

No. 607,548.

Patented July 19, 1898.

J. G. PINKERT.

SELF ACTING CLOSING DEVICE FOR PROPELLER PIPES.

(Application filed Dec. 30, 1897.)

(No Model.)

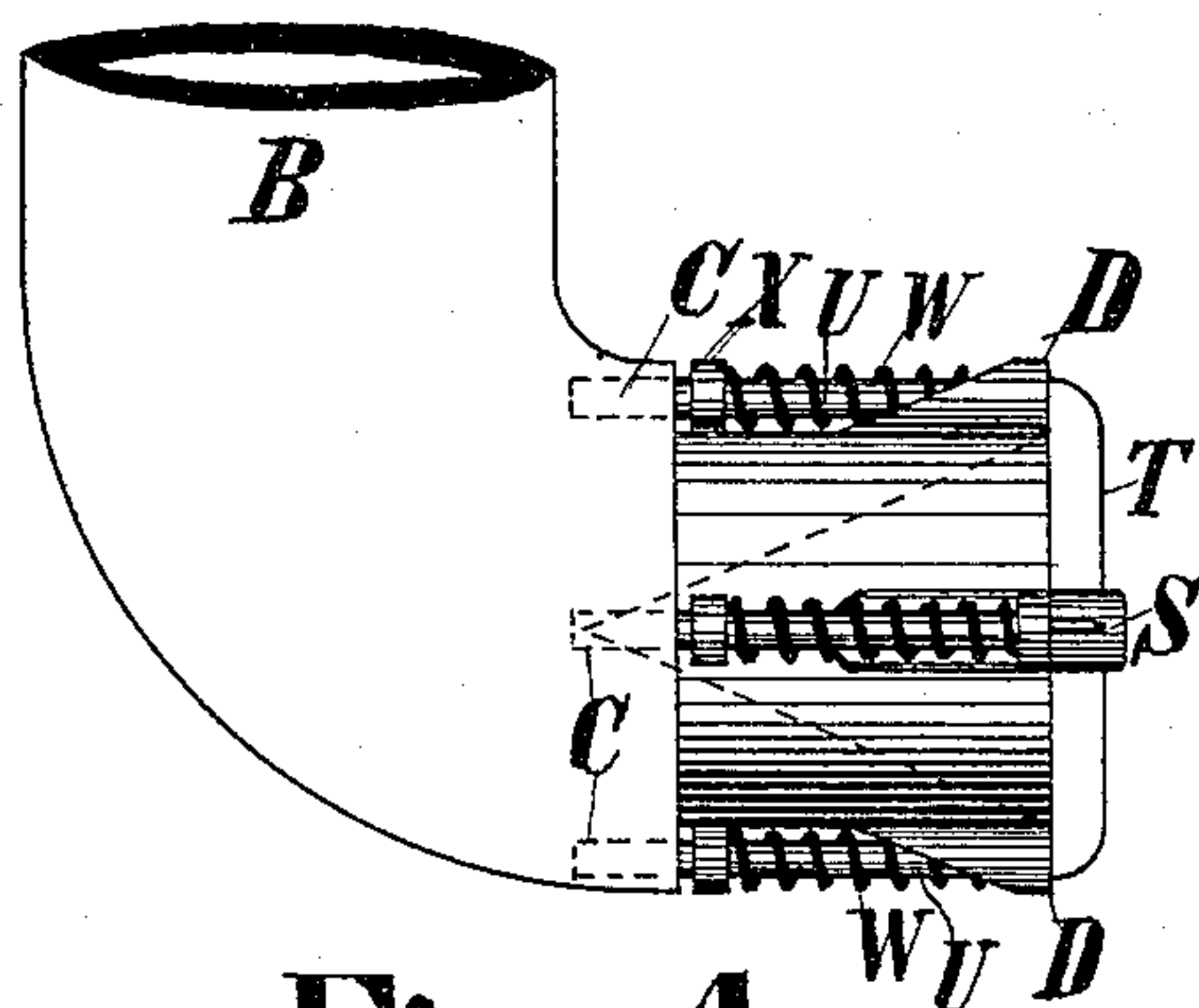


Fig. 1.

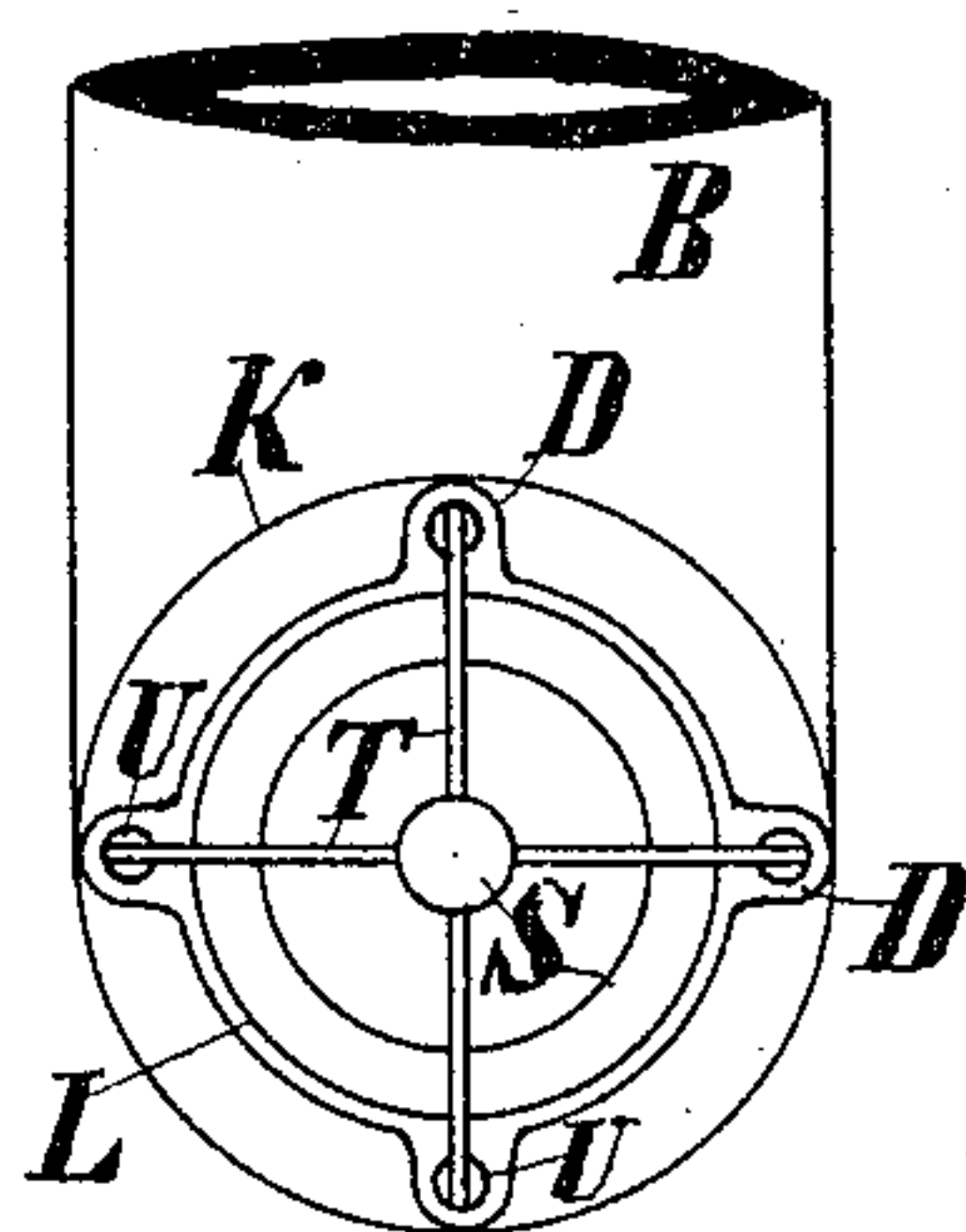


Fig. 2.

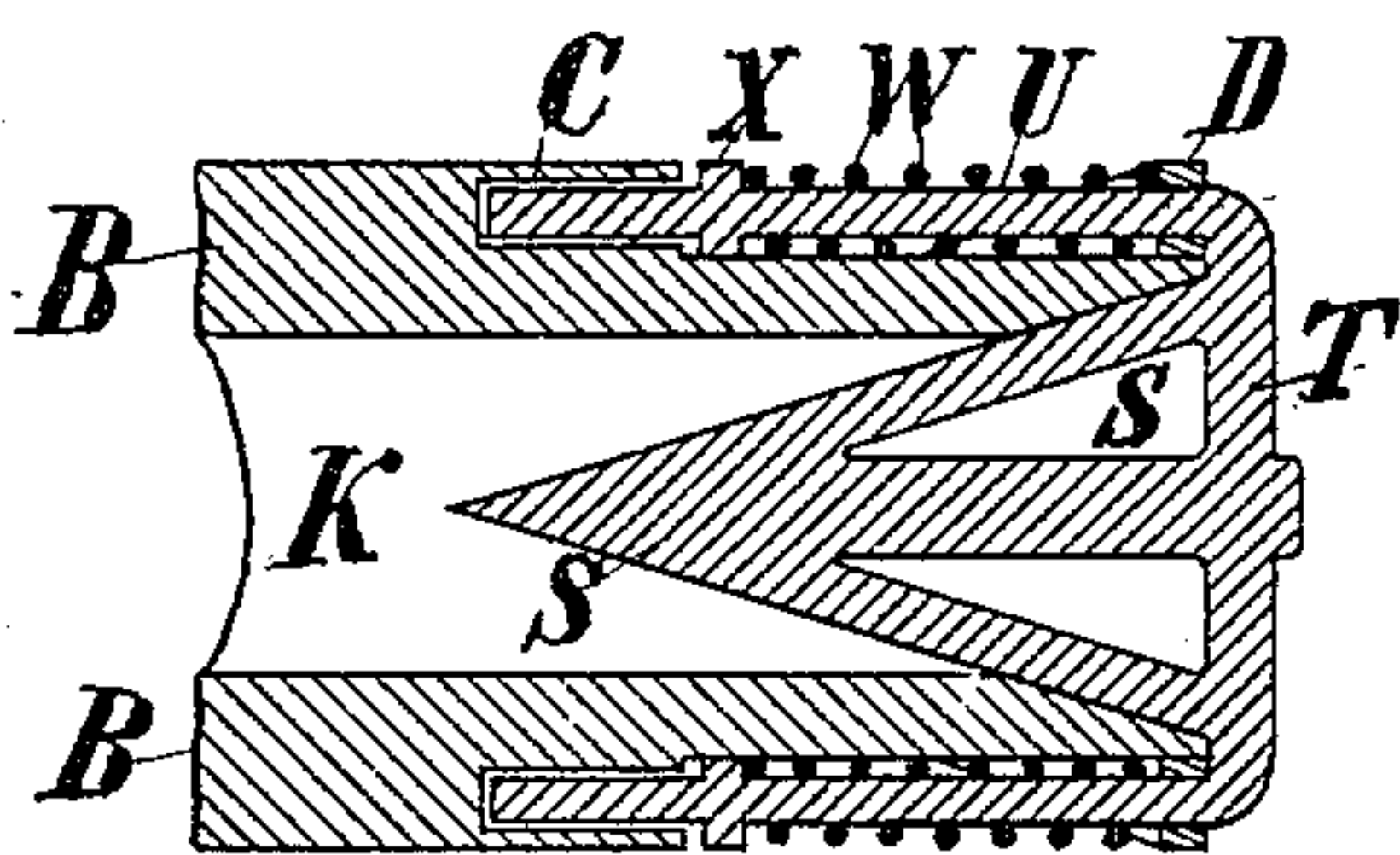


Fig. 3.

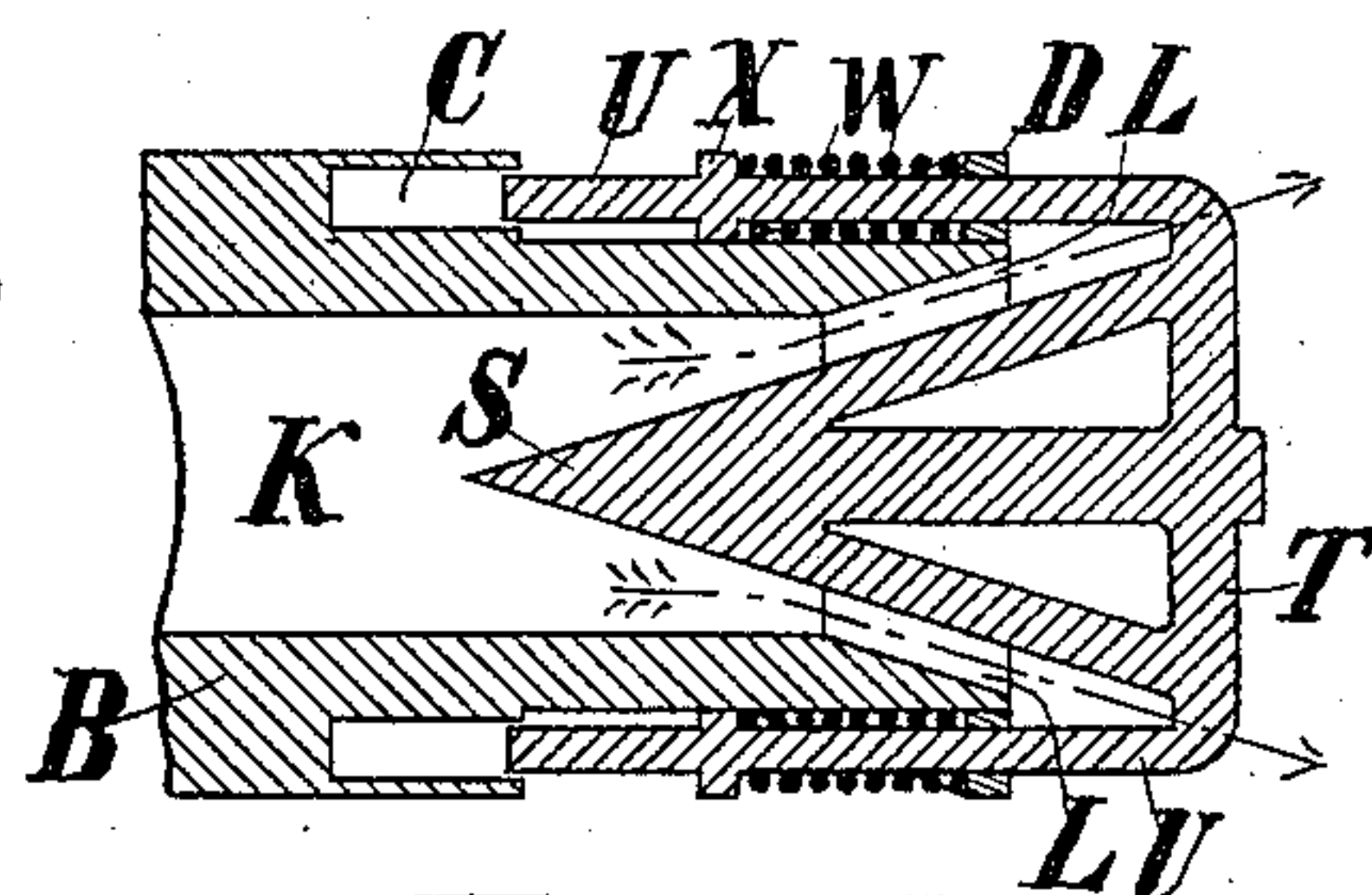


Fig. 4.

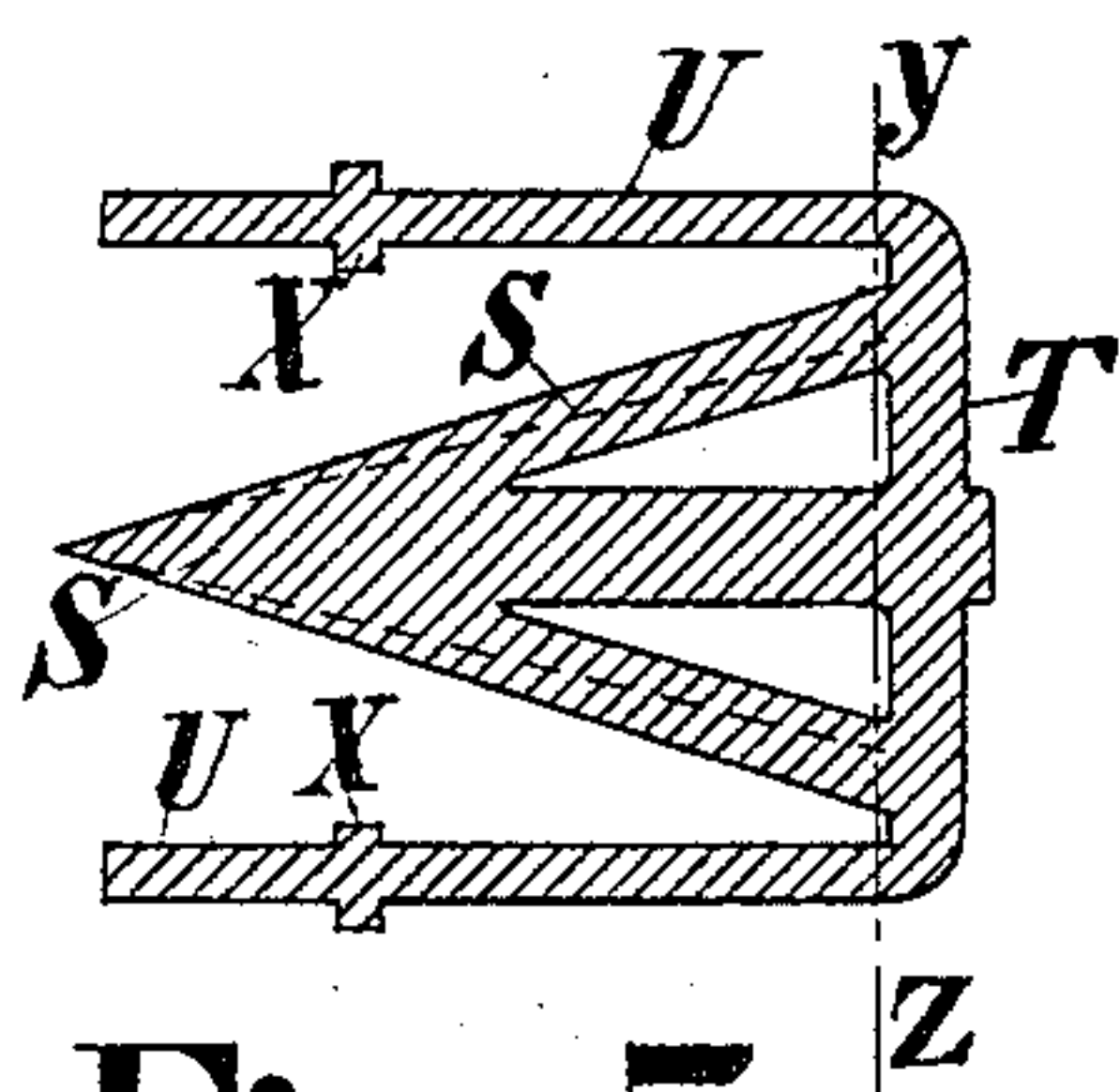


Fig. 5.

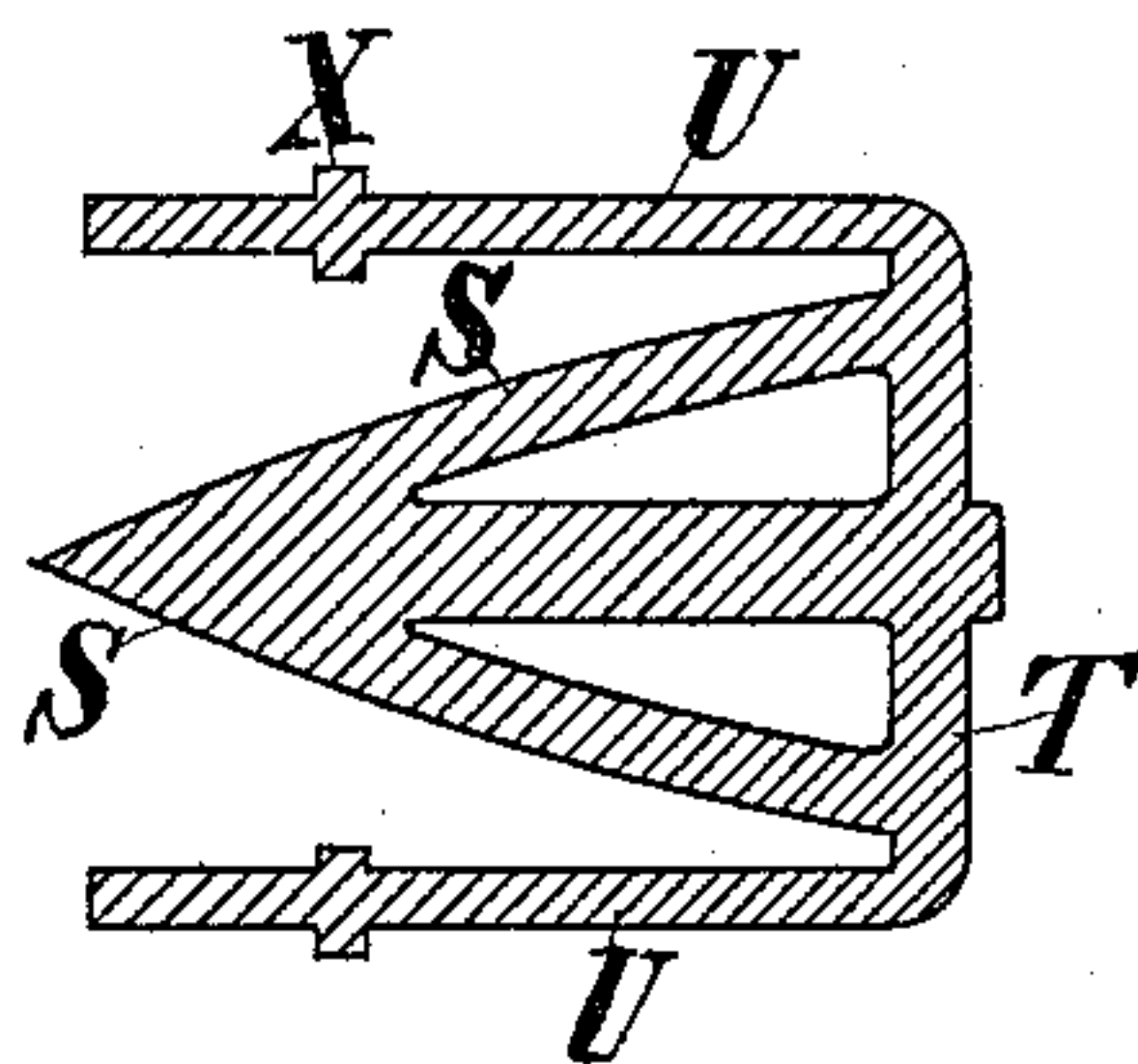


Fig. 6.

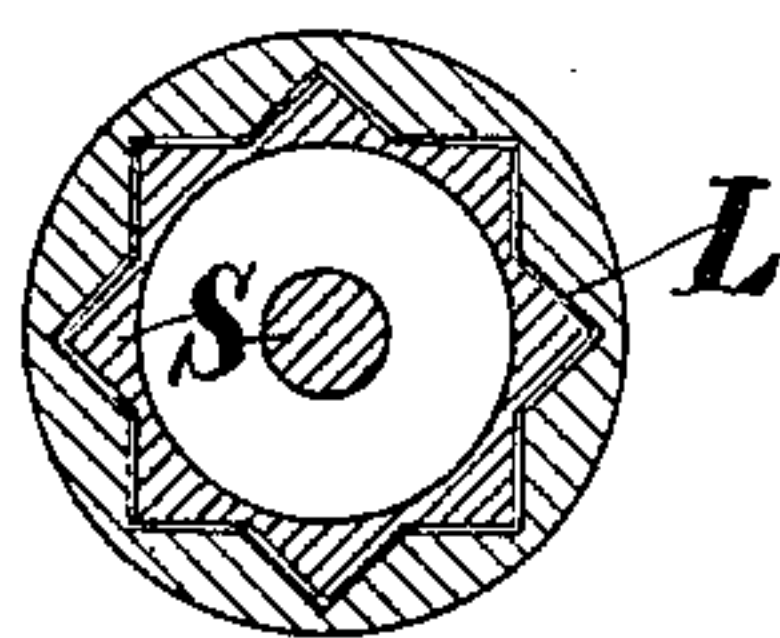


Fig. 7.

Witnesses:

*Wm. L. L. L. L.*  
*F. J. J. J.*

Inventor:

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# UNITED STATES PATENT OFFICE.

JOHANN GEORG PINKERT, OF HAMBURG, GERMANY.

## SELF-ACTING CLOSING DEVICE FOR PROPELLER-PIPES.

SPECIFICATION forming part of Letters Patent No. 607,548, dated July 19, 1898.

Application filed December 30, 1897. Serial No. 664,517. (No model.) Patented in England March 30, 1896, No. 6,872, and in France June 24, 1897, No. 268,157.

*To all whom it may concern:*

Be it known that I, JOHANN GEORG PINKERT, engineer, a subject of the German Emperor, residing at Hamburg, 120 Papenstrasse, in the free town of Hamburg, in the German Empire, have invented new and useful Self-Acting Closing Devices for Propeller-Pipes, (for which I have received Letters Patent in England, No. 6,872, dated March 30, 1896, and in France, No. 268,157, dated June 24, 1897,) of which the following is a specification.

My invention relates to a self-acting closing device for the discharge-pipes of motors for propelling vessels by reaction without the employment of any other propelling means, and has for its objects to form a water-tight closing of these discharge-pipes when in the closed position and to distribute the discharges over a larger area when opened.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the closing device; Fig. 2, a back view of same; Fig. 3, a longitudinal section of same with the device in the closed position; Fig. 4, a similar section with the device in the opened position. Figs. 5 and 6 are longitudinal sections showing modified forms of the said closing device, and Fig. 7 a cross-section taken on the line Y Z of Fig. 5.

The outlet-opening K of the discharge or propeller pipe B is provided with the automatically-acting closing or obturating device. This closing device consists of the obturating-cone S, cross-bars T, and guide-rods U. The obturator S is of a more or less pointed conical shape, as shown in Figs. 3 to 5, of sugar-loaf shape, as shown in Fig. 6, or it may be of paraboloidal shape. It should be ground into its seating at the end of the walls L of the discharge-pipe opening K in order to form a water-tight joint therewith when in the closed position. The obturating-cone S prevents, on the one hand, when closed, the entrance of water into the discharge or propeller pipe B, and, on the other hand, when opened, distributes the discharges of the mo-

tive forces over a larger area. In order to divide the issuing forces into a more jet-like form, the cone S may be made star shape in cross-section, as shown in Figs. 5 and 7. It is obvious that in this case the seating L must be shaped to correspond. The cone S is guided in the guides C and D of the pipe B by means of the cross-bars T and guide-rods U. On the guide-rods U springs W are placed, bearing at one end against the collars X of the guide-rods U and at the other end against the guides D. These springs should have sufficient strength so as to insure the closing of the obturator S, but should not offer any appreciable resistance to the pressure of the issuing forces. The closing of the obturator is, however, normally effected automatically by the pressure of the outer water. The effect of the said springs W could be obtained by any other arrangement, such as vacuum, air-pressure, and the like.

The closing device acts in the following manner: The explosions or other motive forces produce an excess of pressure in B, which presses outward the easily-moved cone S. The motive forces can then pass out through the annular opening thus formed between the cone S and the walls L of the discharge or propeller pipe opening K, as shown by the arrows in Fig. 4, whereby the pressure of the issuing forces is distributed onto a comparatively large quantity of water and is thus effectively utilized. When the pressure produced in B ceases, the external water, assisted by the springs W or other means, closes the cone S against the end of the opening K, and the entrance of water into the interior of the motor is thereby prevented.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim, and desire to secure by Letters Patent, is—

An automatically-acting water-tight closing device, characterized by an easily-moved obturator in the form of a pointed cone, a sugar-loaf, or a paraboloid, placed at the discharge-opening of the propeller-pipe, which obturator, when opened, distributes the issu-

ing forces of explosions or other means onto  
a comparatively large quantity of water, and,  
when closed, preventing the entrance of  
water into the interior of the propeller-pipe,  
5 all substantially as, and for the purpose as  
described in the annexed specification.

In testimony that I claim the foregoing as

my invention I have signed my name in pres-  
ence of two subscribing witnesses.

JOHANN GEORG PINKERT.

Witnesses:

HERM. LEBE SCHUTZE,  
F. C. BOZ, Sr.