

2 sheets R. GROTZ. *sheet 1*
 BARREL HEADINGS GIRCLING & BEVELING
 MACHINE.

PATENTED
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Fig. 1.

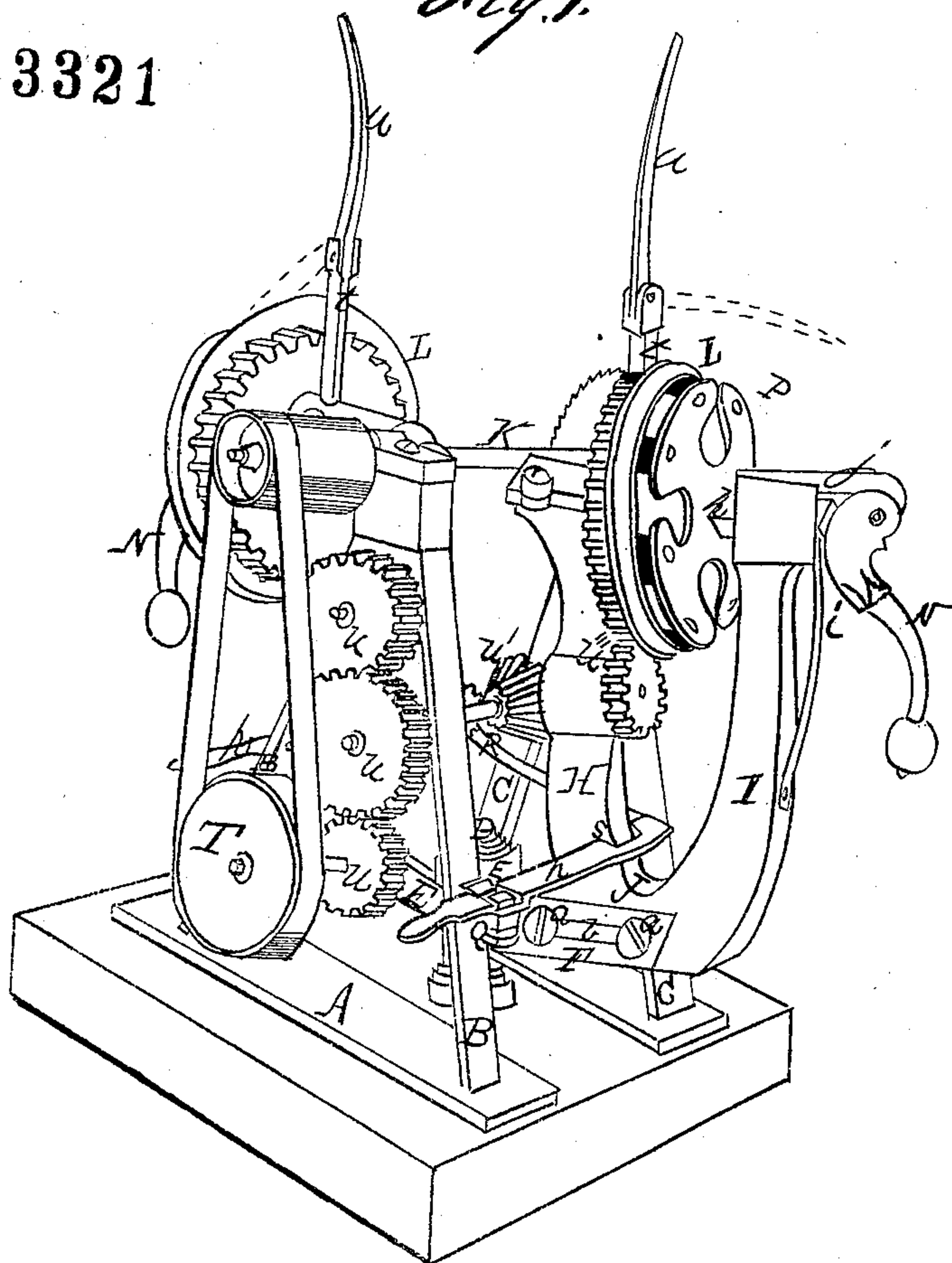
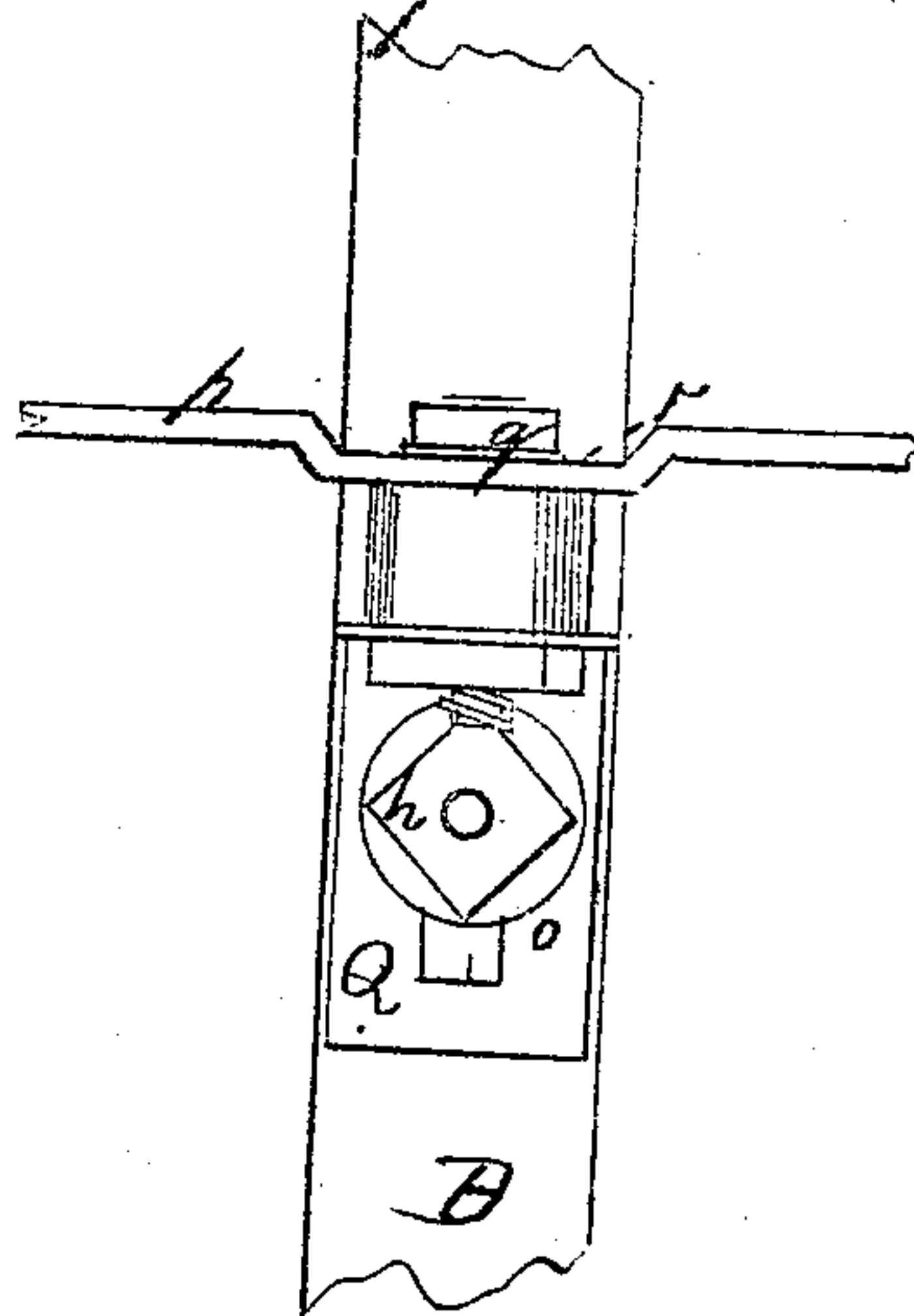


Fig. 2.



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R. GROTZ.
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Fig. 3.

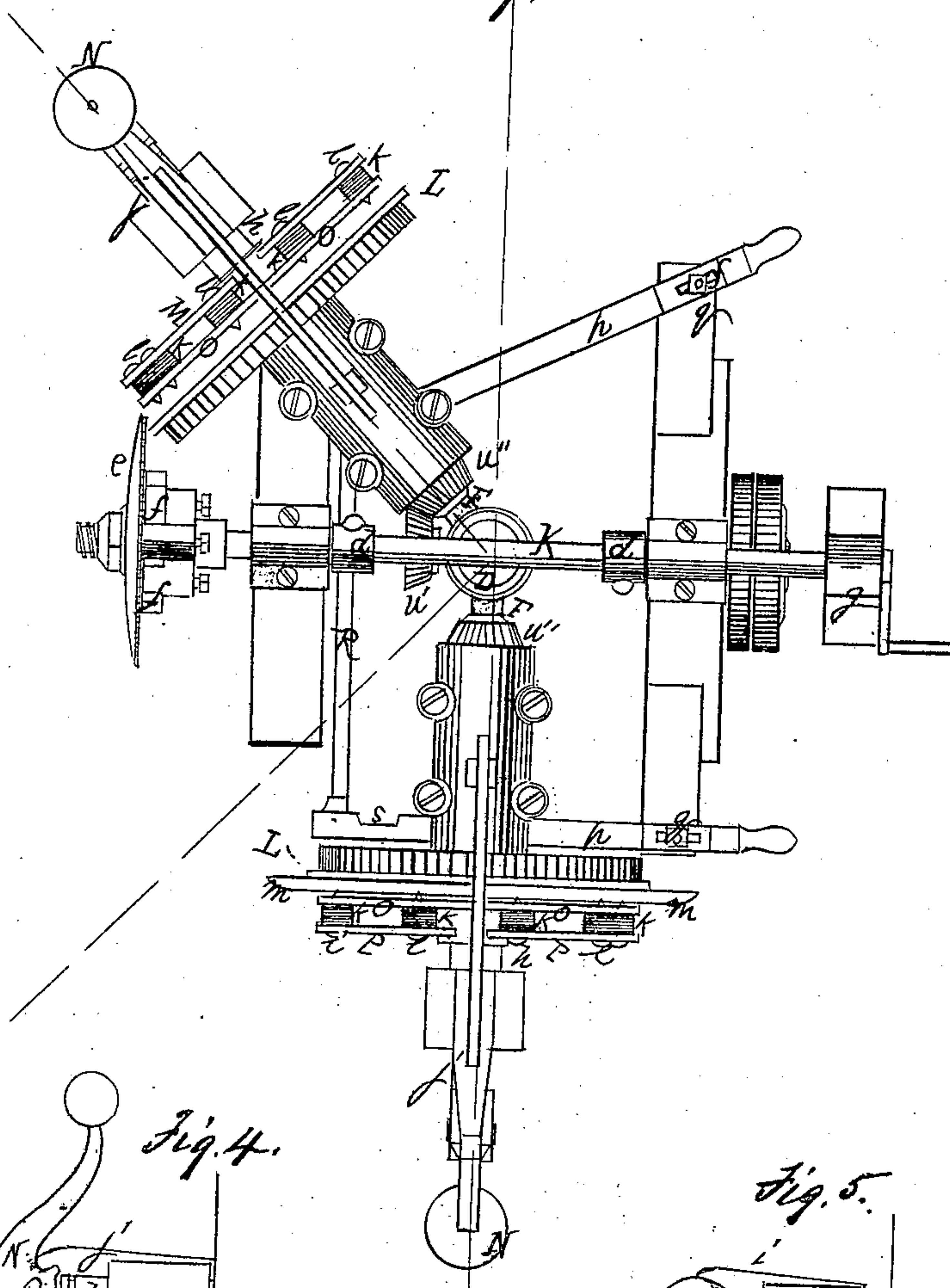


Fig. 4.

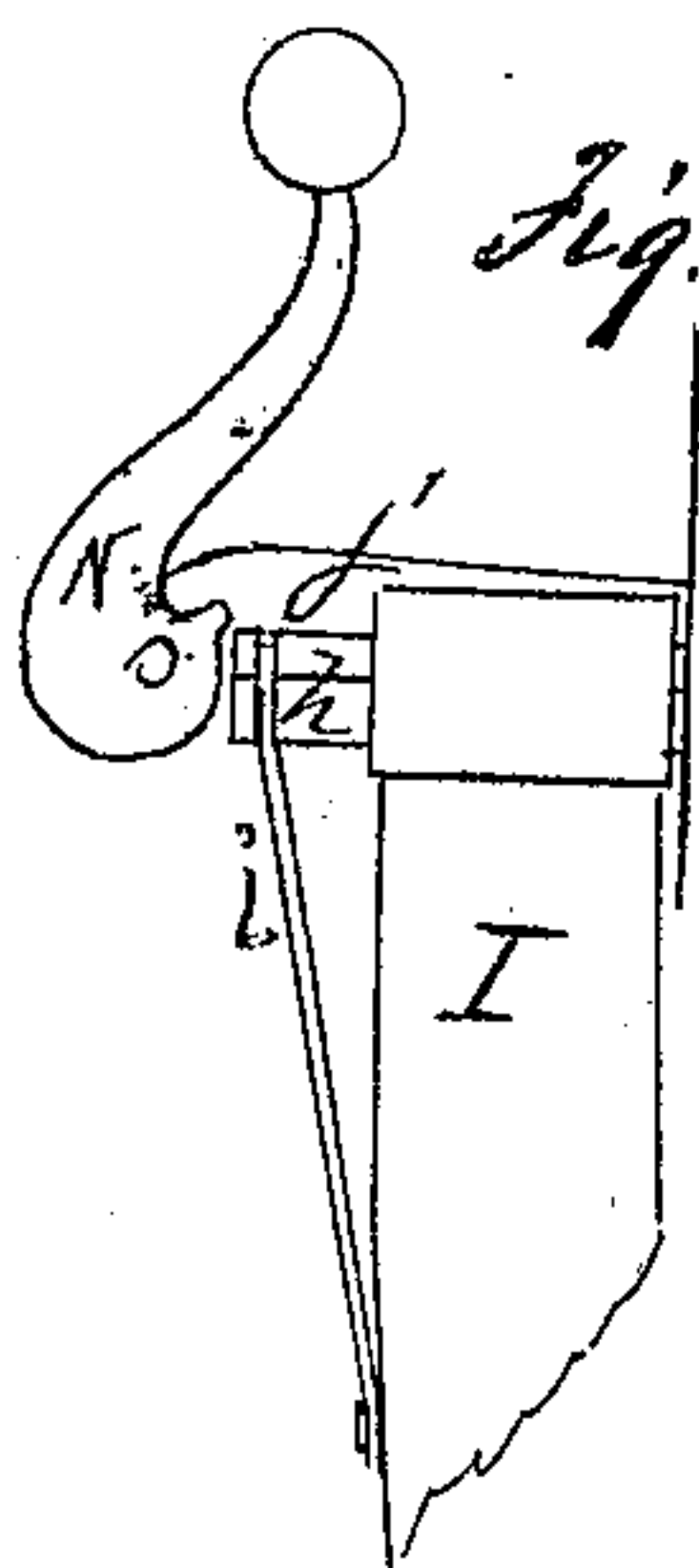
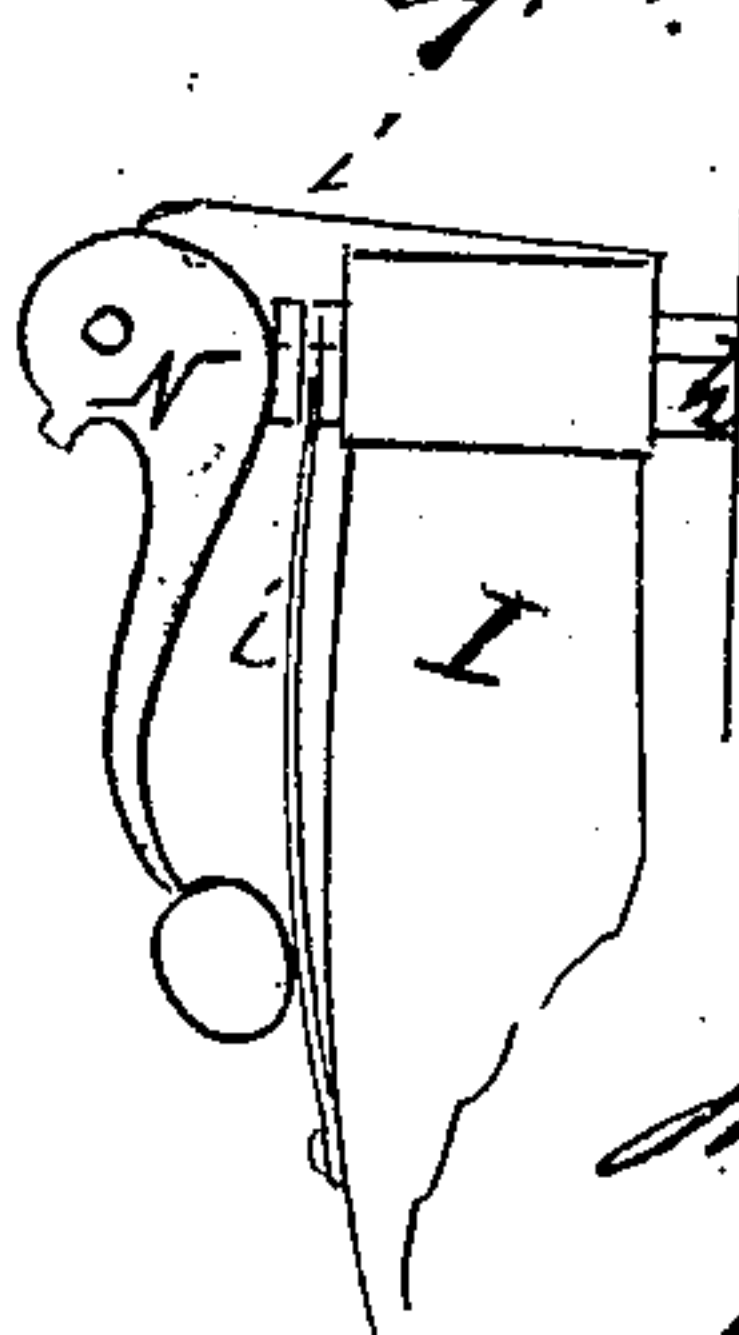


Fig. 5.



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REMIG GROTZ, OF CHICAGO, ILLINOIS.

Letters Patent No. 73,321, dated January 14, 1868.

IMPROVEMENT IN BARREL-HEADING, CIRCLING, AND BEVELLING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, REMIG GROTZ, of the city of Chicago, in the county of Cook, and State of Illinois, have invented new and useful "Improvements in Barrel-Heading, Circling, and Beveling-Machines;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to machines for circling and bevelling barrel-heads, and consists of new and useful improvements in the same, for facilitating their operation and increasing their capacity for turning off work rapidly. In the drawings—

Figure 1 is a view of the machine in perspective.

Figure 2 is a view of a portion of the machine detached.

Figure 3 is a top plan view, and

Figures 4 and 5 are views of detached portions.

In constructing my machine I make a strong frame, consisting of the base, A, the two uprights B C, and the short upright hub or arbor D, as shown in fig. 1. Upon the hub D, I place the hollow shaft or collar E, so as to turn freely on it. This collar E, I make with two slotted arms, F, extending at right angles to the collar E, and at an angle of one hundred and thirty-five degrees with each other. To each of the slotted arms F, I attach, by means of the set-screws *a* passing through the slots *b*, the frames J, each frame J having two upright arms, H I, as shown in fig. 1. The set-screws *a*, passing through the slots *b*, permit the frames J to be adjusted horizontally at any desired distance from the hub D. Across the top of the uprights B C, and in bearings provided for the purpose, I place the shaft K, which has two adjustable rings, *d d*, provided with set-screws. By means of these adjustable rings *d d*, with their set-screws, the shaft K, when moved longitudinally, may be held in any desired position by them. To one end of the shaft K, I attach a concave circular saw, *e*, for sawing the barrel-heads, and near it, on the inside, a series of knives, *f*, for bevelling them, as shown in fig. 2; and to the opposite end of the shaft K, I attach the driving-wheel or crank *g*. Between the upper ends of the arms H, I of the frames J, I place the disks L, which are rigidly attached to shafts having their bearings in the arms H, and provided with cog-wheels for connecting them with the cog-wheels U. In the upper ends of the arms I, I place the square shafts or mandrels *h*, having their centres directly opposite the centres of the disks L, and so that they may easily move longitudinally, as shown in figs. 1, 2, 4, and 5. On the inner ends of the shafts *h*, and between the arms H I, I pivot the clamps M, so as to turn easily and freely upon them, and to the outer ends of the shafts *h*, I attach the springs *i*, as shown in figs. 1, 4, and 5, for the purpose of holding the clamps M away from the opposing disks L. On the upper side of the arms I, and directly above the shafts *h*, I attach the projecting arms *j*, and pivot on their ends the cam-levers N. These cam-levers I make to bear directly on the outer ends of the shafts *h*, so as to press the clamps M towards the disks L, when desired. On the upper side of the arms H, I fasten standards *t*, and to these standards pin-levers *u*, as shown in figs. 1 and 3. These levers *u*, I use to press the pieces composing the headings, if consisting of two or more, when placed between the clamps M and the disks L. Each of the clamps M consists of a wheel, having four or more arms P, and to each of these arms P, I attach corresponding segments, O, by screws *l*, first interposing India-rubber pads, *k*. The screws *l* hold the India-rubber pads *k* in place, and project far enough through the segments O to catch and hold with their sharp points the headings *m*, placed between the segments O and the disks L. The India-rubber pads *k* allow the segments O to readily adjust themselves to any unevenness in thickness of the barrel-headings, as shown in fig. 3. On each side of the upright B, I fasten the elbowed blocks Q, by means of the set-screws *n* passing through the slots *o*, in the arm of the blocks Q, which rests against the upright B, as shown in figs. 1 and 2. By means of the set-screws *n*, and the slots *o*, the blocks Q may be adjusted vertically, as desired. On the upper side of the blocks Q, I place the locking-levers *p*, so that they may be adjusted longitudinally by means of the set-screws *q* passing through the slots *r*, as shown in fig. 3. These locking-levers *p*, I provide with notches, *s*, for locking into the arms H, and holding the frames J in place when set, and loosely pin a cross-bar, R, to their ends, beyond the notches *s*, as shown in fig. 3. For the purpose of securing the required relative

motion to the shaft *k*, and the saw and knives, as well as to the clamping-device in which the heading is held, I use the driving-wheels *T* and the gear-wheels *u u' u'' u'''*, as shown in fig. 1, or any other similar mechanism suitable for the purpose.

In operating my machine, I first adjust the frames *J*, to which the clamping-device is attached, by the different devices connected with it for that purpose, and then adjust the shaft *k* by means of the adjustable rings *d*. These adjustments are made so as to circle and bevel the headings of any size desired. When the adjustments are made, I place the headings in between the clamps *M* and the disks *L*, and bear down on the cam-levers *N*, which presses the shaft *k* forward and holds the clamping-device together, so that the whole may turn together. If the heading is composed of two or more pieces, I press them close together by the levers *u*. This done, I swing the frame *J*, in which the heading has been placed, around to the saw *e* and knives *f*, and lock it in place by the lock-levers *p*, and at the same time it is thrown into gear with the bevel-gear *u'* and *u''*, as shown in fig. 3. The driving-wheels *T* communicate motion to the shaft *K*, and at the same time to the gear-wheels *u*, which in turn communicate motion to the bevel-gear *u'* and *u''*. On the opposite end of the shaft upon which the wheel *u''* is placed, is a pinion, *u'''*, which communicates motion or gears into the cog-wheel on the rear of the disks *L*. While the saw and knives are circling and bevelling the heading in the frame *J*, thus thrown into gear for that purpose, I place heading in a similar manner in the other frame *J*, which will be ready in turn to be swung around to the saw and knives, locked in place, and thrown into gear by the bevel-cog wheels, as already described. In this way, as one frame, *J*, is moved to the saw and knives, the other moves from them, and the sawing and bevelling are kept going on with little or no interruption.

Having thus described my invention, what I claim, is—

1. The frames *J*, with their clamping-devices mounted on the central pivot *D*, and the operating-devices, so arranged that as one is moved to the saw the other shall move from it, substantially as described.
2. The pivoted sleeve *D*, provided with the slotted arms *F*, for supporting and adjusting the frames *J*, as described.
3. The adjustable locking-levers *p*, arranged to operate as described, for the purpose of holding the frames in position, as set forth.
4. The clamps *M*, having the adjustable segments *O*, with the springs *k*, applied to plates *P*, in combination with the square mandrel *k*, with the spring *i* and cam-lever *N*, applied thereto, all mounted on the arm *I* of the swinging frames *J*, when arranged to operate substantially as described.

REMIG GROTZ.

Witnesses:

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