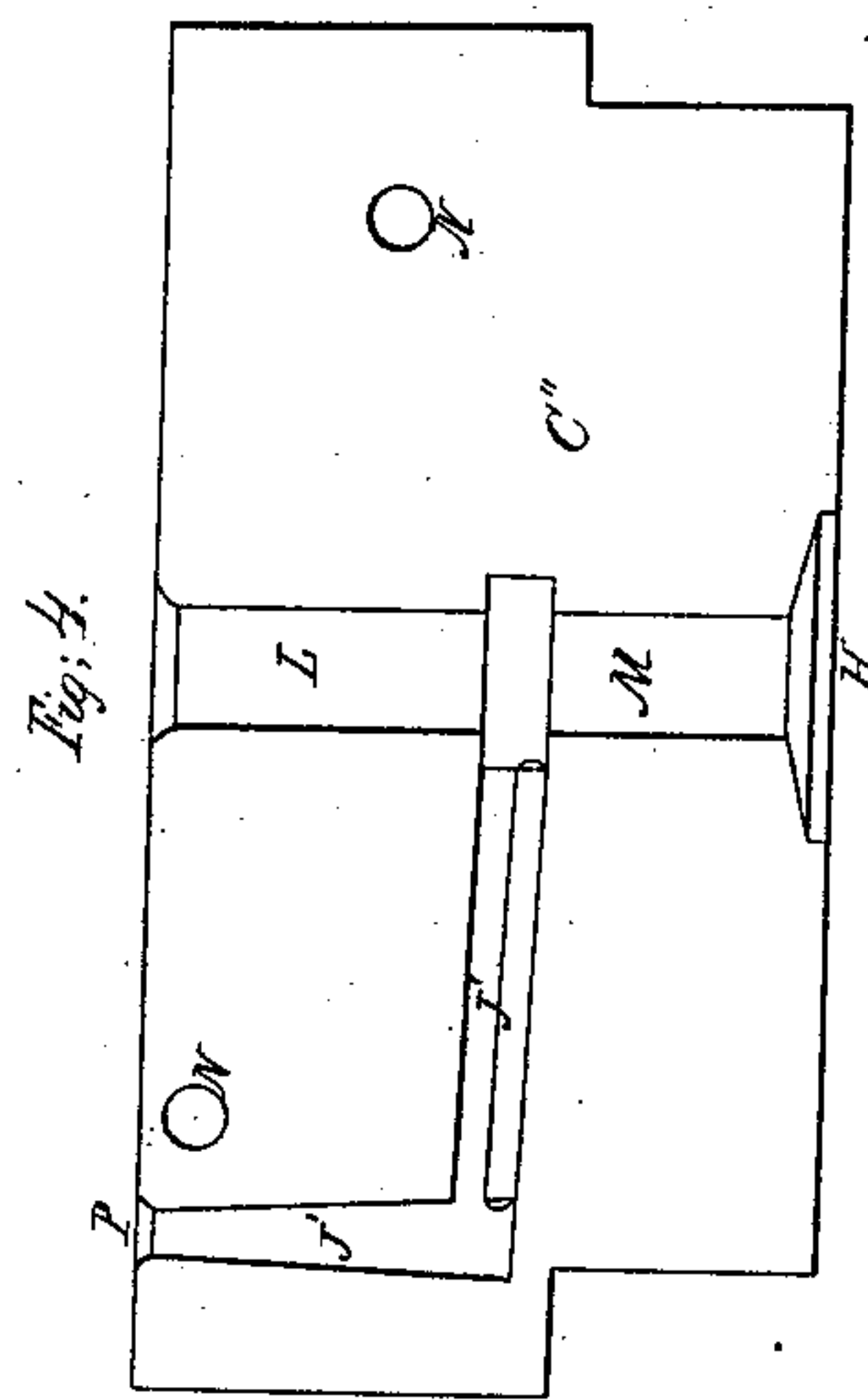
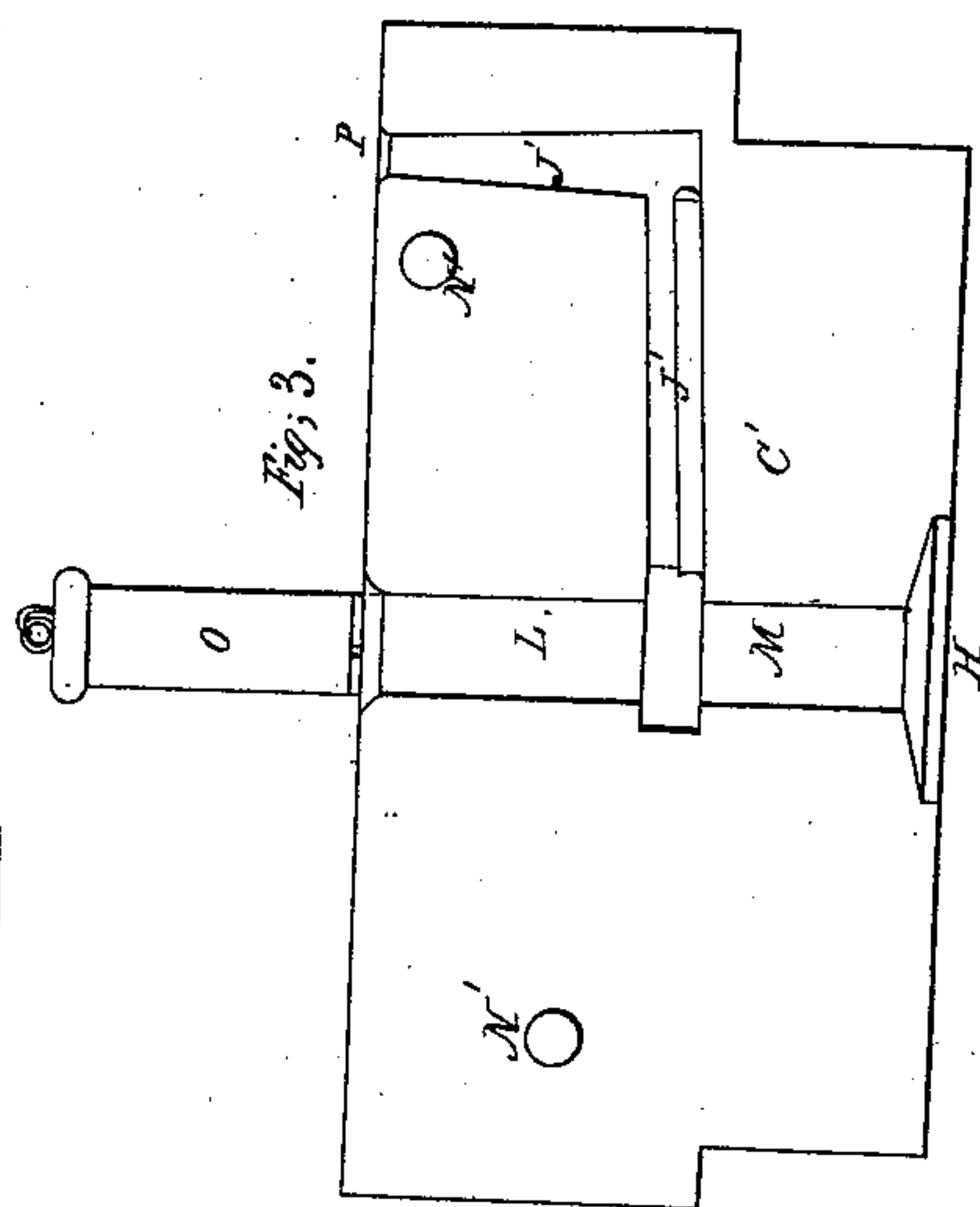
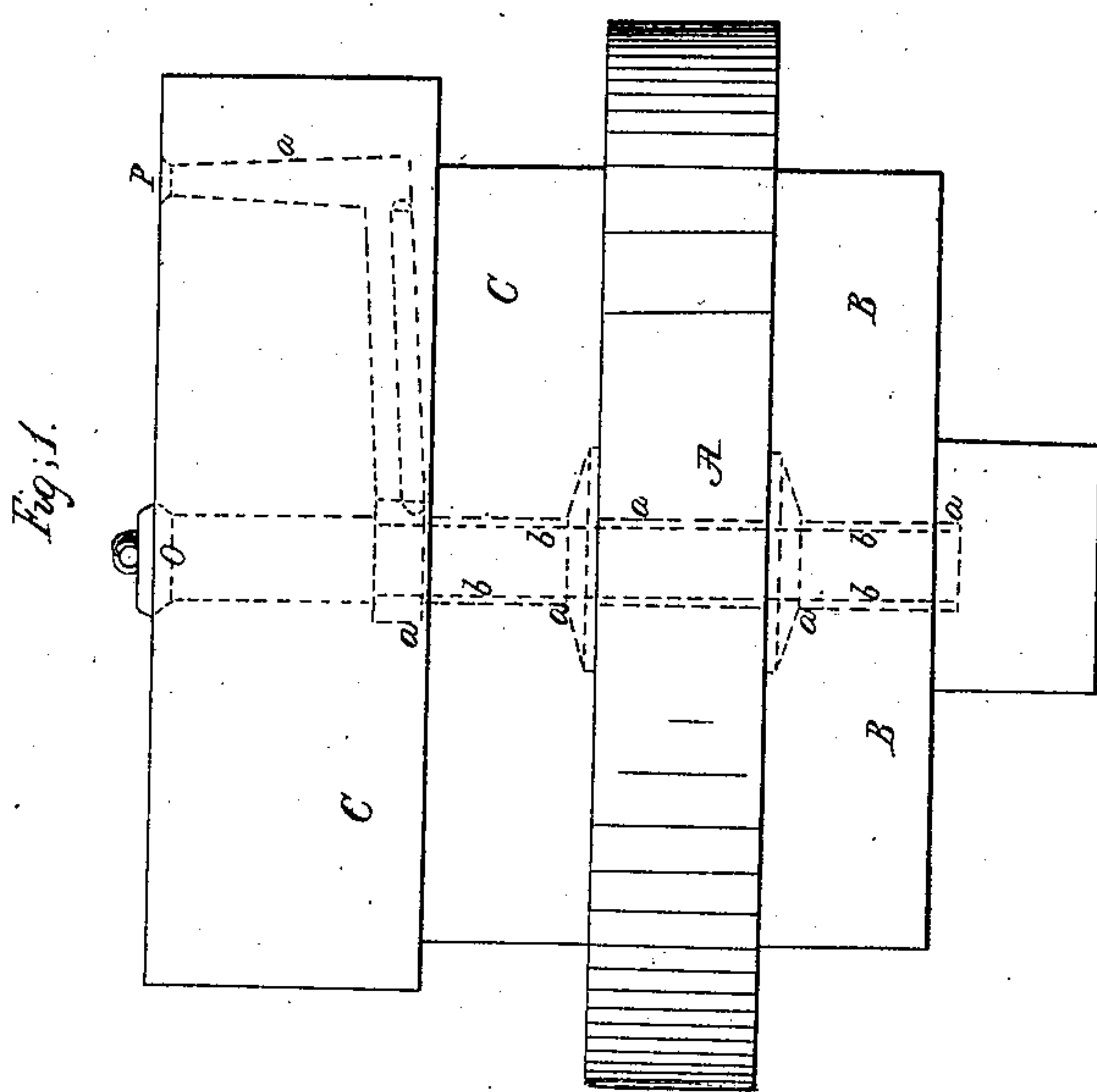
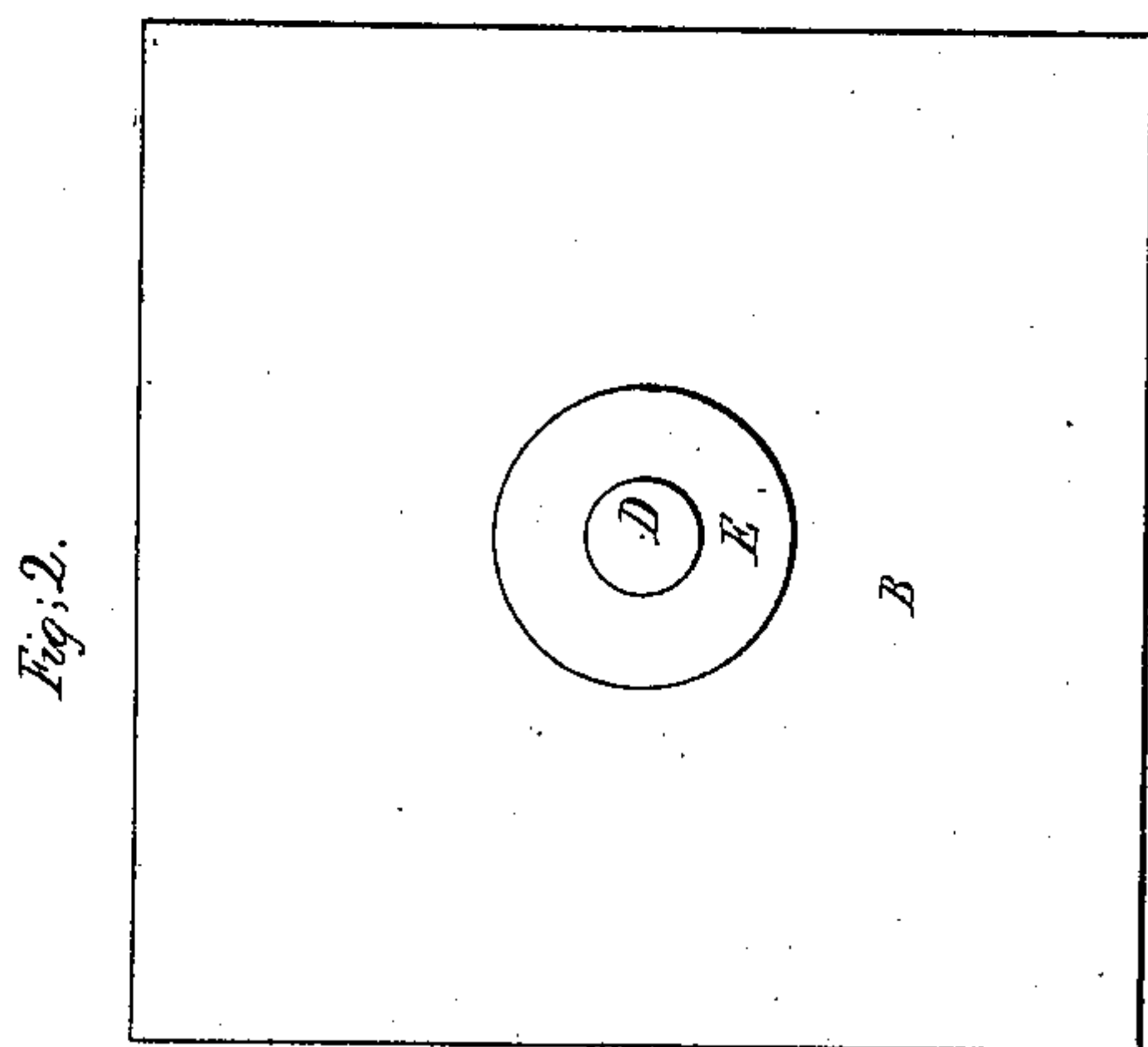
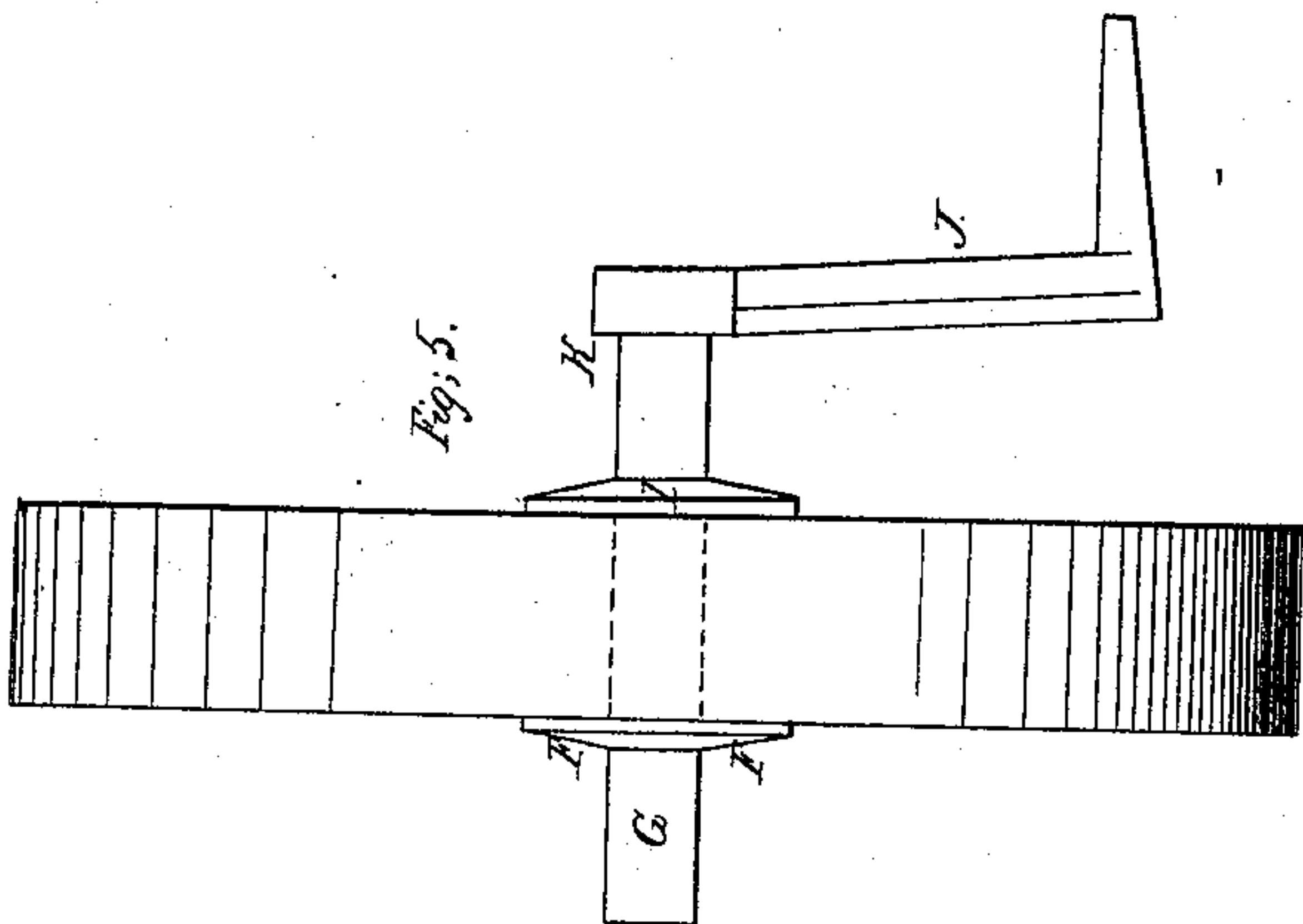


D. Hinman,
Hanging Grindstones.

N^o 15,180.

Patented June 24, 1856.



UNITED STATES PATENT OFFICE.

DAVID HINMAN, OF BEREÄ, OHIO.

IMPROVEMENT IN HANGING GRINDSTONES.

Specification forming part of Letters Patent No. 15,180, dated June 21, 1856.

To all whom it may concern:

Be it known that I, D. HINMAN, of Berea, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in the Method of Hanging Grindstones to their Axes or Shafts; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 represents the molds and stone in place, ready to receive the shaft and crank; Fig. 2, a plan view of the bottom mold; Figs. 3 and 4, the top mold in sections; Fig. 5, a stone hung with the shaft and crank after the method herein described.

Like letters represent like parts in all the several figures.

The stone A is prepared by any of the ordinary means, with the hole in the center, and is placed between the molds B C, Fig. 1. The lower mold, B, Figs. 1 and 2, has a circular hole, D, in the center, and connected with it is a depression or recess, E. In the circular hole and recess is formed the flange F, and that section of the shaft indicated at G, Fig. 5. The upper mold, C, is divided into two equal sections, C' C'', Figs. 3 and 4, through the center of groove, forming the shaft and crank, so that one half side of the shaft and crank and flange is in one mold, and the other half in the other, so that when these two sections are together they form a recess, H, corresponding to E, in which is formed the flange I, and the crank J in J' J'. The section K of the shaft is formed in the groove M, Figs. 3 and 4. In the section C'' are two dowels, N N', which fit into the holes N', so that the section will always be in the proper position when the shaft is being attached to the stone. The mold may also be held by a clamp on the outside. The stone, being prepared, is placed upon its side on the lower mold, B, and the upper mold, C, is placed on the upper side of the stone, as seen in Fig. 1. A rod of suitable size is passed down through the hole L and through the eye of the stone into the hole D of the lower mold. By this means the stone is lined so that the stone and shaft will be true with each other, as the groove in the molds in which the shaft is formed is trued with the face of the molds

which come in contact with the stone, so that the stone will run perfectly true upon the shaft. After the stone is in the desired position between the molds the plug O is passed into the hole L, as seen in Fig. 1. Any molten metal suitable for such purpose is then poured into the sprue-hole at P, and runs down through the cavity of the upper mold, through the eye of the stone, and into the cavity of the lower mold. By this means the entire shaft and crank, with the flanges on each side of the stone, is formed at once, and by the contraction of the metal in cooling the flanges firmly hold the stone in place on the shaft. The plug O prevents the metal from rising any higher in the mold than the outside of the crank.

The centering or truing rod described, which passes down through the hole L and eye of the stone and into the hole D of the lower mold, may be of such size as to allow the molten metal to run around this rod when in the eye of the stone and in the mold, so that it will form the journals and center of the shaft in the eye of the stone; or when the stone is trued with the mold by a truing-rod, a smaller one, as represented by the dotted lines at b, Fig. 1, may be inserted in its place, and the metal cast around it, as described.

The dotted lines a in Fig. 1 indicate the cavities of molds in which the shaft, flanges, and crank are formed and connected to the stone. After the metal in the cavities of the molds has become cooled the molds may be easily separated from the stone, shaft, and crank.

Fig. 5 represents the shafts, flanges, and crank detached from the molds secured to the stone.

What I claim as new, and for which I desire to secure Letters Patent, is—

Hanging grindstones, in the manner herein described, having the shaft and flange with or without a crank cast in one piece, with the stone firmly secured thereto by the shrinking of the metal, as set forth.

DAVID HINMAN.

Witnesses:

I. B. JOHNSON,

W. H. BURRIDGE.