

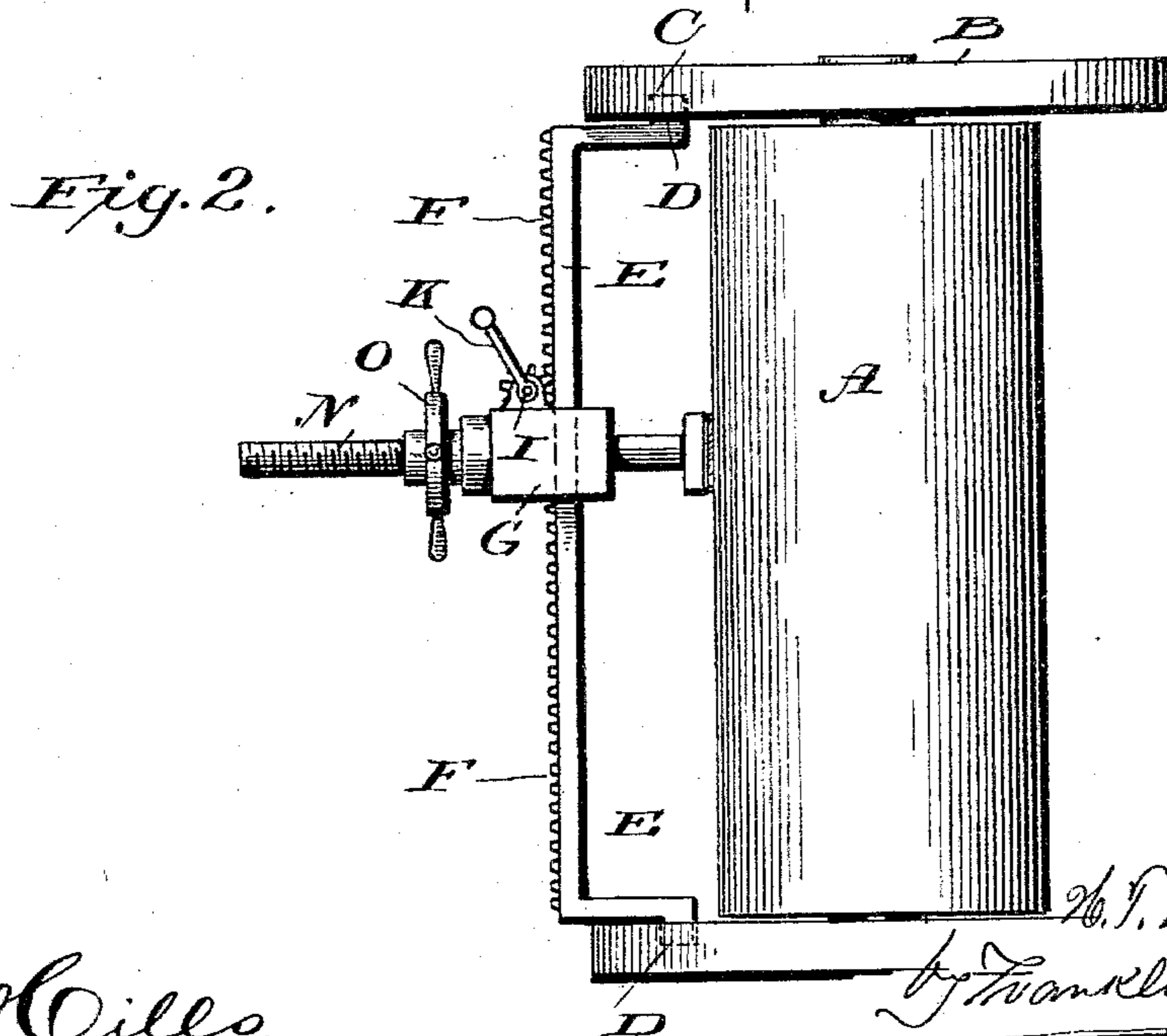
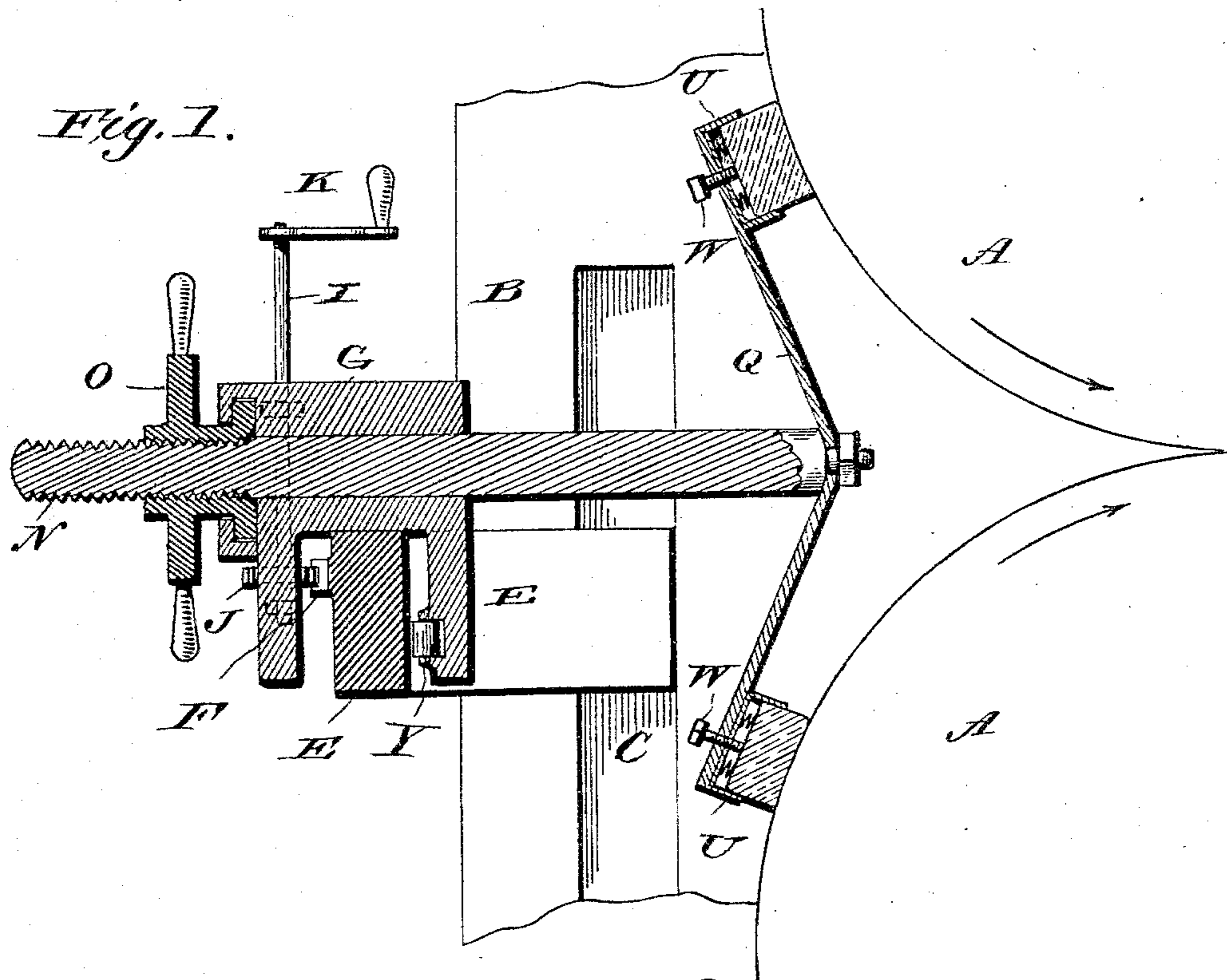
(No Model.)

2 Sheets—Sheet 1.

H. T. WINTERS.
DEVICE FOR POLISHING CURVED SURFACES.

No. 597,518.

Patented Jan. 18, 1898.



Witnesses
L. C. Mills.
J. M. Pfiffer

Inventor
H. T. Winters,
by Franklin H. Hough
Attorney

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

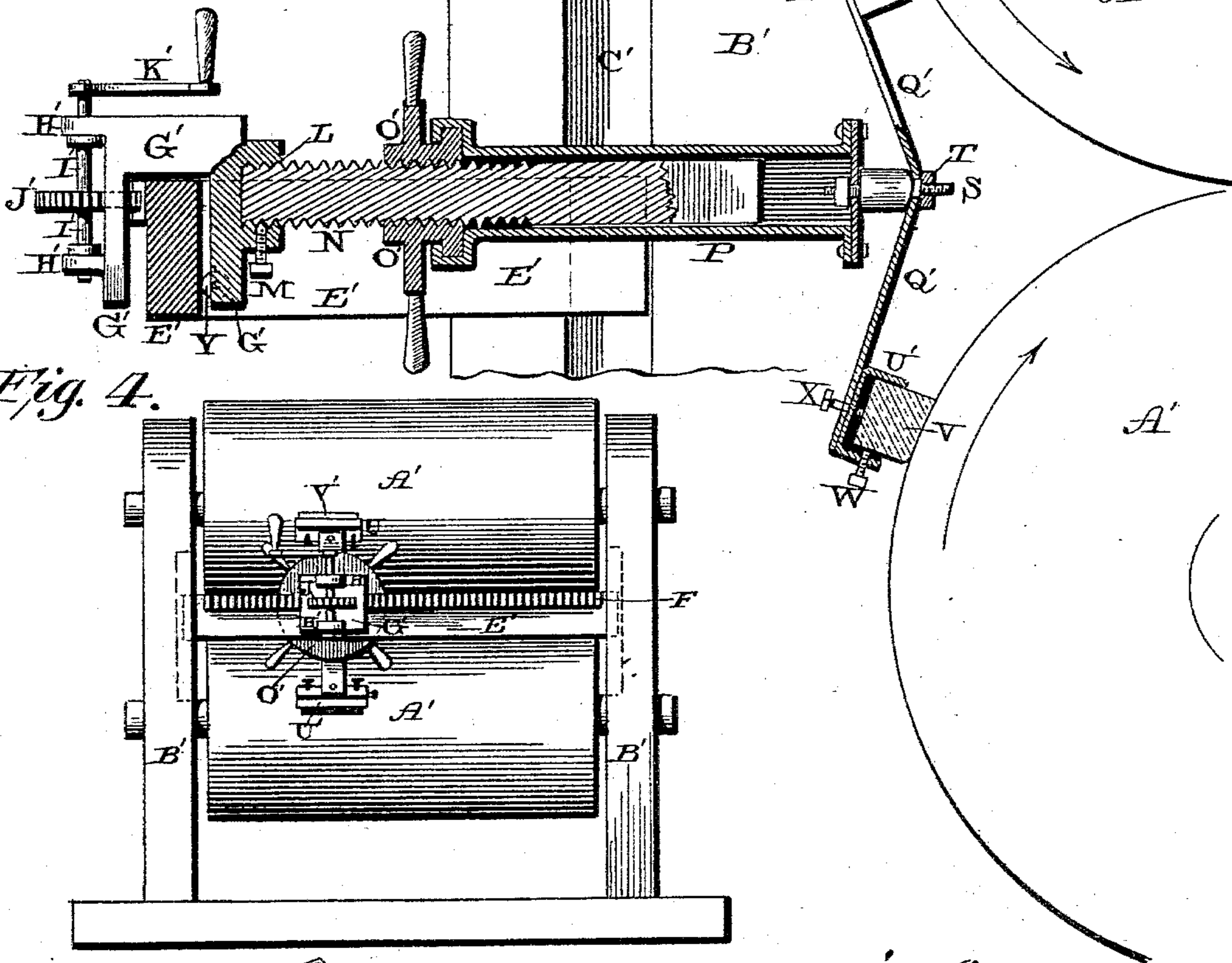


Fig. 4.

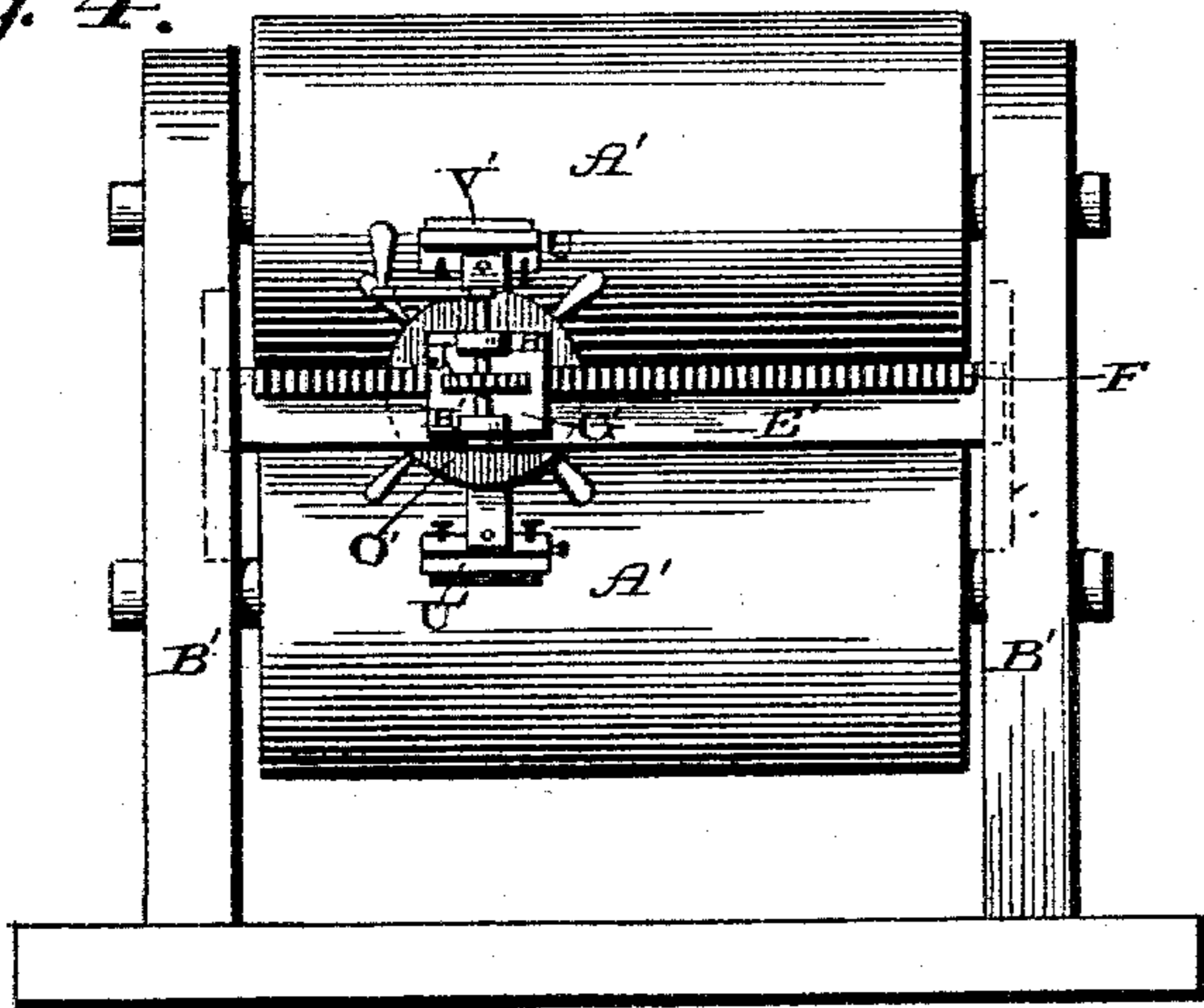


Fig. 5.

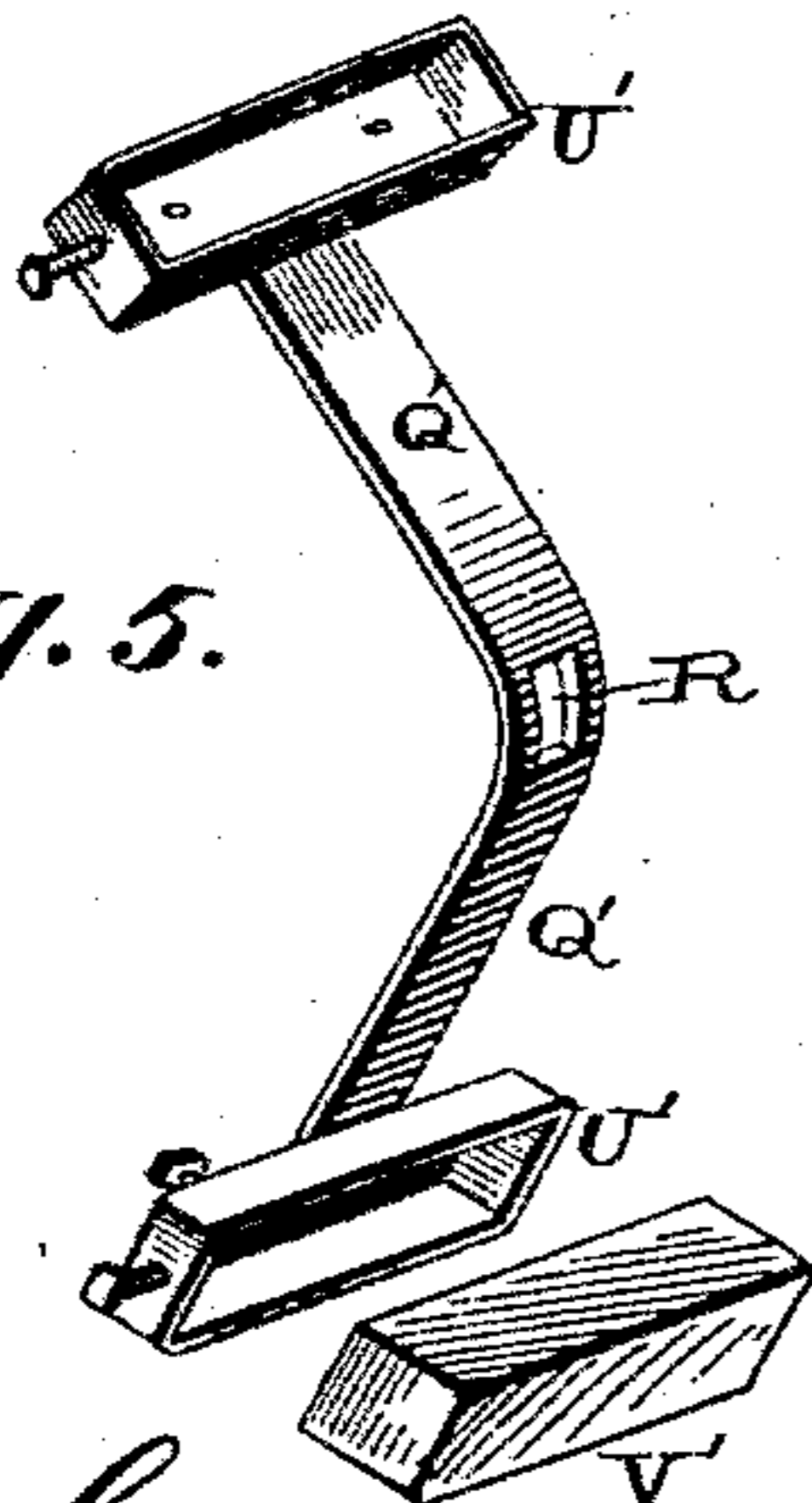
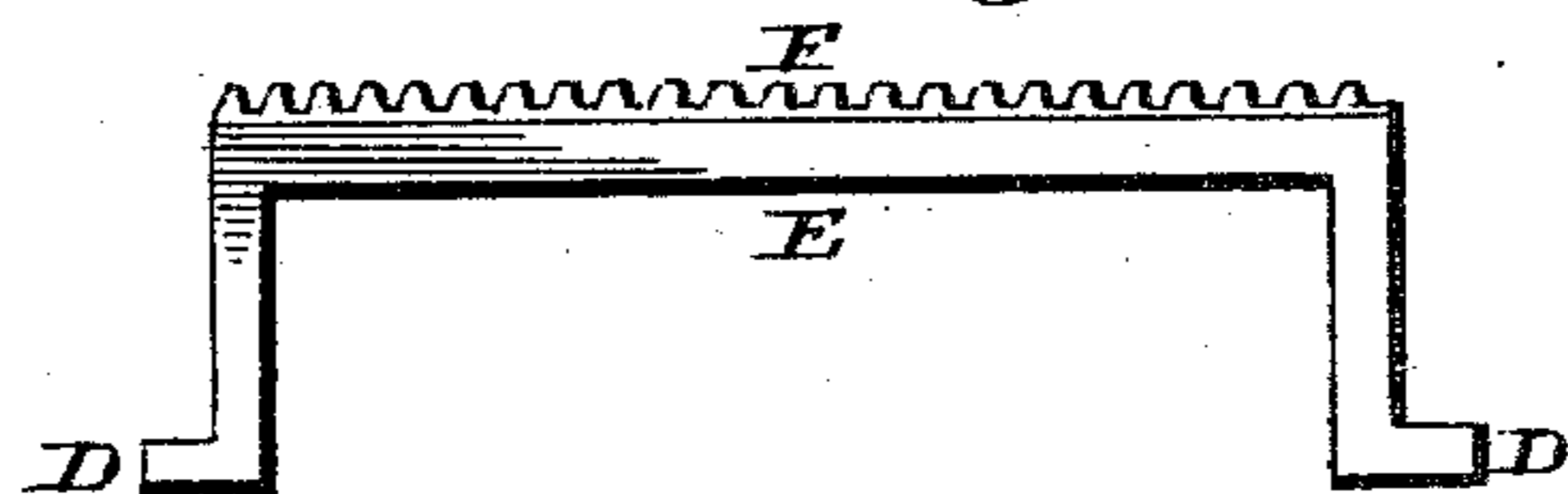


Fig. 6.



Witnesses

L. C. Hills.
J. M. Pfeiffer

Inventor

H. T. Winters
by Franklin A. Hough
Attorney

UNITED STATES PATENT OFFICE.

HARRY T. WINTERS, OF WHEELING, WEST VIRGINIA.

DEVICE FOR POLISHING CURVED SURFACES.

SPECIFICATION forming part of Letters Patent No. 597,518, dated January 18, 1898.

Application filed September 1, 1897. Serial No. 650,300. (No model.)

To all whom it may concern:

Be it known that I, HARRY T. WINTERS, a citizen of the United States, residing at Wheeling, in the county of Ohio and State of West Virginia, have invented certain new and useful Improvements in Devices for Polishing Curved Surfaces; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in devices for polishing or grinding rolls; and it consists in a suitably-shaped arm having on each end a socket for the polishing or grinding material, combined with a suitable supporting-frame which is attached to the housing of the rolls and means for applying pressure to the arm and through it to the polishing or grinding materials.

It still further consists in a suitable supporting-frame attached to the housing of the rolls, a traversing mechanism placed upon the frame and adapted to be moved back and forth horizontally thereon, and a screw-threaded rod which passes through the traversing mechanism and is provided with a swivel operating-nut upon its outer end, combined with a rigid or elastic arm upon its inner end, and holders for the polishing or grinding material secured to opposite ends of the arm.

It still further consists in the arrangement and combination of parts which will be more fully described hereinafter.

The object of my invention is to provide a cheap and simple mechanism whereby rolls may be quickly polished or ground, and which mechanism can be applied directly to the housing of the rolls and made to traverse the rolls from end to end, so that every part can be polished alike.

In the accompanying drawings, Figure 1 is a vertical section of a mechanism which embodies my invention. Fig. 2 is a plan view of the same. Fig. 3 is a vertical longitudinal section of a modification of the device shown in Figs. 1 and 2. Fig. 4 is a front elevation of the same. Fig. 5 is a perspective view of the spring-support for the polishing or grind-

ing material. Fig. 6 is a detail view of the supporting-frame.

A represents the two rolls to which my mechanism is applied, and B the housing therefor, and which is provided with vertical grooves C upon its inner sides to receive the turned-out ends D of the supporting-frame E, by means of which the polishing or grinding mechanism is supported in position. The frames E are shaped as shown in Fig. 6 and are provided upon their outer sides with a horizontal row of teeth or cogs F. Straddling over the top of this frame E is the U-shaped traveling frame G, which is provided with the friction-roller Y upon its inner side to bear against the frame E, so as to decrease the friction between the two frames as much as possible when the frame G is being traversed from side to side.

Passing vertically through the traveling frame G is the shaft I, which is provided with the crank or handle K at its upper end and with the toothed gear J near its lower end to mesh with the teeth or cogs F upon the frame E, so that when the shaft is turned to either the right or left the frame G may be made to travel back and forth before the frame E at the will of the operator. The toothed wheel J projects through a slot in the frame G, so as to mesh freely with the cogs or teeth, as shown.

Passing horizontally through an opening in the top of the frame G is the endwise-moving rod N, which has the swiveled nut O, provided with handles upon its outer end, and by means of which nut O any desired pressure can be given to the arm Q, which is preferably bent so as to be V-shaped and which is provided with the sockets U upon its ends to receive the grinding or polishing materials V, which may be held rigidly in the sockets by means of the set-screws W. If the arm Q is made of non-elastic material, springs will be placed in the bottom of the sockets, so as to keep the grinding or polishing material pressed outwardly against the rolls; but if the arm is made of elastic material, as shown in Fig. 5, then the springs in the bottom of the sockets will be dispensed with and the grinding or polishing material will be held rigidly in any desired position by the screws X and W, the screws X serving to force the mate-

rial forward as fast as it is worn away and screws W serving to lock the material in different positions into which it has been adjusted by the screws X. By turning the nut 5 O the rod N is forced forward, so as to force the grinding or polishing material B against the rolls with any desired amount of pressure. After the desired pressure has been applied to the grinding or polishing material the frame 10 G is traversed from one end of the rolls A to the other by turning the shaft I, and the wheel J upon its lower end, engaging with the teeth or cogs F upon the frame E, causes the frame G to move in any desired direction.

15 In Figs. 3 and 4 is shown a modification of my invention, and in which A' A' represent the rolls, B' the housing, and C' the vertical grooves in their inner sides. The frame E' is constructed as shown in Fig. 6 and is provided with cogs upon its outer side, and over 20 its top is placed the traversing frame G', which is provided with the bearings H' upon its outer side. Through these bearings the shaft I' is passed, provided with the handle K' at its upper end and the toothed wheel J' near 25 its lower one, and which wheel passes through a slot in the outer leg of the frame G' and engages with the teeth or cogs F'. Upon the innerside of the frame G' is formed the pocket 30 L, in which the inner end of the screw-threaded rod N' is rigidly secured by means of the set-screw M. The inner end of the rod N' extends into the socket P, which has the nut O' swiveled upon its outer end and by means of 35 which any desired amount of pressure can be applied to the spring or elastic arm Q', which is secured to the inner end of the socket by the screw-rod S and the nut T. This spring is provided with the opening R through its center, and to each end is secured the socket U' 40 to receive the grinding or polishing material

V'. In this modification (shown in Figs. 3 and 4) the screw-rod is secured rigidly to the inner side of the frame G' and a socket is used to support the grinding or polishing materials and to apply the necessary pressure thereto, whereas in Figs. 1 and 2 the rod N passes directly through the frame G and the socket is dispensed with. The vertical 50 grooves in the housing allow the frames E E' to be adjusted vertically according to the position of the rolls, and the pressure of the screw-rod or the socket against the supporting-arm and the pressure of the grinding material against the rolls serve to force the 55 frames G G' outwardly against the supporting-frames E E' with sufficient force to hold the frames E E' in position upon the housing by frictional contact.

Having thus described my invention, I 60 claim—

The rolls, the housing for the rolls, provided with grooves upon their inner sides; the frame E having its ends shaped so as to catch in the grooves, and provided with teeth or cogs 65 upon its outer side, combined with the frame G placed upon the frame E, and provided with a mechanism for engaging with the teeth or cogs, and thus causing the frame G to travel horizontally back and forth before the 70 rolls, the screw-threaded rod N passing through the frame G, the swiveled nut upon its outer end, and a suitable holder for the grinding or polishing material upon the inner end of the rod, substantially as specified. 75

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

HARRY T. WINTERS.

Witnesses:

ALBERT A. FOX,
WILLIAM WINTERS.