F. R. & W. O. SUTTON.

Machines for Grinding Lenses.

No. 150,799. Patented May 12, 1874.

Fig. 1.

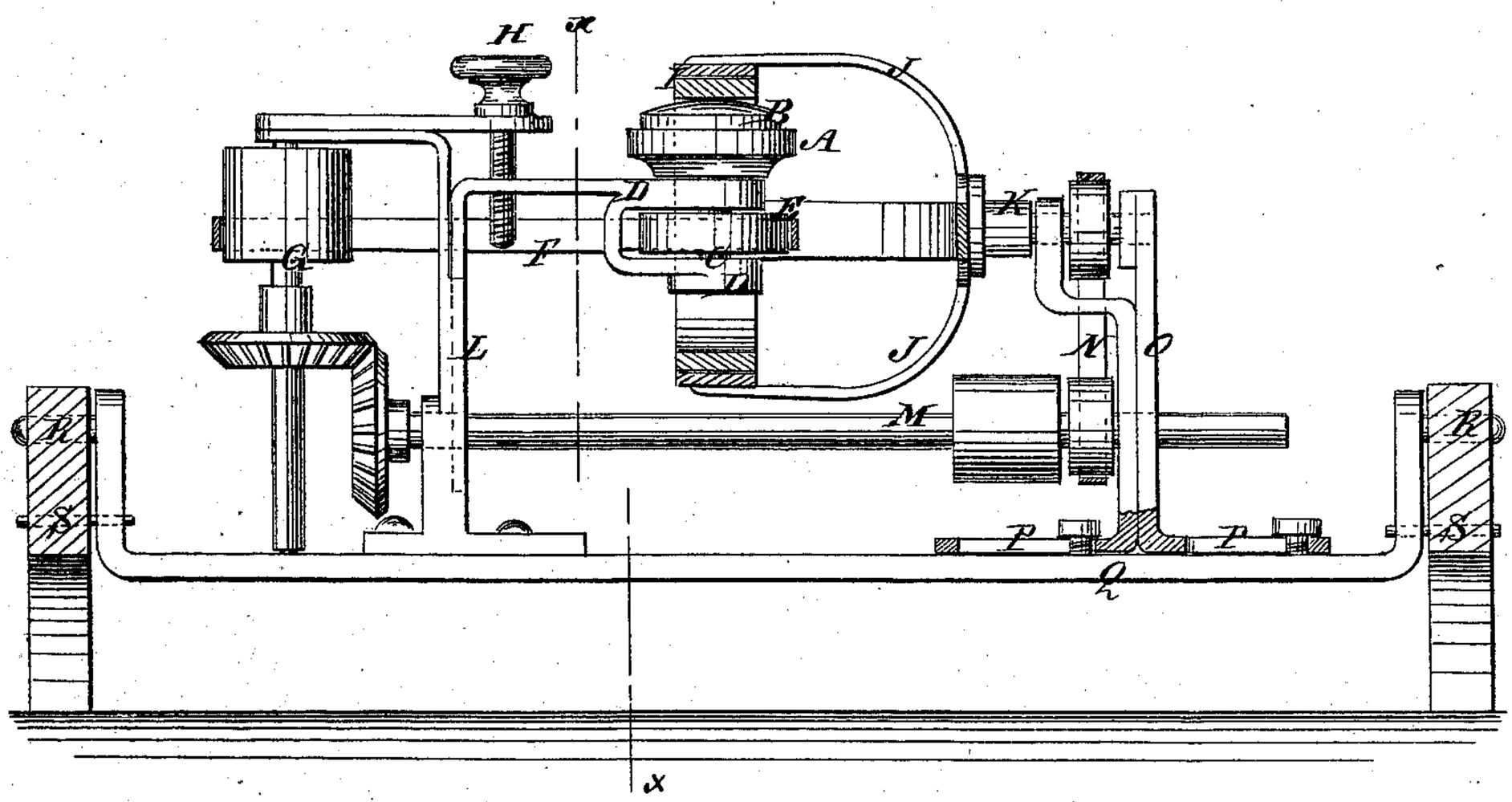
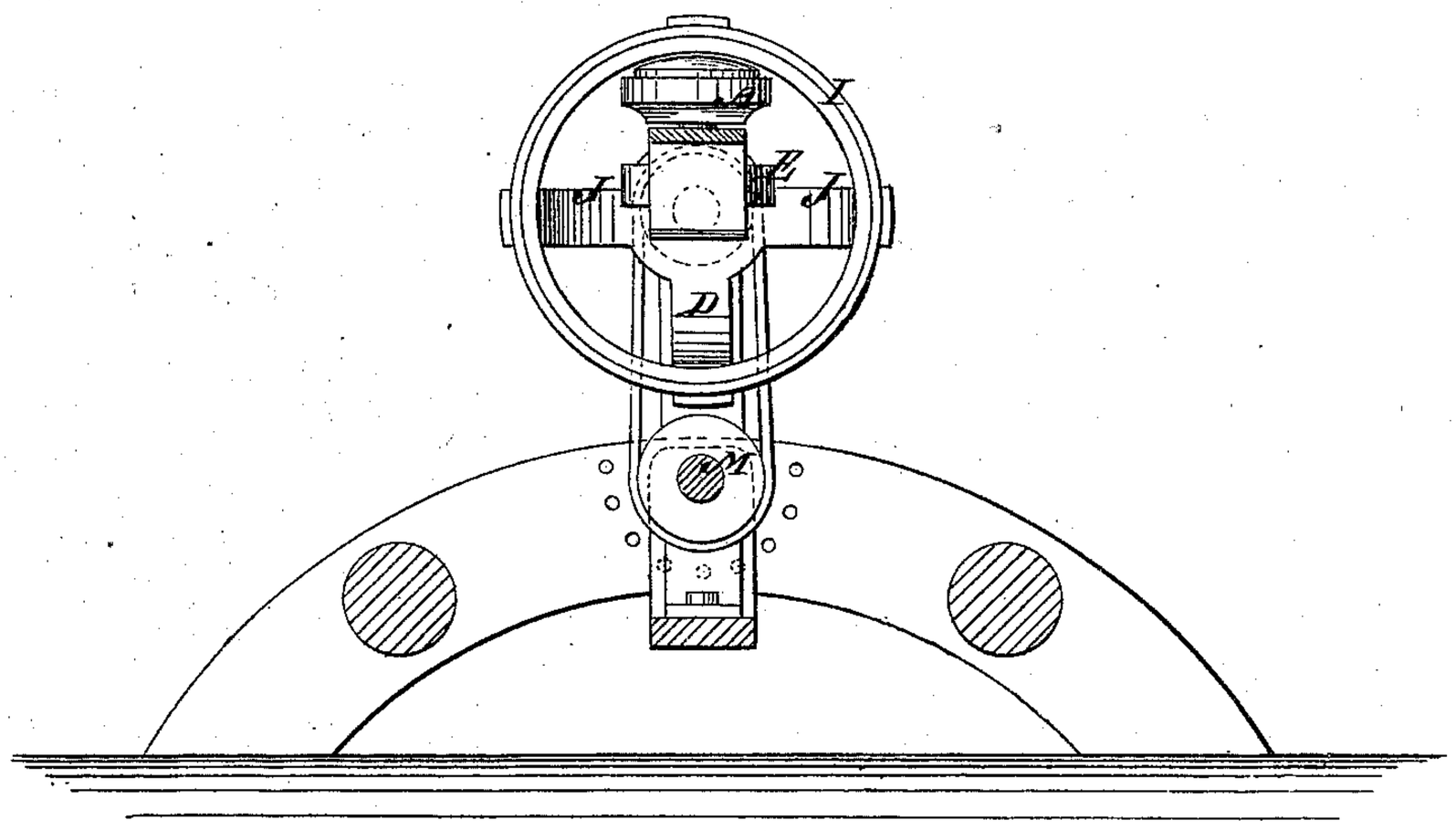


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

FREDERICK R. SUTTON AND WILLIAM O. SUTTON, OF WELLINGTON, ILL.

IMPROVEMENT IN MACHINES FOR GRINDING LENSES.

Specification forming part of Letters Patent No. **150,799**, dated May 12, 1874; application filed September 13, 1873.

To all whom it may concern:

Be it known that we, FREDERICK R. SUTTON and WILLIAM O. SUTTON, of Wellington, in the county of Iroquois and State of Illinois, have invented a new and Improved Machine for Grinding Lenses, of which the following is a specification:

We propose to have a holder for the lens to be ground, revolving, say, in a horizontal plane on a vertical axis, and a grinder revolving in a vertical plane on a horizontal axis, the inner periphery of the grinder working in contact with the face of the lens for grinding convex lenses.

Figure 1 is a side elevation of a machine arranged for grinding convex lenses; and Fig. 2 is a horizontal section of Fig. 1, taken on the line *x x*.

Similar letters of reference indicate corresponding parts.

A represents a chuck, holding the lens B to be ground. It is mounted on a short vertical axis, C, supported in a frame, D, and provided with a pulley, E, by which it is revolved by a belt, F, from a drum on the shaft G. The frame D is capable of vertical adjustment, and provided with an adjusting-screw, H. I is the grinder, which, for grinding convex lenses, will be in the form of a ring. It is mounted on the branching arms J of a horizontal axis, K, so that the lens and its chuck and mandrel can be presented within the ring for the inner periphery of the latter to run against the face of the lens, while the lens revolves on an axis in the plane of the ring, and at right angles to its axis, as clearly shown in the drawing, by which great accuracy is obtained. For feeding up the lens to the grinder, the frame D is arranged to slide in its support L. The axis K is geared with the driving-shaft M by a belt, N, and pulleys. It is, of course, immaterial whether the chuck be on a vertical axis and the grinder on a horizontal one, so long as they be at right angles to each other. The standard O, which supports the grinder-axis, is adjustable at P on the frame Q, so as to move the grinder away from the lens-chuck to facilitate the adjusting of the lens. The supporting-bar Q is arranged on trunnions R to swing to any inclination, and is locked by pins S. The pivoting of frame is employed to enable the said frame to be shifted in position in order to remove or receive either grinder or polisher, and this is done without interfering with drive-belt.

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

1. The combination of a revolving lens-holding chuck, A, and a revolving ring-grinder, I, arranged on axles at right angles to each other, substantially as specified.

2. The combination of the rotary chuck A, rotary grinder I, adjusting-frame D, and screw H, the driving-shafts G and M, and the belts F N, all substantially as specified.

FREDERICK R. SUTTON.
WILLIAM O. SUTTON.

Witnesses:
GEORGE W. GOAD,
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