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PATENTED OCT. 10, 1905.

T. A. PANYARD.
GRINDING AND POLISHING MACHINE.

APPLICATION FILED JUNE 12, 1905.

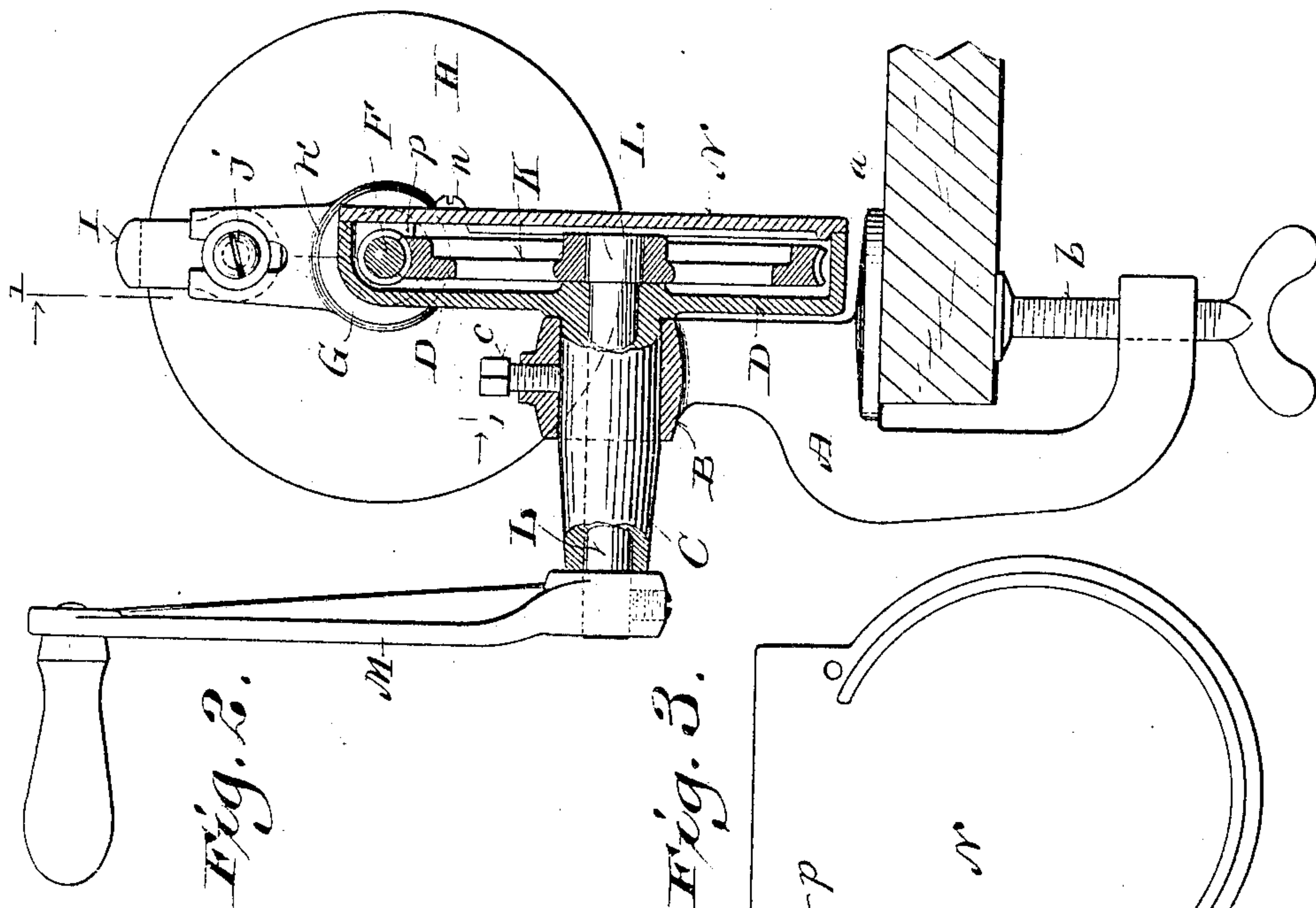


Fig. 1.

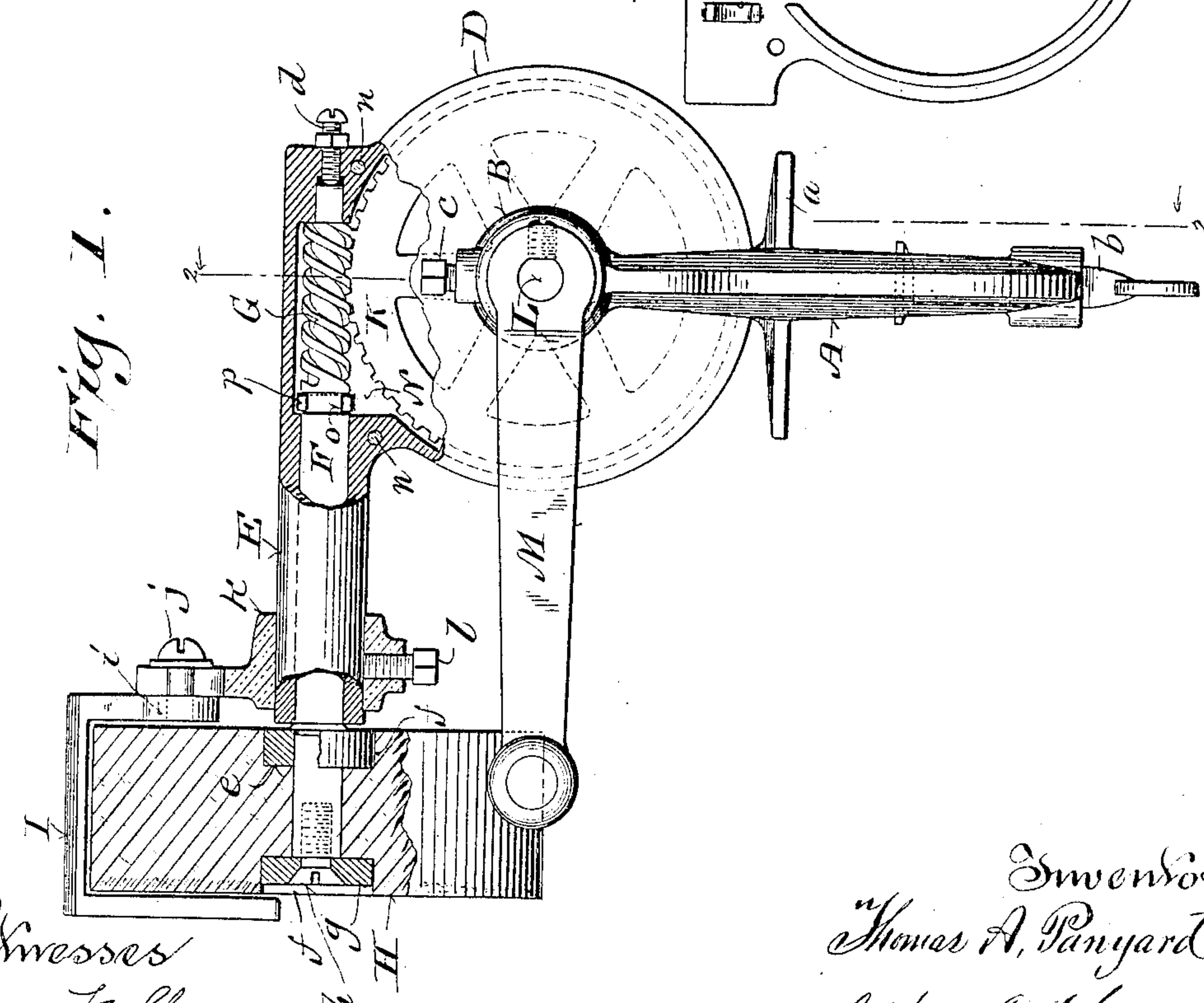
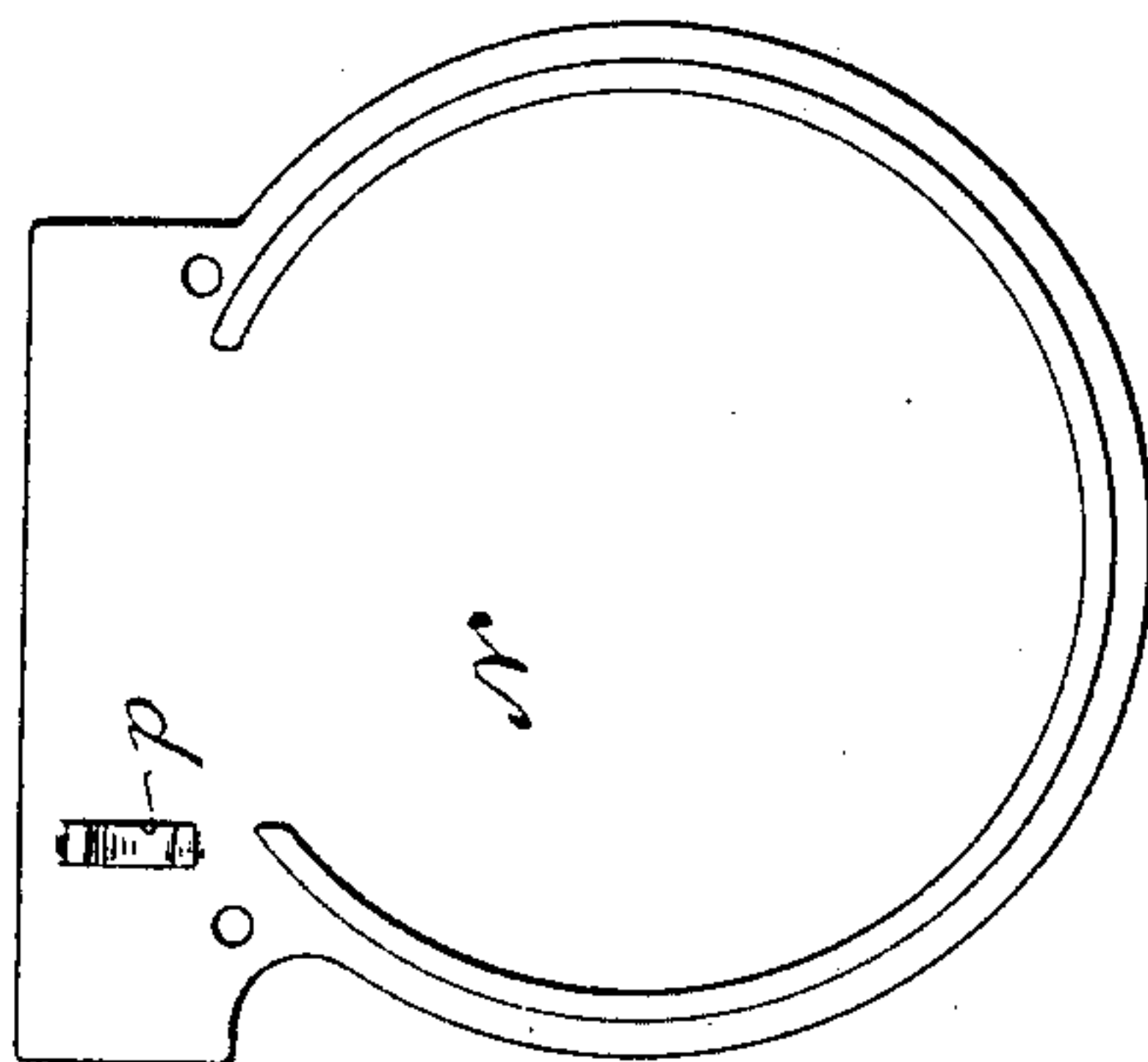


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

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GRINDING AND POLISHING MACHINE.

No. 801,542.

Specification of Letters Patent.

Patented Oct. 10, 1905.

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To all whom it may concern:

Be it known that I, THOMAS A. PANYARD, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Grinding and Polishing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention refers to grinders or polishers, its object being to construct such a machine that the abrading-wheel thereof is capable of adjustment to various angles required for different classes of work; and it consists in certain peculiarities of construction and combination of parts to be fully set forth hereinafter with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a side elevation of a machine in accordance with my invention, partly broken away and having parts thereof in section as indicated by line 1 1 in Fig. 2; Fig. 2, a vertical cross-section indicated by line 2 2 in Fig. 1, and Fig. 3 a detail face view of the gear-cover of said machine.

Referring by letter to the drawings, A is a bracket provided with a foot *a* and clamping-screw *b*, the upper extension of said bracket terminating in a sleeve B, which sleeve supports the hub C of a circular gear-casing D, the latter being held in its position by a set-bolt *c*, threaded into the sleeve B. The gear-casing D has a tangential barrel E extending therefrom and in which is mounted a driving-spindle F, having its inner end formed with a double-threaded worm G and terminating in a reduced portion which has a bearing in the gear-casing. The end thrust of said spindle is taken up by a set-screw *d*, threaded into the back of the casing D aforesaid. The spindle F just outside of the barrel has shrunk thereon a collar *e*, which forms a shoulder for the grinding-wheel H, that is carried by said spindle. The wheel H is preferably composed of abrading-surfaces of different degrees of coarseness on its sides, and for this reason it is made reversible, there being corresponding counter-sunk annular recesses *f* in said wheel adapted to fit the collar *e*, and a retaining-washer *g* of the same diameter as the collar engages a recess of the aforesaid wheel, which is held in

place by a screw *h* being threaded into the end of the spindle against said washer.

A right-angle tool-rest I passes over the face and outside surface of the grinding-wheel and has a depending ear *i*, into which is threaded a screw *j*, that engages the slotted end of a supporting-arm J, the hub K of which is mounted upon the end of the barrel E and may be adjusted radially upon the latter and is held in its adjusted position by a set-screw *l* engaging its hub. The worm G of the spindle meshes with a worm-wheel K, that is housed in the casing D, and a shaft L is secured to said worm-wheel and projects through and has its bearings in the hub C of said casing. This shaft is provided with a driving-crank M, that is secured thereto by a set-screw *m*. A gear-cover N is fitted to the front of the gear-casing D by screws *n*, and in order to prevent end movement of the spindle F the latter is provided with an annular groove *o*, which is engaged by a spanner-lug *p* projecting inward from said gear-cover.

From the foregoing description it will be readily understood that by loosening the set-bolt *c* the gear-casing may be revolved within the sleeve B of bracket A in either direction from that shown in the drawings, and thereby bring the grinding-wheel at the angle desired for the particular work to which it is to be applied—as, for instance, if a flat tool, such as a clipper-blade, is to be ground the wheel would be adjusted to a vertical position and the flat surface or side of said wheel be utilized, the bolt *c* having first been tightened to hold the device in this position.

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

1. In a grinder or polisher, a clamping-bracket, and a gear-casing provided with a hub adjustably mounted in said bracket and means for holding the casing in its adjusted position, a driving-shaft mounted in the hub of the aforesaid gear-casing, a spindle having its bearings in the casing in gear connection with the driving-shaft, and an abrading-wheel secured to the spindle.

2. In a grinder or polisher, a clamping-bracket, a gear-casing provided with a central hub adjustably mounted in said bracket, and means for holding the casing in its adjusted position, a driving-shaft mounted in the hub of the aforesaid gear-casing, a spin-

dle having its bearings in the casing at a tangent to the hub thereof and provided with a worm, and a worm-wheel secured to the said driving-shaft in mesh with the aforesaid
5 worm.

3. In a grinder or polisher, an abrading-wheel, a spindle for the same provided with a gear, and a driving-shaft having a gear in mesh with the gear of said spindle, a gear-
10 casing mounted upon the drive-shaft and ar-

ranged to carry the spindle, and means for adjusting said casing around the drive-shaft.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wis- 15
consin, in the presence of two witnesses.

THOMAS A. PANYARD.

Witnesses:

SAM NEWMAN,
GEO. W. YOUNG.