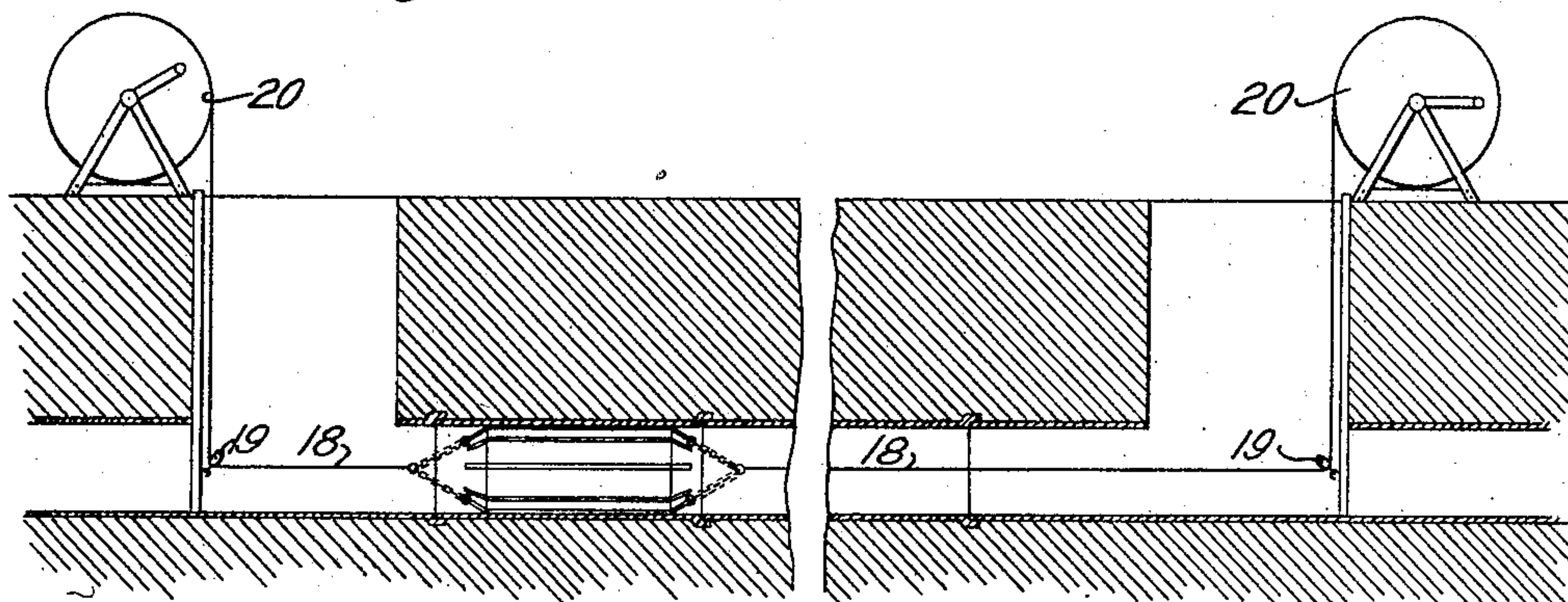
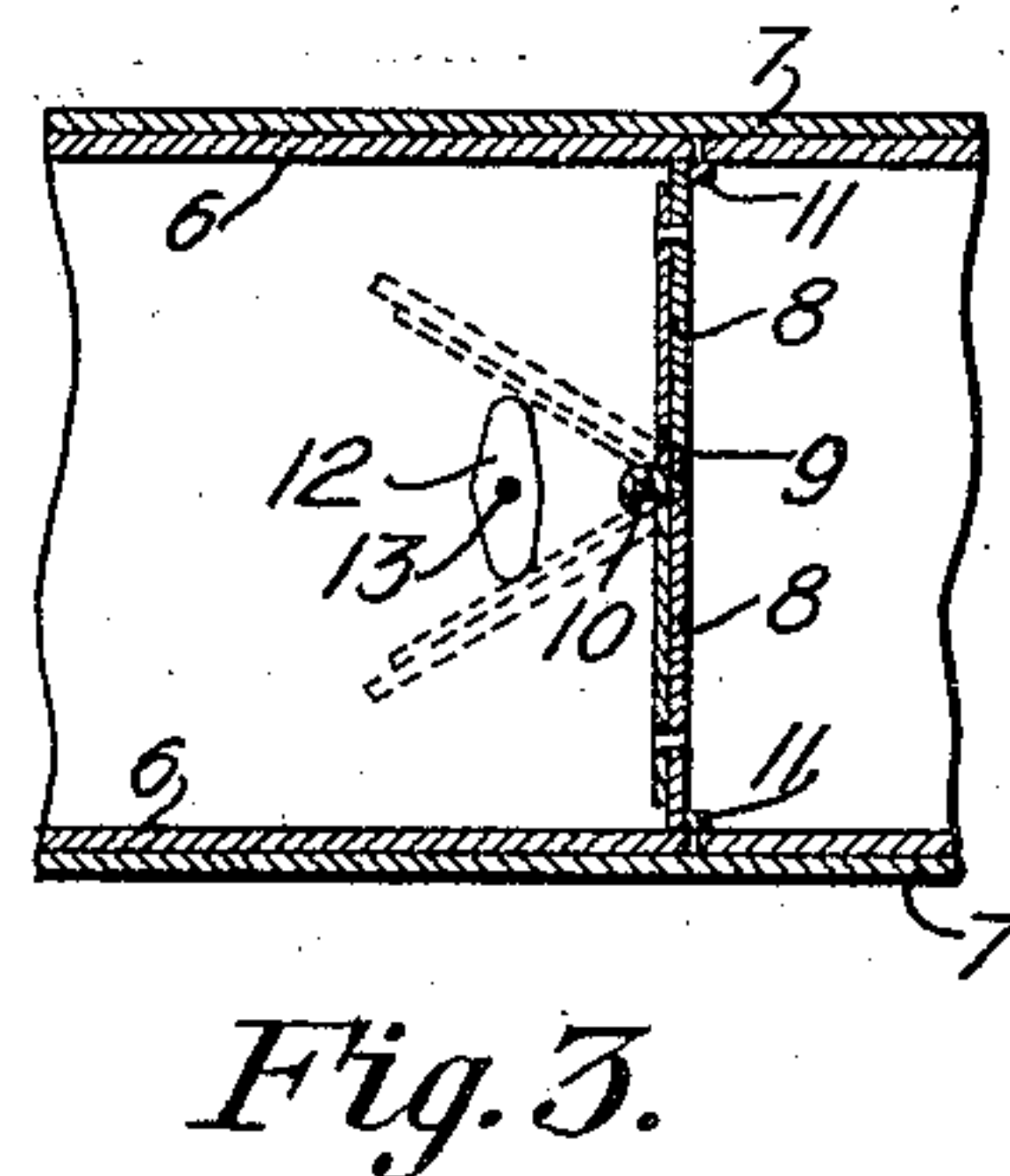
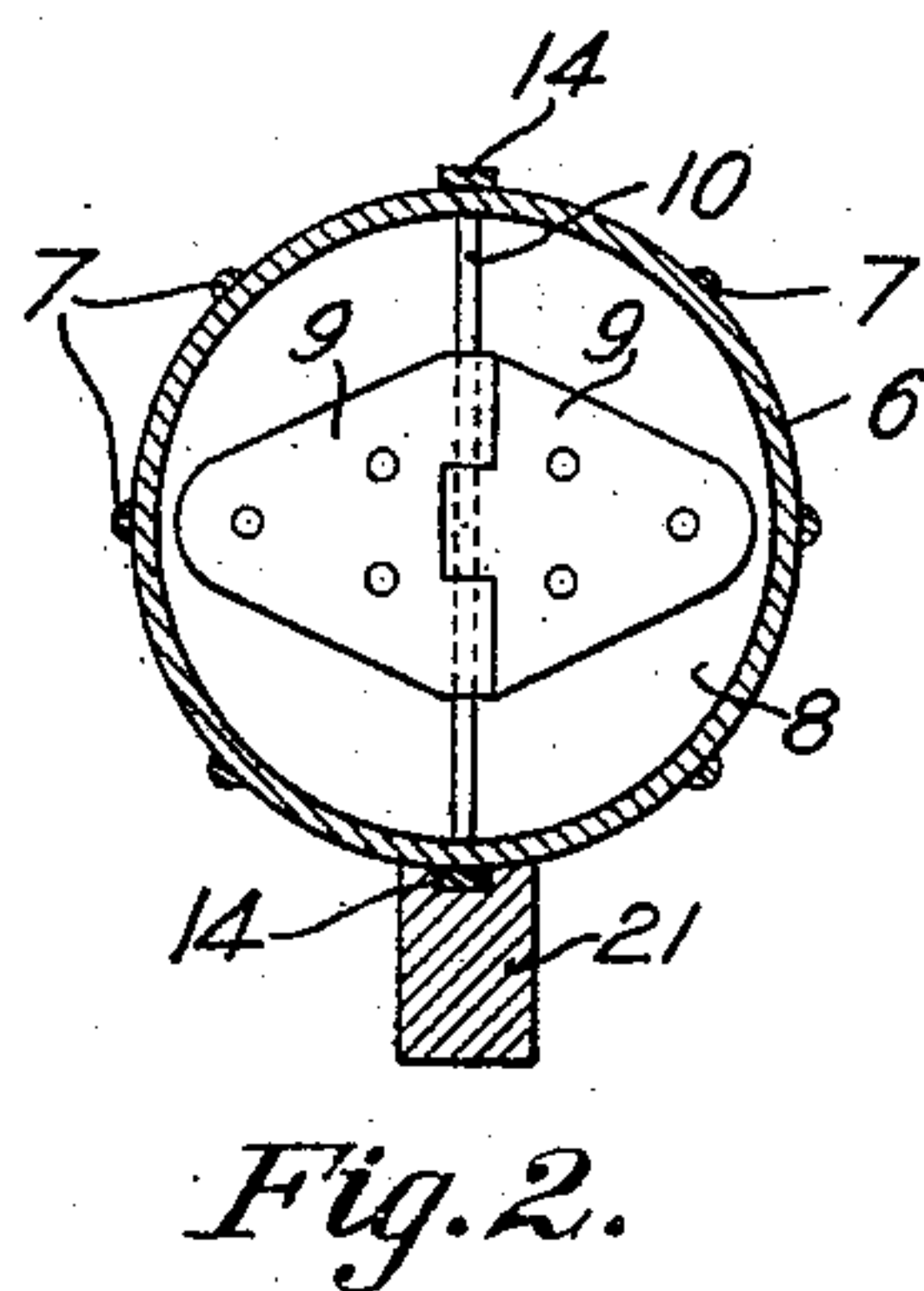
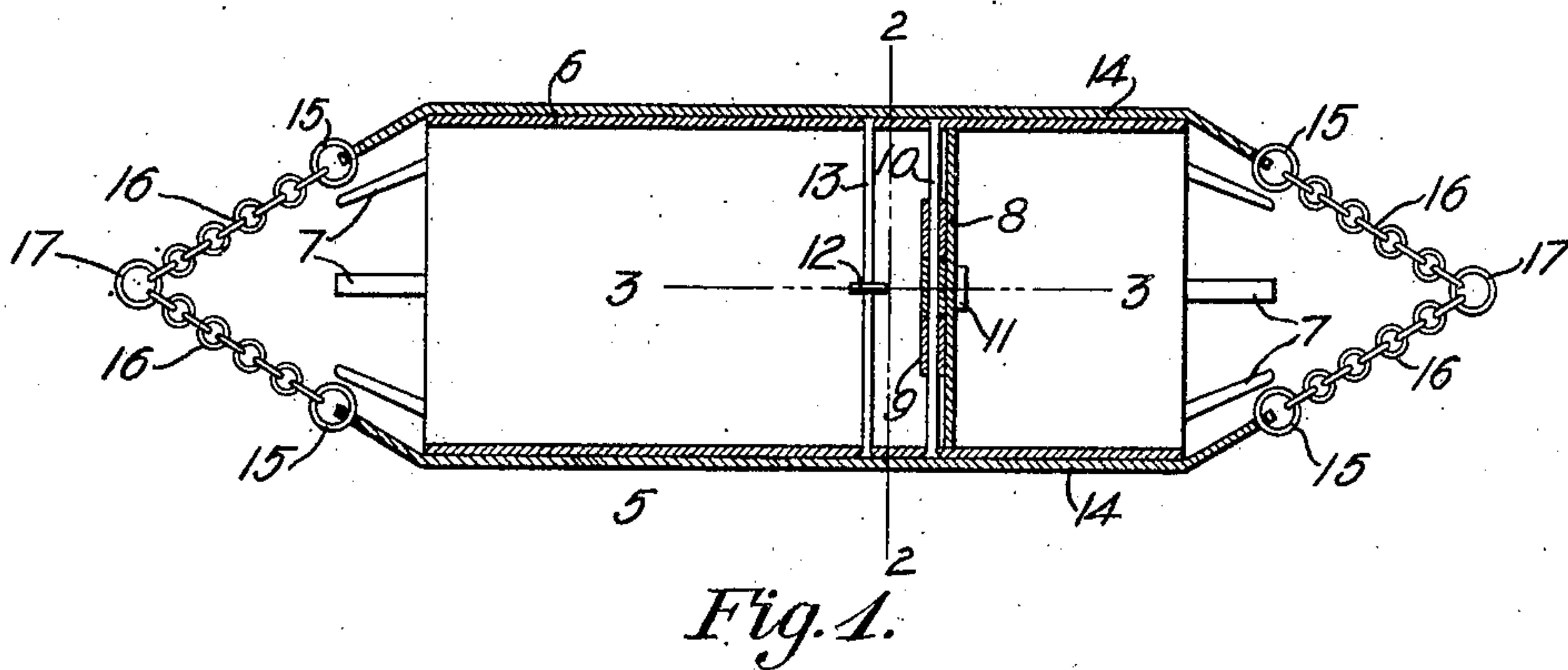


No. 896,835.

PATENTED AUG. 25, 1908.

J. KELLY.  
APPARATUS FOR CLEANING SEWERS.  
APPLICATION FILED APR. 20, 1908.



Witnesses:  
Framis H. Bishop.  
William C. Glass.

Fig. 4.

Inventor:  
John Kelly  
by his attorney, Charles S. Gooding.



# UNITED STATES PATENT OFFICE.

JOHN KELLY, OF JAMAICA PLAIN, MASSACHUSETTS.

## APPARATUS FOR CLEANING SEWERS.

No. 896,835.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed April 20, 1908. Serial No. 427,992.

*To all whom it may concern:*

Be it known that I, JOHN KELLY, a citizen of the United States, residing at Jamaica Plain, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Apparatus for Cleaning Sewers, of which the following is a specification.

This invention relates to improvements in devices for cleaning sewers, and the object is to provide an apparatus by means of which collections of mud and other matter may be much more easily and quickly removed from sewers and with less expense than has heretofore been possible.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the appended claims.

Referring to the drawings: Figure 1 is a longitudinal sectional elevation of a sewer cleaning device embodying my invention. Fig. 2 is a sectional elevation of the same taken on line 2—2 of Fig. 1, looking toward the right. Fig. 3 is a plan section taken on line 3—3 of Fig. 1 and partly broken away to save space. Fig. 4 is a longitudinal sectional elevation illustrating the sewer in section with my complete apparatus arranged in connection therewith.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 5 is a casing comprising a shell 6 which may be cylindrical in form and having a plurality of exterior ribs 7 extending longitudinally thereof, said ribs in this instance consisting of half-round bars secured at intervals to said shell, opposite ends of said bars extending beyond opposite ends, respectively, of said shell and being bent inwardly. Mounted within the shell 6 are two gates or clappers 8, 8 which in this instance are riveted to two hinged members 9, 9, through which passes a rod 10 terminating at its opposite ends, respectively, in opposite sides of the shell 6. The gates 8, 8 are adapted to swing from the position shown in full lines in Fig. 3 to the position shown in dotted lines therein, the extent of movement of said gates being limited in one direction by two stops 11, 11 and in the opposite direction by a stop 12 which is fast to a rod 13 terminating at its opposite ends, respectively, in opposite sides of the shell 6.

The gates 8, 8 constitute a valve or valves which are adapted to permit the flow of

fluids through the shell 6 in one direction, but prevent the flow of fluids through said shell in the opposite direction, that is, toward the right, Figs. 1 and 3. Secured to the exterior of the shell 6 and extending longitudinally thereof are two strips of bars 14, 14 which like the bars 7 are bent inwardly at opposite ends, respectively, thereof, said ends being connected by means of four rings 15 to four chains 16, said chains terminating in two rings 17, 17 which as seen in Fig. 4 are connected to ropes or other suitable like devices 18, 18, respectively, said ropes passing through pulley blocks 19, 19, respectively, and extending therefrom upwardly through the manholes of the sewer. These ropes 18 may be manipulated by any suitable means as for example two drums 20, 20 on which they may be wound and by means of which the cleaning device may be moved to and fro longitudinally through the sewer.

The general operation of the apparatus hereinbefore specifically described is as follows: The apparatus is set up, as shown in Fig. 4, and is drawn through the sewer toward the right, which movement results in the gates 8, 8 being opened into the position shown in dotted lines in Fig. 3. It will be noted that the stop 12 limits the swinging movement of the gates 8, 8, whereby in their open position said gates are inclined at an acute angle to the longitudinal median axial line of the casing. When the device has been moved to a point below the right-hand manhole, it is then moved toward the left and as soon as such movement toward the left begins the gates 8, 8 are closed, as seen in full lines in Fig. 3, and as the movement toward the left continues the deposits of mud and other matter are carried along and collected in the shell 6 until the left-hand manhole is reached, at which point such collections may be moved through said manhole. The device may be passed to and fro from one manhole to the other until the sewer has been entirely freed of deposits.

In the use of the apparatus the casing is apt to rotate upon its axis owing to twisting of the ropes which are used to draw it through the sewer pipe and, therefore, the pivotal pin 10 of the gates 8 is just as apt to stand in a horizontal position as in a vertical position, but regardless of the position of said pin the gates 8, 8 when in their open position so diverge from the pivot that in moving the device toward the left the collec-



tions of mud or other material enter into the V-shaped space between the left hand faces of the gates and said gates never fail to close under the influence of the mud pressing thereagainst.

The ribs 7 serve the double purpose of reducing the frictional resistance due to contact of the walls of the sewer and the spaces left between the shell 6 and the surface of the sewer walls permits the water to flow past the device while it is at work. The ends of the bars 7 and 14 being bent inwardly prevents the ends of the device from catching on the joints in the sewer structure and also makes it easy to draw the device through curved portions of the sewer. When the sewer is of non-circular cross section, the device may have secured thereto a shoe 21 of the proper shape, said shoe being illustrated in cross section in Fig. 2.

Having thus described my invention, what I claim and desire by Letters Patent to secure is:

1. In a device for cleaning sewers, a casing, two gates pivotally mounted within said casing and adapted in opening to swing to-

ward each other toward the longitudinal median axial line of said casing and adapted in closing to swing toward a plane at right angles to said median line, and means to limit the swinging movement of said gates, whereby at the end of their opening movement each is inclined at an acute angle to said median line.

2. In a device for cleaning sewers, a casing, two gates pivotally mounted within said casing to swing about a common axis and adapted in opening to swing toward each other toward the longitudinal median axial line of said casing and adapted in closing to swing toward a plane at right angles to said median line, and means to limit the swinging movement of said gates, whereby at the end of their opening movement each is inclined at an acute angle to said median line.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN KELLY.

Witnesses:

LOUIS A. JONES,  
SADIE V. MCCARTHY.