

No. 688,384.

Patented Dec. 10, 1901.

C. C. BROOKS.
MACHINE FOR SERRATING CUTTING EDGES.

(Application filed July 10, 1901.)

(No Model.)

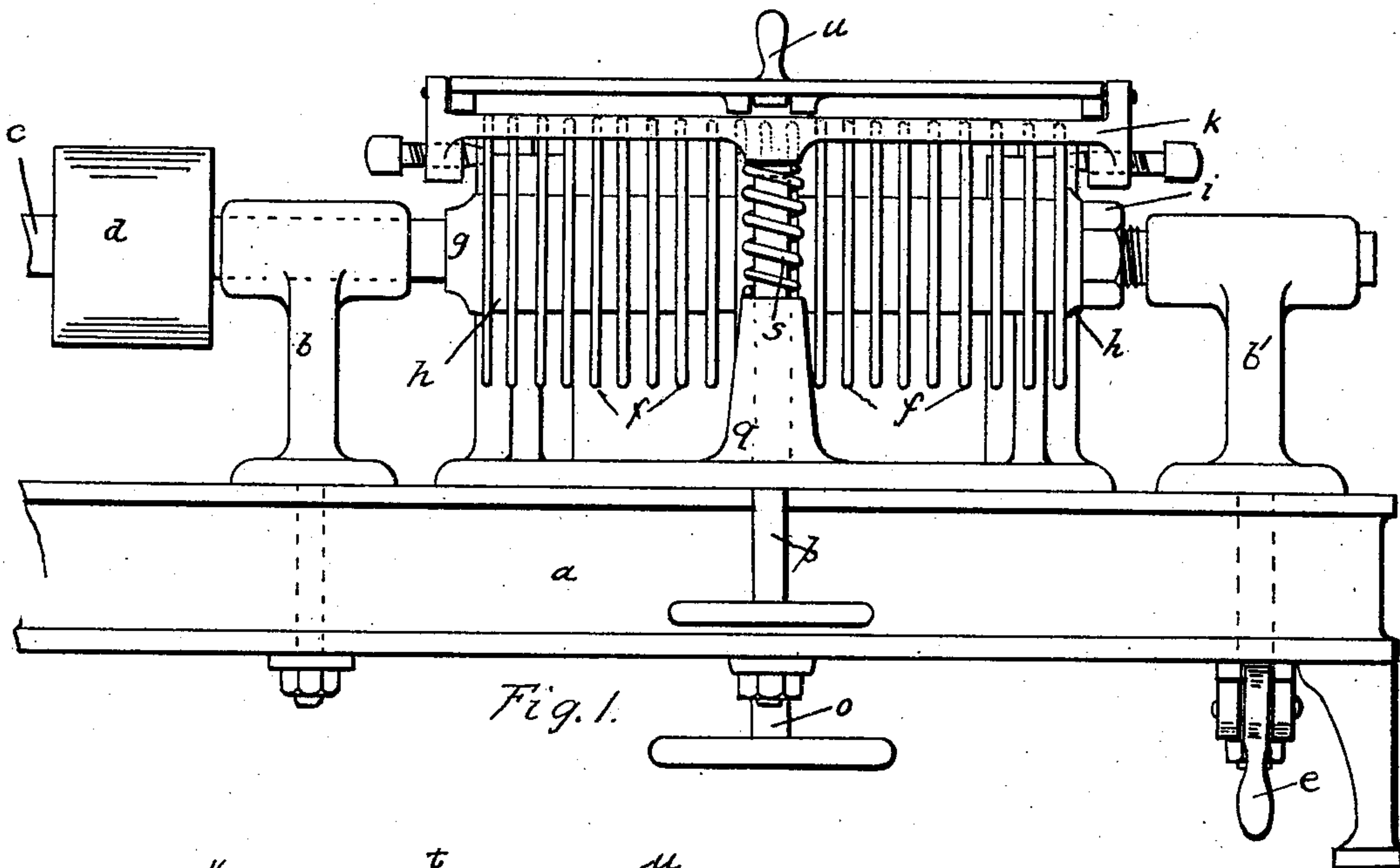


Fig. 1.

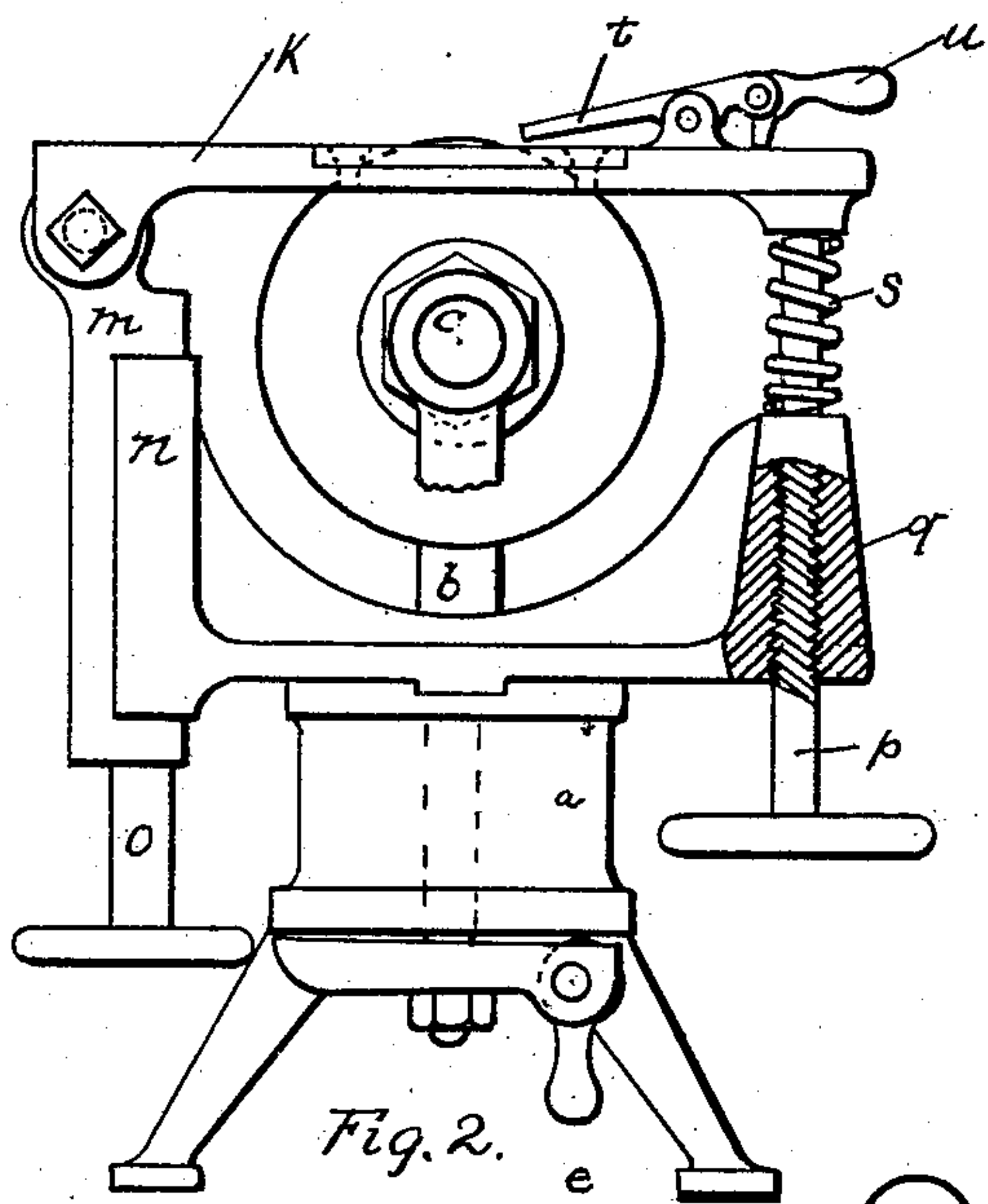


Fig. 2.

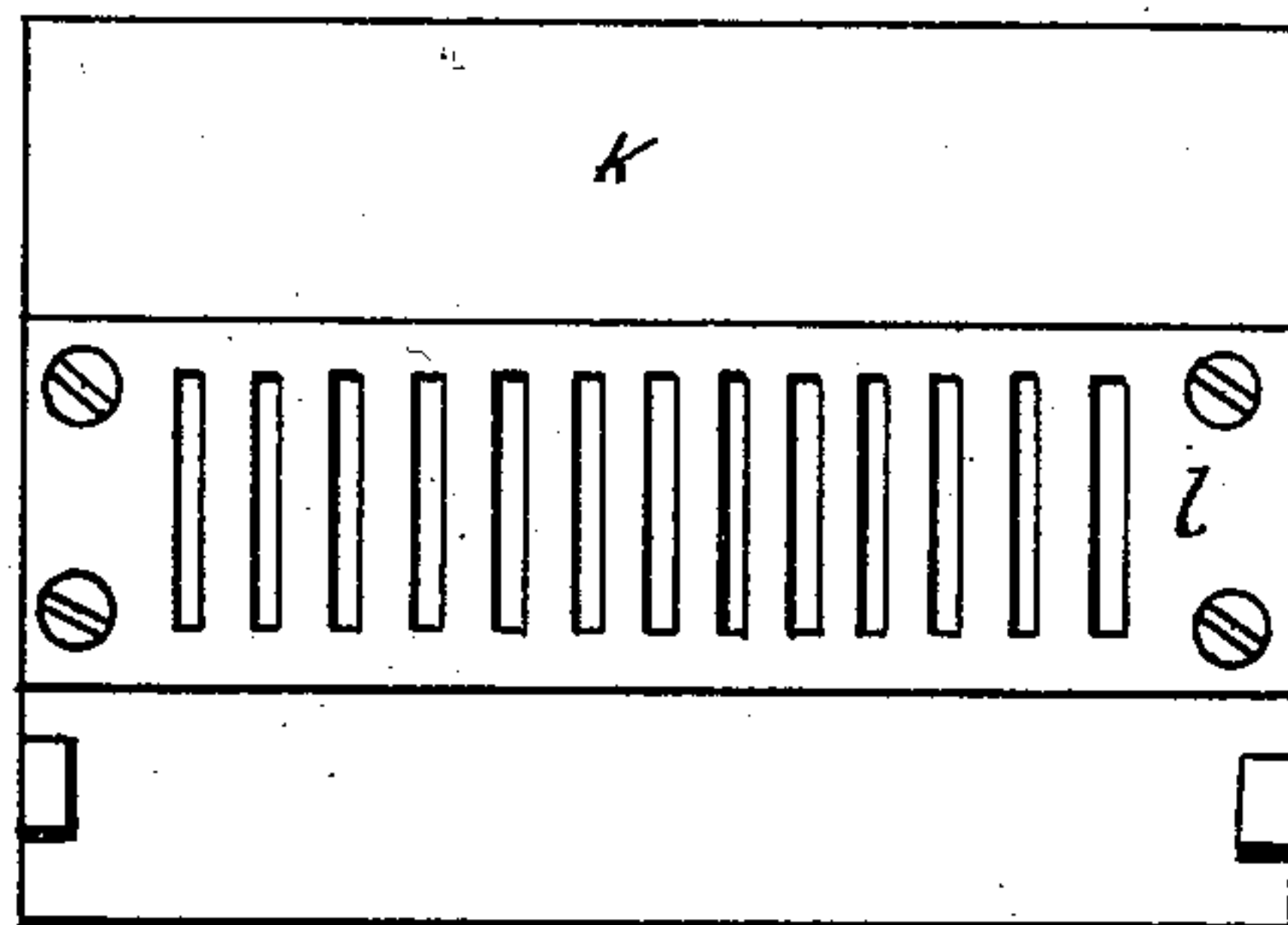


Fig. 3.

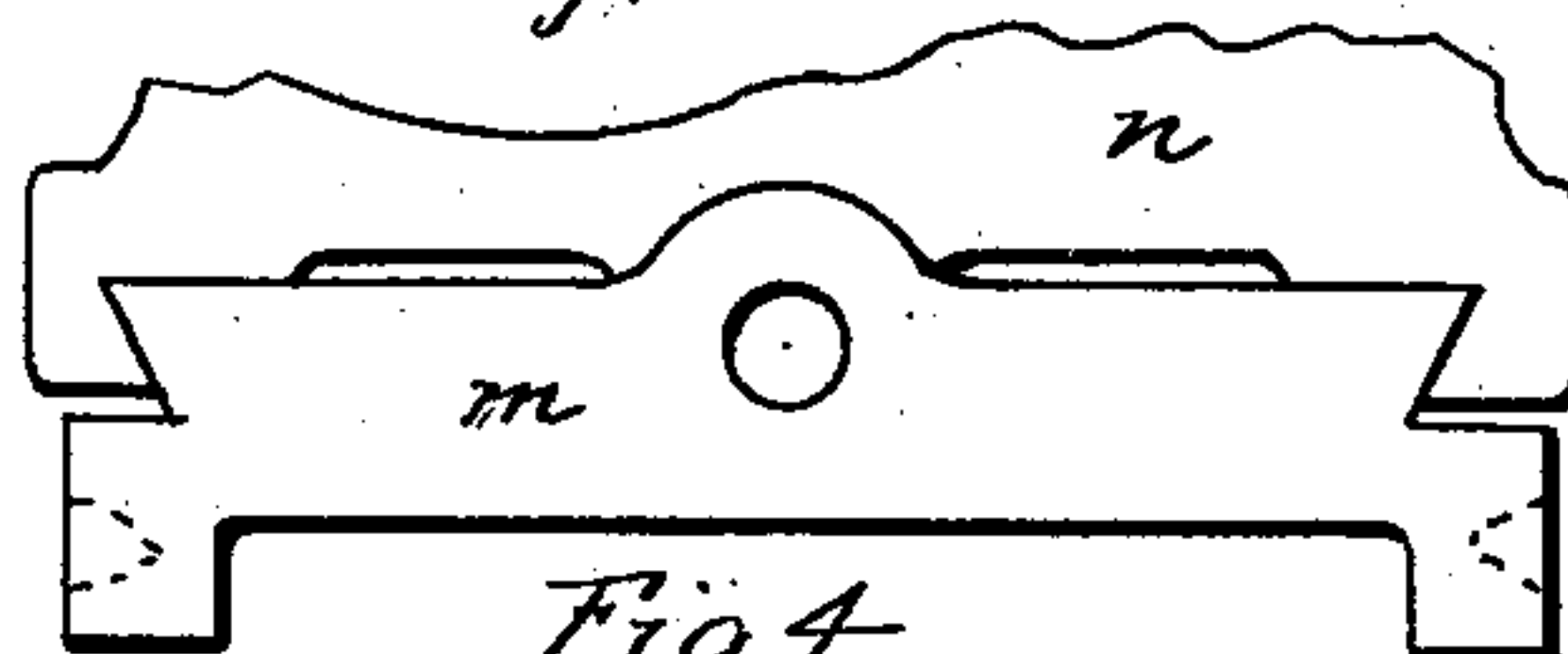


Fig. 4.

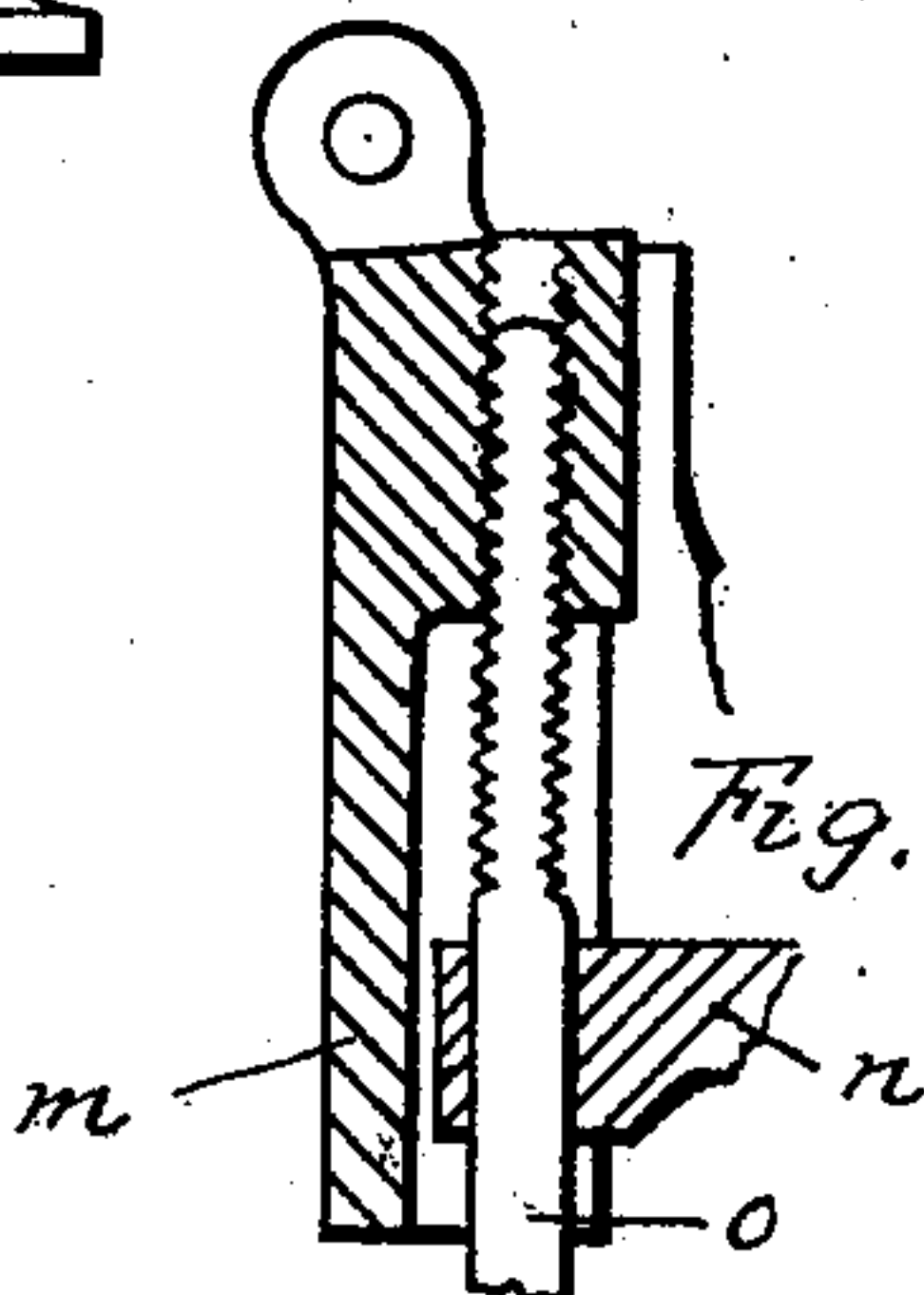


Fig. 5.

Witnesses.
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UNITED STATES PATENT OFFICE.

CHAPIN C. BROOKS, OF HALLOWELL, MAINE.

MACHINE FOR SERRATING CUTTING EDGES.

SPECIFICATION forming part of Letters Patent No. 688,384, dated December 10, 1901.

Application filed July 10, 1901. Serial No. 67,736. (No model.)

To all whom it may concern:

Be it known that I, CHAPIN C. BROOKS, a citizen of the United States, residing at Hallowell, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Machines for Serrating Cutting Edges; and I hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to means for cutting grooves in the side or sides of cutting edges, whereby the cutting edges are provided with serrations. The cutting edges thus provided with serrations are capable of use in the construction of tools of various descriptions and such serrated edges are highly desirable in a great variety of tools; but it has hitherto been impossible, by reason of the great cost of providing grooves, to make economical use of such serrated edges.

It is the purpose of my invention to provide the means whereby such grooves can be made in the side or sides of the cutting edges of tools, whereby these edges become serrated.

It consists in the application of emery-wheels or similar cutting devices in gangs in such manner as to cut parallel grooves in the surface of the tools.

It is believed that the invention will be understood from the following description, in which—

Figure 1 is a side elevation of the machine in which I have embodied my invention. Fig. 2 is an end view of the same. Fig. 3 is a top view of the table, showing the slotted portion thereof. Fig. 4 is a detail showing the construction of the standard and movable plate at the rear of the machine, and Fig. 5 is a detail showing in vertical cross-section the standard and plates shown in Fig. 4 and the screw for operating the same.

In the drawings, *a* is the bed of the machine, upon which are placed the boxes *b b'*, which support the shaft *c*. The shaft at one end carries the pulley *d*, while the box at the other end of the shaft is so connected with the bed *a* that it may be removed. This is accomplished by means of the cam-lever *e* or by a bolt and nut or similar means, (see Fig.

1;) but it is believed that the cam-lever will be found most convenient in practice. The portion of the shaft *c* between the boxes *b b'* carries the emery-wheels *f f*. These wheels are of the usual construction, separated by collars *h h*, adapted to be placed upon the shaft *c*. The wheels *f f* should be of the same diameter as likewise preferably are the collars. The collars may be made of varying thickness, as by means of the varying thickness of the collars the distance between the grooves produced is regulated. At the right of the box *b* the shaft *c* is provided with a fixed collar *g*. Against this is placed the first emery-wheel and then a collar, and so on, until the desired number of wheels has been placed upon the shaft. Another collar *h* is now placed against the last emery-wheel and the nut *i* set up against it, that portion of the shaft *c* which lies in the neighborhood of the box *b'* being threaded. Above the shaft *c* is placed the table *k*, which is shown in detail in Fig. 3. This table is provided through the center of its length with a detachable plate, which may be secured therein by means of screws or any other suitable means. The plate *l* is provided with slots so arranged and of sufficient width to permit the passage through them of the emery-wheels *f f*, one slot of course being provided for each emery-wheel. A plate *l* must be provided so as to accommodate each set of emery-wheels, and as the distance between the emery-wheels is changed by means of collars of different thickness the corresponding plate *l* must be placed in the table to receive them. This table *k* is, as already stated, placed on the machine above the shaft *c*. Normally it should be so placed, that but a small portion of the emery-wheels will be above the surface of the plate *l*. For convenience I have hinged the table at the rear to a slide *m*. This slide is connected by means of dovetails with the standard *n*. A screw is passed upward through the standard *n* of the slide *m*, whereby the screw being provided with a collar beneath the lower surface of the slide *m* may either elevate or depress the surface of the table *k*. The front edge of the table rests upon the screw *p*. This screw plays in the front standard of the table *q*, which is provided with the necessary

thread, as seen in Fig. 2. The upper end of the screw *p* (shown in Fig. 2) supports the front of the table. The upper end of the screw is surrounded by a coil-spring *s*, and provision is thus made for supporting the forward end of the table upon the spring *s*, the screw being then screwed down. On the upper surface of the table may be placed the plate *t*, which is shown in Fig. 2. This plate is provided at either end with an ear, by means of which it is pivoted to the table. The plate *t* may be controlled by means of the cam-lever *u* or any other convenient means or by hand.

The operation of the device is obvious. It having been decided what distance apart the grooves are to be in the surface of the cutting edge to be treated the emery-wheels are placed upon the shaft *c*, so arranged, by means of the collars *h h*, that they shall be separated by the same distances as the grooves which it is desired to cut. The tool to be operated upon is now placed at the front of the table *k*, over the front edge of the slotted piece *l*, which should be so constructed that the varying slots are equally distant and the spaces be the same as between the emery-wheels. The machine is now set in motion and the tool operated upon held down by hand upon the surface of the emery-wheels and while the wheel rotates against the surface of the tool from the edge to such distance therefrom as may be desired. Of course the tool may be held in place by means of the plate *t* and the lever *u* or by any other means.

The method of operation may be varied in certain classes of tools as follows: The table *k* may be supported at the front upon the coil-springs *s*, and when the tool to be operated upon has been set in proper position upon the plate *l* and held in place by the vise consisting of the plate *t* and lever *u* or their equivalent means the table may be depressed to a slight degree by the hands of the operator applied at the front, thus bringing the tool in contact with the wheels and cutting the grooves desired, when the table is released

and a new tool subjected to the operation as before.

What I claim as my invention is—

1. In a machine for serrating cutting edges, the combination of a shaft carrying emery-wheels with means for separating said wheels and securing them upon said shaft and a table above said shaft provided with a slotted plate adapted to receive the edges of said wheels, substantially as described.

2. In a machine for serrating cutting edges, the combination of a shaft with a series of emery-wheels thereon, means for separating the said wheels and securing them upon said shaft, a table above said shaft provided with a slotted plate adapted to permit the passage of a portion of the periphery of said wheels and means upon the surface of said table whereby the edge to be operated upon may be held against said slotted plate, substantially as described.

3. In a machine for serrating cutting edges, the combination of a series of emery-wheels and collars for separating the same, means whereby said wheels and collars may be secured upon said shaft, a hinged table above said shaft, a plate in said table slotted to receive said wheels and means whereby the free end of said table may be elevated or depressed, substantially as described.

4. In a machine for serrating cutting edges, the combination of a shaft, emery-wheels and collars and means for securing the same upon said shaft, a table above said shaft hinged at the back and supported at the front upon a spring and provided with a slotted plate adapted to receive a portion of the periphery of said wheel, substantially as described.

In testimony that I claim the foregoing as my invention I have hereunto set my hand this 1st day of July, A. D. 1901.

CHAPIN C. BROOKS.

In presence of—

GEO. E. BIRD,
A. C. BERRY.