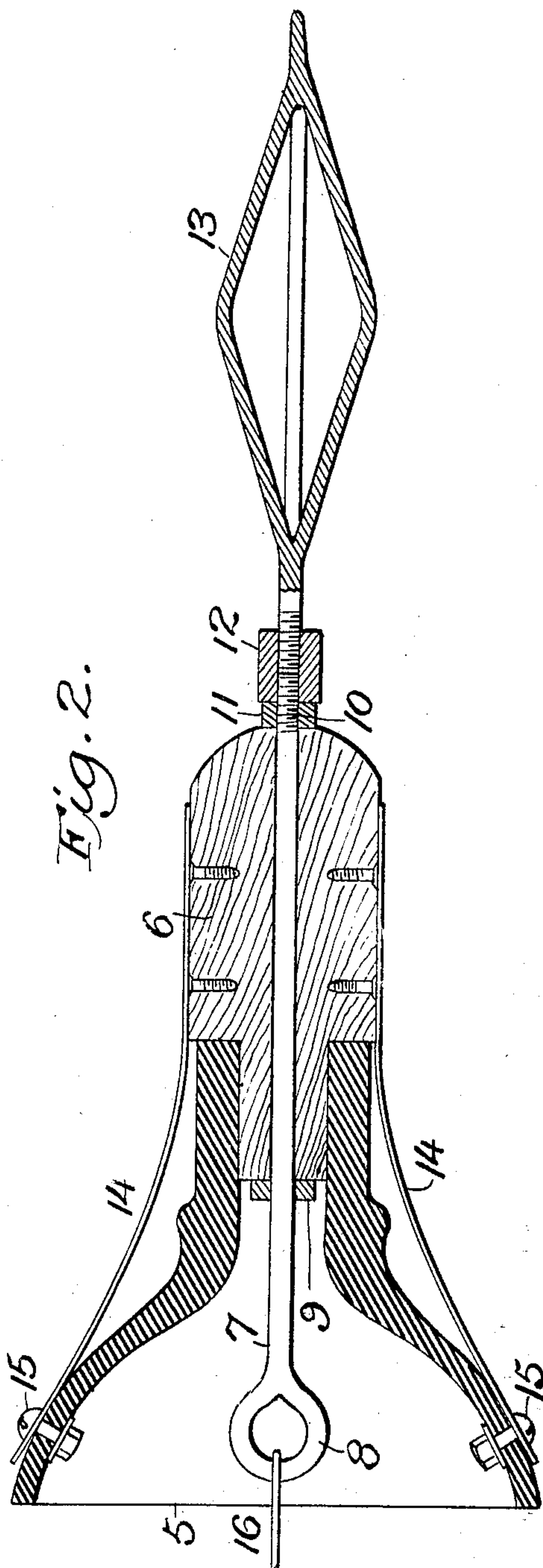
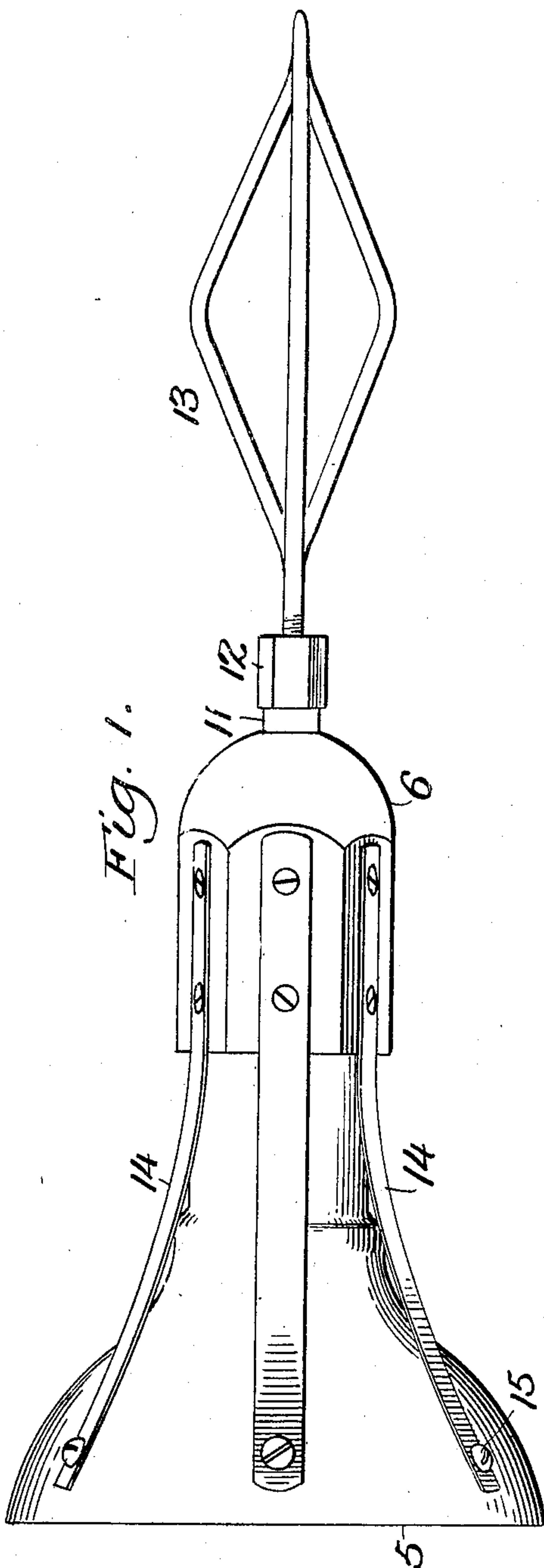


H. A. GREENAN.  
DEVICE FOR PASSING CABLES THROUGH WATER PIPES.  
APPLICATION FILED FEB. 23, 1906.

934,520.

Patented Sept. 21, 1909.



WITNESSES:  
*James F. Duhamel,*  
*William J. Firth*

INVENTOR,  
*Hugh A. Greenan,*  
BY  
*S. A. Osell,*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

HUGH A. GREENAN, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO  
NATIONAL WATER MAIN CLEANING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF MAINE.

DEVICE FOR PASSING CABLES THROUGH WATER-PIPES.

934,520.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed February 23, 1906. Serial No. 302,431.

*To all whom it may concern:*

Be it known that I, HUGH A. GREENAN, a citizen of the United States of America, and a resident of New York, in the county and State of New York, have invented a certain new and useful Improvement in Devices for Passing Cables Through Water-Pipes, of which the following is a specification.

This invention relates to pipe cleaning devices and more particularly to the means for carrying the cables and ropes to which such pipe cleaning devices are attached, through the pipes to be cleaned as a preliminary to the cleaning operation.

The object of the device is to carry the rope or cable through the water pipe by the use of the pressure of the water passing through the pipe, and thus save time in the preliminary operation.

The device is made highly elastic and is made to fit closely in the pipe to be cleaned in which it is propelled by the pressure of the water acting on one side of it, while carrying a flexible wire attached to the cable, or, in the larger sizes used in larger pipes, carrying the cable itself before the cleaning device is introduced into the cable.

The device is economical in construction and simple in operation as will be shown, reference being had to the specification and the drawings in which:

Figure 1 is a side view of the device. Fig. 2 is a longitudinal sectional view.

In the device shown, a cup or bell-shaped body 5, is constructed of rubber or other flexible material, which will permit of the reduction or the increase of the diameter of its rear end so that it may readily be introduced into a pipe of slightly less diameter than the bell or, so that when inserted into a larger pipe the fluid pressure at its rear tends to expand it, so that the diameter becomes increased.

The bell 5 is attached at its upper or forward end to a head 6 made of wood or hollow metal in order to lighten the device, and through the whole runs an axis, made in two parts. The rear part 7 has an eye 8 and is provided with a collar or pin 9. The forward

part 10 of the axis is threaded and carries a binding nut 11 and a lock nut 12. To the lock nut 12 is attached a spindle 13, which has the shape of a pointed cage, so that its forward end may move clear of the bottom or sides of the pipe and avoid obstructions in the pipe. This spindle serves as a guide during the passage of the device through a pipe.

In order to give more solidity to the bell 5 and to prevent it from becoming inverted, light flat retractile springs 14, are provided and are attached to the bell by means of bolts 15, and their forward ends are fastened to the head of the bell by screws or other suitable means.

While the device is shown as carrying a wire 16, it may be coupled direct to a cable or rope carrying a cleaning device, the latter course followed only when the device and the pipe through which it is passed are of sufficiently large diameter.

The whole device is constructed with a view of producing a light structure, readily moved forward by the water pressure behind it and protected against tearing by the projections caused by accretions and deposits in the pipes to be cleaned.

The spindle 13 may be made of a hollow sheet of metal, or of wood without departing from the invention.

What I claim as new is:

1. In a device of the character described, the combination of a flexible cup, a head attached to the pointed end of said cup and placed in front thereof and retractile springs attached to the head and cup and adapted to prevent inversion of the latter.

2. In a device of the character described, the combination of a flexible cup, a head attached to the pointed end of said cup and placed in front thereof, retractile springs attached to the said head and cup and adapted to prevent inversion of the latter, and a pointed guiding device attached to the head.

3. In a device of the character described, a cup, a head attached in front thereof and springs attached to the head and adapted to prevent inversion of said cup.

4. In a device of the character described, a cup, a head attached in front thereof, springs one end of each of which is attached to said head, the other end resting in contact with  
5 the outside of the cup adapted to prevent inversion of said cup.

5. In a device of the character described, a cup, a head attached in front thereof and

means attached to the head adapted to prevent inversion of said cup.

Signed at New York this 20th day of Feb. 1906.

HUGH A. GREENAN.

Witnesses:

C. A. O. ROSELL,  
GEO. F. WHITNEY.