

L. NORDLINGER.
FIREWORK.

APPLICATION FILED APR. 9, 1906.

2 SHEETS—SHEET 2.

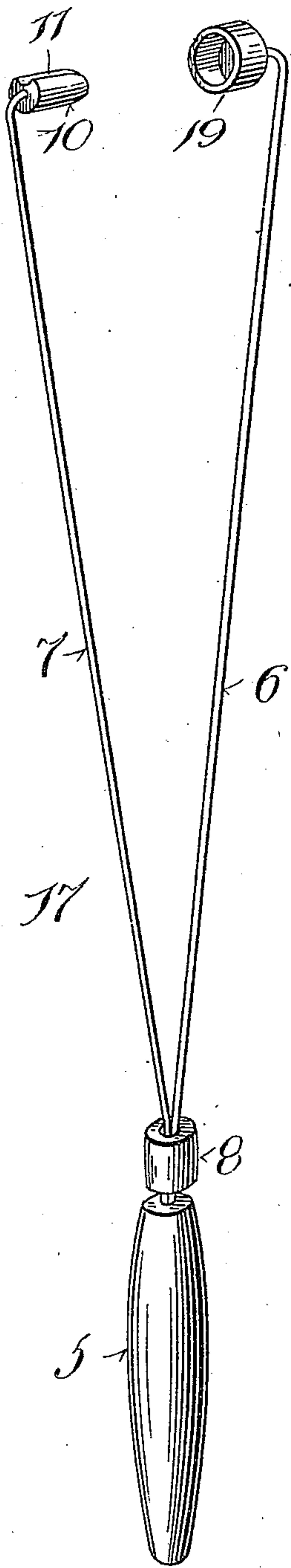


Fig. 9.

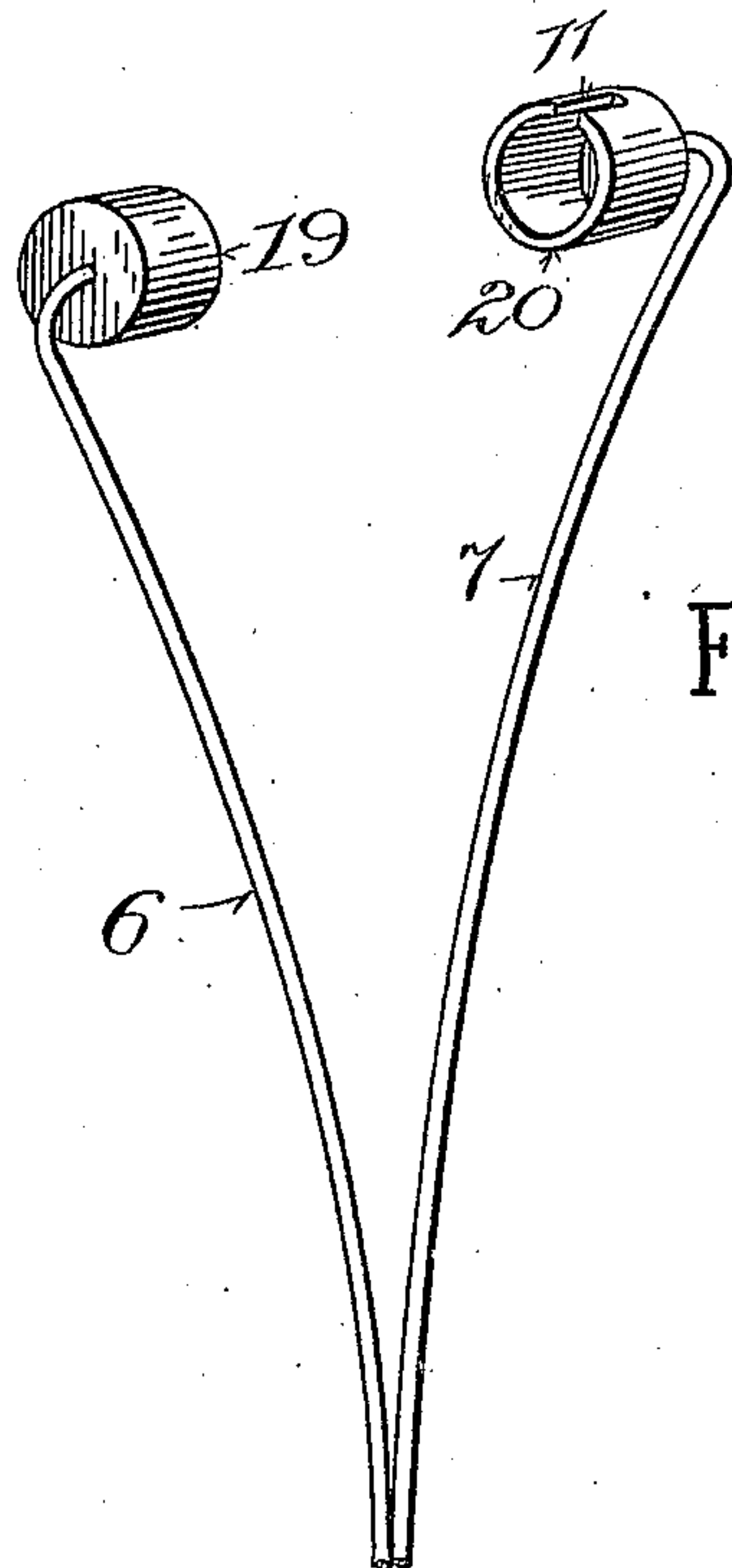


Fig. 10.

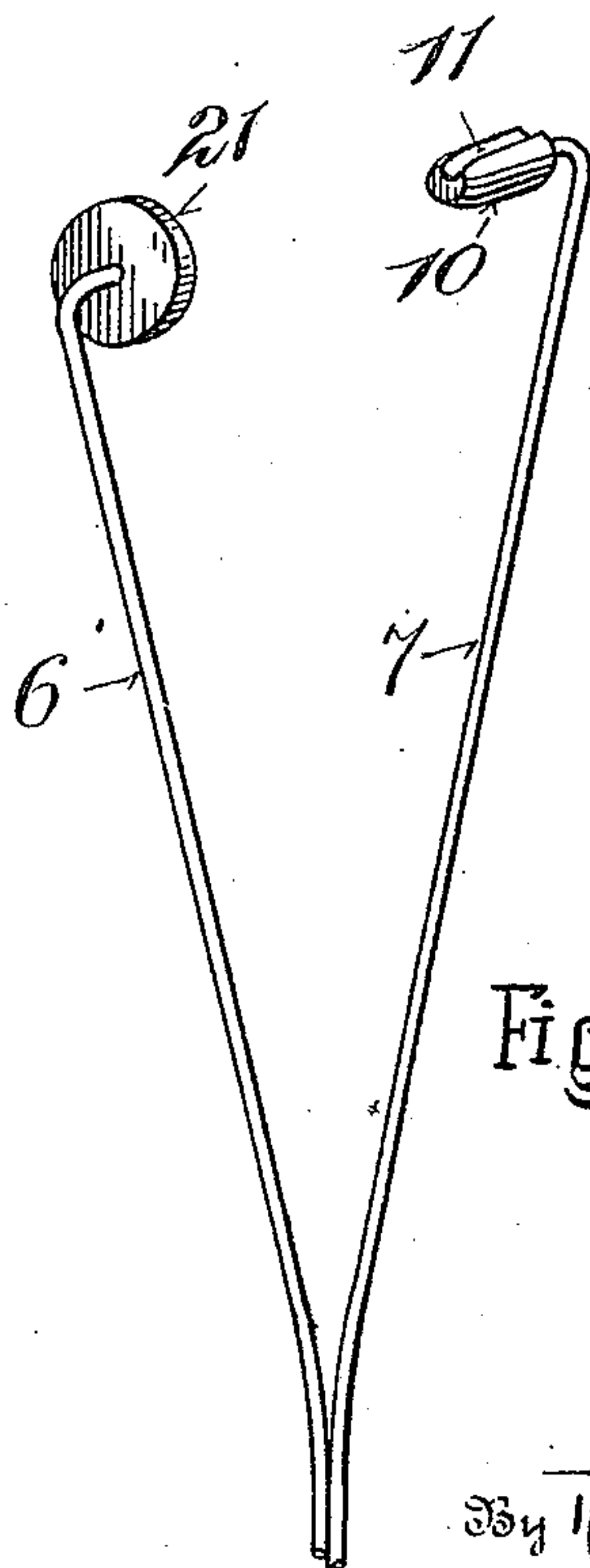


Fig. 11.

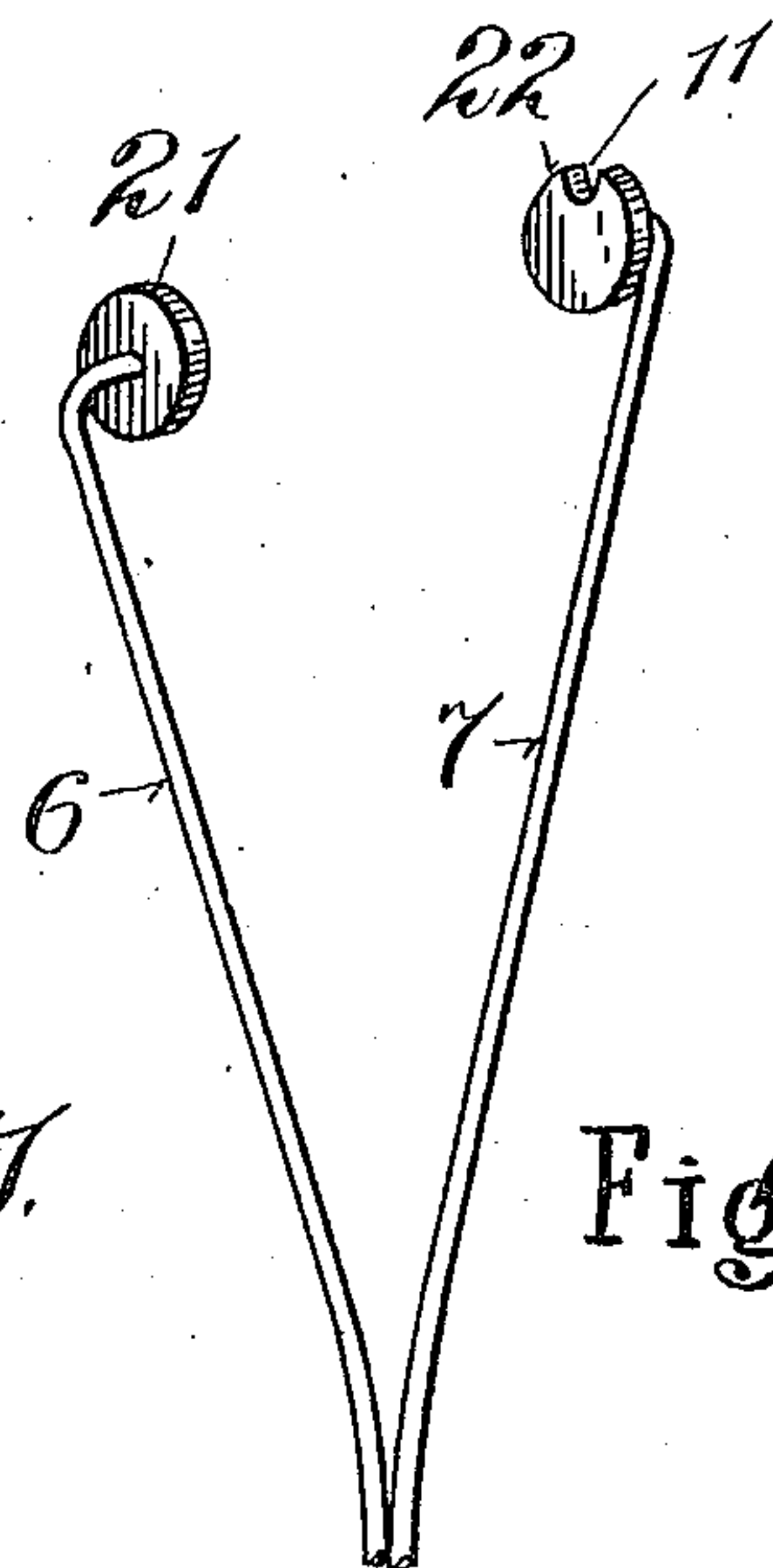


Fig. 12.

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UNITED STATES PATENT OFFICE.

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FIREWORKS.

No. 840,242.

Specification of Letters Patent.

Patented Jan. 1, 1907.

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To all whom it may concern:

Be it known that I, LOUIS NORDLINGER, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a new and useful Improvement in Fireworks, of which the following is a specification.

The object of my invention is to provide a novel form of fire-cracker, together with means for holding the same when exploded. This object is accomplished by means of the devices hereinafter set forth.

For a more particular description of my invention reference is to be had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a longitudinal section of my improved fire-cracker. Fig. 2 is a side elevation of my improved holder. Fig. 3 is a plan view of the same. Figs. 4, 5, and 6 show enlarged details. Figs. 9, 10, 11, and 12 show various modifications.

Throughout the various views of the drawings similar reference characters designate similar parts.

Fig. 1 shows a novel form of fire-cracker in that the usual "plugging" at the ends is omitted. It consists of a tube 1, made of a paper-roll and open at each end. In the bore of this tube are the package 2 of explosive and the fuse 3. It is obvious that this form of fire-cracker cannot be exploded properly unless the ends are suitably plugged, as otherwise the explosive would not burst the tube, but simply blow out at either or both ends. This trouble is entirely obviated by my improved holder, several forms of which are herein shown and described.

Referring to Figs. 2 to 6, inclusive, the holder 4 comprises a handle 5 and two resilient wires 6 and 7, respectively, each curved and flared, as shown in Fig. 2, and both have the sliding clamp 8, which draws them together or separates them. In Fig. 2 this clamp 8 is shown in the form of a hollow cylinder. The free ends of the wires 6 and 7 are bent so as to be in the same line, and they are provided with the plugs 9 and 10, respectively, which plugs are so shaped as to fit the hollow bore of the tube 1. The plug 10 is recessed at 11, so as to receive and protect the fuse 3. These plugs are preferably made of metal and are fixed to the wires, as shown in Fig. 5. When used, the clamp 8 is brought to the handle 5. The fire-cracker is then

placed as shown in Fig. 2. The clamp 8 is then moved away from the handle 5, and the fire-cracker is then firmly clamped and its ends are plugged. It must be so placed that the fuse is brought out through the slot 11 in the plug 10. The fuse may then be ignited and the fire-cracker exploded, the tube 1 being burst in the usual way. This construction of fire-cracker and holder as above described does away with the expensive process of plugging the ordinary fire-cracker. However, if such a result is not desired the construction of Fig. 7 may be used. Here the ordinary fire-cracker 12 is held by points on the wires 13 of the holder 14. The wires are clamped or unclamped by means of a perforated ball 15 sliding thereon.

Yet another form is shown in Fig. 8, where the ends of the wires 16 are bent to form a loop, each of which rests in the end of an ordinary fire-cracker.

In Fig. 9 the holder 17 is shown with wires 18 like those shown and described in Fig. 2, except that instead of the plug 9 a cup 19 is substituted, which is adapted to inclose and hold the end of a fire-cracker.

In Fig. 10 the plug of Fig. 9 is replaced by a slotted cup 20, adapted to receive the end of a fire-cracker with a fuse which passes through the slot.

Fig. 11 is the same as Fig. 9, except that a disk 21 is substituted for the cup 19, and Fig. 12 is the same as Fig. 11, except that a recessed disk 22 is substituted for the plug.

While I have shown and described certain embodiments of my invention, I do not regard it as limited thereto, as it is obvious that many changes in form may be made that embody its substance.

Having described my invention, what I claim is—

1. In a device of the class described, a fire-cracker with ends unplugged, and a handle having means for plugging the end of said fire-cracker and holding the same so that it may be exploded.

2. In a device of the class described, an unplugged fire-cracker, detachable plugs for the ends of said fire-cracker, and means for holding said plugs under pressure in the ends of said fire-cracker.

3. In a device of the class described, a holder, wires leading therefrom, a clamp on said wires, plugs on the end of said wires, and an unplugged fire-cracker held between said plugs and plugged by them.

4. A fire-cracker composed of a tube, a fuse, and an explosive in the bore of said tube, said tube being unplugged.
5. In a device of the class described, an unplugged fire-cracker and a holder, said holder composed of a handle, plugs, resilient means for supporting said plugs, and a plug on said wires for holding said plugs in place.
6. In a device of the class described, a handle, curved wires leading therefrom, and fire-cracker-engaging means on said wires.
7. In a device of the class described, a handle, wires leading therefrom, a clamp sliding thereon and fire-cracker-engaging means on said wires.
8. In a device of the class described, a handle, wires leading therefrom, a cylindrical clamp sliding thereon, and fire-cracker-engaging means on said wires.
9. In a device of the class described, a handle, wires leading therefrom, a clamp sliding thereon, and plugs on said wires adapted to enter the bore of a fire-cracker tube.
10. In a device of the class described, a handle, wires leading therefrom, a clamp leading therefrom, a clamp sliding thereon, plugs on said wires, and means to receive a fuse in one of said plugs.

Signed this 6th day of April, 1906.

LOUIS NORDLINGER.

Witnesses:

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J. REINORS.