

No. 686,066.

Patented Nov. 5, 1901.

H. HERDER.  
RAZOR STROPPING DEVICE.

(Application filed June 18, 1901.)

(No Model.)

Fig. 1.

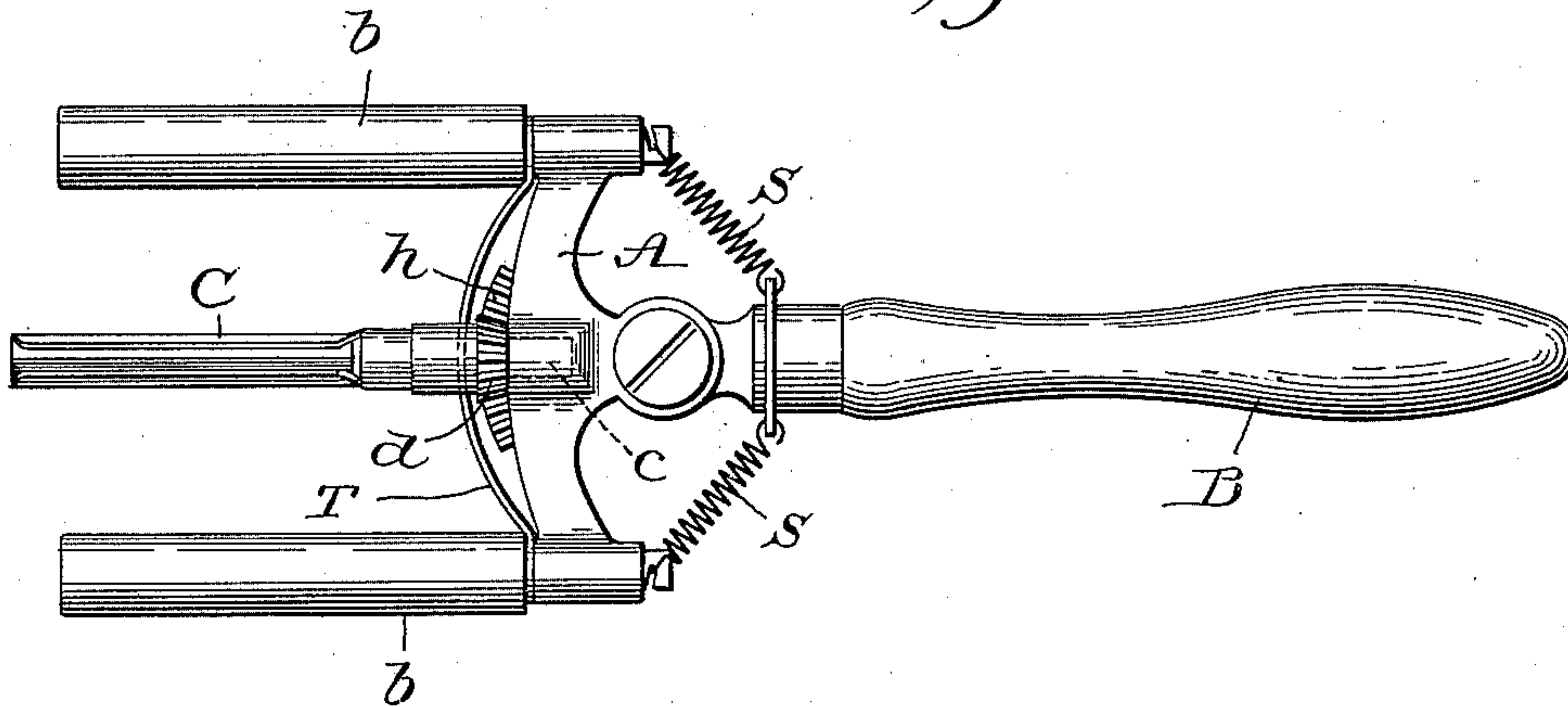


Fig. 2.

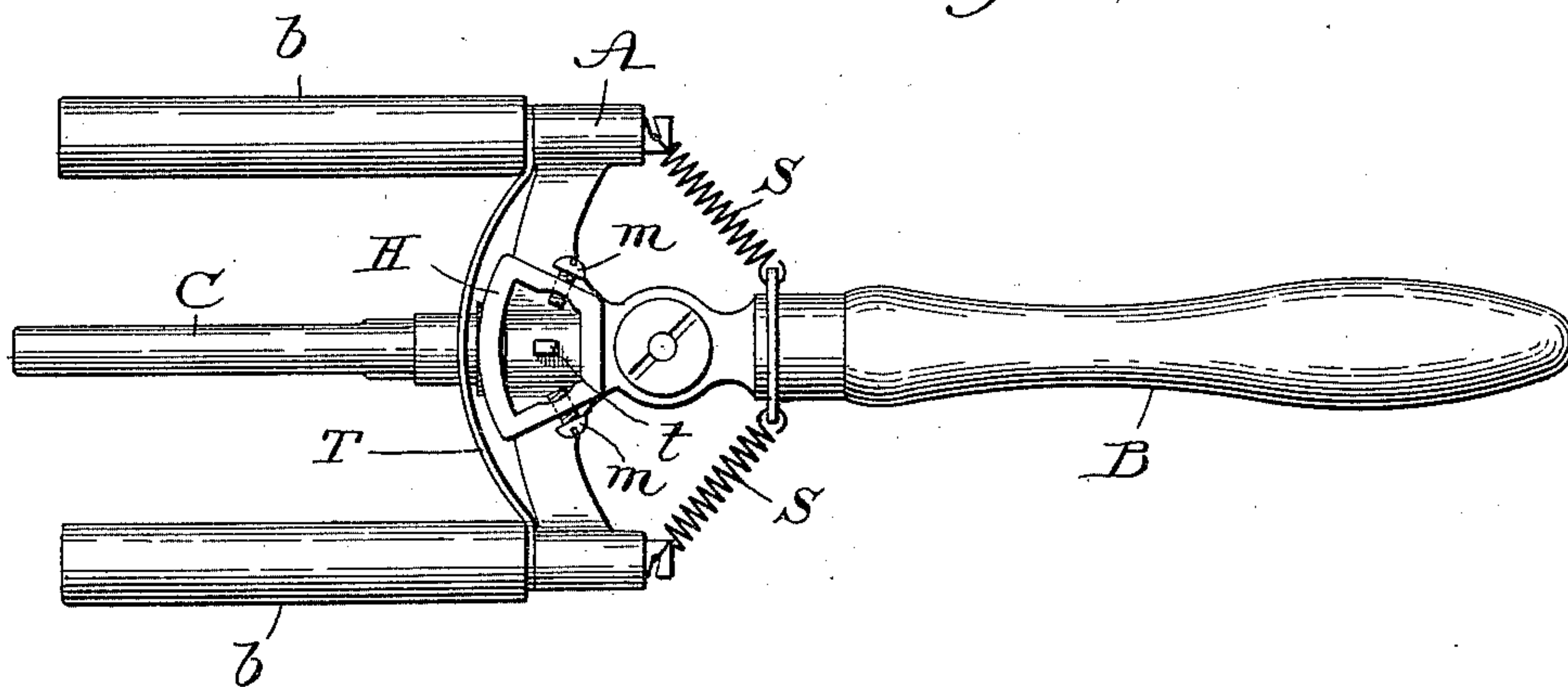
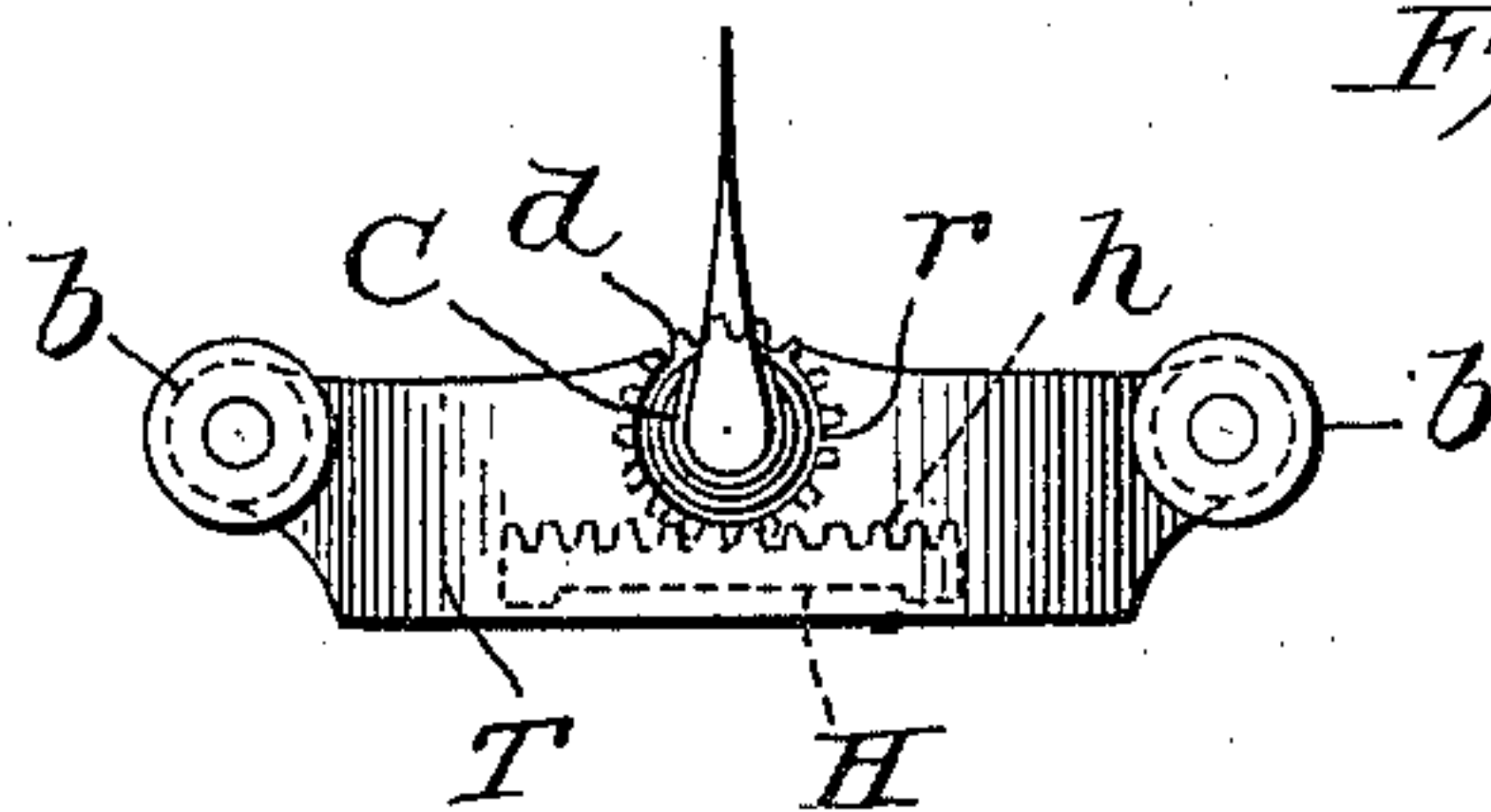


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HERMAN HERDER, OF PHILADELPHIA, PENNSYLVANIA.

## RAZOR-STROPPING DEVICE.

SPECIFICATION forming part of Letters Patent No. 686,066, dated November 5, 1901.

Application filed June 18, 1901. Serial No. 64,974. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN HERDER, a citizen of the United States, residing at the city of Philadelphia, State of Pennsylvania, have  
5 invented certain new and useful Improvements in Razor-Stropping Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

10 My invention relates to razor-stropping devices adapted particularly to stropping or honing the short blades of so-called "safety-razors," and is an improvement on the device described in and patented to me by Letters  
15 Patent No. 653,914, dated July 17, 1900. Said patented device therein described consists in its essential features of a pair of non-rotatable supporting-arms, an intermediate rotatable blade-roller having a spindle end and  
20 carrying actuating-gearing thereon, means to support said elements relatively to each other and to permit the blade-holder to rotate therein by means of its spindle, a segmental rack-gearing fixed relatively to the operating-handle and meshing with said gearing on the ro-  
25 tatable blade-holder, operating to simultaneously reciprocate the blade-holder and non-rotatable supporting-arms in an arc of a circle, means to limit the arc movement of said  
30 parts, and a handle with pivotal connecting devices between the same and the device which supports the rotatable blade-holder and non-rotatable arms, the object of the combined mechanism being to present the rotatable  
35 blade-holder and supporting-arms to the strap in a longitudinally-inclined direction in imitation of the manual movement of a razor-blade on a strap, so as to thereby present the whole blade edge to the strap at each stroke  
40 and simultaneously to partially rotate the blade over its back, so as to properly present its edge to the strap for sharpening.

My improvement has for its object to more effectually carry out the purposes for which  
45 the original instrument was designed; and it consists of the combination, with a device of the character described, primarily of spring mechanism operating to automatically restore the blade-holder and supporting-arms  
50 and their mounting to normal position relatively to the handle—i. e., bring the blade-holder in alinement with the handle—when

the device is lifted off and out of operative contact with the sharpening-strap; also, of a shield or guard operating to protect the actuating-gearing of the device from contact with the razor-strap, and, finally, of devices to adjustably regulate the stop mechanism which limits the arc movement of the segmental rack-gearing and the blade-holder cog-gearing relatively to each other.

In the drawings illustrating my invention, Figure 1 is an elevation from the top side of the device; Fig. 2, a like view from the under side, and Fig. 3 a top view looking down  
65 on the instrument in the position shown in Fig. 2 and is designed to illustrate the shield or guard-cover of the gearing.

The device consists, primarily, of two pivotally-connected parts—namely, a handle B, carrying on one end a segmental rack-bar *h* in fixed relation to the said handle, the other element being a supporting-frame A, carrying two non-rotatable arms *b b*, which support the whole device upon the razor-strap and by  
75 frictional contact between which the connecting actuating-gearing between the parts is caused to reciprocate the blade-holder in an arc of a circle and simultaneously partially rotate it, the object of the first movement  
80 being to bring the whole blade at each movement of the device in contact with the strap, and at the same time to bring the edge of the blade against the strap in proper position to sharpen it, said supporting-frame also carrying, intermediate of the supporting-arms *b b*,  
85 a rotatable blade-holder C, carrying a cog-gearing *d*, and having a spindle end *c*, with bearing for the latter in the said supporting-frame. The segmental rack-bar *h* is mounted upon a slotted sector end H of the handle,  
90 a pin *t*, carried by the supporting-frame A, projecting into said slot of the sector, and thereby operating to limit the length of reciprocatory movement of said supporting-frame in an arc of a circle and also the extent of the simultaneous partial rotary movement of the blade-holder C. Such is the device shown and described in my said Patent  
95 No. 653,914.

100 My presently-described improvements thereon consist, first, in supplying set-screws *m m* in the side walls formed by the slot in the sector end of the handle, so that by ad-



justing the same at pleasure the stop-pin *t* will have more or less play in said slot, and thereby limit not only the length of the arc movement of the supporting-frame A, but  
 5 also of the simultaneous partial rotary movement of the blade-holder C, the latter effecting any depth of sharpening of the blade edge required. I have further improved the  
 10 T, arranged over the cog-gearing, secured in position on the supporting-frame A between the opposite extreme ends thereof, under the spindles of the non-rotatable arms *b b*, this shield being slotted at *r* to allow the blade-  
 15 holder to pass through and freely rotate within the same, and the said shield is preferably widened on the non-slotted or lower side of the device in order that the arms *b b* and blade-holder C may be rested on the strap  
 20 while this slightly-widened part of the shield will abut against the vertical side of the strap and prevent the device riding up on the strap; but in any event the guard protects the strap from being cut or indented by the cog-gearing  
 25 of the device. Finally, I have further improved the device by providing spring mechanism operating to automatically restore the supporting-frame A, carrying the blade-  
 30 the blade-holder into alinement with the handle when the device is lifted off the strap and not in use, and this is effected by the provision of springs S S between the pivotally-connected elements of the device, so that when these  
 35 parts are given an arc-like reciprocatory movement relatively to each other by movement of the arms *b b* on the strap the springs will restore them to normal position on lifting the device from the strap. These springs are shown  
 40 as coiled springs connected at one end to the upper end of the handle below the sector end thereof carrying the segmental rack, but obviously may be secured to the sector itself or the ends of the rack thereon. The other end of  
 45 each spring is secured to the end of the supporting-arm *b*, which projects through the supporting-frame A. It is obvious, however, that other equivalent forms of spring tension may be supplied in lieu of the coiled springs shown,  
 50 and equally obvious that they may be secured to the pivoted members at other points than as shown, the principle of the spring device being to normally hold the cog-gearing of the blade-holder centrally of the length of the seg-

mental rack-bar, in which normal position the blade-holder is necessarily in alinement with the operating-handle and the supporting-arms *b b* in the same parallel plane with both. 55

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 60

1. In combination in a razor-stropping device, a pair of non-rotatable arms, a rotatable blade-holder intermediate the same, means to support said parts, actuating-gearing operating to partially rotate the blade-holder and simultaneously reciprocate it in an arc of a circle, a handle, pivotal connecting devices between it and the means which support the non-rotatable arms and rotatable blade-  
 70 holder, operating to permit the arc movement of the same relatively to the handle, and spring mechanism operating to automatically restore the rotatable blade-holder and non-rotatable arms to normal position, relatively  
 75 to the handle, when the device is out of operative contact with the strap.

2. In a razor-stropping device, the combination with a frame carrying a pair of non-rotatable supporting-arms, an intermediately-mounted rotatable blade-holder carrying cog-gearing, a handle carrying a sector or segmental rack, devices between said frame and handle pivotally supporting and operating the blade-holder relatively to the handle, and a  
 85 slotted shield or guard secured to the frame in which the rotatable blade-holder is mounted and arranged over the actuating-gearing thereof.

3. In a razor-stropping device, the combination with a pair of non-rotatable supporting-arms, an intermediate rotatable blade-holder, a handle, pivotal connecting mechanism between the handle and the blade-holder, gearing between said parts operating to reciprocate the blade-holder in an arc of a circle and simultaneously cause a partial rotation of the same, means to limit said arc of rotation, and with means to adjustably regulate the operation of the latter. 100

In testimony whereof I have hereunto affixed my signature this 12th day of June, A. D. 1901.

HERMAN HERDER.

Witnesses:

GEO. W. REED,  
 H. T. FENTON.