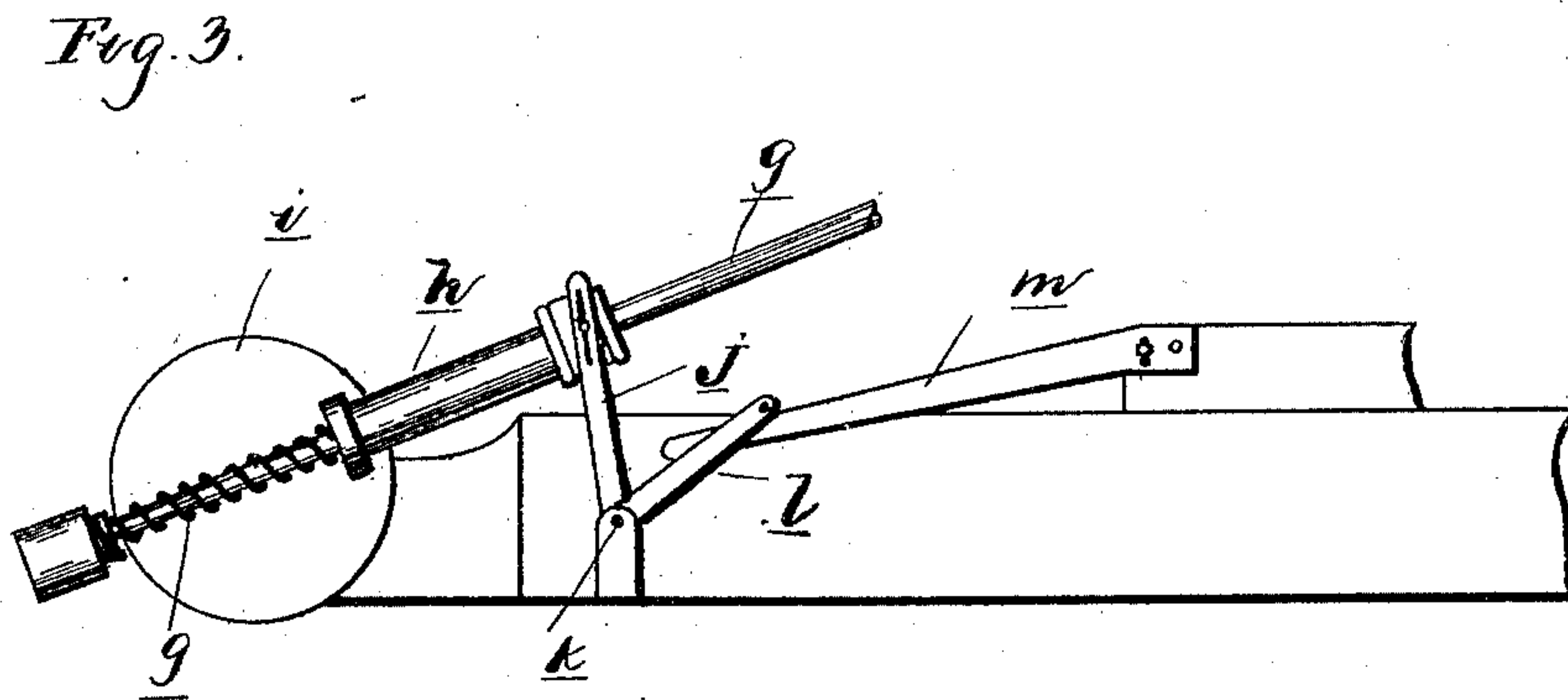
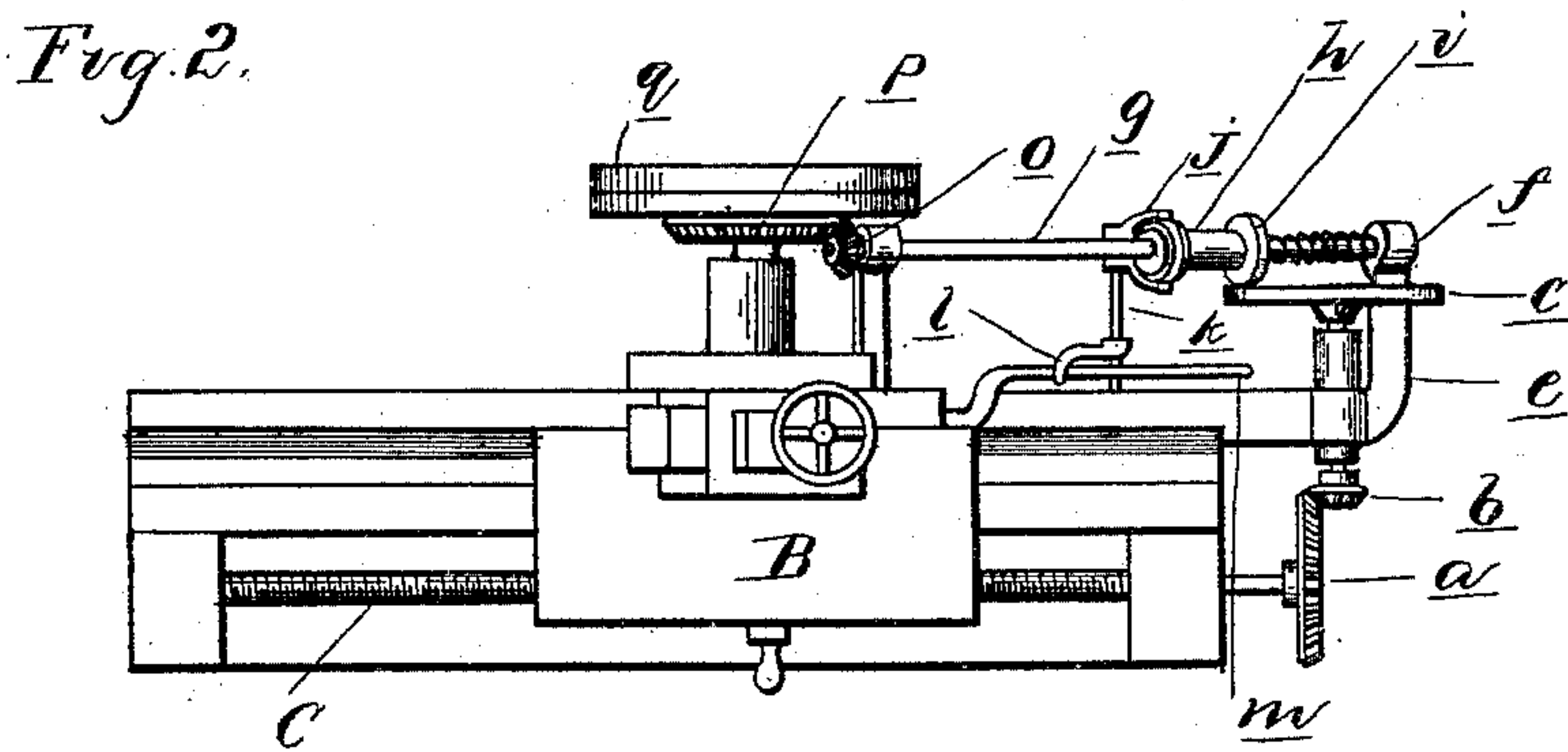
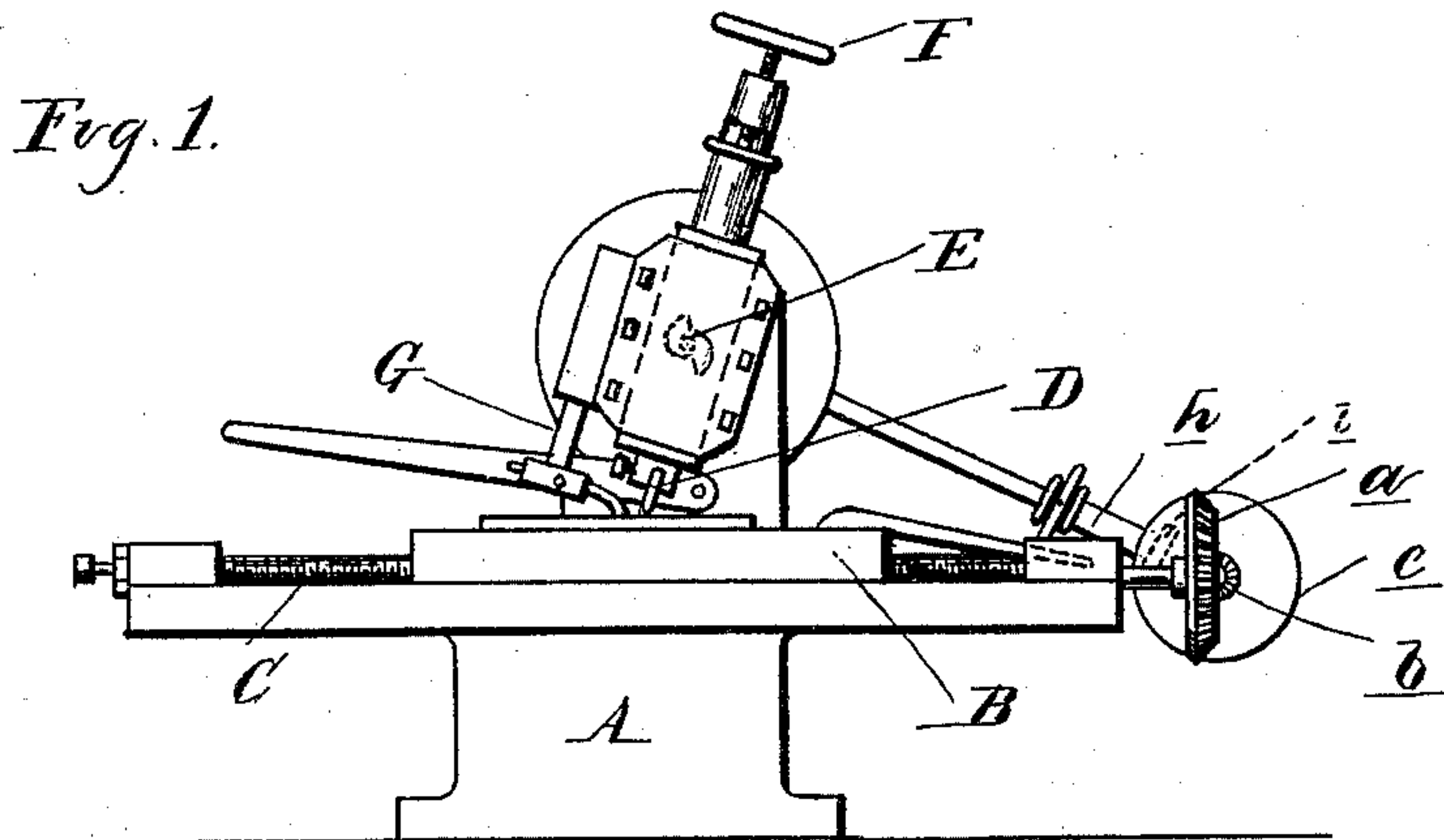


(No Model.)

J. BUYER.  
FILE CUTTING MACHINE.

No. 462,075.

Patented Oct. 27, 1891.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JACOB BUYER, OF SANDUSKY, OHIO.

## FILE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 462,075, dated October 27, 1891.

Application filed May 27, 1891. Serial No. 394,312. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB BUYER, a citizen of the United States, residing at Sandusky, in the county of Erie and State of Ohio, have invented certain new and useful Improvements in File-Cutting Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in file-cutting machines; and it consists in the peculiar construction of the feed, whereby the chisel may be caused to vary the distance between the cuts in any desired manner from the toe to the heel of the file.

The invention further consists in the peculiar construction, arrangement, and combination of the various parts to accomplish this adjustment, all as more fully hereinafter described.

In the drawings, Figure 1 is a side elevation of the file-cutting machine embodying my invention. Fig. 2 is a plan view thereof, and Fig. 3 is an elevation of my attachment enlarged, looking from the opposite side from that shown in Fig. 1.

A is the base of the machine. B is the bed-plate forming the work-holder and adapted to receive the file while being cut. C is the actuating feed-screw for the bed-plate B. D is the chisel actuated by the cam E. F is the adjusting-screw for the chisel to regulate the depth of cut, and G is the presser-foot. These parts may be of any known and usual construction.

To a machine thus constructed I apply my improved feed in the following manner: *a* is a bevel gear-wheel upon the end of the screw C, with which meshes the bevel-pinion *b* upon a shaft which carries at its opposite end the friction-disk *c*. This shaft is journaled in a suitable box *d* in the laterally-projecting arms *e* of the frame. This arm is provided at its outer end with a suitable journal or bearing *f*, with which the shaft *g* slidingly engages. This shaft is provided with the collar or sleeve *h*, which carries at its lower end the friction drive-wheel *i*. This sleeve is supported upon the locking-arm *j*, which is bifurcated to embrace the collar and is secured thereto by

pivots on either side. This arm is secured at its lower end to the shaft *k*, pivoted in the side of the frame of the machine and provided with the actuating-arm *l*, arranged in the path of the cam-lever *m*, which is secured to the work-holder or plate B. At the upper end of the shaft *g* is mounted the bevel-pinion *o*, which meshes with the bevel gear-wheel *p* on the drive-shaft, a suitable pulley *q* being provided on said shaft to actuate the same.

The parts being thus constructed, their operation is as follows: The cam *m* being arranged at a suitable pitch to the desired increase or decrease in the spacing between the chisel-cuts and motion being imparted to the mechanism, it is evident that the friction-roller *i* will be gradually moved through the connection described toward the center of the friction-disk *c*, and as it nears the center it will gradually increase the speed imparted to the feed-screw C, thereby moving the bed-plate B more rapidly, which will increase the distance between the cuts on the chisel. By this arrangement I may make a gradual increase in the number of cuts from the toe to the heel of the file, and it has been evident by practice that a file so cut will give much better results in use than one in which the cuts are evenly spaced.

In crosscutting the file by a simple change of speed I find that the teeth may be arranged in circular or angular paths, giving the best results. When the teeth are arranged in line from end to end, they are apt to furrow the surface instead of cutting it off smooth and clean; but by arranging them irregularly across the surface of the file I obtain a perfect cutting-tool.

What I claim as my invention is—

1. In a file-cutting machine, the combination, with the feed-table and driving mechanism for the same, of a feed-regulator for the driving mechanism, an actuating-arm for the speed-regulator, and an inclined arm on the feed-table adapted to engage with and move the actuating-arm, substantially as described.

2. In a file-cutting machine, an automatic regulator to control the speed of the work-holder, comprising a friction-disk and a friction-roller for driving the same, and means



connected with the feed-table for moving the roller radially on the disk, substantially as described.

3. In a file-cutting machine, an automatic  
5 regulator to control the speed of the workholder, comprising a friction-disk and a friction-roller for driving the same, means connected with the feed-table for moving the roller radially on the disk, and a spring for

moving the roller in the opposite direction, so substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB BUYER.

Witnesses:

M. B. O'DOHERTY,  
N. L. LINDOP.