

(No Model.)

H. L. MASSEY.
TYPE WRITER CLEANING ATTACHMENT.

No. 551,038.

Patented Dec. 10, 1895.

Fig. 1.

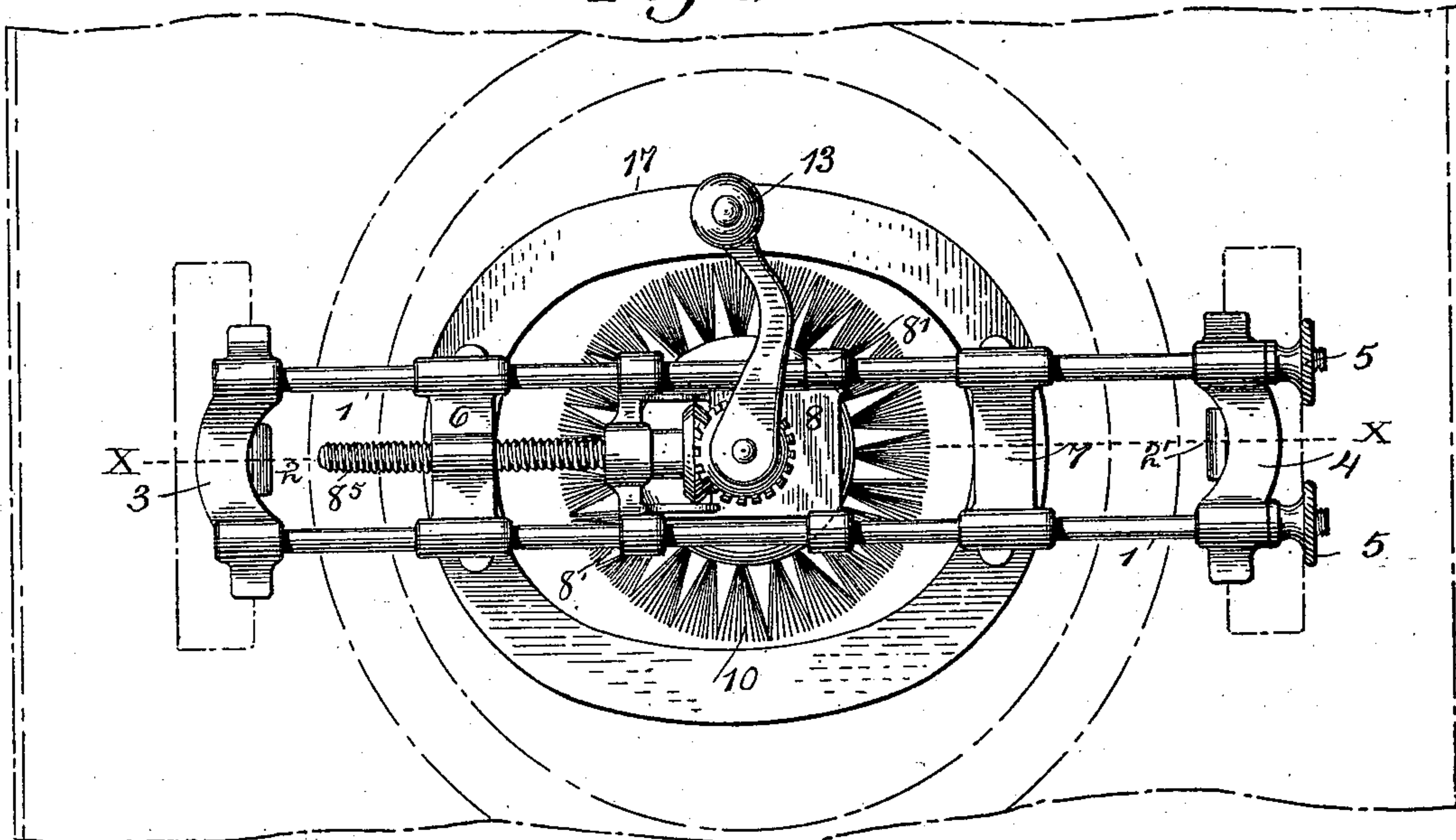


Fig. 2.

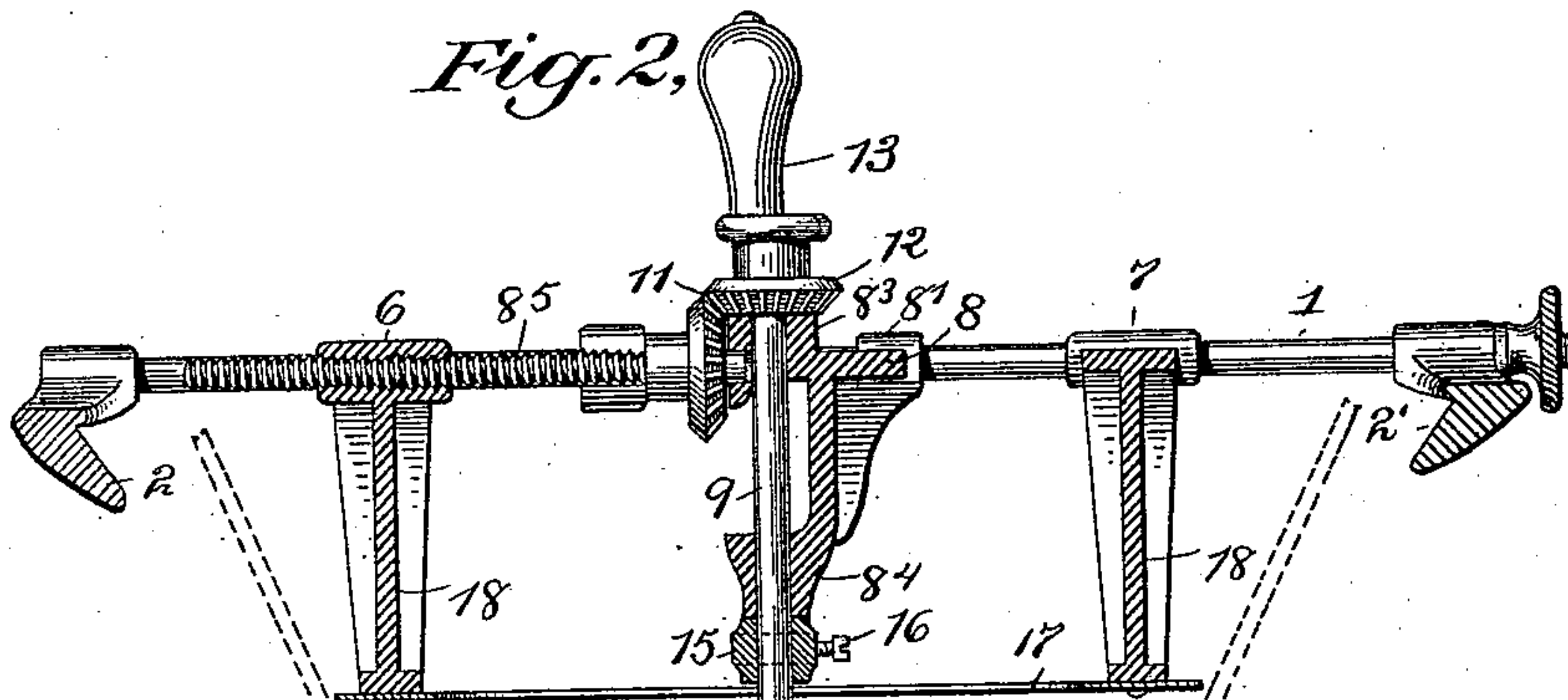


Fig. 3.

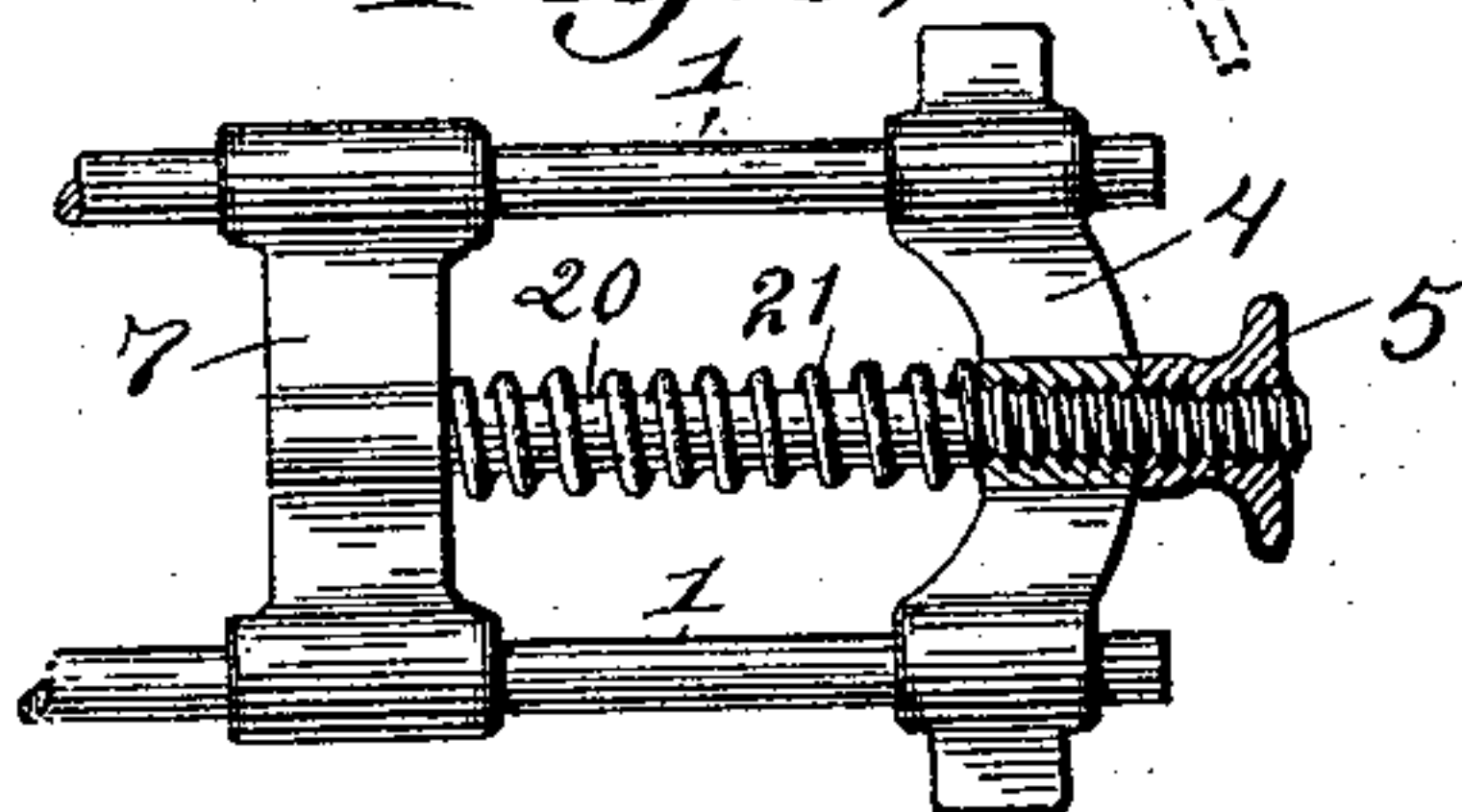
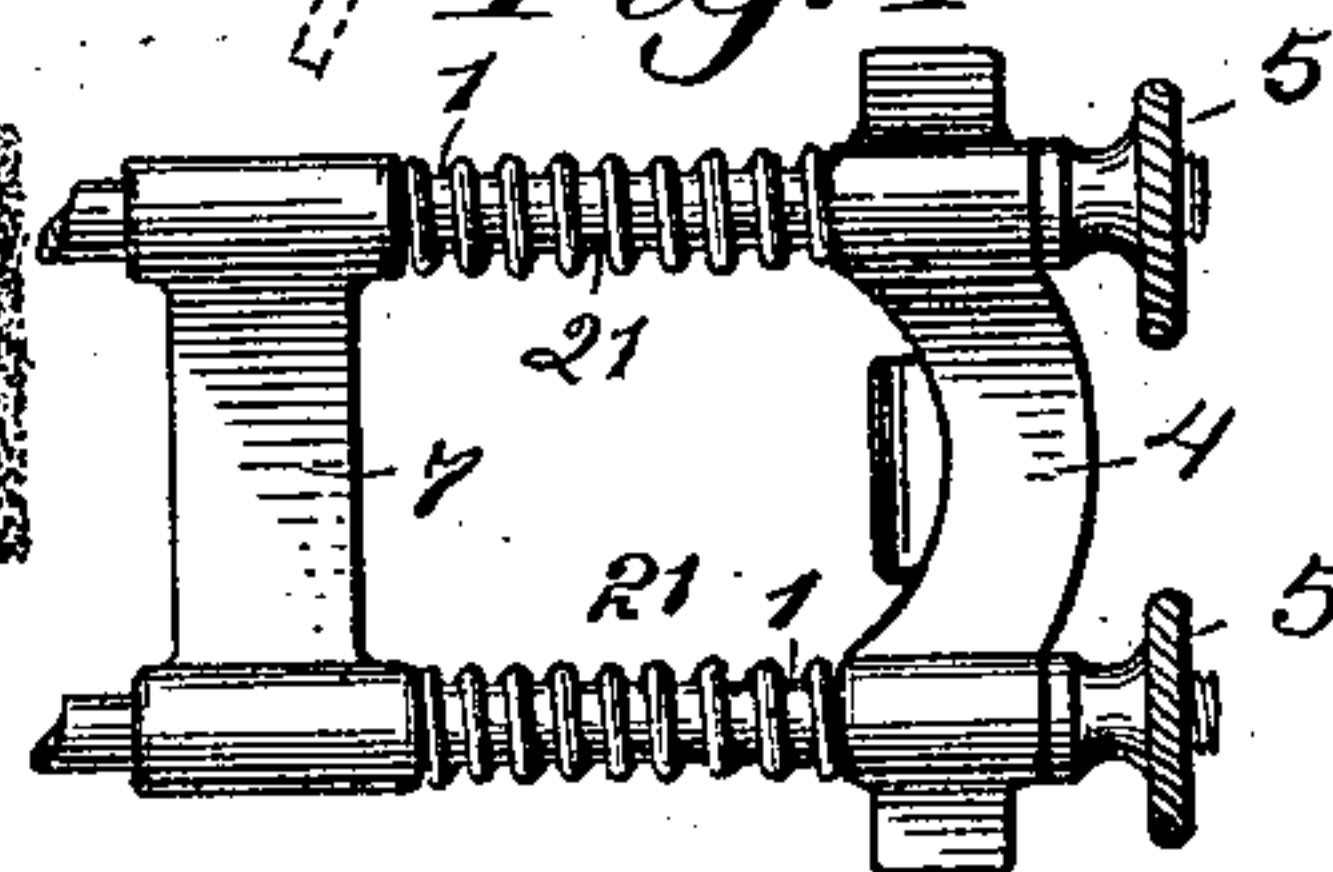


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TYPE-WRITER-CLEANING ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 551,038, dated December 10, 1895.

Application filed October 17, 1894. Serial No. 526,122. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. MASSEY, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Type-Writer-Cleaning Attachments; and I do hereby 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.

My invention relates to improvements in type-writer attachments, and particularly to an improved type-writer-cleaning brush, the construction and arrangement of the parts of which will be hereinafter fully described, and particularly pointed out in the claims.

Great difficulty has heretofore been found in constructing a satisfactory type-writer-cleaning brush which is suitable for use on type-writers of the Remington type—that is, those in which the key-bars are arranged out of a true circle. It has been an apparently easy matter to provide satisfactory type-cleaning brushes for such machines as the Densmore or the Smith, in which the type-keys are arranged in a circle, and cleaning attachments have been provided for those machines which are always in position on the machine, being placed so as not to interfere with the ordinary operation of the machine when not wanted and capable of being quickly and easily raised into position to clean the type when wanted; but a satisfactory solution of the problem of how to construct a type-writer-cleaning brush which can be used upon machines whose type-bars are arranged elliptically or out of a true circle has not been so easy. At the present time, so far as I am aware, there is no type-cleaning attachment for this class of machines on the market which enables one to clean more than two or three keys at a time. Most, if not all, of such type-cleaning attachments make use of a revoluble brush, so journaled and supported as when in position to be in the center of the space formed by the type-bars. The separate types, as they are to be cleaned, are raised against the surface of the revolving brush and are held there until they are thoroughly cleaned. Such devices as these have many objectionable features. Not

only is the operation of cleaning the type tiresome and laborious, but the types are frequently thrown out of alignment in the operation of cleaning, and this last objection is a very serious one.

The type-cleaning brush, which will be hereinafter fully described, is particularly adapted for use on machines of the character to which reference has just been made; and the object of my invention is to provide a type-cleaning brush which will be free from the disadvantages just mentioned, which will enable the cleaning of the keys of the Remington type-writer or of other type-writers whose type-bars are arranged out of a true circle to be accomplished quickly and thoroughly, and which can be easily attached to and detached from the machine on which it is to be used.

While it is impossible to use upon machines whose type-bars are arranged in the form of an ellipse a simple rotating brush journaled and supported so as to come in contact with the type on either side of the machine, since such a brush would only clean a portion of the type, it has occurred to me that a brush of sufficient diameter to fit in the rounded part of the ellipse and to strike the keys on both sides of the straight part of the ellipse might be removably fastened in position to clean a portion of the type at a time and be given a reciprocating movement, by means of which it could in a short time effect the entire cleaning of the type, and accordingly I have constructed a cleaning attachment upon this principle. I provide supporting-bars removably attached to the top plate of the machine and extending lengthwise of the elliptical space formed by the type-bars, upon which reciprocates a carriage which carries a cleaning-brush of sufficient diameter to thoroughly clean the keys in the circular part of the type-key ellipse and to clean the sides of said ellipse in its reciprocating movement. In order to secure the utmost simplicity of action, I have so arranged the parts that the movement of the crank required to revolve the type-cleaning brush also imparts a reciprocating movement to the carriage.

To prevent the possibility of any of the type-bars being forced out of alignment by the action of the cleaning-brush, I make use

of an elliptical frame, which is attached to and supported by the above-mentioned supporting-bars and which is so formed as to fit snugly into the space formed by the type-bars and to keep them from moving while the cleaning attachment is in position on the machine. Any injury which might result from disarrangement of the type-bars is thus effectually prevented.

My invention is fully illustrated in the drawings which accompany and form a part of this application and in which the same reference-numerals refer to the same or corresponding parts, and in which—

Figure 1 is a top plan view of my cleaning attachment, its position upon a machine to which it may be attached being represented by showing parts of the said machine in dotted lines. Fig. 2 is a section of Fig. 1 in the line X X. Figs. 3 and 4 are detailed views of methods which I have devised for operating the adjustable clamp, by means of which my cleaning attachment is fastened to the top plate of the machine.

Referring to drawings, 1 1 represent the supporting-rods, which extend across the space formed by the type-bars and are attached to the top plate of the machine by means of the clamping-jaws 2 2. It is upon these rods that the carriage reciprocates to which the type-cleaning brush is attached, and it is also from these rods that the elliptical frame is supported, by means of which the type-bars are held in position during the operation of the cleaning-brush.

The clamping-jaws 2 and 2' form parts of yokes 3 and 4, which extend across the space between the supporting-rods 1 1 and securely hold them parallel to each other. Yoke 3 is brazed or otherwise rigidly attached to the said supporting-rods 1 1 and when the cleaning device is to be placed in position on a machine is hooked over one side of the top plate of the same. Yoke 4 is movable, the adjusting-screws 5 permitting it to slide along the supporting-rods 1 1 until the type-cleaning attachment is firmly secured in place on the machine.

At equidistant points on the supporting-rods 1 1 and in such position as to come just within the line formed by the elliptically-arranged type-bars are immovably secured on said connecting-bars the yokes 6 and 7, which, like yokes 3 and 4, span the space between the connecting-rods 1 1. Yoke 6 is centrally enlarged and bored to receive the end of screw 8⁵, which forms a part of the sliding carriage 8, in which is journaled the rod 9, carrying the type-cleaning brush 10, and which is provided with the mitered head 11, gearing with the miter-gear 12, formed on the end of the crank 13, by means of which crank-shaft 9 is revolved. The carriage 8 is formed with four bearings 8' 8', which encircle the supporting-rods 1 1 and allow a free movement of said carriage upon said supporting-rods. The body portion of the carriage 8 is centrally

raised, forming the boss 8³, through which and through the depending portion 8⁴ of the carriage passes the shaft or rod 9, to which the type-cleaning brush 10 is attached. The washer 15, attached by the thumb-screw 16 to said rod 9, renders its movement in its bearings more easy and uniform. The lower end of rod 9 is screw-threaded, and upon this end is screwed the type-cleaning brush 10, said brush being removable and capable of replacement.

From the construction thus described it will be seen that when the crank 13 is revolved the carriage 8 will be carried backward or forward in a direction corresponding with the direction of rotation of the crank and that the direction of the movement of the carriage may be reversed by reversing the direction of the rotation of the crank. The carriage, and therefore the type-cleaning brush, may thus be reciprocated through the length of movement necessary to thoroughly clean all of the keys of the type-writer with a rapidity governed by the size of the thread on the screw 8⁵ and by the ratio of gearing between the miter-gears 11 and 12.

In order to prevent the type-bars from being thrown out of alignment by the movement of the type-cleaning brush, which, it should be stated, is of sufficient size to fit the rounded end of the ellipse formed by the type-bars, and to thoroughly clean the type on both sides of the ellipse during its reciprocating movement, I provide a frame 17, which is shaped to fit snugly into the space formed by the type-bars and which is held in place just a little above the type themselves by means of the supporting-brackets 18, which are integral with the yokes 6 and 7.

The operation of my improved cleaning attachment is as follows: When it is desired to attach the same on a machine, the jaw 2 is hooked under one side of the machine-top plate and by means of the screws 5 jaw 2' is moved up until the attachment is securely held in place. When in position, the elliptical frame 17 fits against the whole ellipse of the type-bars and prevents them from being moved by the operation of the cleaning-brush. As the cleaning-brush is now revolved by means of the crank 13, it moves from one end of the ellipse to the other, its direction of motion being reversed when the end of the ellipse is reached by reversing the direction of the rotation of the crank. The size of the cleaning-brush is such as to enable it to thoroughly clean all of the type on the machine. The rapidity of its reciprocating movement can, of course, be adjusted by varying the size of the screw-threads on screw 7 and by changing the ratio of the gears which operate said screw. The attachment may be removed from the machine by loosening the screws 5 and pushing yoke 4 back until the clamp-jaw 2' is removed from engagement with the machine-frame.

In Figs. 3 and 4 I have shown in detail

modified forms of construction and operation of yoke 4, which carries the adjustable clamping-jaw 2'. In Fig. 3 yoke 7 is centrally enlarged and bored to receive a pin 20, which
 5 extends parallel to the supporting-rods 11 and extends through the thumb-screw 5, which is fitted in a central aperture formed in yoke 4 and bears against said yoke. Thus the adjustment of the yoke in this case is ac-
 10 complished by a single thumb-screw instead of the two used in the construction shown in Fig. 1. A spring 21 surrounds pin 20 and acts to force yoke 4 outward when screw 5 is unloosened.

15 The construction shown in Fig. 4 is similar to that shown in Fig. 1, except that springs 21 are used in this construction, as in that shown in Fig. 3, to force outward the adjustable clamping-jaw 2' and the yoke which carries the same when the screws 5 are unloosened and it is desired to remove the cleaning
 20 attachment from the machine to which it is attached.

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

1. In a typewriter cleaning attachment, the combination with a suitable support, of a cleaning brush supported thereby, and a
 30 frame attached to said support, which is adapted to fit within the space formed by the type bars and to hold said bars in place during the cleaning operation, substantially as described.

35 2. In a typewriter cleaning attachment, the combination with a suitable support, of a carriage mounted thereon, a type cleaning brush secured to said carriage, means for reciprocating said carriage upon said support, and
 40 a depending frame secured to said support, which is adapted to fit within the space formed by the type bars and to hold said bars in place during the cleaning operation, substantially as described.

45 3. In a type-writer cleaning attachment, the

combination with a suitable support, of a carriage mounted thereon, a type cleaning brush secured to said carriage, means for revolving said brush, and thereby also reciprocating the carriage upon its support, and a depending
 50 frame secured to said support, which is adapted to fit the circular or elliptical space formed by the type bars, and to hold said bars in place during the cleaning operation, substantially as described.

4. In a typewriter cleaning attachment, the combination with the top plate of the typewriter, of supporting rods 1 removably attached to said top plate, a carriage 8 mounted upon said supporting rods, a vertical shaft 9
 60 journaled in said carriage, a typewriter cleaning brush 10, attached on the lower end of said vertical shaft, a gear wheel 12, an operative crank arm on the upper end of said vertical shaft, an apertured yoke 6 connect-
 65 ing the two supporting rods 1, and the screw 8⁵ extending through said aperture in said yoke 6, and having formed on one end the gear 11 engaging with the gear 12, substantially as described.

5. In a typewriter cleaning attachment, the combination with the top plate of a typewriter, of parallel supporting rods removably attached to said top plate, a carriage mounted on the same, a type cleaning brush secured
 75 to said carriage means for reciprocating said carriage upon said support, yokes connecting said supporting arms and steadying the same, depending portions formed on said yokes, and a frame secured to said depending
 80 portions, which is adapted to fit the circular or elliptical space formed by the type bars, and hold said bars in place during the cleaning operation, substantially as described.

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

HENRY L. MASSEY.

Witnesses:

CALVIN PERKINS,
 W. G. HARSH.