

F. G. TERWILLIGER.
WHISTLE AND CUT-OUT.
APPLICATION FILED APR. 23, 1910.

976,008.

Patented Nov. 15, 1910.

2 SHEETS—SHEET 1.

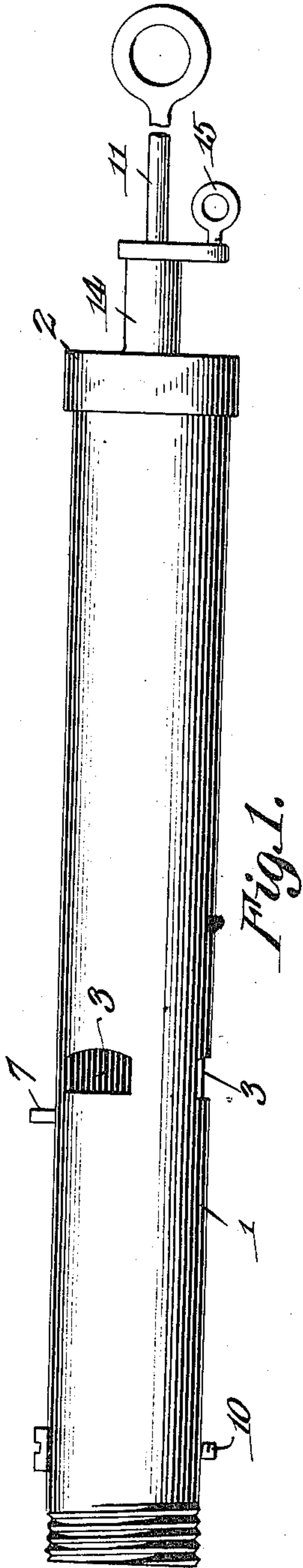


Fig. 1.

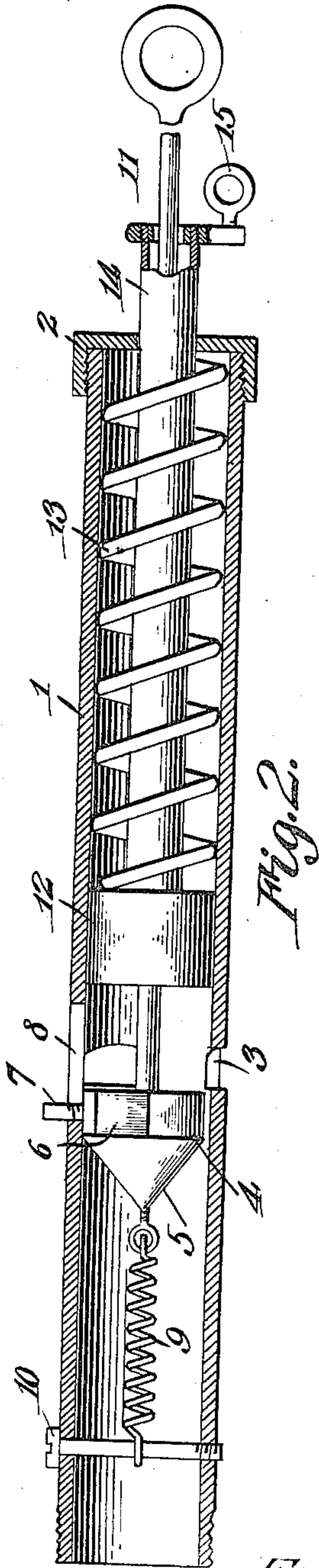


Fig. 2.

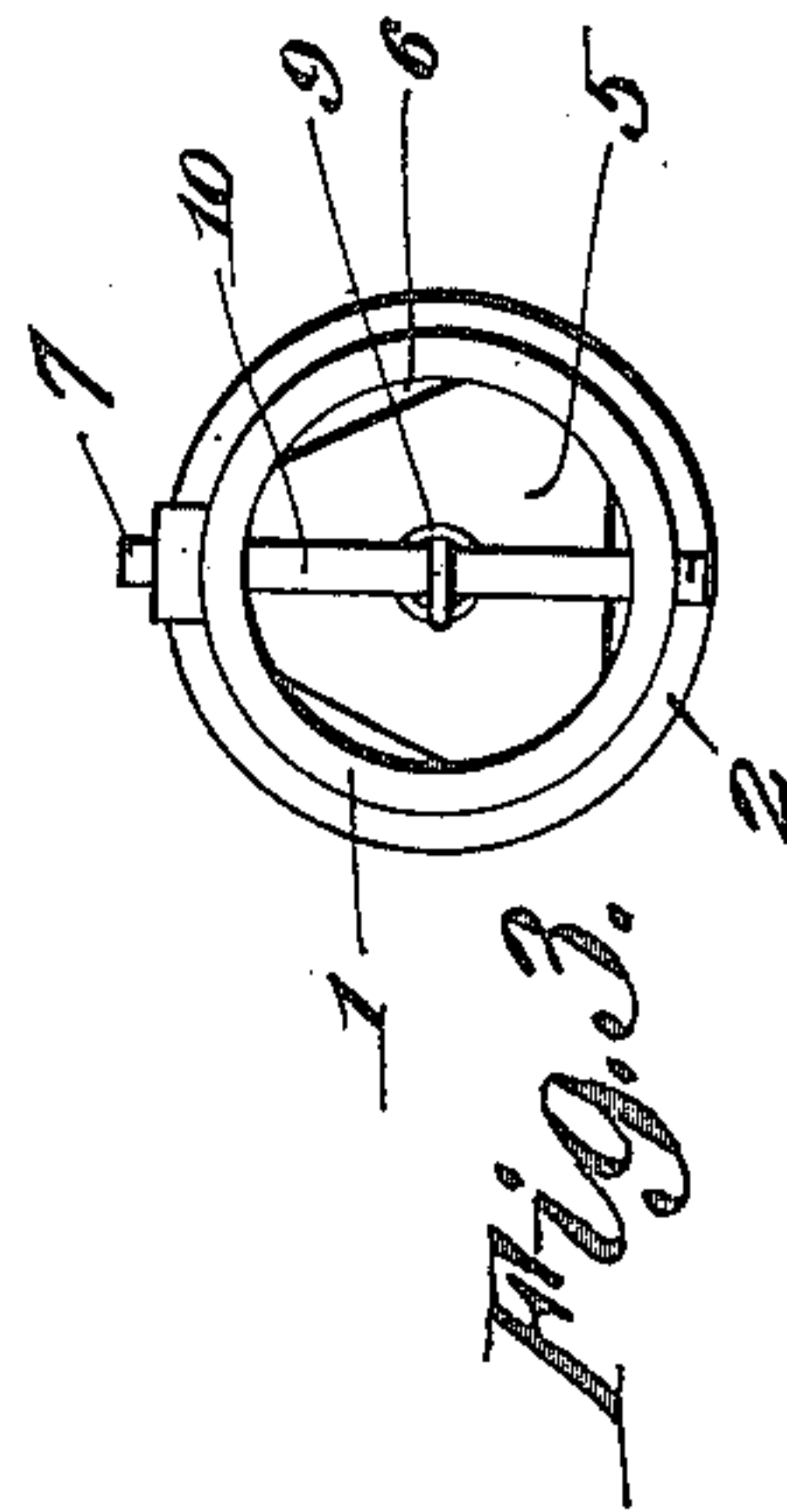


Fig. 3.

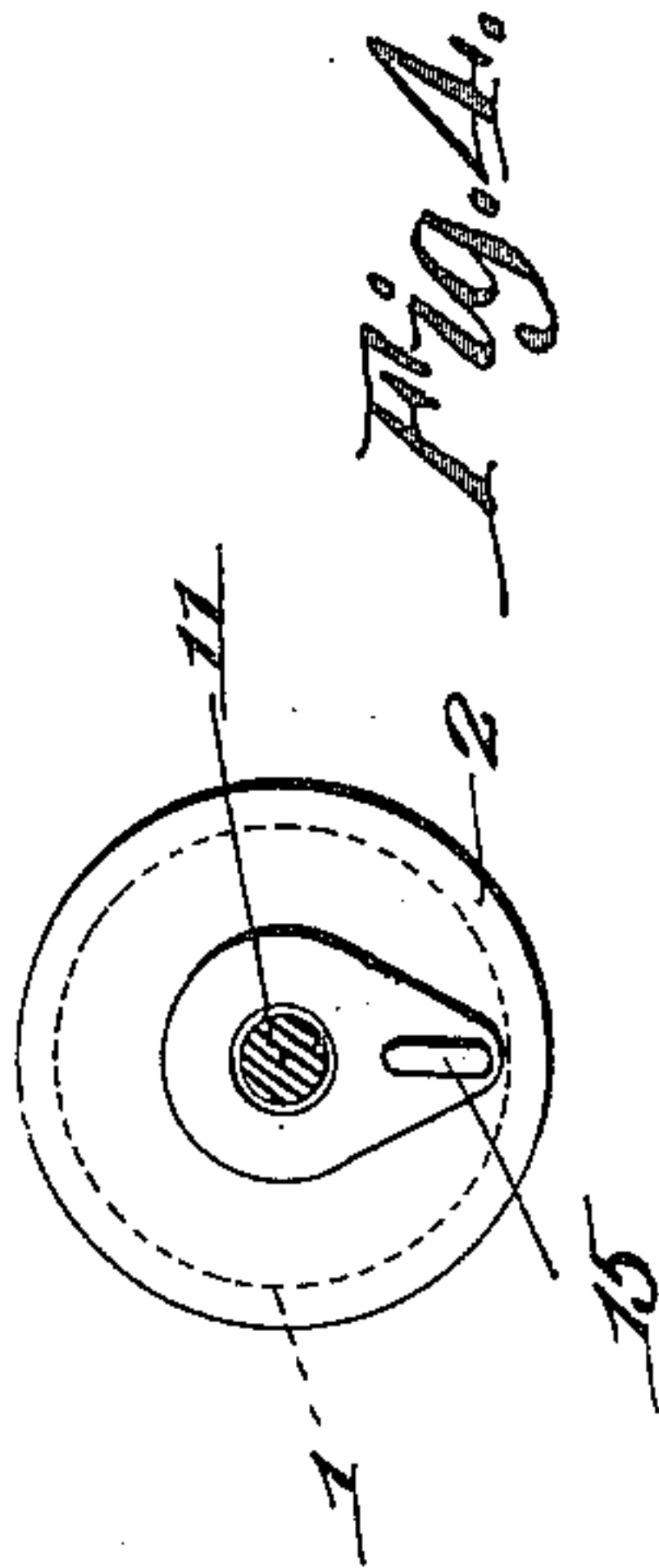


Fig. 4.

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2 SHEETS—SHEET 2.

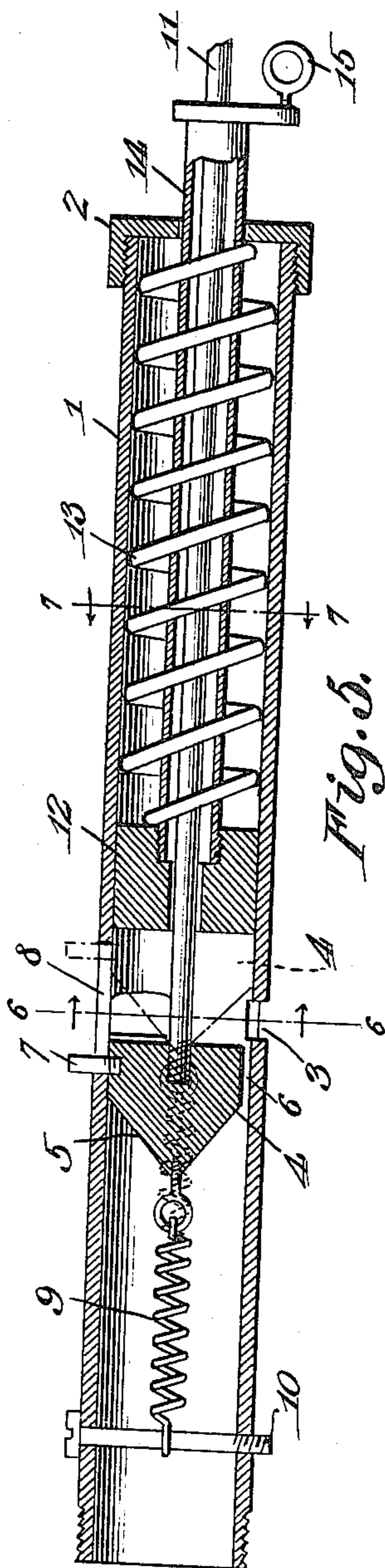


Fig. 5.

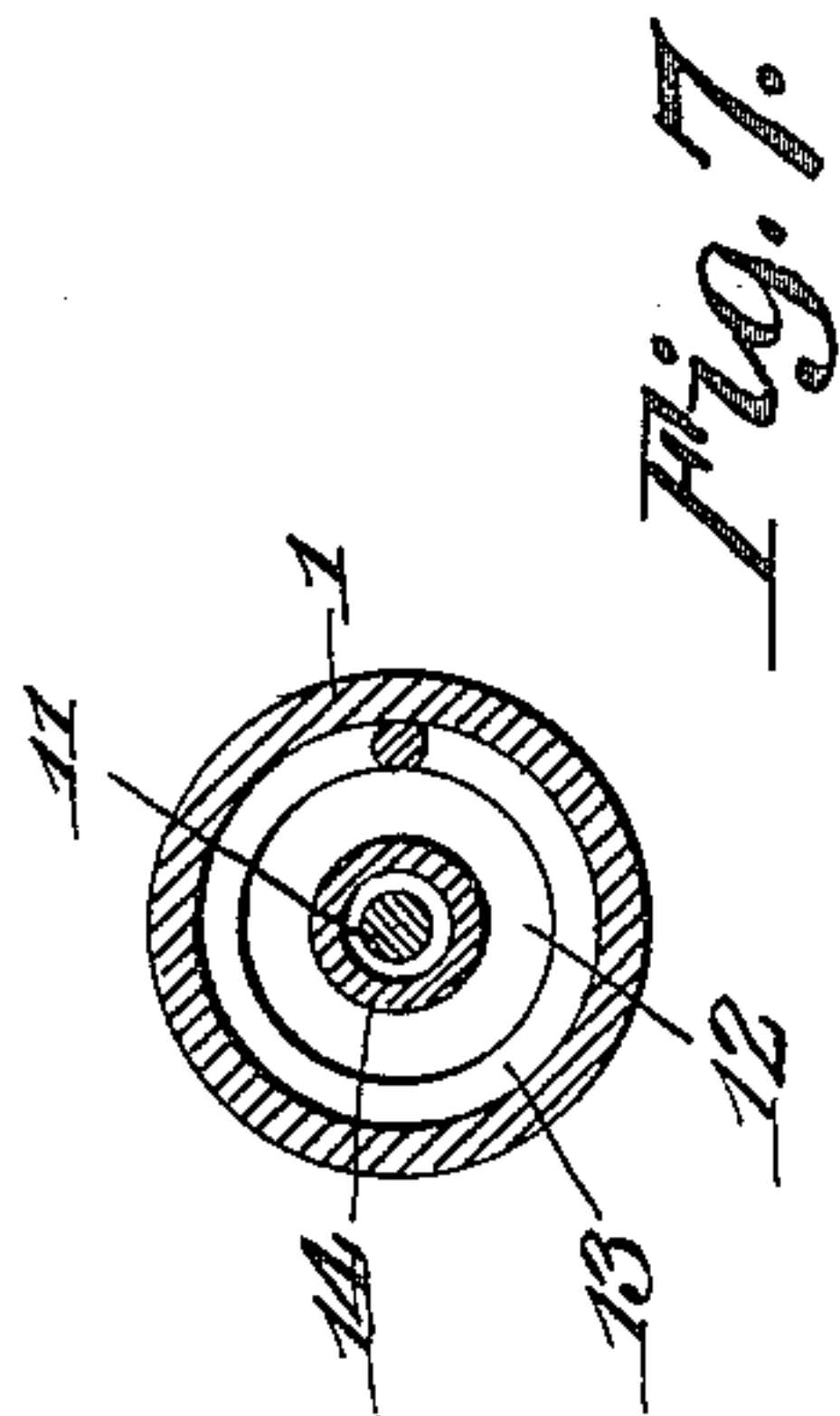


Fig. 7.

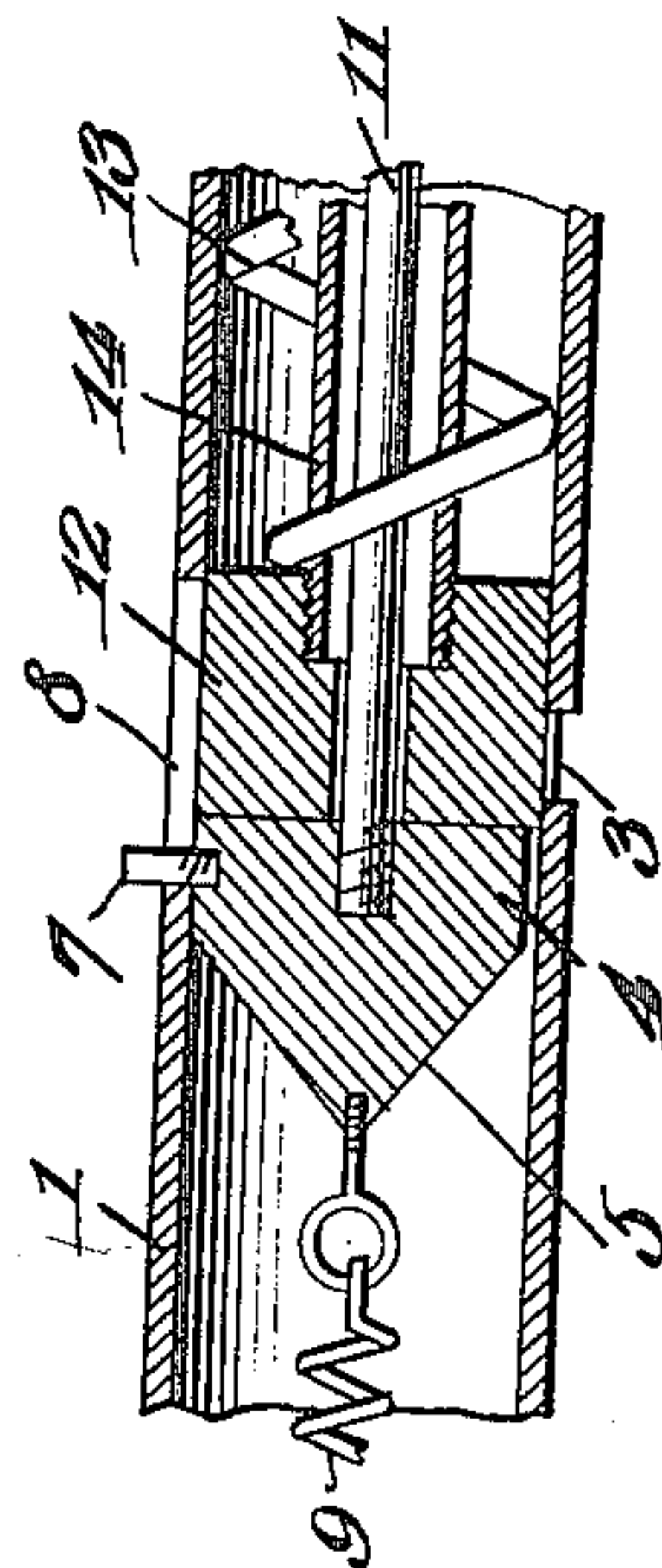


Fig. 9.

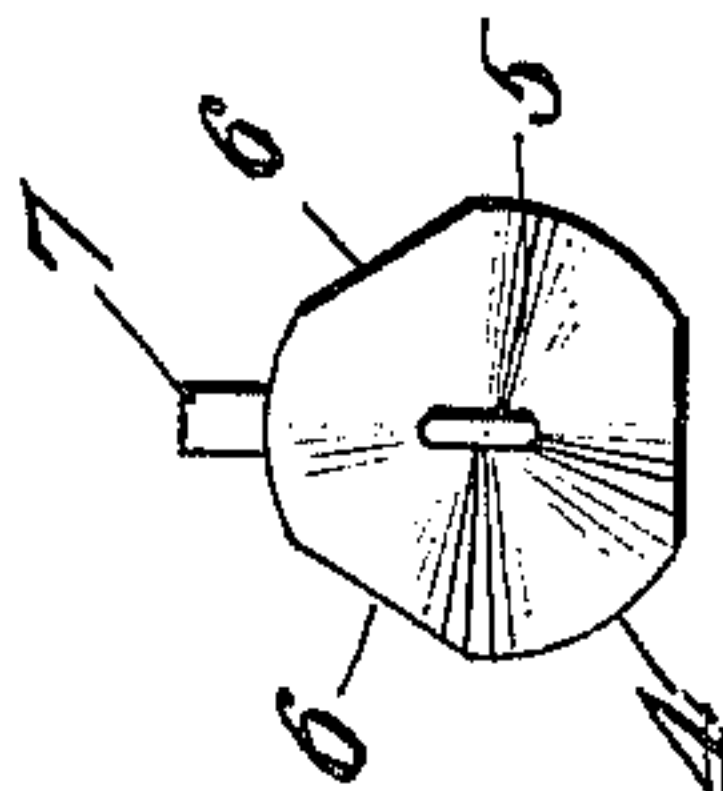


Fig. 8.

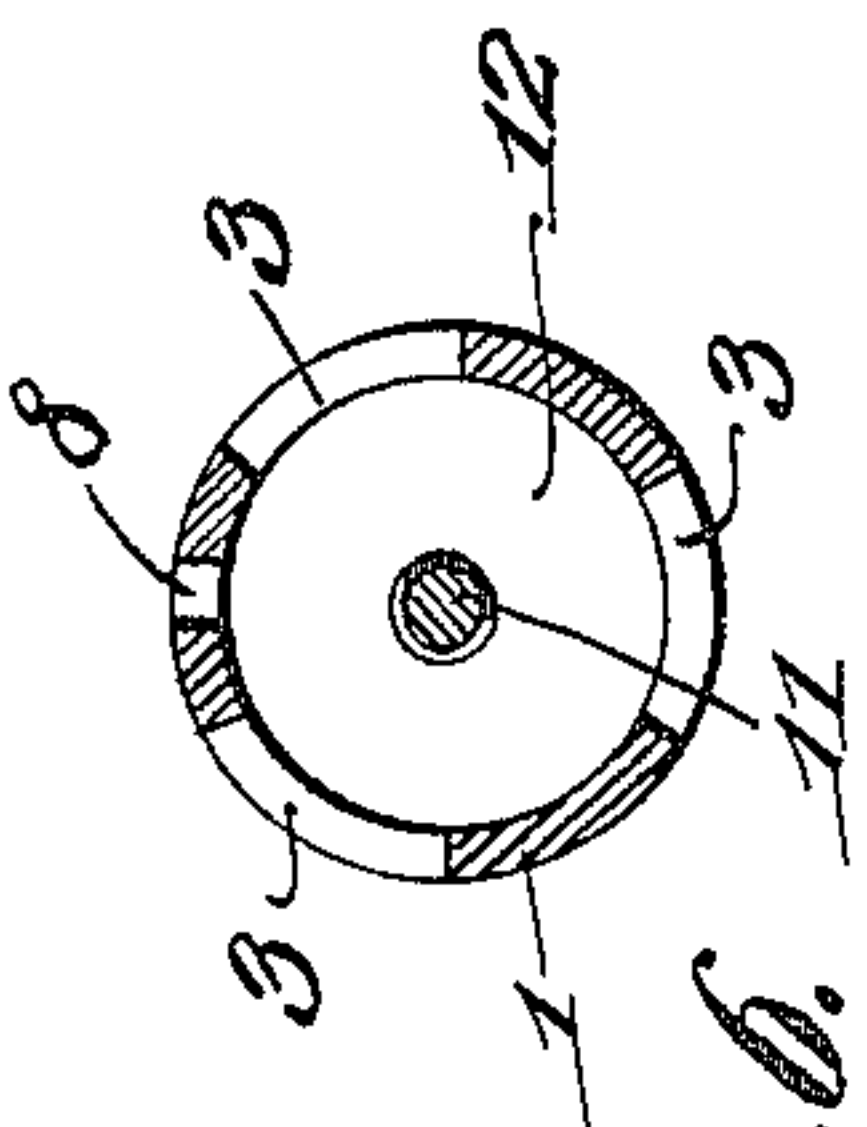


Fig. 6.

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UNITED STATES PATENT OFFICE.

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WHISTLE AND CUT-OUT.

976,008.

Specification of Letters Patent.

Patented Nov. 15, 1910.

Application filed April 23, 1910. Serial No. 557,205.

To all whom it may concern:

Be it known that I, FRED G. TERWILLIGER, a citizen of the United States, residing at Siegfried, in the county of Northampton and State of Pennsylvania, have invented new and useful Improvements in Whistles and Cut-Outs, of which the following is a specification.

The purpose of this invention is to supply a device for use in connection with internal combustion engines of mechanically propelled vehicles both as a cut-out and whistle, thereby relieving the muffler when a free passage for the exhaust is required and in use said exhaust has means for operating the whistle.

A further purpose of the invention is to devise an article of the character aforesaid which will admit of the tone being varied so as to produce a series of musical notes and which will prevent the clogging of the passages by burned material from the engine.

The invention also aims to provide an appliance of the nature herein indicated which may be used solely as a cut out or separately as a signal, both adaptations being readily effected from any convenient point.

With these objects in view and others that will be readily apparent to those skilled in the art as the invention is comprehended, the improvement consists of the novel features, details of construction, and combinations of parts which hereinafter will be more particularly described, illustrated in the accompanying drawings and pointed out in the appended claims.

Referring to the drawings forming a part of the specifications: Figure 1 is a side view of a whistle and cut out constructed in accordance with and embodying the essential features of the invention. Fig. 2 is a central longitudinal section of the device, the internal parts being in full. Fig. 3 is a view of the article as seen from the coupling end. Fig. 4 is a view of the device as it appears when seen from the other end, the rod for operating the plug being in section. Fig. 5 is a central longitudinal section of the device. Fig. 6 is a transverse section on the line 6—6 of Fig. 5 looking in the direction of the arrows. Fig. 7 is a cross section on the line 7—7 of Fig. 5 as seen in the direction of the arrows. Fig. 8 is an end view of the plug. Fig. 9 is a sectional view showing the relative position of the plug and piston when the device completely closes the exhaust.

Corresponding and like parts are referred to in the following description and indicated in all the views in the drawings by the same reference characters.

The body of the combined whistle and cut out is indicated by the reference numeral 1 and is hollow, consisting of a length of tubing. A cap 2 closes one end of the body and the opposite end is externally screw threaded or otherwise constructed to be attached to the pipe or other device carrying off the exhaust from the engine. One or more openings 3 are provided in the sides of the body 1 intermediate the ends thereof. These openings 3 may be of any form commonly adapted in the manufacture of whistles or like sound-producing devices. The openings may be of like form or varying in outline according to the effect to be produced.

A plug 4 is arranged within the body 1 and the end facing the inlet is adapted to be coupled to the exhaust pipe, and is made conical as indicated at 5. The sides of the plug adjacent the sides of the body 1 provided with the openings 3 are flattened as indicated at 6 to provide passages for the exhaust or other fluid blast by means of which the whistle is sounded. It is to be understood that the plug 4 has as many flattened sides 6 as there are openings 3 in the sides of the body 1. The conical end 5 results in dividing the exhaust or blast so as to divert portions thereof to the several passages and openings 3. The plug is mounted to slide within the body and this is of advantage particularly when it is required to provide a direct outlet for the exhaust when power is required. This sliding movement also prevents the lodging of burned material or other matter in the passages formed by the flattened sides 6. It is important that the plug be prevented from turning in the body so as to maintain the flattened sides 6 in register with the openings 3 and this result is accomplished by means of a pin 7 projected laterally from the plug and operating in a slot 8 formed in a side of the body. The pin also serves in conjunction with the slot 8 to limit the movement of the plug and to hold the same in given position. A spring 9 of the coil type normally exerts a force upon the plug 5 to hold the same in a given position. This spring is of the pro-

tractile type and one end is attached to the plug and the opposite end is connected with a pin 10 supported in the lower portion of the body. A rod 11 is attached at its inner end to the plug 4 and passes through the body 1 and cap 2 and terminates at its outer end in a ring to which a cord, chain, or other connecting means may be attached in operating the plug when required.

10 A piston 12 is arranged to operate in the body 1 between the plug 4 and closed end 2 and normally bears against the plug 4 and closes the openings 3 thereby preventing the escape of any exhaust when the device is not required to be used either as a cut out or signal. A coil spring 13 of the expansible type is arranged within the upper portion of the body 1 and is confined between the piston 12 and cap 2 and normally exerts a pressure to hold the piston against the plug 4 as indicated in Fig. 9. A rod or stem 14 is connected at its inner end to the piston 12 and operates through the cap or closed end 2 of the body 1 and is provided at its outer end with an eye 15 to which a cord, chain, or other operating means may be attached. The rod or stem 14 is hollow and receives the rod 11, which latter passes through an opening formed in the piston and through an opening formed in the cap closing the outer end of the rod or stem 14.

In practice the device is located in the length of the exhaust pipe between the muffler and the engine. Under normal conditions the appliance remains inactive since the openings 3 are closed. If it be required to sound the whistle to give warning the rod or stem 14 is operated to move the piston 12, the sound produced may be varied since the nodal points of the sound waves are changed. A pleasing effect may be produced by a reciprocating movement of the piston as will be readily understood. To use the device as a cut-out the rod 11 is operated to move the plug 4 so as to clear the openings 3 thereby providing an unobstructed and direct passage for the outflow of the exhaust.

It will be understood from the foregoing that the invention supplies an article which may be used either as a signal or a cut out as may be required, the device being exceptionally simple, economical and effective and adapted to be readily cleared of any burned material tending to obstruct the pas-

sages formed between the flattened side or sides of the plug and the body. It is also observed that the device is compact in structure and may be advantageously located in any convenient position and is adapted to be easily manipulated to effect the required result whether as a cut out or signal.

Having thus described the invention what is claimed, is:—

1. In a device of the character set forth, the combination of a hollow body provided in a side with an opening, a plug arranged within said body and having a side portion adjacent the opening of the body cut away to provide a passage, operating means for moving the plug within the body, a piston located within the body and adapted to normally close the opening formed in the side thereof, and operating means for said piston.

2. In combination, a hollow body having an opening in a side thereof, a plug, and a piston arranged within the body, a stem connected with the piston, to provide convenient means for operating the same, and a rod passed through said piston and having connection with the plug and admitting of both the plug and piston being simultaneously operated.

3. A combined whistle and cut out comprising a hollow body having a series of openings in its sides, a plug arranged to operate within the body and having the end facing the inlet made conical and having its sides flattened adjacent the respective openings of the body, means for preventing the turning of the plug and limiting the movements thereof, a spring normally exerting force upon the plug to hold the same in a given position, a piston mounted within the body and adapted to close the openings in the sides thereof, a spring normally exerting a pressure to hold the piston in given position to close the openings in the sides of the body, a rod connected to the plug and passing through the piston and body, and a hollow stem attached to the piston and receiving said rod, the parts being arranged to operate substantially in the manner specified.

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

FRED GRANT TERWILLIGER.

Witnesses:

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CHAS. A. HAFF.