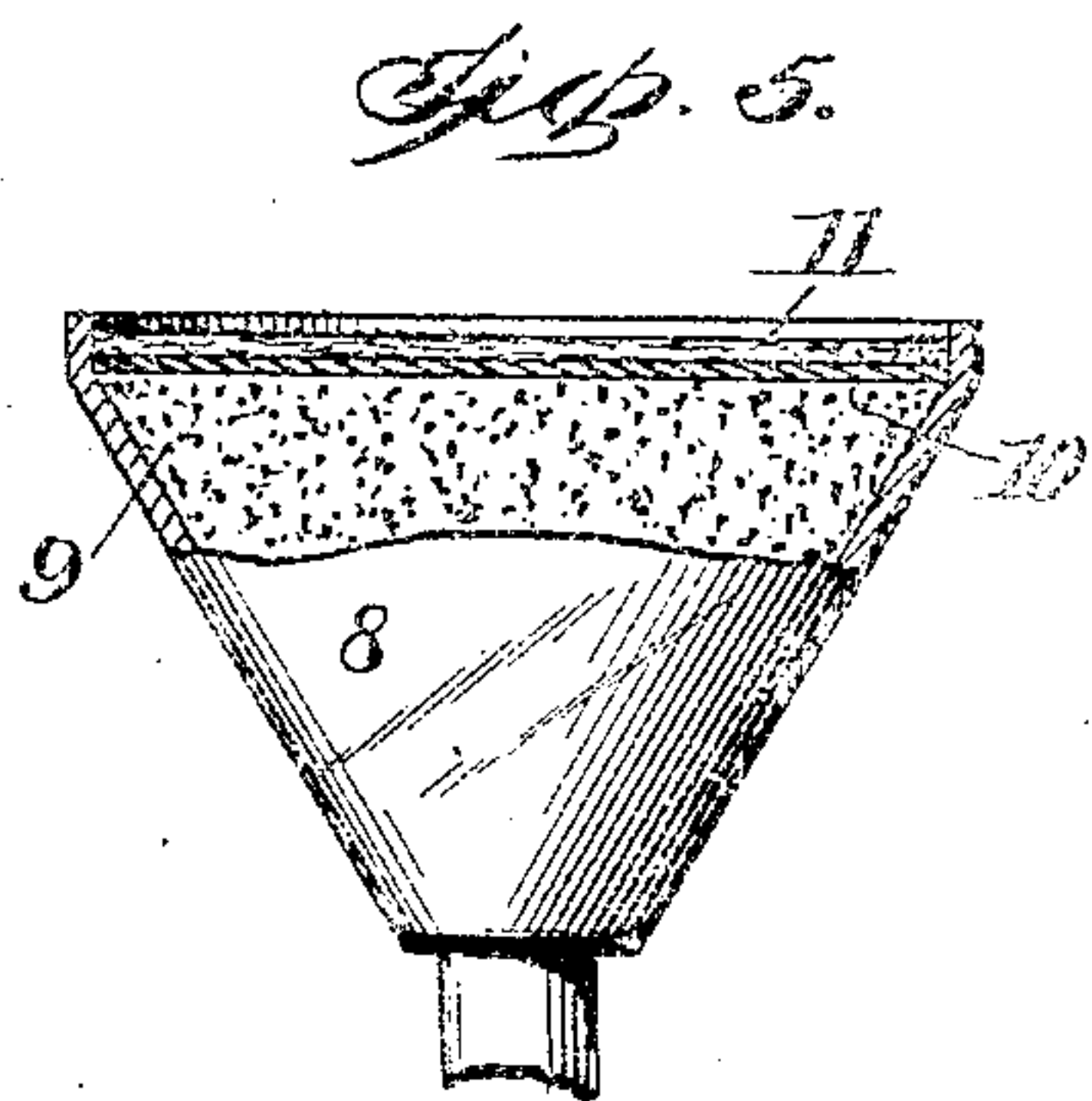
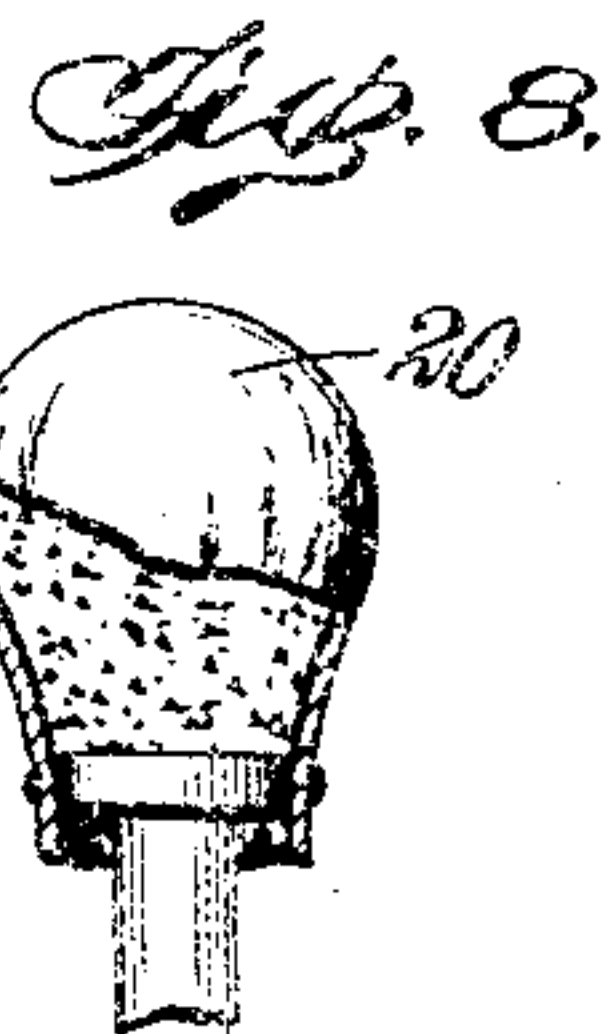
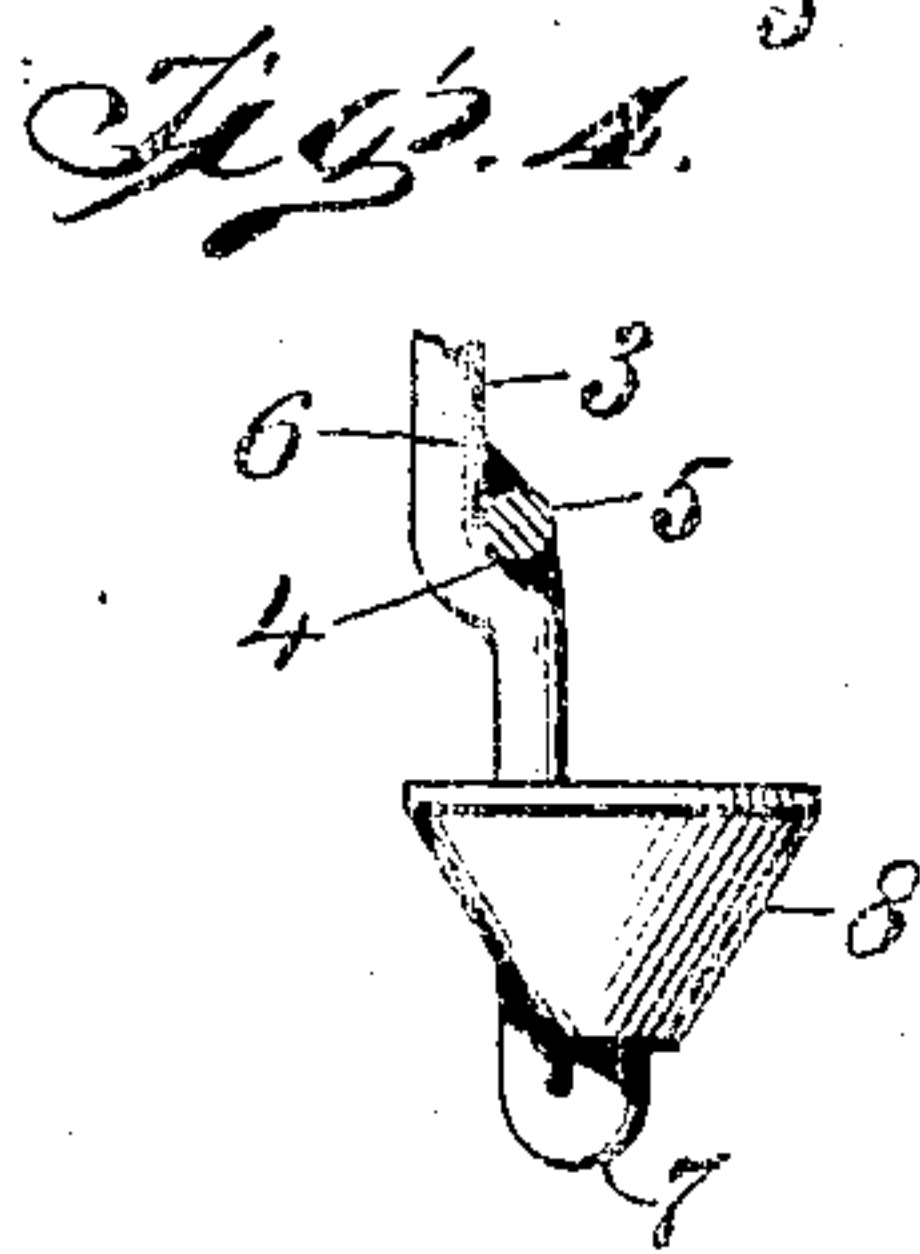
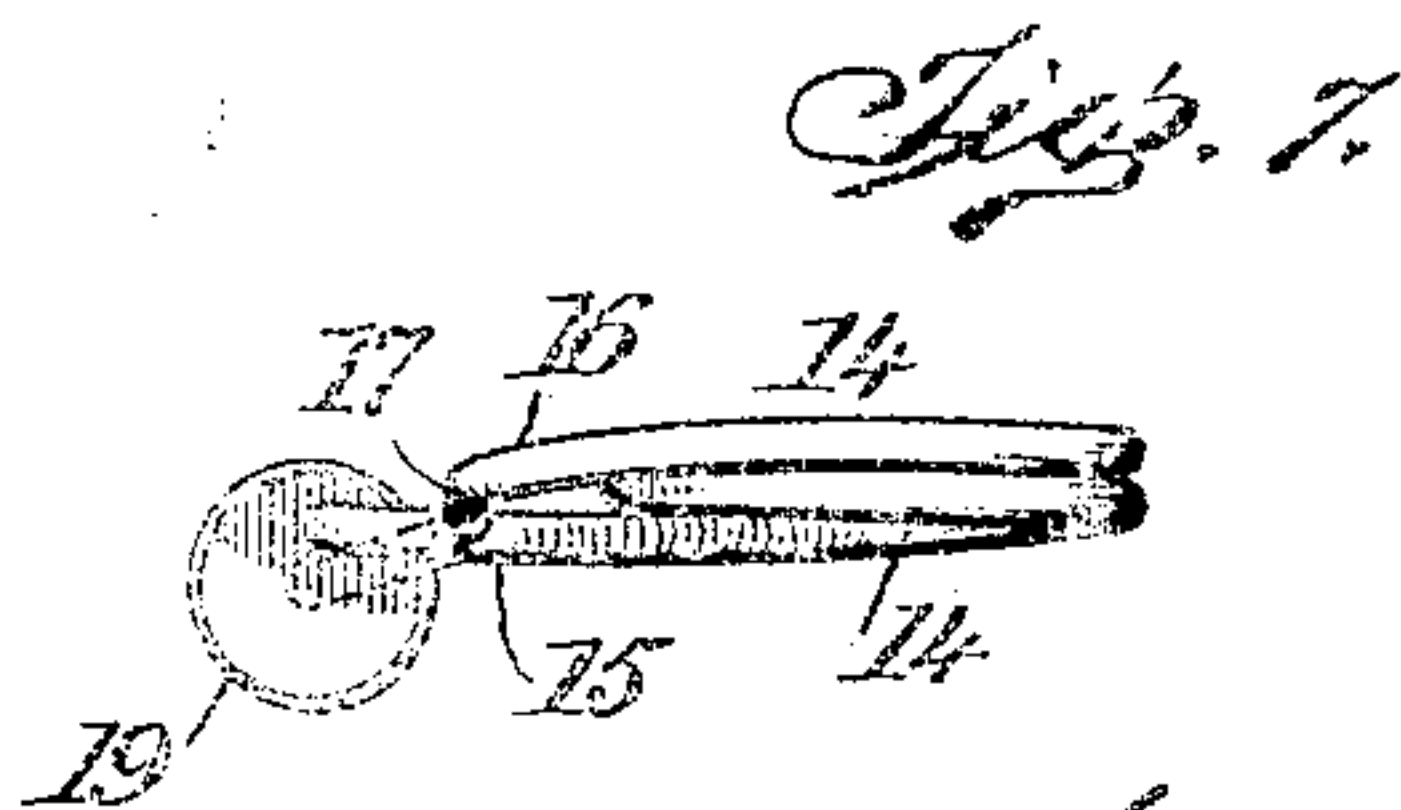
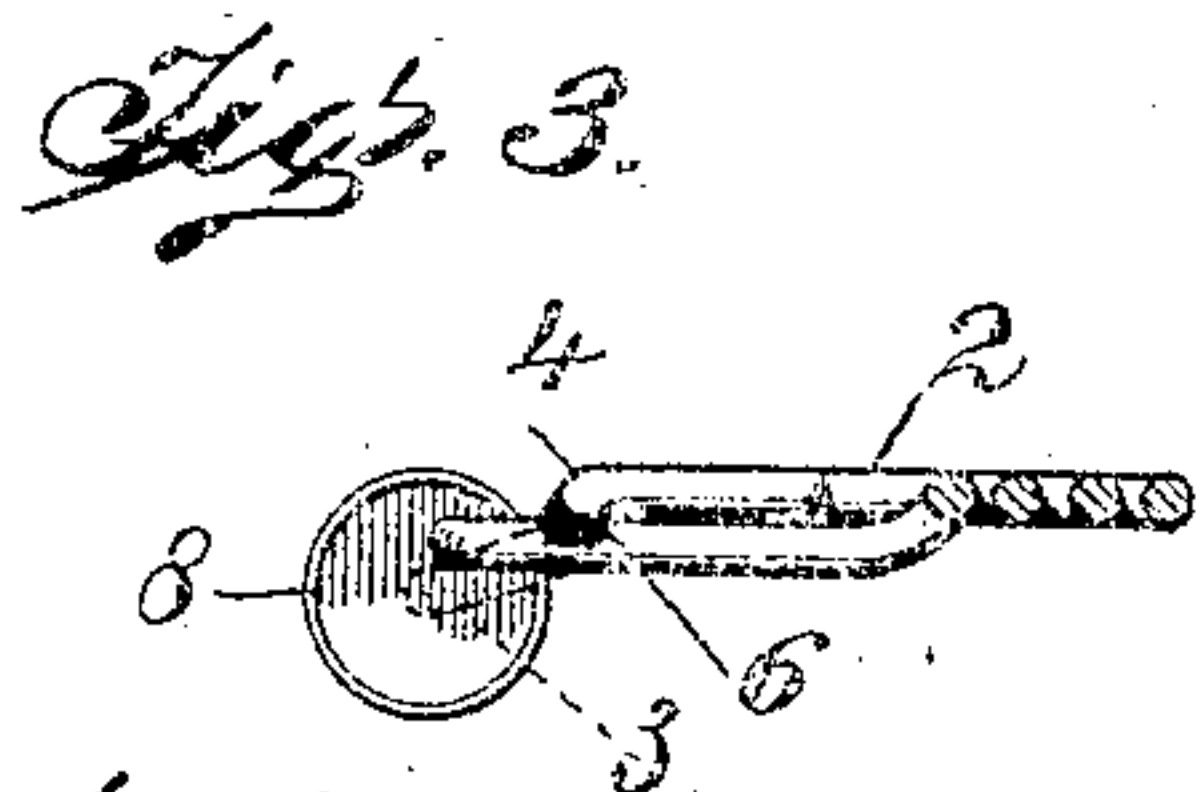
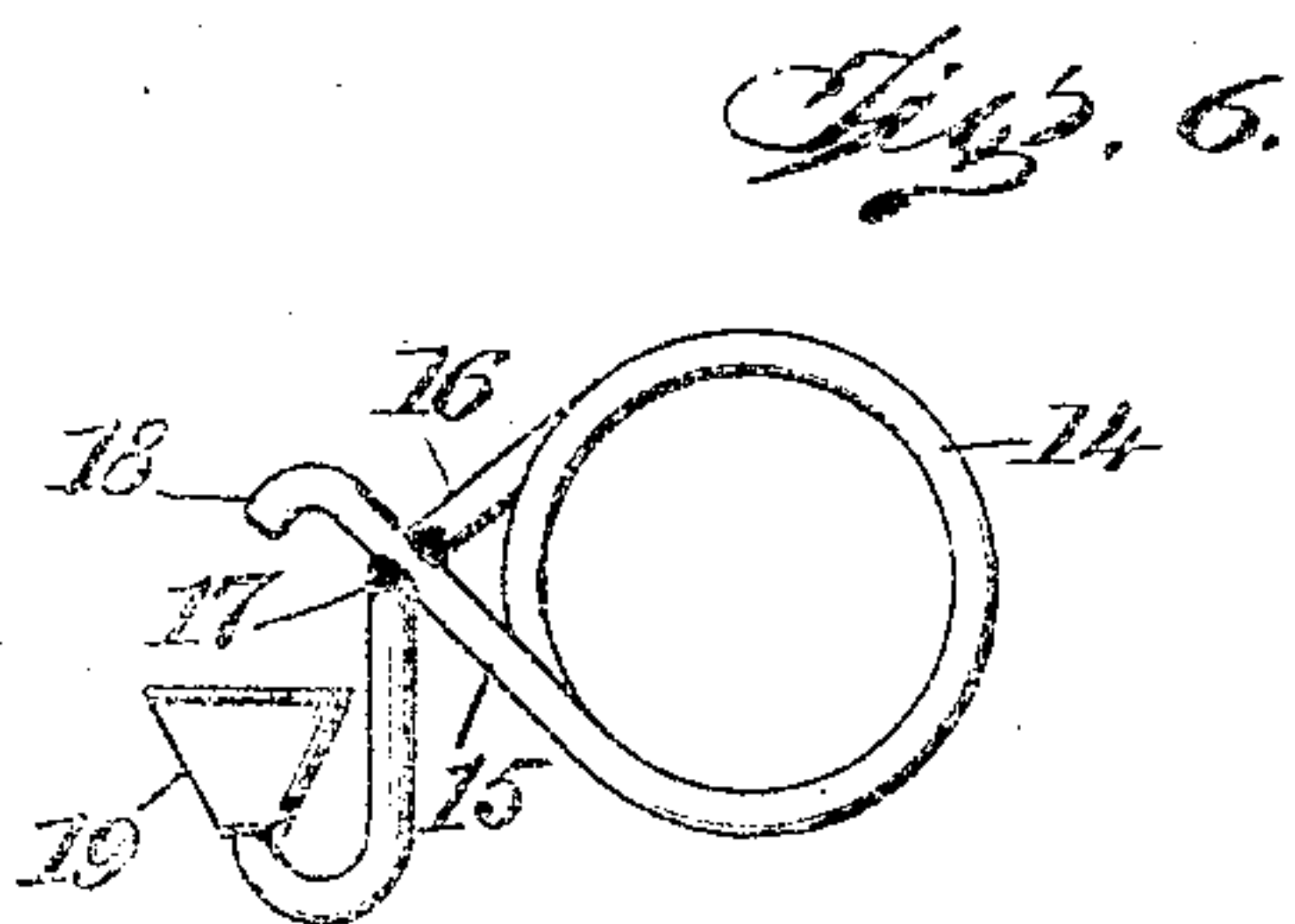
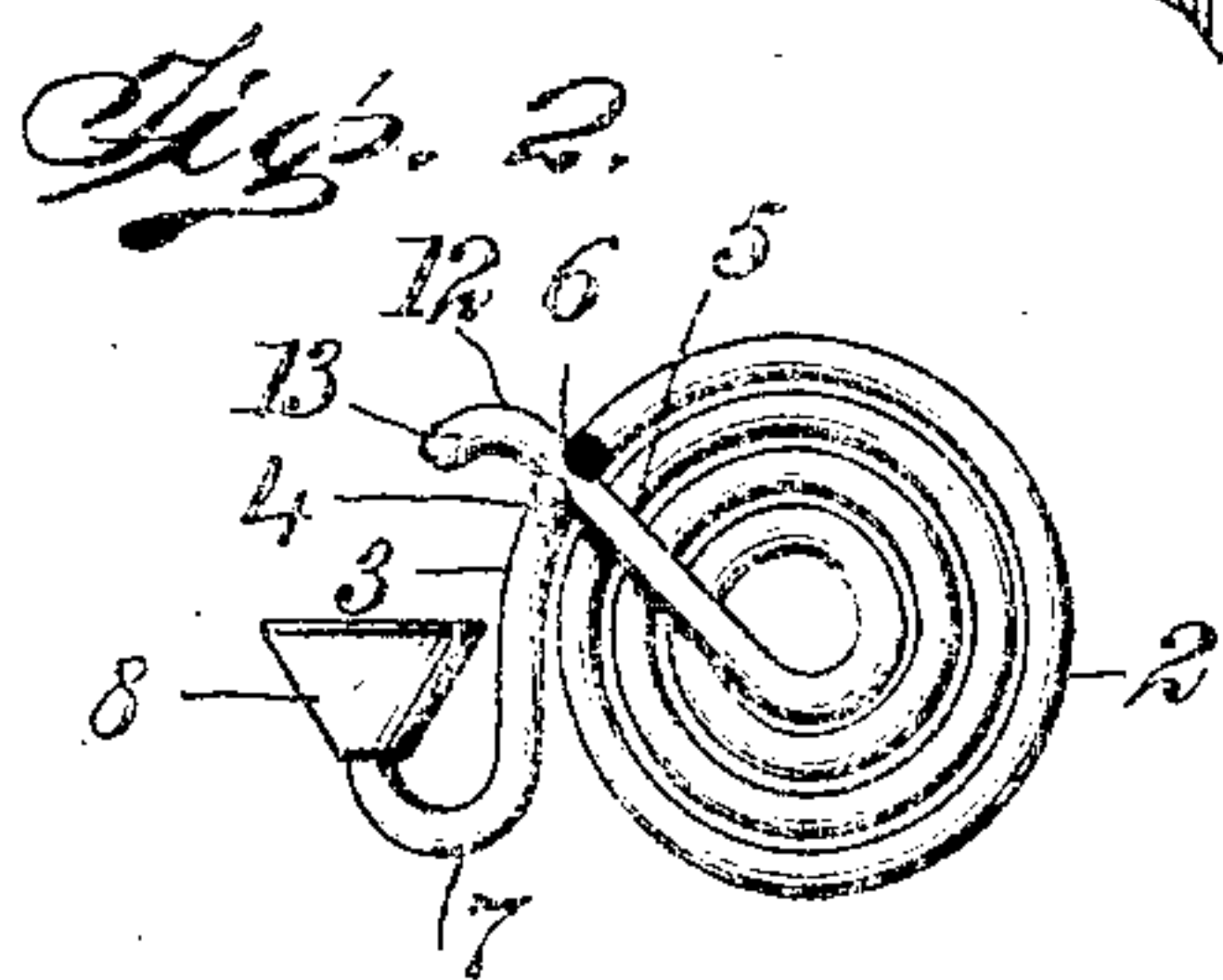
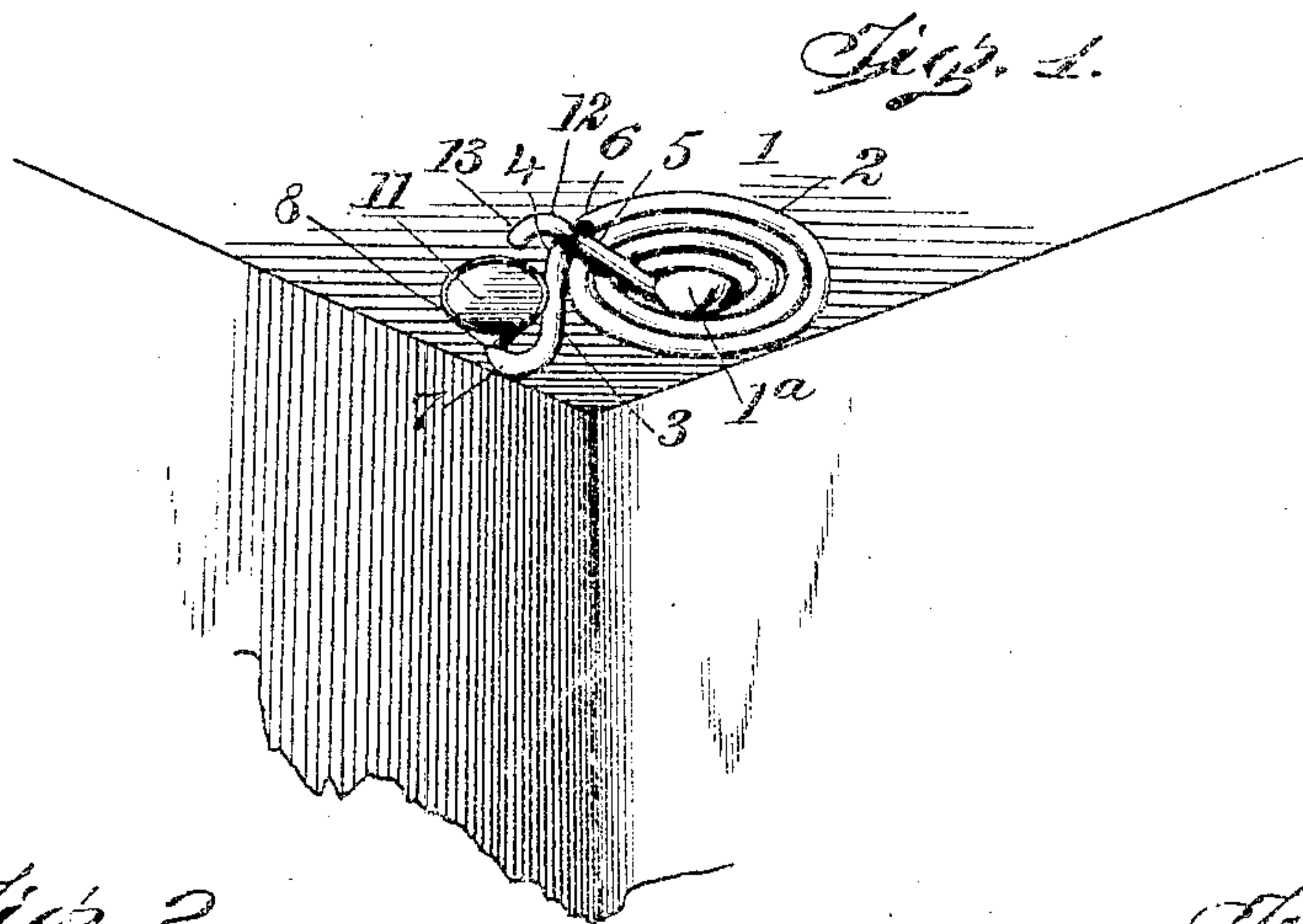


No. 786,655.

PATENTED APR. 4, 1905.

M. A. LIBBEY.
 DETONATING FIRE ALARM.
 APPLICATION FILED FEB. 12, 1904.



WITNESSES:

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UNITED STATES PATENT OFFICE.

MARK A. LIBBEY, OF SOUTH BERWICK, MAINE.

DETONATING FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 786,655, dated April 4, 1905.

Application filed February 12, 1904. Serial No. 193,283.

To all whom it may concern:

Be it known that I, MARK A. LIBBEY, a citizen of the United States, and a resident of South Berwick, in the county of York and State of Maine, have invented new and useful Improvements in Detonating Fire-Alarms, of which the following is a full, clear, and exact description.

This invention relates to alarm devices; and it consists substantially in the construction and combinations of parts hereinafter particularly described, and pointed out in the claims.

The principal object of the invention is to provide an improved alarm device operating by detonation to give notice of the occurrence of fire in an apartment, room, or other place and also to provide a device of this character which is exceedingly simple, as well as inexpensive to manufacture, and thoroughly effective and reliable for its purpose.

A further object is to provide a device of the kind referred to which comprises but few parts and which possesses numerous advantages over many other structures hitherto devised with like ends in view.

The above and additional objects are attained by means substantially such as are illustrated in the accompanying drawings, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a view in perspective representing one manner in which my improved detonating-alarm may be applied for use in case of fire. Fig. 2 is a side view representing one form of the device. Fig. 3 is a top plan view thereof, partly in section. Fig. 4 is an end view of the structure shown in Figs. 2 and 3, the same being also partly in section and partly broken away. Fig. 5 is an enlarged part sectional elevation of the holder for the fulminate or explosive, showing the water or damp proof sealing devices therefor. Fig. 6 is a side view of a slightly-modified form of the device. Fig. 7 is a top view thereof, and Fig. 8 is a part sectional elevation showing a slight modification of the holder for the fulminate.

Before proceeding with a more detailed description it may be stated that in each of the forms of my improvements herein shown I em-

ploy a detonating-alarm device which may be readily secured to any part of the ceiling or wall of a room or apartment or to any object or support within the room, said device comprising a holder for a fulminate or detonating substance or compound and a member for striking upon the fulminate to produce a loud report or explosion. Said member is normally held or restrained from action by means of a fusible solder, which on the occurrence of fire in the vicinity of the device is caused to melt, (due to the heat engendered by the fire,) and thereby release the striking member to operate in the manner intended.

I have herein represented my improvements in certain selected embodiments; but it will be understood, of course, that I am not limited to the precise details thereof, since immaterial changes therein may be made coming within the scope of my invention.

Specific reference being had to the drawings by the designating characters marked thereon, 1 represents my improved detonating device as an entirety, the same being shown in Fig. 1 as applied or fastened to the ceiling of a room by means of a screw or similar device 1^a. As represented in Figs. 1 to 4, inclusive, the device comprises, preferably, a piece of wire 2 of considerable resiliency, which is coiled upon itself any desired number of times, the outer end portion 3 thereof being bent or turned laterally, as indicated at 4, so as to form a shoulder upon which is supported the upturned inner end portion 5 of the wire, constituting the striking member of the alarm. The resiliency or tension of said striking member combined with that of the coils tends to carry the member from the shoulder with considerable force; but normally the same is maintained upon the shoulder by means of a suitable binder or solder 6, adapted to melt or liquefy at a predetermined temperature, and thereby release the member. The extremity of the said end portion 3 of the wire is preferably bent or curved at 7, and supported thereby is a holder 8 for a suitable fulminate or detonating substance 9, said fulminate being protected from dampness or moisture by means of a closure or seal for the holder, preferably

constituted of a disk 10, of tin-foil or the like, and an outer layer 11, of waterproof fabric or material. It will be noted that the upper end of said holder is located directly below and in the working path of the striking member 5, the latter being preferably bent at 12 to form a head or hammer 13 for directly delivering the blow to explode the fulminate. The holder may be of any form suited to the purpose; but preferably I construct the same with tapering or conical sides, as shown, which enables the placing of the fulminate therein more compactly and which also provides increased area of surface for the striking member to operate upon when released.

As shown in Figs. 6 and 7, instead of coiling the wire of the device upon itself, as in Figs. 1 and 2, I form the same into parallel coils 14 of substantially equal dimensions, the end portions 15 and 16 of said wire being brought together and united by the binder or solder at 17, the one end portion, 15, having a head 18 and being the striking member of the device, while the other end portion, 16, serves as a support for the holder 19, as already explained with reference to Figs. 2 and 4, inclusive.

In Fig. 8 the holder for the fulminate is shown substantially in the form of a bulb 20, of foil or other suitable material, the contracted lower end of which is provided with a disk, and, if desired, the said structure may be coated or covered with any suitable damp or waterproof material or finish.

From the foregoing it will be understood that on the melting of the binder or solder the striking member of the device is released, whereupon said member of its own resiliency or tension is carried into forcible contact with the fulminate in the holder, thereby exploding said fulminate for the purpose explained.

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

1. A detonating fire-alarm, comprising a resilient member formed into a coil and having the ends crossed, a binder rendered ineffective by heat applied to said member to hold the

ends apart, and a holder containing fulminate disposed between the ends of said member.

2. A detonating fire-alarm, comprising a resilient member formed into a coil having its ends crossed and bent toward each other, a binder of fusible material applied to said ends at the point of crossing to hold the ends apart, and a holder containing fulminate mounted upon one end of said member in position to be engaged by the other end when the binder is fused.

3. A detonating-alarm, comprising a holder for a fulminate, a striker for exploding the latter, and a fusible binder normally restraining the action of the striker, said holder being provided with a closure of zinc and waterproof fabric.

4. A detonating-alarm, comprising a resilient wire bent into coils, and having the end portions thereof joined or united by a fusible solder, one end portion being provided with a holder for a fulminate, and the other end portion constituting a striker normally restrained from operating upon said fulminate by said solder.

5. A detonating-alarm, comprising a resilient wire bent upon itself into coils, and having one end portion thereof also bent to form a shoulder, and provided with a holder for a fulminate, the other end portion of the wire resting on said shoulder under tension, and a fusible solder normally maintaining said portion on the shoulder.

6. A fire-alarm comprising a resilient member having crossed extremities, a fusible or combustible bond connecting said extremities, and restraining the same against relative movement, and an alarm actuated by a relative movement of said extremities.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARK A. LIBBEY.

Witnesses:

CHARLES C. HOBBS,
J. Q. A. WENTWORTH