

No. 616,200.

Patented Dec. 20, 1898.

C. L. NEWCOMB.
ROTARY DELUGE NOZZLE.

(Application filed Feb. 18, 1898.)

(No Model.)

2. Sheets—Sheet 1.

Fig. 2,

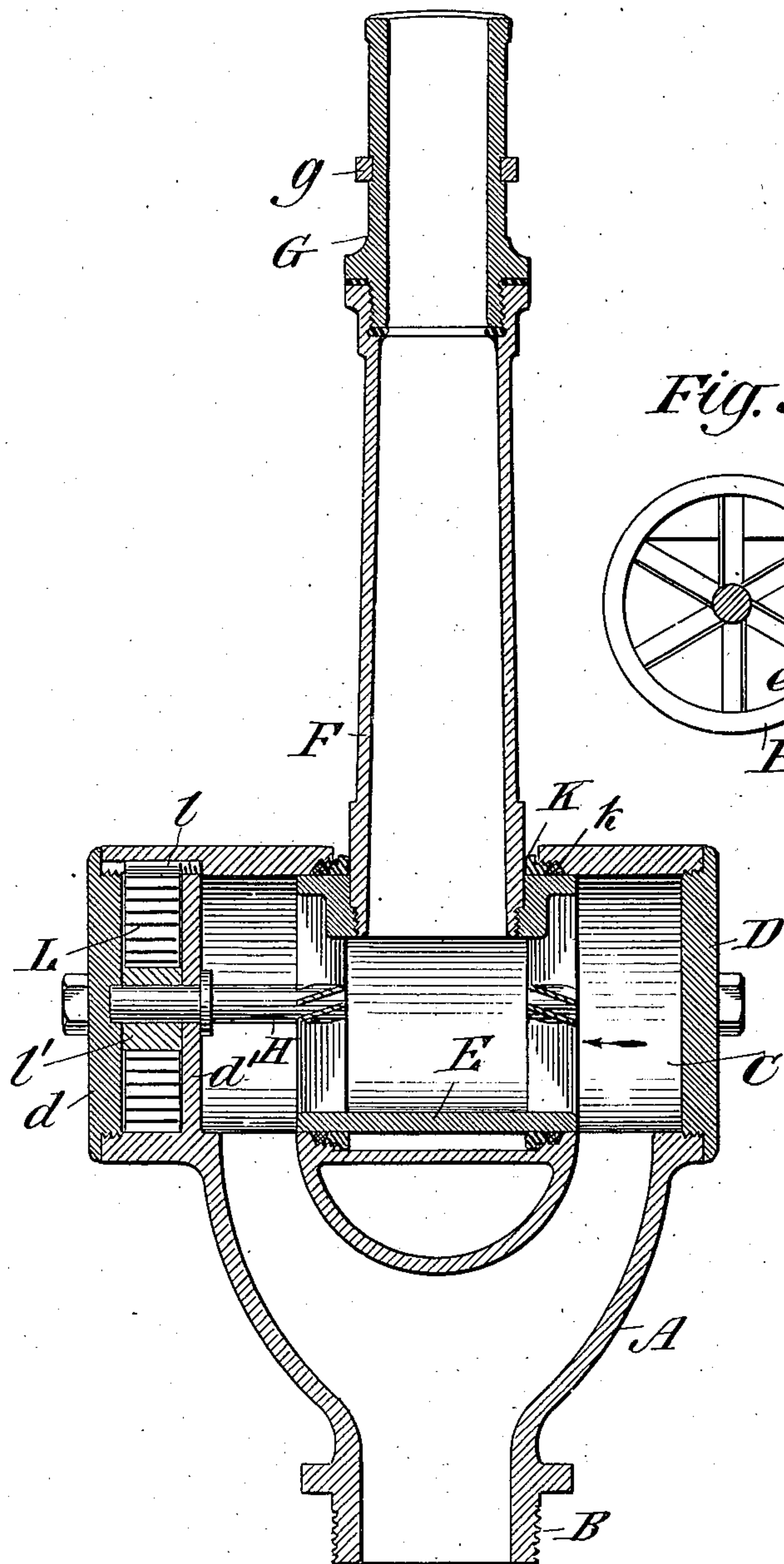


Fig. 1,

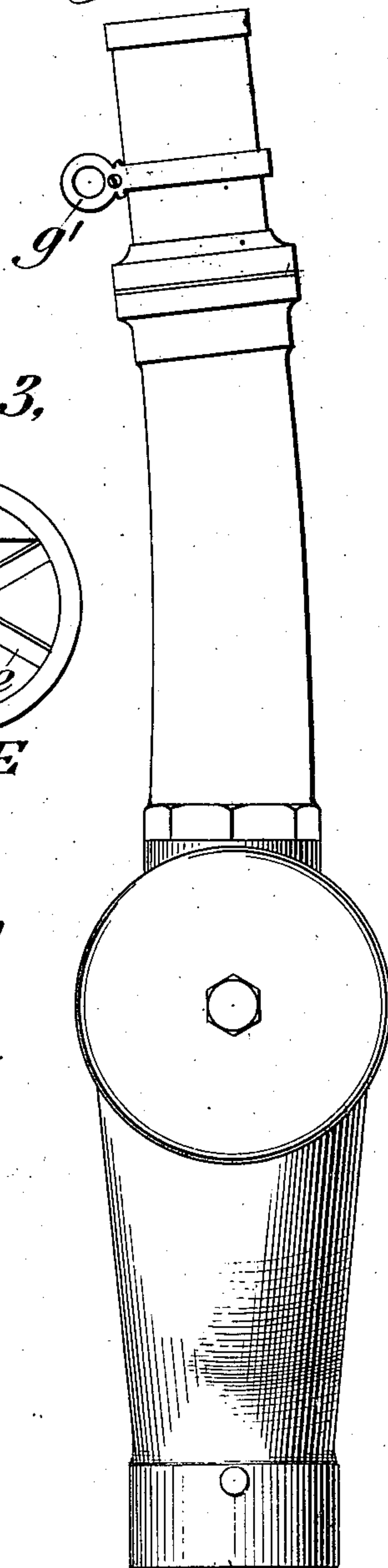
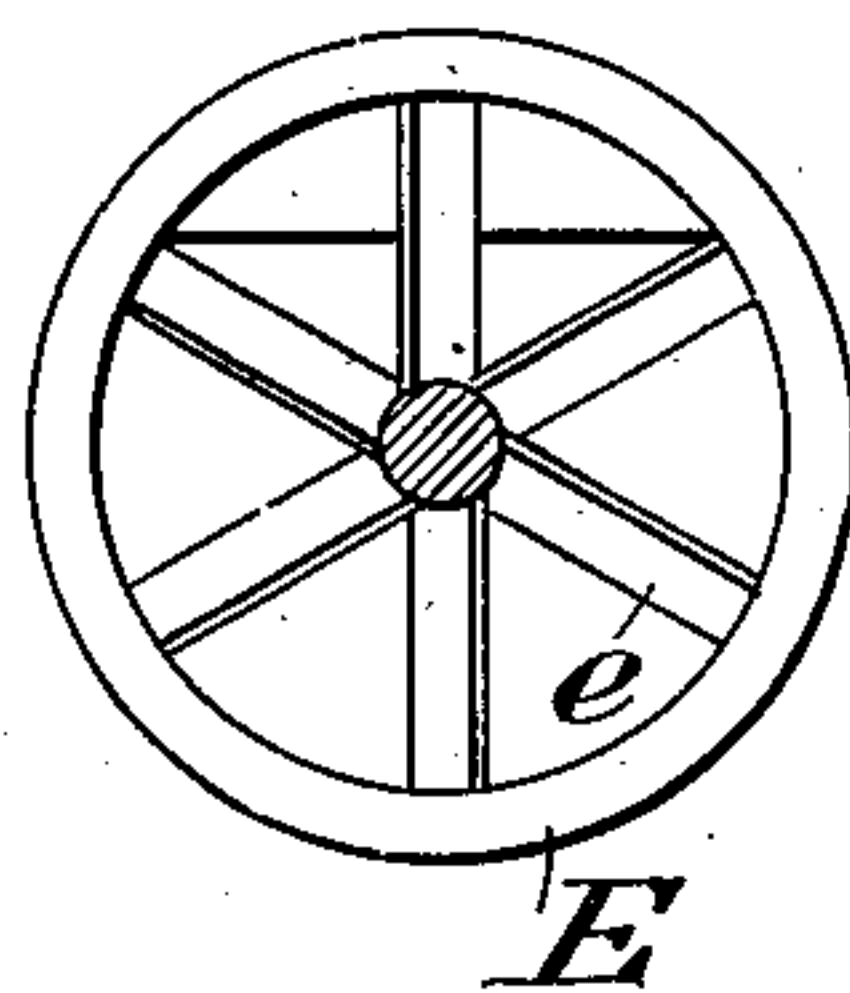


Fig. 3,



WITNESSES:

A. H. Hayworth
Emerson R. Newell

INVENTOR

Charles L. Newcomb

BY

R. C. Mitchell

ATTORNEY

No. 616,200.

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C. L. NEWCOMB.
ROTARY DELUGE NOZZLE.

(Application filed Feb. 16, 1898.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 7, $M_{n^2} n^3$ Fig. 4,

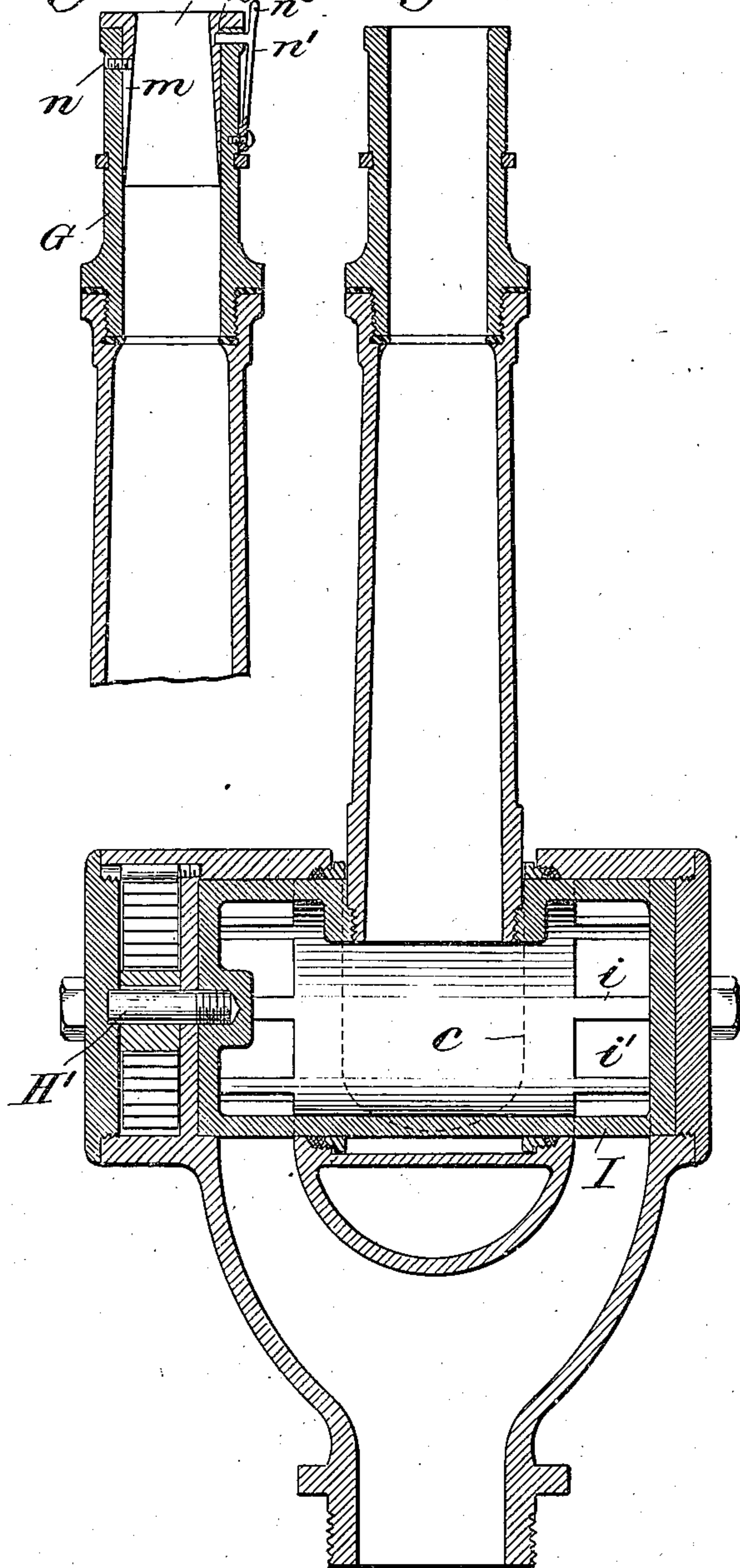


Fig. 6,

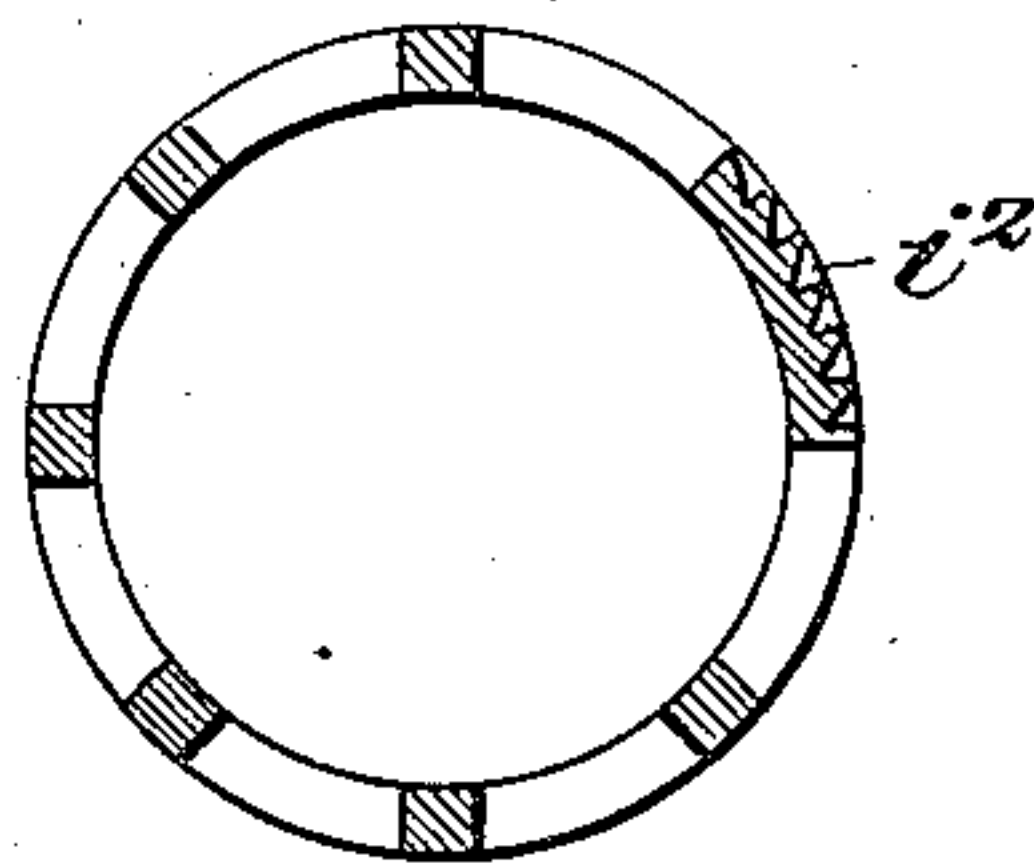
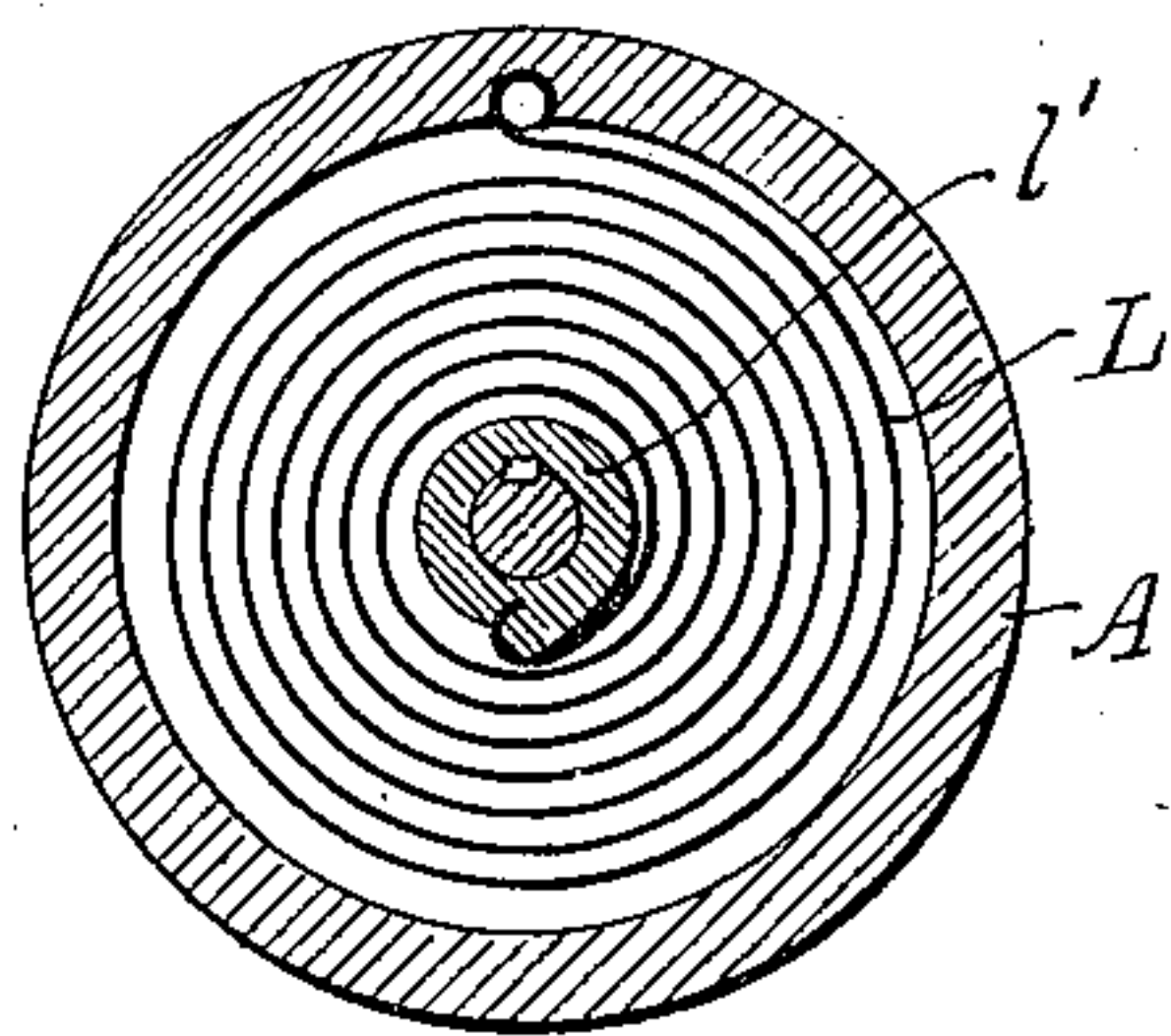


Fig. 5,



WITNESSES:

N. H. Raymond.
Ernest H. Lowell

INVENTOR

Charles L. Newcomb.

BY

R. C. Mitchell.
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES L. NEWCOMB, OF HOLYOKE, MASSACHUSETTS.

ROTARY DELUGE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 616,200, dated December 20, 1898.

Application filed February 16, 1898. Serial No. 670,521. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. NEWCOMB, a citizen of the United States, residing at Holyoke, Massachusetts, have invented certain new and useful Improvements in Rotary Deluge-Nozzles, of which the following is a full, clear, and exact description.

My invention relates to that class of nozzles and attachments connected therewith, together with supports therefor, commonly used by firemen, and especially those used on aerial trucks, fire-boats, water-towers, and the like, where it is desirable to use a large stream and to have a nozzle which may be easily and quickly thrown into several different positions and which may be operated by a single fireman either standing at the nozzle or at a distance therefrom.

The objects of this invention are, among others, to improve the construction of such devices and to provide a nozzle which will be easily assembled, which may be easily operated, and which will be operated by the water passing therethrough to be thrown into a normal position. Other advantages will appear from the illustrated preferred embodiment of my invention, in which—

Figure 1 represents my device as a whole in side elevation. Fig. 2 is a sectional view thereof; and Fig. 3 is a transverse sectional view of the main portion, looking in the direction of the arrow and showing the vanes or buckets in the casing. Fig. 4 is a sectional view of a modified construction. Fig. 5 is a transverse view of the spring and its inclosing parts. Fig. 6 is a transverse view of a part of the casing shown in Fig. 4 and illustrating a modified construction of the vanes or buckets. Fig. 7 is a modification showing the supplementary tip.

A represents the main portion of my device, which in the preferred construction consists of a bifurcated pipe connected with a transverse compartment C. Said compartment has inclosed within it a rotatable casing E, to which is secured the nozzle F, which moves in a slot *c* in said part C for the purpose hereinafter to be described. Said compartment is provided with a stuffing-box composed, preferably, of a screw-threaded ring K and suitable packing material *k*. The casing E

in the construction shown in Fig. 2 is provided with vanes or buckets *e*, which in this construction consist of inclined slats. These vanes may be at one or both ends of said casing and are adapted to be operated upon by the water passing through the same, which will rotate said casing and throw said nozzle into its vertical or normal position. The nozzle F may also, if desired, be curved, as shown in Fig. 1. The force of water passing through the main portion and nozzle will act upon this curved nozzle, and it will tend to throw the nozzle into its aforesaid normal position. A tip G is shown attached to the nozzle, having a ring *g* swiveled thereon and provided with an attachment *g'* for a rope or other device by which said nozzle may be pulled down to any desired position. Said device as a whole may be given a horizontal rotation, if desired, by the screw-threads on the bottom of the part A or in any of the well-known methods of analogous constructions. The casing E is also provided with a shaft fixed thereto and passing through the head *d'* in said part C, to which may be attached a sleeve *l'* by a key, as shown in Fig. 5. To this sleeve is attached one end of a coiled spring L, and the other end of the spring is attached to the part C by any desired means—for instance, by the screw-threaded pin *l*. Two caps D and *d* are provided for closing the ends of the part C.

In the modified construction shown in Figs. 4 and 6 the casing is in the form of a cylinder, having projections *i* and spaces *i'*, through which the water passes. One or more of these projections *i* may be formed with sloping teeth *i*², as shown in Fig. 6, which constitute vanes or buckets to be acted upon by the water to throw the nozzle into its normal position in substantially the same way that the vanes or buckets shown in Fig. 3 operate.

Fig. 7 shows a supplementary tip for the nozzle, which may be choke-bored, if desired. A locking arrangement is provided between said supplementary tip and the main tip in the preferred construction of the same, consisting of a bayonet-slot and stud to take into the same (shown in Fig. 7 by *m n*) and a spring-lock *n'*, provided with a projection *n*² and a finger-piece *n*³.

This rotary deluge-nozzle is particularly

applicable for use on aerial trucks, water-towers, or on fire-boats. When used on an aerial truck, it is desirable that the weight shall be the least possible, and for this purpose I may construct the casing and other rotatable parts preferably of a composition of copper and tin, usually designated the "United States standard composition," and the main portion of aluminium or aluminium composition; but I do not wish to limit myself to the use of any particular metal. When used on an aerial truck, the device is raised to the top of a ladder in any desired manner, and when the proper height is attained the nozzle may be rotated horizontally, as specified, and the firemen below may rotate the nozzle vertically by pulling on the rope attached to the ring *g*, as specified, and direct the stream of water to any point desired.

It makes practically no difference in the operation of my device at what point in the nozzle the curve or crook is situated, as the water will act upon the same in substantially the same way. The spring *L* is principally useful in throwing the nozzle into its normal position when no water is passing through the device, but also aids the vanes or buckets in attaining this object. Either, however, may be used without the other.

The packing retaining-ring *K* may be screwed into its seat and the nozzle then screwed into the casing, and said nozzle will then hold said ring and prevent it from becoming loose. The cap *d* is not fixed to the shaft *H*, but said shaft may have a supplemental bearing therein, if desired.

Many modifications of my device which will fall within the spirit of my invention will occur to any skilled mechanic, and I do not, therefore, desire to limit myself to the precise construction shown.

What I claim is—

1. In a device of the character described, a casing and a curved fire-nozzle adapted to be acted upon by the stream of water there-through to move the same into an upright

position, and means to stop the same in said position.

2. In a device of the character described, a main portion, a part movable therein and carrying a vane to throw said part into a predetermined position, automatic means to stop the same at said position, and a nozzle attached to said movable part.

3. In a device of the character described, a bifurcated pipe, a rotatable casing, and a nozzle attached to said casing, said nozzle acted upon by a force tending to throw it into a predetermined position.

4. In a device of the character described, in combination, a main portion having a head and a compartment beyond said head in which is situated a spring, a rotatable casing within said main portion on the other side of said head and adapted to be moved by said spring, and a fire-nozzle connected to said casing.

5. In a device of the character described, in combination, a bifurcated main portion, said bifurcations connected to a part having a rotatable casing provided with a vane and a nozzle attached to said casing and movable in an opening in said main portion.

6. In a device of the character described, a main portion, consisting of a passage for water, a second passage for water at an angle therewith, a compartment substantially in line with said second passage, and a head between said compartment and second passage.

7. In combination a bifurcated main portion, a rotatable casing and a curved nozzle attached thereto, said casing having a vane adapted to be acted on by water passing there-through to throw said nozzle into a predetermined position.

Signed at Holyoke, county of Hampden, State of Massachusetts, this 10th day of February, 1898.

CHARLES L. NEWCOMB.

Witnesses:

JOHN T. LYNCH,
JOHN HILDRETH.