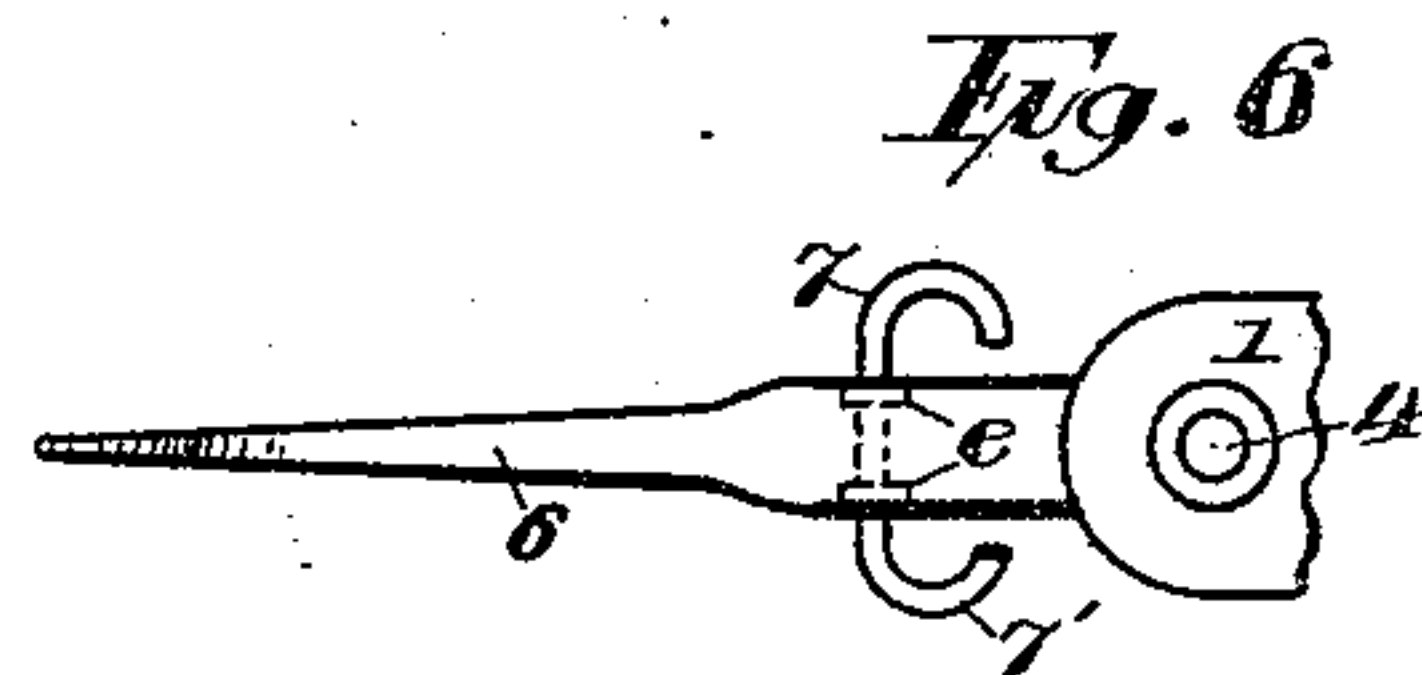
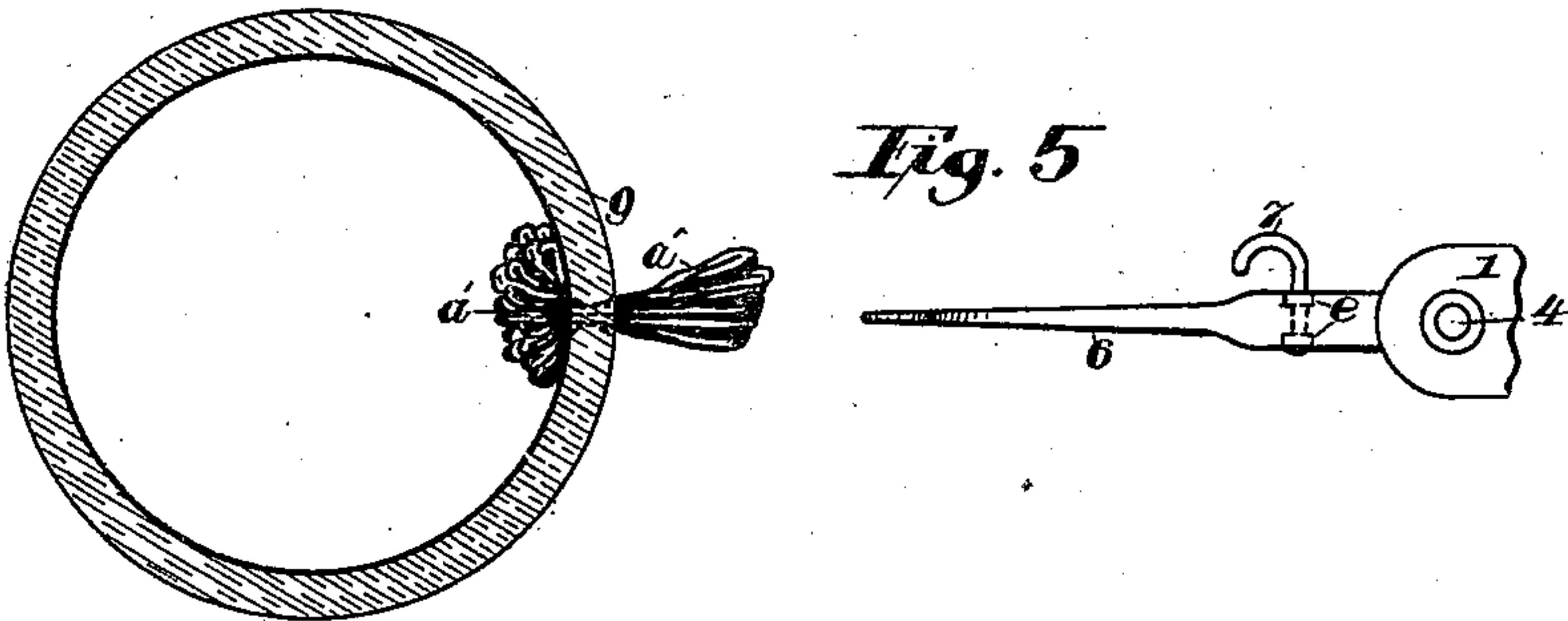
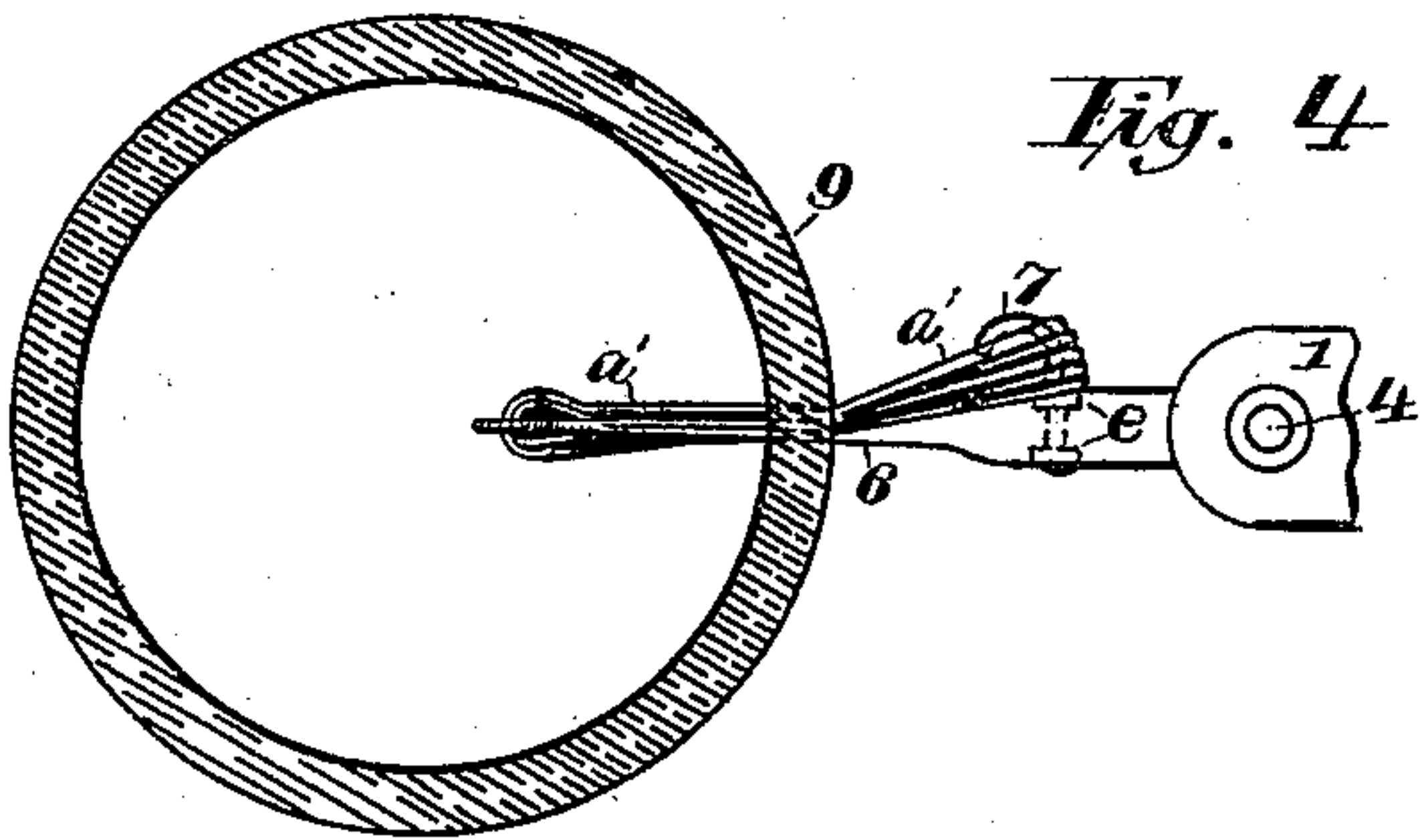
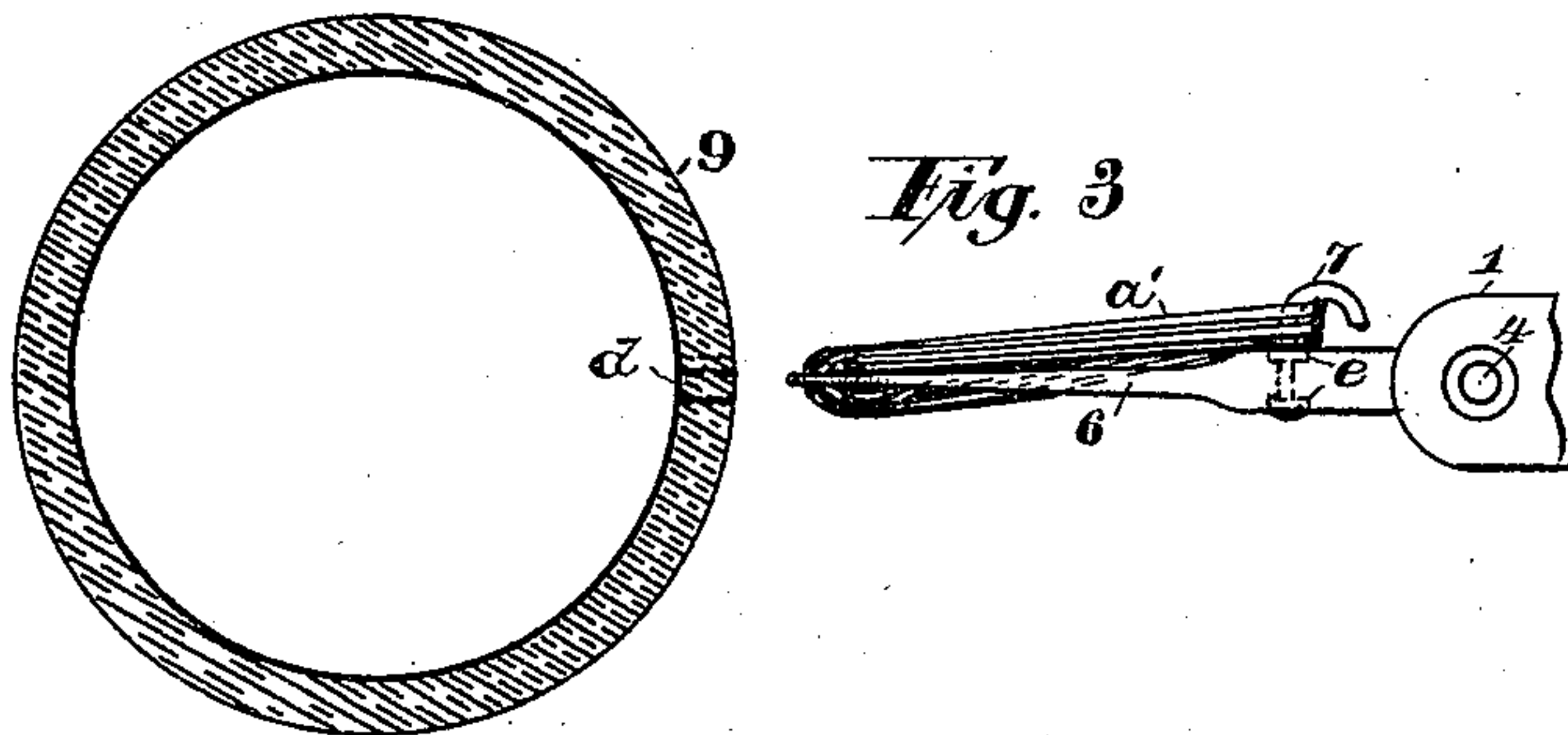
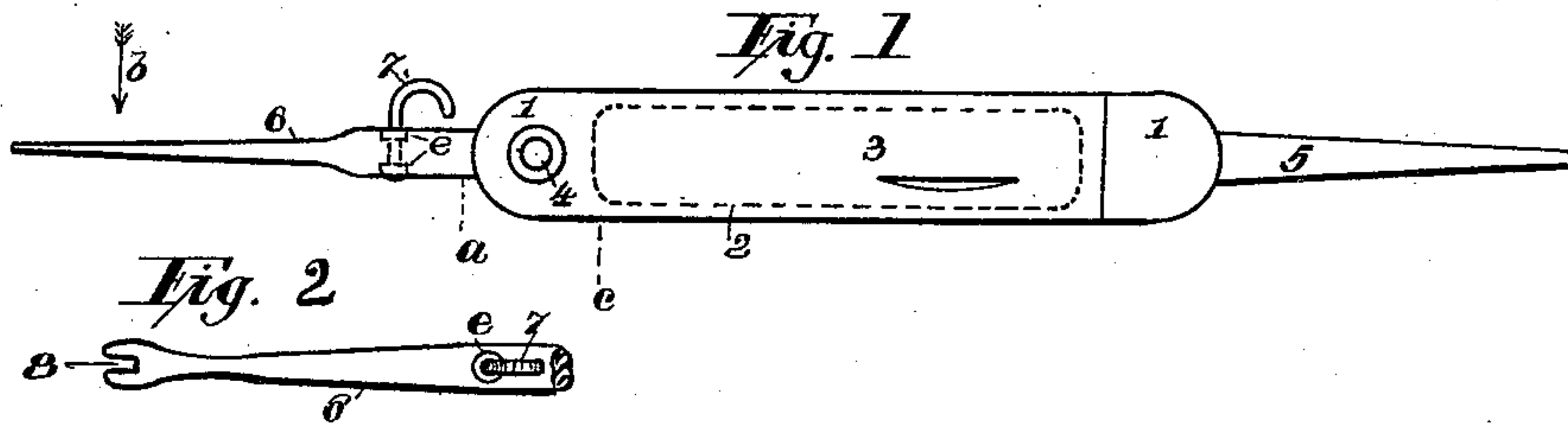


(No Model.)

A. D. HITCHCOCK.
PNEUMATIC TIRE MENDING DEVICE.

No. 532,960.

Patented Jan. 22, 1895.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ALFRED D. HITCHCOCK, OF WATERBURY, CONNECTICUT.

PNEUMATIC-TIRE-MENDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 532,960, dated January 22, 1895.

Application filed June 7, 1894. Serial No. 513,730. (No model.)

To all whom it may concern:

Be it known that I, ALFRED D. HITCHCOCK, a citizen of the United States, and a resident of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Pneumatic-Tire-Mending Devices, of which the following is a specification.

My invention relates to a device to be used in connection with rubber bands for plugging up the small holes punctured in pneumatic tires. A full description of such device and its mode of operation will be fully set forth in the following specification, and such features as I believe to be new and novel particularly pointed out in the claims.

To enable others to understand my invention reference is had to the accompanying drawings, in which—

Figure 1 represents the device consisting of a handle portion, a pocket therein for carrying a stock of rubber bands, a swinging cover therefor, an awl at one end for shaping the hole in the tire, a needle at the opposite end, with a reversible retaining hook on the shank portion for holding said bands, and Fig. 2 is a broken detail view of the needle through line *a* of Fig. 1, and a view of said needle looking in the direction of arrow *b*. Fig. 3 is a broken detail view of the needle end of handle through line *c* of Fig. 1, showing the needle loaded with rubber bands and about to be inserted into a hole in a pneumatic tire, a cross section of which tire is shown. Fig. 4 is also a broken detail view similar to Fig. 3, but showing the needle and rubber bands inserted into the tire. Fig. 5 is also a view similar to Figs. 3 and 4, but showing the operation of plugging completed and the needle withdrawn. Fig. 6 is a detail broken view of the device, showing a band-retaining hook on opposite sides of the needle shank, as a modification of such feature.

Its construction and operation are as follows:

1 represents the handle portion; 2, the pocket therein for holding a stock of rubber bands; 3, swinging cover therefor pivotally mounted on the pin 4; 5, awl; 6, needle; 7, retaining hook rotatably mounted in the shank portion of said needle. The eye of the said needle consists (see Fig. 2) of the notch 8 in

the end thereof, for the purpose presently to be described. When, therefore, a puncture occurs in a pneumatic tire, the awl 5, which is tapered as shown, is inserted into the hole for the purpose of giving it a cylindrical shape and also to enlarge it sufficiently for the admission of the needle carrying the rubber bands *a'*. In affixing the bands to the needle they are first placed in the eye 8, then stretched and thrown around the retaining hook 7, as seen at Fig. 3, and in each operation as many of these bands are used as the needle will hold. The needle thus loaded with the rubber bands is then passed through the hole *d* in the tire 9 until it assumes the position shown in Fig. 4, whereupon the hook 7 is reversed, so that the bands may be released therefrom when the needle is withdrawn (as shown at Fig. 5) leaving the bands in the tire. The pressure of the air due to the inflation of the tire will crowd the inwardly projecting ends of these rubber bands into a knotted form, forcing them as far as possible into the hole in the tire until it is effectually plugged against further leakage of air.

In some cases it might be advisable to continue the retaining hook through the shank of the needle and form the lower hook 7', as shown at Fig. 6. The collars *e* operate in countersunk holes in the shank to keep said hook in place, as shown in the several views.

It will be fully understood that the retaining hook can be made in any form best calculated to retain the bands on the needle before insertion, and from which said bands are easily released on withdrawing the needle and for which purpose the hook seems to be very well adapted. It will also be readily understood that both the awl and needle could be arranged to close upon the handle like the blades of a knife, and in some cases I may choose to make them in that manner. It will therefore be readily seen that the device above described is well adapted for the purpose for which it is intended. The rubber bands used are easily procured and are carried in the pocket of the instrument for use when wanted, thus making a neat, compact and complete tool ready at all times for instant use.

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

1. The herein described instrument for mending holes in pneumatic tires, comprising in combination, a handle portion, a pocket therein for storing rubber bands or other like mending material, a needle projecting from such handle, an eye in the end thereof, and a reversible hook in the shank portion for supporting rubber bands, for the purpose set forth.
2. The herein described instrument for mending or plugging holes in pneumatic tires, comprising in combination, a handle, a pocket therein for storing rubber bands, an awl and a needle projecting from said handle, the needle having an eye at the end and a reversible hook in the shank for supporting the rubber bands, for the purpose described.
3. In an instrument of the character described for mending holes in pneumatic tires, of a needle, a support therefor, an eye in the end thereof, and a reversible hook in the shank portion, between which two points rubber bands are stretched, so that the needle and bands may be passed through a hole in the tire, the reversible feature of the retaining hook enabling the needle to be withdrawn, leaving the rubber bands in said hole, as described and for the purpose set forth.
- Signed at Waterbury, in the county of New Haven and State of Connecticut, this 29th day of May, A. D. 1894.
- ALFRED D. HITCHCOCK.
- Witnesses:
SHERMAN B. BACON,
GEORGE E. JUDD.