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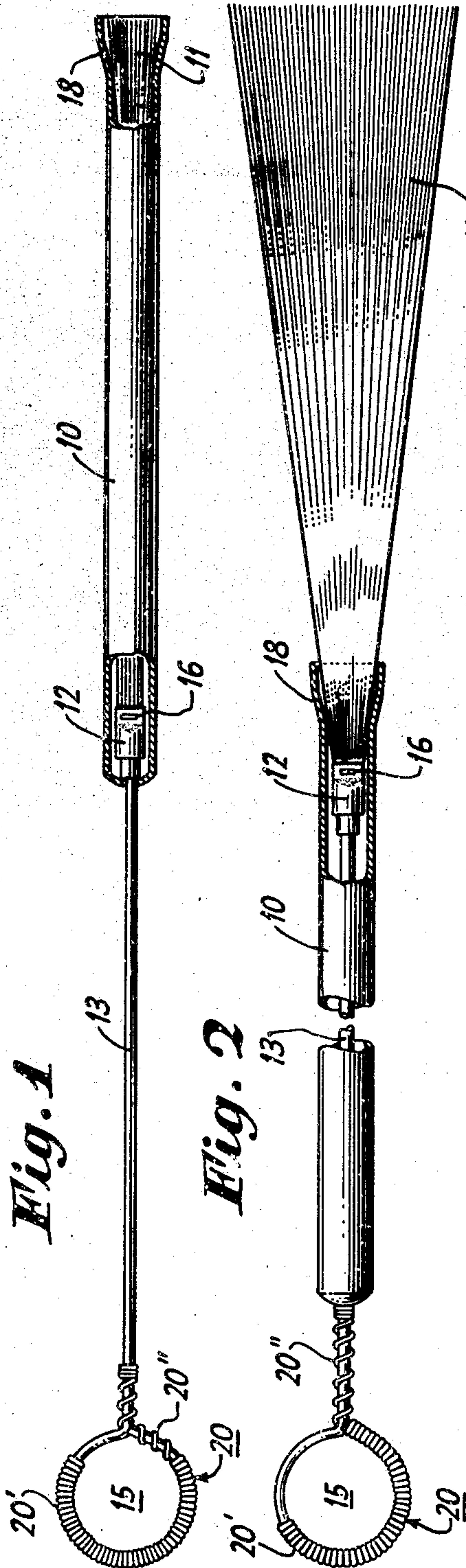
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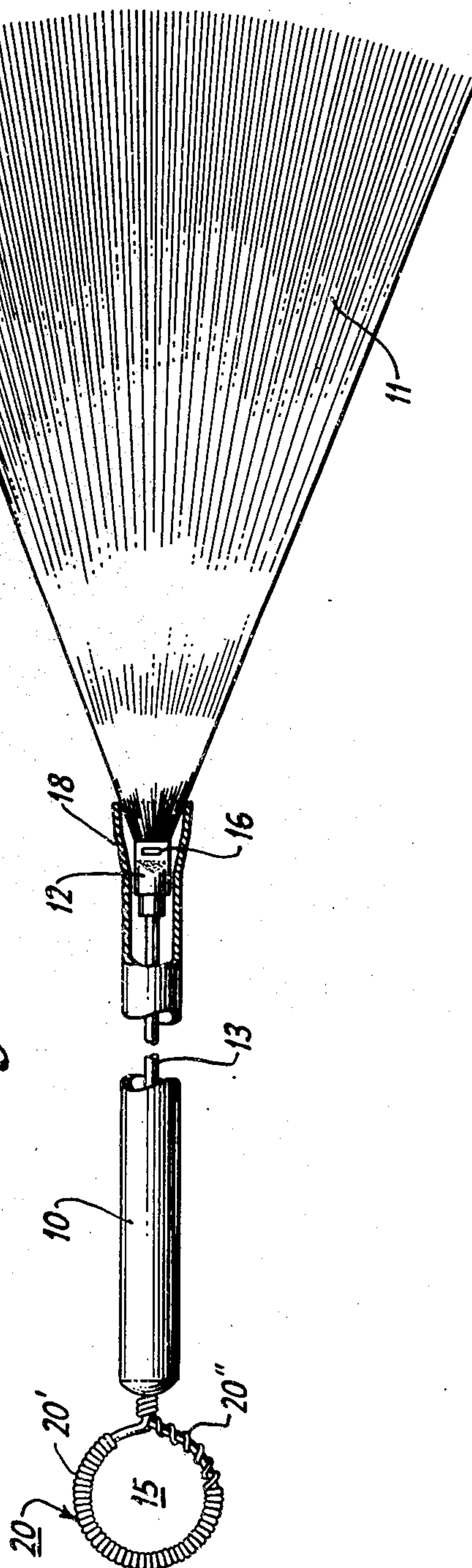
DRUM BEATER

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2 Sheets-Sheet 1



*Fig. 3*



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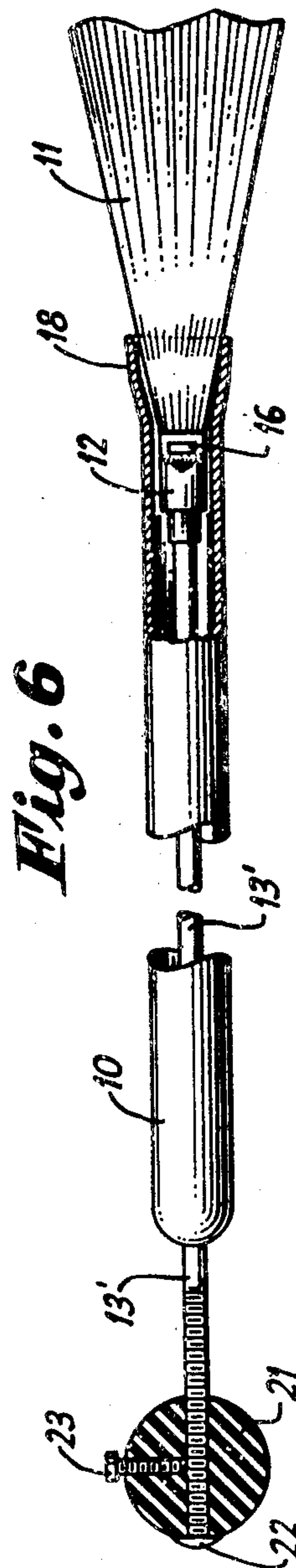
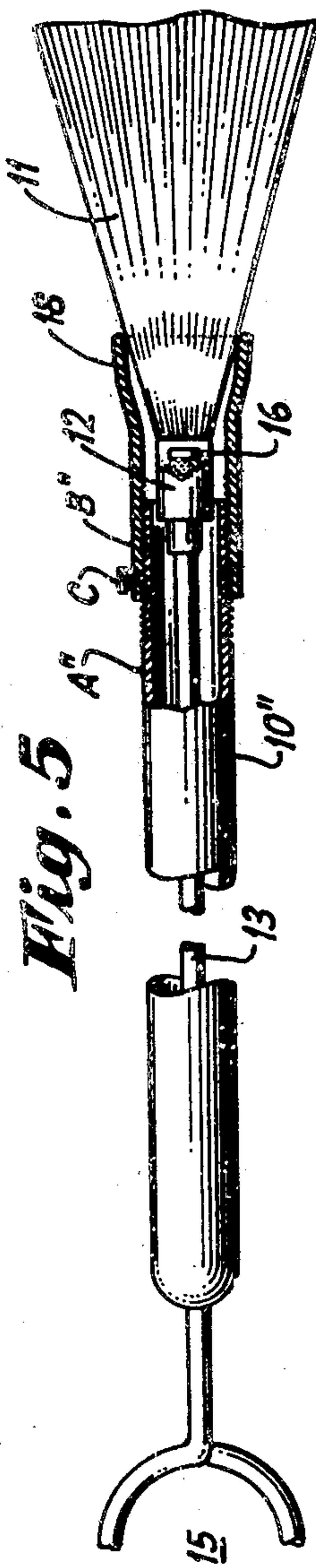
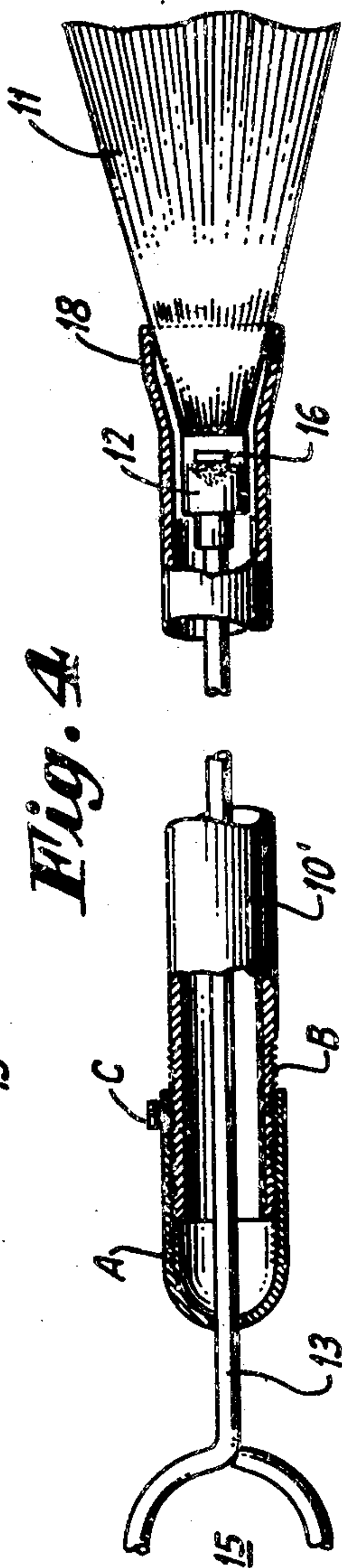
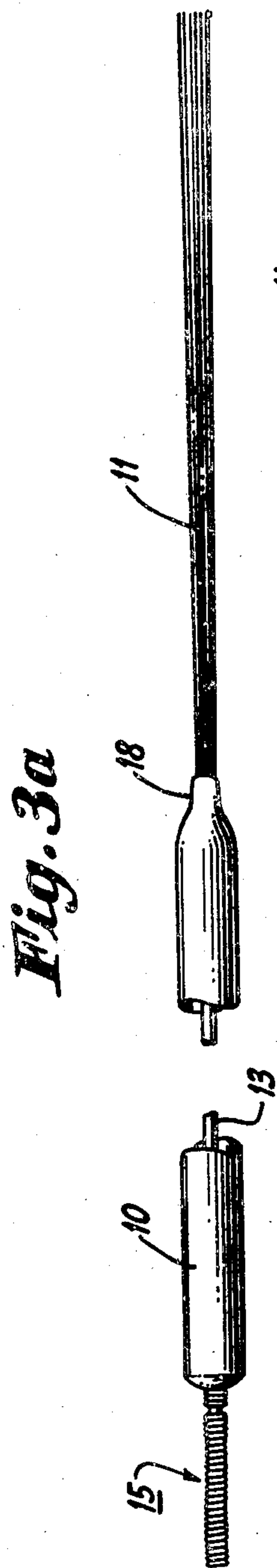
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**DRUM BEATER**

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

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## DRUM BEATER

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8 Claims. (Cl. 84—422)

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This invention relates to musical instruments, and more particularly to wire brushes, sometimes referred to as jazz drum switches.

The wire brush is used with the drum or cymbal to obtain patter and swish-like sound effects. It comprises a tubular handle having at one end a plurality of thin gauge steel wires which spread out in the manner of a fan and are fastened to a clip or lug seated within and slidable along the length of the handle. For adjusting the spread of the wires, there is provided a metal rod which is fixedly connected at one end to the lug in the interior of the handle. The other end of the rod terminates in a loop or a ball located outside the handle to enable the rod to be easily grasped by the hand and moved along the longitudinal axis of the handle, thereby permitting adjustment of the effective length and the spread of the wires.

One difficulty experienced with known types of wire brushes is that the length of the rod which protrudes from the handle changes during use for different adjustments of the wires, thus interfering with the balance or feel of the instrument in the hand of the user.

Another difficulty is caused by undesired changes in adjustment of the wires during usage, due to inadvertent movement of the rod.

The present invention overcomes the foregoing difficulties.

According to the invention, means are provided for varying the relative length of the rod with respect to the tubular handle by desired amounts.

In accordance with one embodiment of the invention, there is provided a spiral spring which is wound around the loop and whose turns near one end are more widely spaced apart than the turns near the other end. Putting it in other words, the pitch of the spiral spring is different along different portions of its length. The spring thus acts like a worm. This spring can be manipulated by the fingers of the musician to enable the rod to enter into the handle a greater or lesser distance, thus providing an adjustment of the spread of the wires.

According to another embodiment of the invention, the handle itself is adjustable in length. By way of example only and not by way of limitation, this adjustment can be accomplished

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by means of a threaded portion on the handle, and this threaded portion can be fixedly positioned over a range of distances, or if desire, the handle may comprise a pair of telescoping or sliding sections which are movable relative to each other.

A more detailed description of the invention follows in conjunction with a drawing, wherein:

Fig. 1 illustrates one embodiment of the wire brush of the invention with the wires pulled entirely into the interior of the handle and the adjusting rod extending out for its whole length;

Fig. 2 illustrates the wire brush of Fig. 1 ready for use, with the spiral spring adjusted for minimum entry of the rod into the handle;

Fig. 3 illustrates the wire brush of Fig. 1 ready for use, with the spiral spring adjusted for maximum entry of the rod into the handle;

Fig. 3a is a side or edge view of Fig. 3;

Figs. 4 and 5 illustrate two other embodiments of the wire brush of the invention with the handle provided with adjustable sections for changing the effective length of the handle; and

Fig. 6 shows another embodiment of the present invention.

Throughout the figures of the drawing, the same parts are represented by the same reference numerals.

Referring to Figs. 1, 2, 3 and 3a in more detail, there is shown a wire brush or jazz drum switch comprising a tubular handle 10 of elliptical cross-section; a plurality of fine quality, thin gauge, rust-proof piano steel wires 11 held together at one end by a metallic lug or clip 12; and an adjustment rod 13 having one end fixedly secured to the lug 12 and its free end formed into a loop 15.

The lug or clip 12 is crimped at 16 to hold the steel wires firmly, and is slidable along the interior of the handle 10 in response to movement of the rod 13. It will be evident that this lug can have a different shape than that shown.

The handle 10 essentially comprises a tubular sleeve which may be of any suitable material such as metal or plastic. The end 18 of the sleeve is preferably flared.

Surrounding the loop portion 15 of the rod is a spiral spring 20. In the process of manufacture, this spring is slid onto the rod before the end of the rod is formed into a loop. The spring 20, it should be noted, has one portion whose turns



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are very closely spaced and touch each other, as at 20', and has another portion 20'' whose turns are more widely spaced. This spring acts in the manner of a worm in response to rotary motion of the fingers at any point on the spring. Thus, by turning the spring, the latter can assume the position shown in Fig. 2 or the position shown in Fig. 3, or any intermediate position, as shown in Fig. 1.

That end of the spring or worm which is located on the straight portion of the rod 13 is tightly wound and serves two purposes. First, it serves as a stop and prevents the spring from entirely leaving the straight portion of rod 13, and second, it acts as a limiting point for the entry of rod 13 into the handle. Thus, with the spiral spring adjusted for the position of Fig. 2, the spring extends for its maximum permissible length on the straight portion of rod 13, and the rod extends for its minimum distance within the handle 10. For the adjustment of the spiral spring shown in Fig. 3, the spring has a minimum permissible length on the straight portion of rod 13, and the rod extends for its maximum distance within the handle 10.

In adjusting the spiral spring, the rod 13 is first pulled out for a substantial distance from the handle, and then the spring rotated by the fingers to assume the desired position, after which the rod is pushed back into the handle as far as it can go, with the left end of the handle resting against one end of the spring. In this position, the rod cannot move with normal use of the instrument, and the adjustment remains the same until the user again pulls out the rod to make another adjustment. The wires 11, due to their tendency to spread out (their springiness, so to speak), exert a force on the rod 13 in such direction as to tend to pull the loop 15 toward the handle.

Fig. 1 shows the rod pulled out for its entire length, in which position the wires are concealed in the handle. This is the position in which the wire brush is carried when not being used, in order to prevent damage to the wires 11.

Fig. 3 shows the greatest spread and greatest effective length of the wires, with the rod 13 pushed all the way into the handle as far as it can go.

Fig. 2 shows the smallest spread and smallest effective length of the wires, with the rod 13 adjusted for minimum entry into the handle by virtue of the position of the spiral spring.

In the embodiment of Figs. 1, 2, 3 and 3a, it is important for the loop 15 to be so closed upon itself that the turns of the spiral spring cannot enter between the space between the straight portion of the rod 13 and the end of the loop which makes contact with the rod. This insures the fact that the spiral spring cannot leave the rod 13 entirely, and that only rotary motion of the spring is effective for adjusting the spring.

Figs. 4 and 5 show other embodiments of the invention which make use of an adjustable length handle.

In Fig. 4, the handle is designated 10' and comprises two threaded engaging portions A and B. Portion A is located at the end nearest loop 15 of the rod 13, and is adjustable in position over portion B to vary the effective length of handle 10', and hence the effective spread of wires 11 when the rod 13 is pushed all the way into the handle. A set screw C passing through a threaded aperture in portion A enables portions A and B

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to be fixedly secured together for a desired adjustment of the handle.

Fig. 5 is somewhat similar to the wire brush of Fig. 4 except that the adjustment of the effective length of the handle 10'' is made at a location intermediate the ends of the handle. In Fig. 5 the two adjustable threaded engaging portions are designated A' and B'', and are provided with a set screw C for securing these two portions together for any selected adjustment.

In Fig. 6, which shows another embodiment of the present invention, the wire brush comprises a rod 13' which is threaded for a small distance at the end which protrudes from the tubular sleeve or handle 10. There is provided in this embodiment a ball 21 of hard rubber or other suitable material which comprises a stop and which takes the place of the loop 15 of Figs. 1 to 5 inclusive. This ball or stop 21 may be threaded as shown and is adjustable in position over the threaded portion of the rod 13 by turning it in an obvious manner. The ball 21 is prevented from leaving the end of the rod 13' which protrudes from the sleeve 10 by means of a rivet or enlarged portion 22 which forms an enlarged end for the rod 13'. It will thus be seen that turning the ball 21 will adjust the position of this ball over the threaded portion of the rod 13' and determine the extent of entry of the rod 13' into the tubular handle 10, hence controlling the spread of the wires 11 from the tapered end 18 of the handle.

A set screw 23 serves to fix the position of the ball 21 at any desired position along the length of the threaded position of the rod 13'.

What is claimed is:

1. A musical instrument comprising a wire brush having a tubular handle, a plurality of wires adapted to protrude from one end of the handle, a rod extending from one end of the handle and entering the interior of said handle for adjusting the effective length and spread of the wires, and an extensible member on said handle at one end thereof for controlling over a range the extent of entry of said rod into said handle.

2. A musical instrument comprising a wire brush having a tubular handle, a plurality of wires adapted to protrude from one end of the handle, a straight rod in the interior of said handle for adjusting the effective length and spread of the wires, said rod having a loop at one end, and a spiral spring on said loop having one end on the straight portion of said rod, whereby rotary motion of said spring controls the extent of entry of the straight portion of said rod into said handle.

3. A musical instrument comprising a wire brush having a tubular handle, a plurality of wires adapted to protrude from one end of said handle, a clip for said wires, said clip being slidable in said handle, a rod in the interior of said handle and having one end engaging said clip for varying the effective length and spread of the wires, said rod having a loop located externally of said handle at its other end, said loop having a spiral spring thereon over the major portion of its length for controlling the extent of entry of said rod into said handle, the turns of said spring being differently spaced at different portions along said spring, one end of said spring being located outside of said loop.

4. A musical instrument known as a jazz drum switch comprising a tubular handle flared at one end, a plurality of wires adapted to protrude



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from said flared end and held together by a clip slidable in said handle, the spread of said wires outside said handle being controlled by the dimensions of said flared end, a rod secured at one end to said clip, said rod having a finger gripping element at its other end and protruding from the other end of said handle, and adjustable means for controlling the effective amount of entry of said rod into said handle and fixedly maintaining the rod in any desired position of adjustment.

5. A musical instrument comprising a jazz drum switch having a tubular handle, a plurality of wires adapted to protrude from one end of said handle, and a rod in the interior of said handle having one end secured to said wires for varying the effective length and spread of the wires, said handle comprising a pair of sections which are adjustable in length over each other.

6. A musical instrument comprising a jazz drum switch having a tubular handle, a plurality of wires adapted to protrude from one end of said handle, and a rod in the interior of said handle having one end secured to said wires for varying the effective length and spread of the wires, said handle comprising a pair of sections which threadedly engage each other for adjusting the effective length of the handle.

7. A musical instrument known as a jazz drum switch comprising a tubular sleeve open at both ends, a plurality of thin gauge metallic wires adapted to protrude from one end of said sleeve and held together by a clip slidable in said sleeve, a rod secured at one end to said clip and pro-

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truding out from the other end of said sleeve, said rod having at its protruding end a stop which is adjustable over said rod for a short distance, whereby the extent of entry of said rod into said sleeve may be varied by adjustment of said stop.

8. A wire brush or jazz drum switch comprising a tubular sleeve, a plurality of wires adapted to protrude from one end of said sleeve and held together by a clip slidable in said sleeve, a rod secured at one end to said clip and protruding out from the other end of said sleeve, said rod being threaded for a short distance at its protruding end, and a ball surrounding said last end of said rod and adjustable in position over the threaded portion of said rod, whereby the extent of entry of said rod into said sleeve may be varied by adjustment of said ball.

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