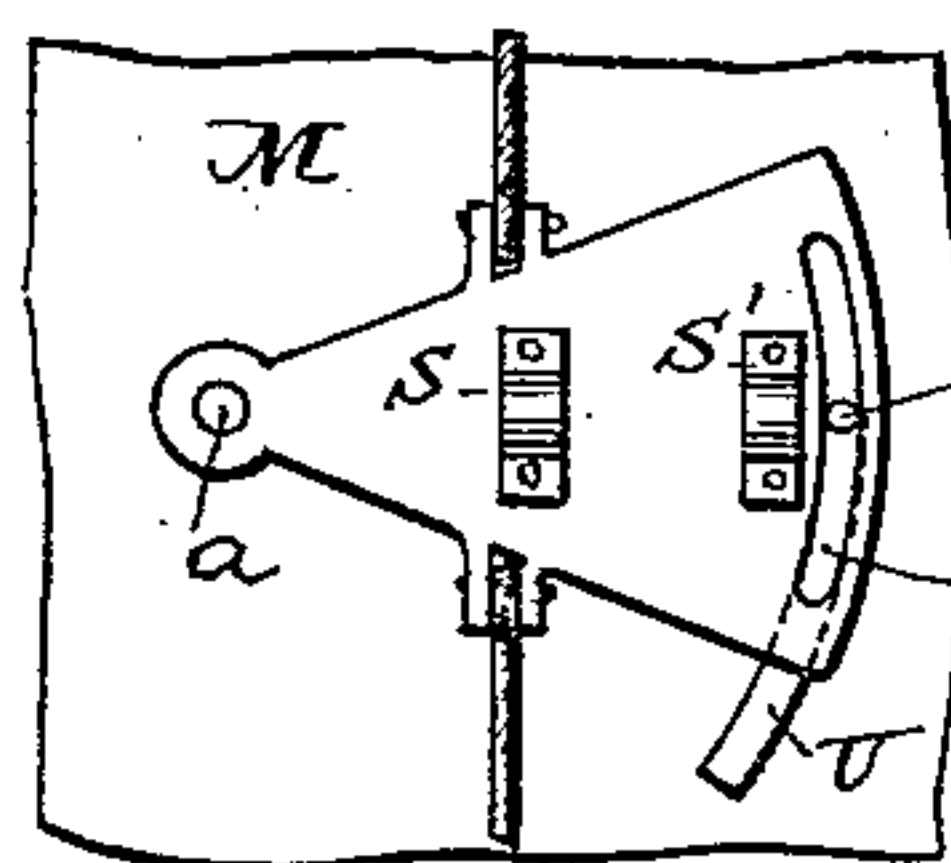
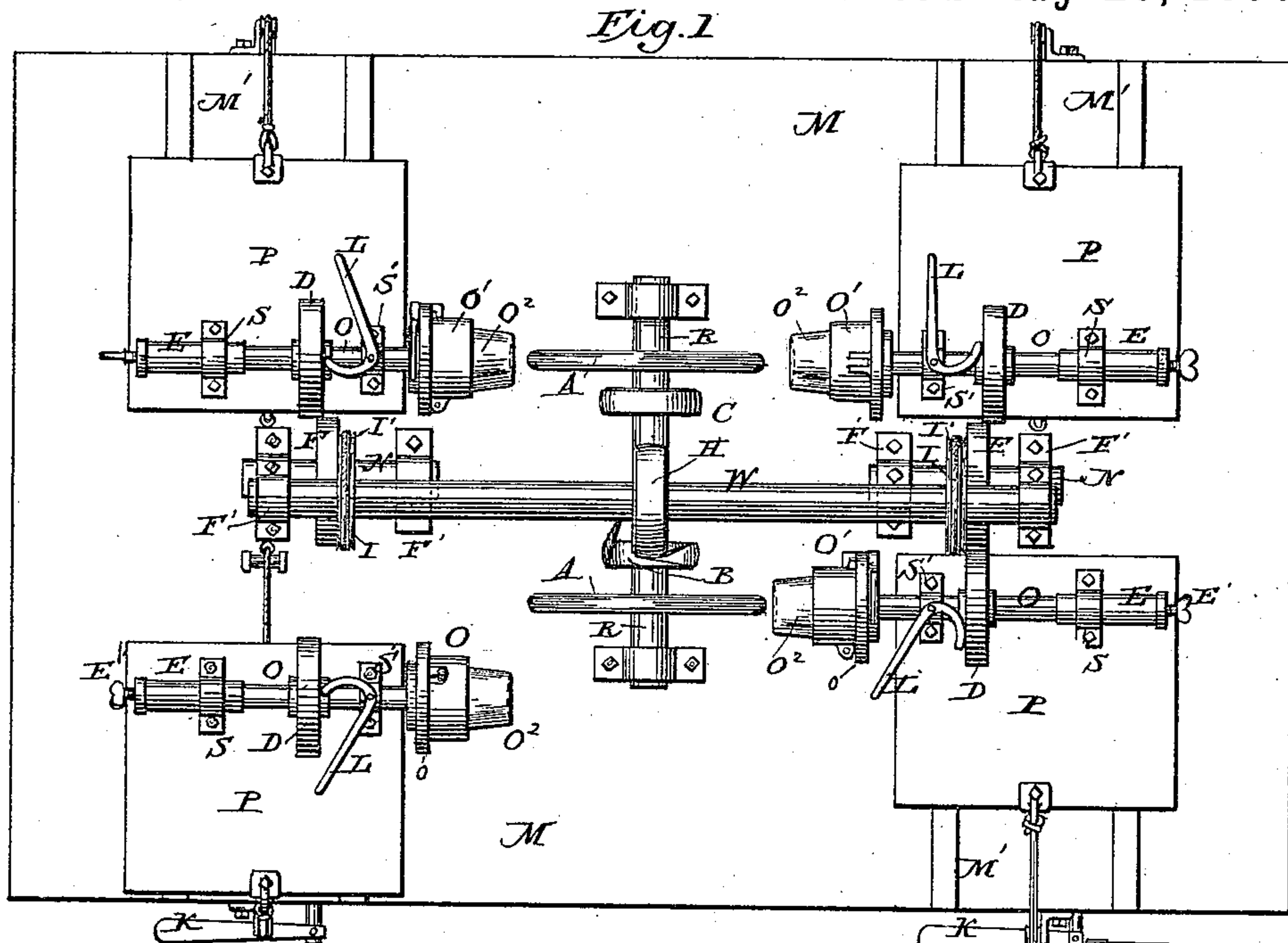
(No Model.)

H. C. WOOD & A. J. SNOBURGER.

MACHINE FOR GRINDING AND POLISHING GLASSWARE.

No. 428,195.

Patented May 20, 1890.



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UNITED STATES PATENT OFFICE.

HARRY C. WOOD AND ANDREW J. SNOBURGER, OF NEW BRIGHTON,
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MACHINE FOR GRINDING AND POLISHING GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 428,195, dated May 20, 1890.

Application filed July 19, 1888. Serial No. 280,405. (No model.)

To all whom it may concern:

Be it known that we, HARRY C. WOOD and ANDREW J. SNOBURGER, of New Brighton, in the county of Beaver and State of Pennsylvania, have invented new and useful Improvements in Machines for Grinding and Polishing Glassware; and we do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in machines for grinding and polishing the bottoms of glass tumblers and similar articles; and the objects thereof are to provide means whereby such articles may be rapidly and correctly ground or polished, so that their bottoms will be provided with a concavity corresponding to the arc of the grinder or polisher used.

Our invention consists in the construction and combination of parts hereinafter described, and pointed out in the claims.

In the drawings which accompany and form a part of this specification, and in which like letters of reference denote similar parts, Figure 1 is a plan view of the machine. Fig. 2 is an end view of the same. Fig. 3 is a sectional view of one of the chuck-shaft slides or carriages and a portion of the bed. Fig. 4 is a detail view showing the rear end of one of the chuck-shafts and its spring-pressed bearing. Fig. 5 is an enlarged detail sectional view of one of the tumbler-chucks open and detached from its shaft and with a tumbler in place. Fig. 6 is a plan view of a modified form of slide or carriage.

At M is shown the top of a table suitably supported by legs or otherwise, and upon the table are secured four ways M', and fitted to slide upon each of said ways is a carriage P. Each carriage or slide has connected to it at its inner end a cord running over an idler-pulley and terminating in a weight or spring, and at its outer end another cord running over an idler-pulley and connected to a treadle K. Each table is provided with a bearing S'. Chuck-shaft O is free to rotate in bearing S', and the rear end of said shaft

has a bearing in the tubular casing E, which is secured in standard S. This tubular casing contains two metallic disks E³, between which is arranged a spiral spring E². The rear end of shaft O is pointed and bears against the forward disk E³, while the rear disk E³ is adjustable by means of a thumb-screw E', which passes through the cap of the tubular casing. By this means the chuck-shaft, with its tumbler, is forced toward the grinding or polishing wheel with an adjustable yielding pressure.

Upon each shaft O is secured a friction-pulley D, and a lever L, which may be, as shown, fulcrumed upon the bearing S', has its short end curved toward the side of said pulley. By operating said lever the chuck-shaft may be forced back against the action of spring E², or it may be left free to be moved toward the grinding-wheel by the action of said spring.

To the front end of shaft O is secured a chuck O' for the tumbler O². Said chuck consists of two parts o and o', the part o being secured to the end of the shaft and having the ring o' hinged to it at o². A pin turning freely in a flange or projection of part o has secured to one end a lever o³, and to its other end a button or lug o⁴, which engages the lug o⁵ on ring o' when said ring is turned up against the part o, and the lever o³ is turned so as to cause the lugs o⁴ and o⁵ to engage each other. The ring o' is provided internally with a packing or gasket o⁶ of rubber or other elastic material.

It will be observed that there are two pairs of sliding carriages, one pair being shown at the right-hand end of the table in Fig. 1 and the other pair at the left-hand end.

The friction-pulleys D of each pair of chuck-shafts receive motion from a single friction-pulley F, secured to a short counter-shaft N, which is mounted in bearings F' on table M. The extreme right and left hand bearings F' have their caps extended upward to form standards or bearings for the long shaft W. This shaft W may be supported directly above the shafts N; but for convenience of illustration I have shown it as slightly arranged to one side of a vertical plane there-

with. The shafts N receive motion from shaft W by means of belts and grooved pulleys I and I'. The main shaft R, carrying the two grinding or polishing wheels A A, is supported in bearings on table M, between the shafts N N, in the same horizontal plane therewith and at a right angle thereto and to shaft W.

C is a pulley on shaft R, and receives power for the whole machine from any suitable source. B is a pulley on the same shaft, and by means of a quarter-twist belt conveys power to the pulley H on the shaft W.

The operation of our machine is as follows: The chuck being opened, as shown in Fig. 5, a tumbler is placed in the ring o', which is then turned up against the part o and secured in that position by the lever, lug, or button, the chuck-shaft being meanwhile held back by the lever L, and the carriage being held away from the driving friction-pulley F by the operator keeping his foot upon treadle K. A tumbler being thus secured in the chuck, pressure is relieved from treadle K. Then the lever L is turned to allow the chuck to carry the tumbler toward the wheel, and the grinding or polishing begins. When a tumbler is finished, the chuck-shaft is forced back, as heretofore described, and pressure exerted upon the treadle K, thereby bringing the carriage to the position shown at the lower left-hand portion of Fig. 1, which allows ready access for the removal of the finished tumbler and the insertion of another. Suitable stops may be provided to keep one or more of the carriages out of operative position.

In Fig. 6 we have shown a carriage which, instead of being arranged to slide in a direct line toward and from shaft N, is pivoted at one end, as at a, and has at its other segmental end a curved groove and slot T, fitting, respectively, a curved rib U and pin V, which project from carriage P. One object of this modified form is, that by having the carriage move or slide in the arc of a circle the tumbler is turned outward more conveniently for the removal from its chuck when said pivoted carriage is moved by the treadle K.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with a grinding or polishing wheel, of a rotary chuck, the shaft of which is provided with a friction-pulley and supported in bearings in a plane parallel with the radius of said wheel and opposite the pe-

riphery thereof and movable in a plane across the face of said wheel, and a power-driven counter-shaft having a friction-pulley, substantially as described.

2. The combination, with a grinding or polishing wheel, of a rotary chuck, the shaft of which is provided with a friction-pulley and supported in bearings in a plane parallel with the radius of said wheel and opposite the periphery thereof and movable in a plane across the face of said wheel, a spring for exerting a pressure of the chuck toward the wheel, and a power-driven counter-shaft having a friction-pulley, substantially as described.

3. The combination, with a grinding or polishing wheel, of a rotary chuck, the shaft of which is provided with a friction-pulley and supported in bearings in a plane parallel with the radius of said wheel and opposite the periphery thereof, said bearings being carried by a slide having a path across said plane, and a power-driven counter-shaft having a friction-pulley, substantially as described.

4. The glass-holding chuck herein shown and described, consisting of the combination of a disk concentrically secured to the end of a rotary shaft, a ring hinged to said disk, and means for locking the disk and ring together.

5. In a glass grinding or polishing machine, the combination, with the abrading-wheel thereof, of the disk o, concentrically secured to the end of a rotary shaft, a ring o', hinged to said disk, and means for locking the disk and ring together, the ring o' being provided with an internal elastic packing, substantially as described.

6. In combination with a shaft carrying a plurality of grinding or polishing wheels, two spring-pressed rotary chucks arranged diametrically opposite each wheel, each chuck being mounted on a carriage movable at a right angle to the plane of rotation of the wheel, friction-pulleys on said chuck-shafts, counter-shafts carrying friction-pulleys arranged between and parallel with each pair of chuck-shafts on either side of the wheel-shaft, and means for operating the said counter-shafts, substantially as described.

In testimony whereof we affix our signatures in presence of two subscribing witnesses.

HARRY C. WOOD.

ANDREW J. SNOBURGER.

Witnesses:

JAMES RADCLIFFE,
WARWICK SCOTT.