

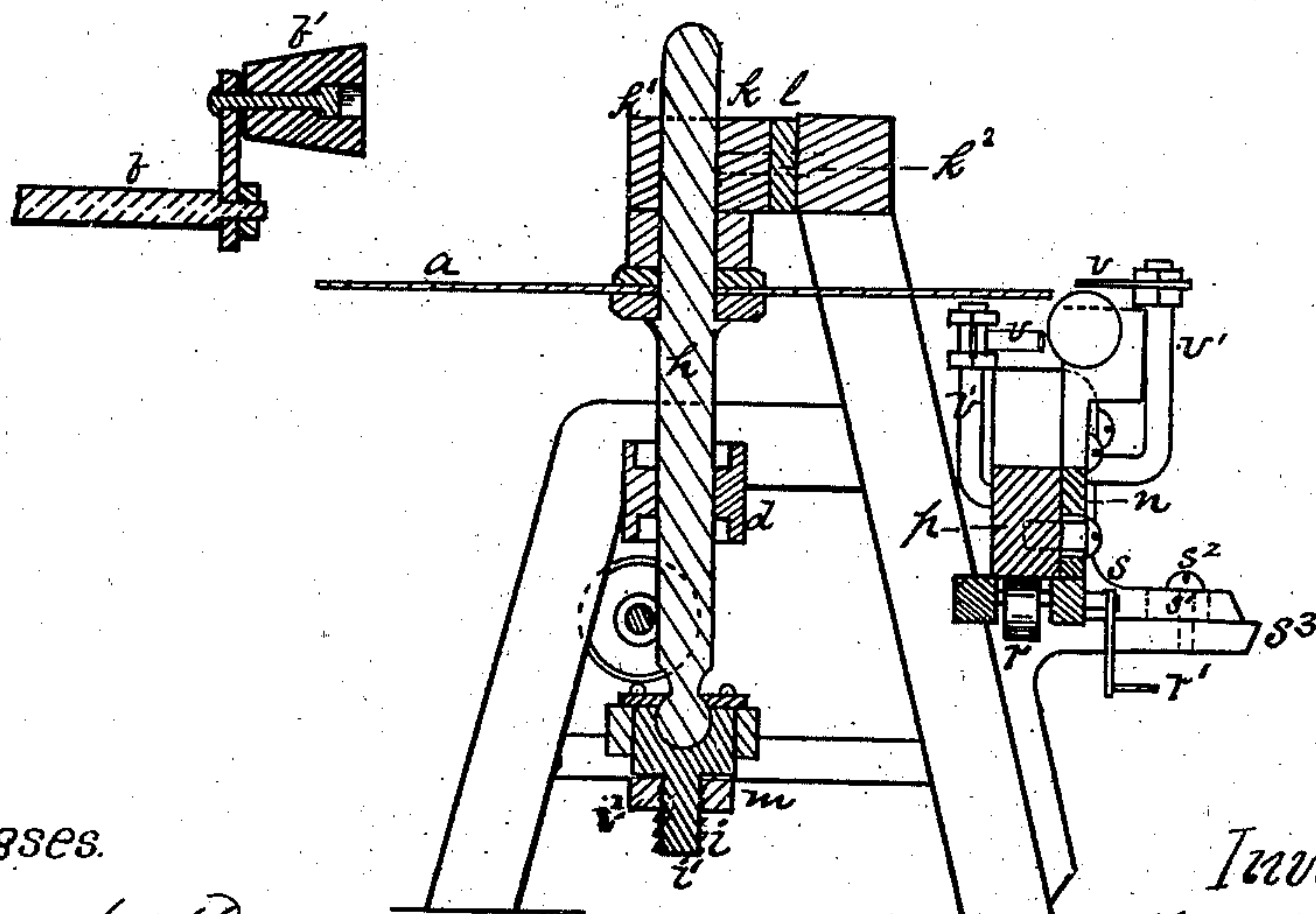
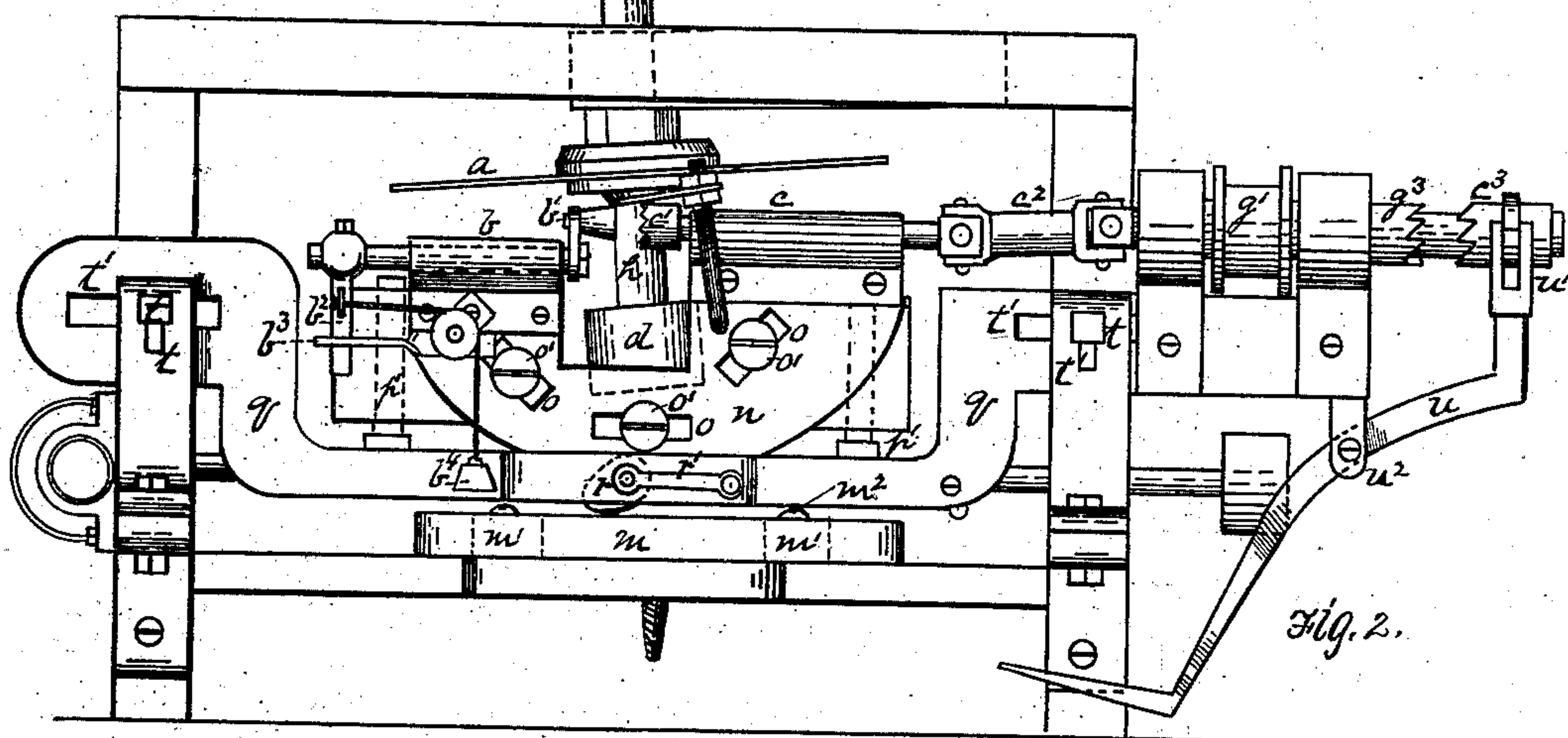
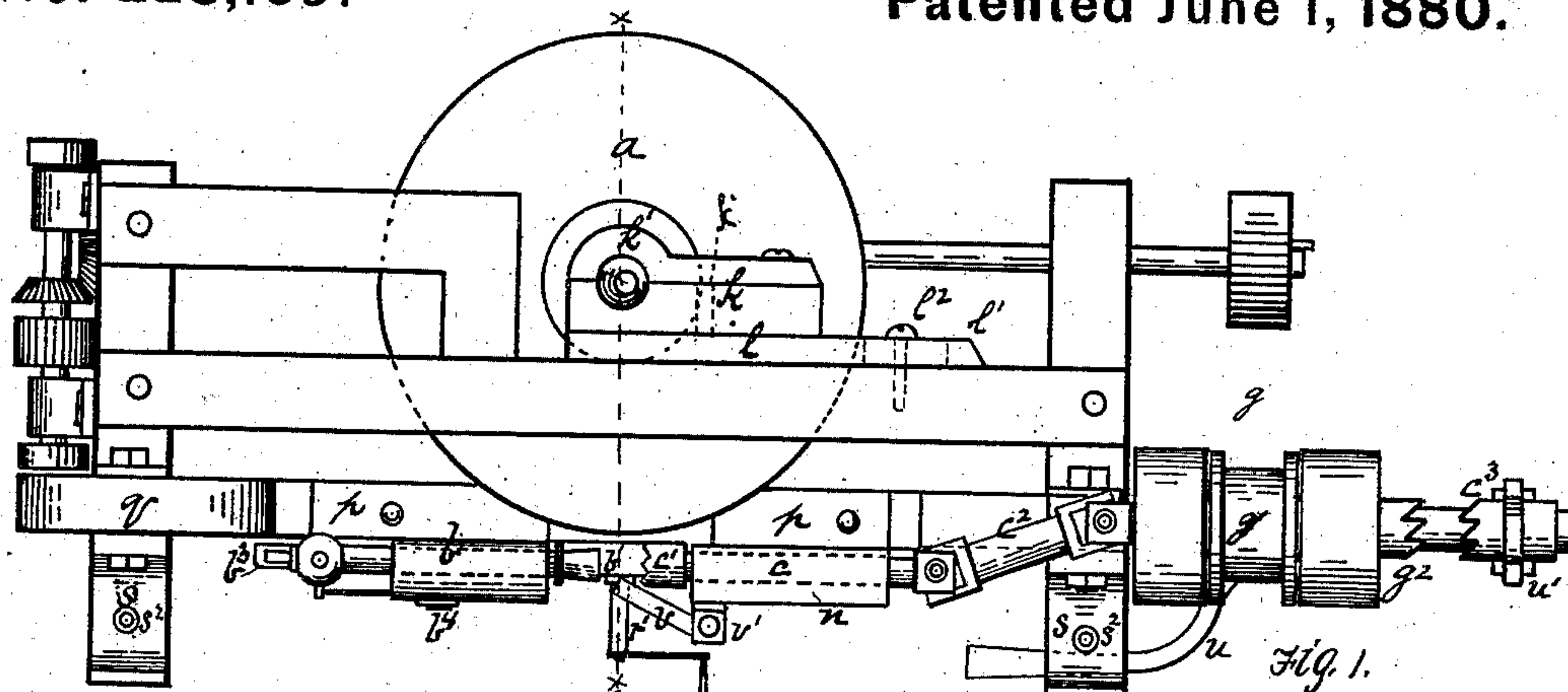
(Model.)

F. L. BLAIR.

Machine for Tapering Corks.

No. 228,169.

Patented June 1, 1880.



Witnesses.
R. W. Wamsburd
J. K. Smith

Inventor,
Frank L. Blain
by Bakerwell & Co.
Attorneys

UNITED STATES PATENT OFFICE.

FRANK L. BLAIR, OF ALLEGHENY, PENNSYLVANIA.

MACHINE FOR TAPERING CORKS.

SPECIFICATION forming part of Letters Patent No. 228,169, dated June 1, 1880.

Application filed March 18, 1880. (Model.)

To all whom it may concern :

Be it known that I, FRANK L. BLAIR, of Allegheny city, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Machines for Tapering Corks; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of my improved cork-tapering machine. Fig. 2 is a side elevation; and Fig. 3, a cross-section at $x x$, Fig. 1.

Like letters of reference indicate like parts in each.

My invention consists, chiefly, in devices for angling the knife and the cork-spindles, so as to facilitate the cutting of corks of any desired degree of taper.

To enable others skilled in the art to make and use my invention, I will now describe its construction and operation.

This machine has a rotating knife or cutting-disk, a , and cork-holding spindles $b c$, for holding and presenting the cork to the knife a . The spindle b has a limited reciprocating motion, such motion being limited by the stem b^2 , extending down into the slot of the guide b^3 . The ends of the slide are closed and serve to limit the movement of the stem b^2 , and thereby the movement of the spindle b . The spindle b is held forward by the pressure of a weight, b^4 , attached by a cord to the stem b^2 . The spindle b has a rotating head, b' , for holding the cork, such head being mounted on a stem and being free to rotate. The spindle c has a rotatory movement imparted to it by the belt and pulley $g g'$, and a reciprocating movement, hereinafter to be described. Its head or holding-face is serrated.

The knife a is rotated by the pulley d . It is mounted on a vertical arbor, h , which is stepped in a vertically-adjustable oil-cup, i , and secured at the upper end in a journal-box, k , which is pivoted to a block, l , at l^2 , as indicated by dotted lines, Figs. 1 and 3. A cap, k^2 , is placed on the box k . The block l is slotted at l' , and secured to the frame of the machine by a bolt, l^2 . The purpose of this is to permit the longitudinal adjustment of the box k , so as to throw the arbor h out of vertical line, and thereby incline the knife. The cup

i rests in the block m , which is slotted at m' m' , and secured to the frame of the machine by bolts $m^2 m^2$. The purpose of this construction is to permit the cup i to be moved horizontally, and thus throw the arbor h out of perpendicular, thus aiding in giving the knife an oblique adjustment. This construction may be used with non-adjustable spindles, and, for ordinary purposes, will enable me to give the knife such an inclination that corks of the ordinary degrees of taper can be cut on the machine.

The operation with this construction would be the same as in other machines of this class, the knife being first adjusted to the required angle by loosening the proper bolts, adjusting the arbor, and then tightening the bolts again.

I also show a method of obtaining the adjustment by means of the spindles. The spindles b and c are both mounted on a rocking frame, n , which is secured, by bolts o' in slots o , to a slide, p , on a frame, q , at the side of the machine. By loosening the bolts o' the frame n may be tipped either way at pleasure. A toggle or movable wrist, c^2 , connected with the shaft that rotates the spindle c , permits this adjustment to be made without interfering with the rotation of the spindle. By this means the cork may be presented to the knife without moving the arbor. This is for ordinary forms of corks. But there are large numbers of corks used having a greater degree of taper than those commonly used. These require the use of both of the means of adjustment described, and then they operate jointly—that is, the knife and the spindles are both inclined to the horizon, but in opposite directions.

To bring the cork within operative range of the knife, there is a cam, r , moved by a crank, r' , which, working against the slide p , causes it to slide up on the guides p' , and thus bring the spindles into the range of the knife a .

The knife a may be adjusted vertically with relation to the spindles by screwing up or down the cup i , which has a screw-stem, i' , working through the collar i^2 .

In case of the wearing of the knife, the spindles $b c$ can be moved in toward it, the frame q being mounted on knees s , which are adjustable by slots s' and bolts s^2 in the brackets s^3 . The frame q is secured to the knees s by bolts

t through transverse slots $t' t'$, one in each part.

The spindle c extends through the pulley g^2 , which has a clutch-collar, g^3 . At the outer 5 end of the spindle is a clutch device, c^3 , designed to connect the spindle with the pulley in order to communicate power to it. The clutch is thrown in and out of connection by means of a bifurcated lever, u , taking over 10 projections u' and pivoted at u^2 . The pulley g' is in continuous motion.

When a cork is placed between the spindles the spindle c is thrown forward to grasp it. This throws the clutch c^3 into connection and 15 causes the rotation of the spindle. When the spindle is withdrawn to release the cork the clutch is disconnected and the spindle ceases to rotate.

At the rear of and above the head of the 20 spindle c , and mounted on screw-stems $v' v'$ on the frame u , are two centering-strips, $v v$. They are adjusted, as may be desired, on the screw-stems $v' v'$, and when adjusted are designed to center the cork properly between 25 spindle-heads $b' c'$.

In feeding the machine the cork is rested against the strips, in the angle between them, and, if they are accurately adjusted, will be properly centered with the spindles. When 30 the cork is presented the spindle b , being held forward by the weight b^4 , is not opposite to the cutting-point. The object of this is to cause the cork to be grasped by the heads $b' c'$ before the clutch c^3 comes into contact with the collar g^3 and causes the rotation of the 35 spindle. This is in order that the operator may be enabled to feed the machine while the spindles are not turning and while they are not in dangerous proximity to the knife. When 40 the spindle c , as it moves back, comes in contact with the cork-blank it forces it against the head b' , and thereby forces the spindle b back until the clutch c^3 is in gear, which brings the cork opposite to the center of the knife.

45 The operation of my machine is as follows: The adjustment necessary to produce the re-

quired taper is made either by angling the knife to the spindles, or vice versa, or by angling both in opposite directions, and then plac- 50 ing the cork (which is either a block or a cylindrical blank previously cut) between the spindles against the centering devices, and grasping it between the holding-faces of the spindles, and bringing it opposite the center of the knife by placing the foot on the lever 55 u . This causes the rotation of the cork, and then the spindles are raised to the rotating knife a by the crank r' , and the desired taper cut thereon.

I am aware that the cutting-disk has here- 60 tofore been attached to a pulley journaled on a slide-rest attached to a knuckle-joint, so that, through the combined motion of the slide-rest and knuckle-joint, the operator, while running the machine, could incline the knife at will, 65 and do not herein claim such devices; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a cork-tapering machine, the combination, with rotating cork-holders, of the ro- 70 tary knife or cutting-disk mounted on an arbor which is stepped at one end in an adjustable oil-cup and journaled at the other end in a pivoted adjustable block, whereby the rotary knife may be adjusted to or from the cork- 75 holders and set at an angle thereto, substantially as and for the purpose specified.

2. In a cork-tapering machine, the combination, with a rotating cutting-disk, of rotat- 80 ing cork-holders mounted in a rocking frame adjustably connected to a reciprocating frame or slide, whereby the spindles or cork-holders may be set at an angle to the cutting-disk and moved to and from the same, substantially as 85 and for the purpose specified.

In testimony whereof I, the said FRANK L. BLAIR, have hereunto set my hand.

FRANK L. BLAIR.

Witnesses:

T. B. KERR,
JAMES A. McKEAN.