

No. 816,640.

PATENTED APR. 3, 1906.

J. BUTLER.
LOGGING APPARATUS.
APPLICATION FILED OCT. 8, 1904.

2 SHEETS—SHEET 1

Fig. 3.



Fig. 1.

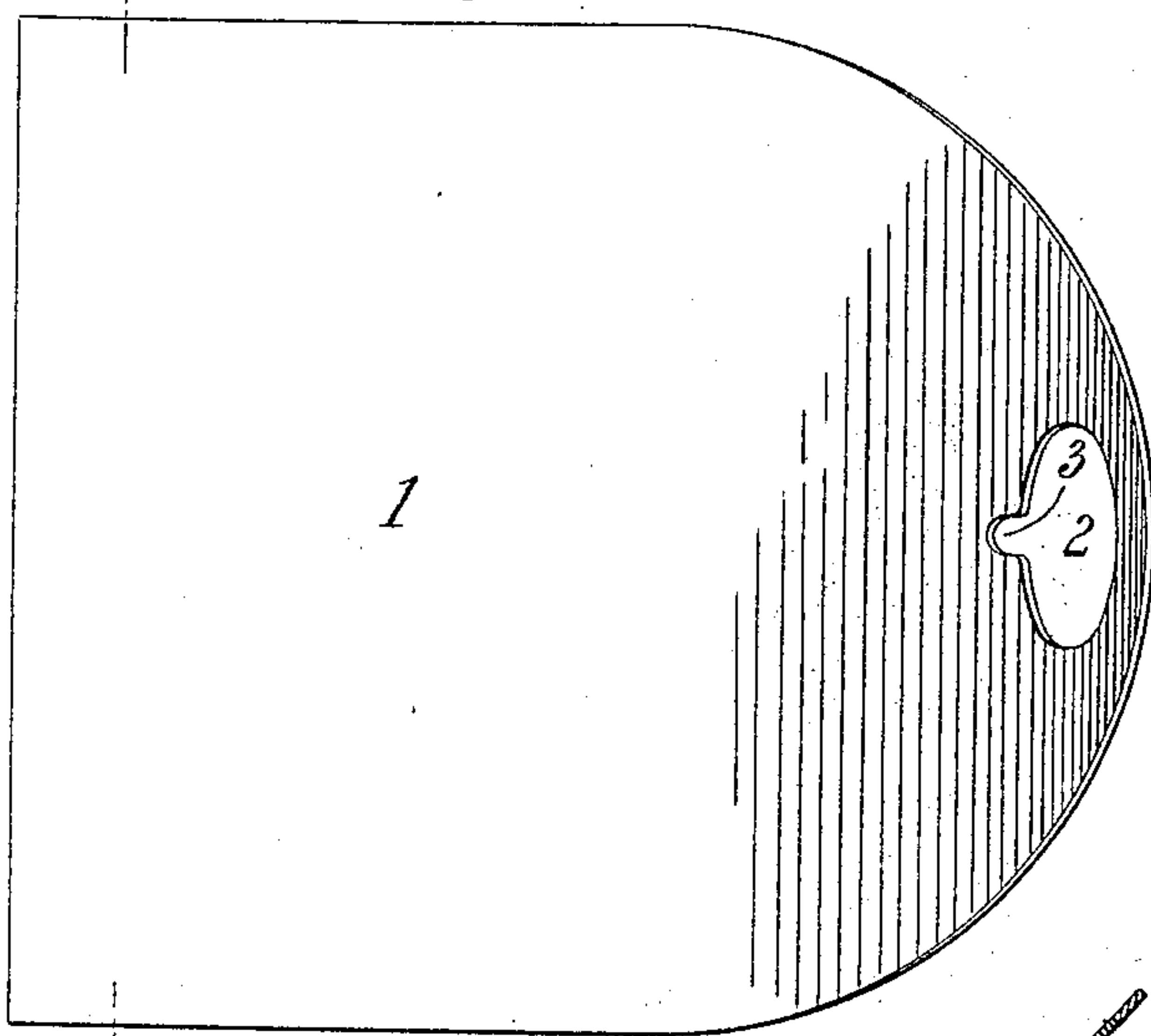


Fig. 4.

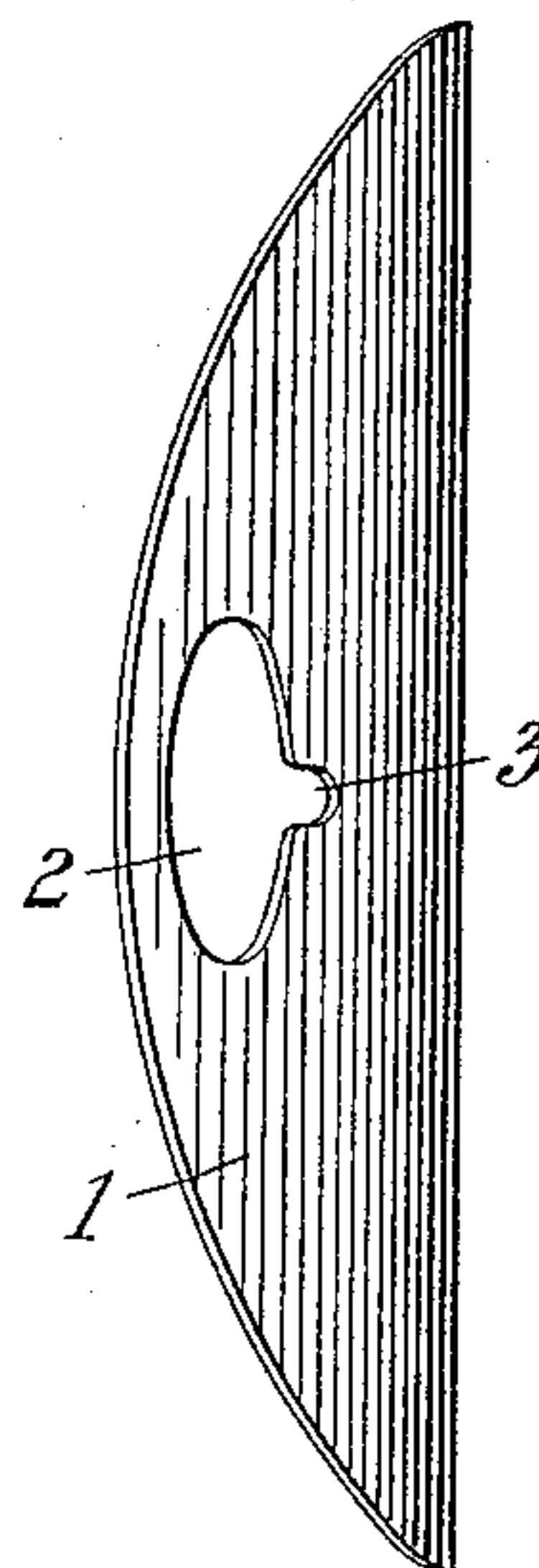


Fig. 2.

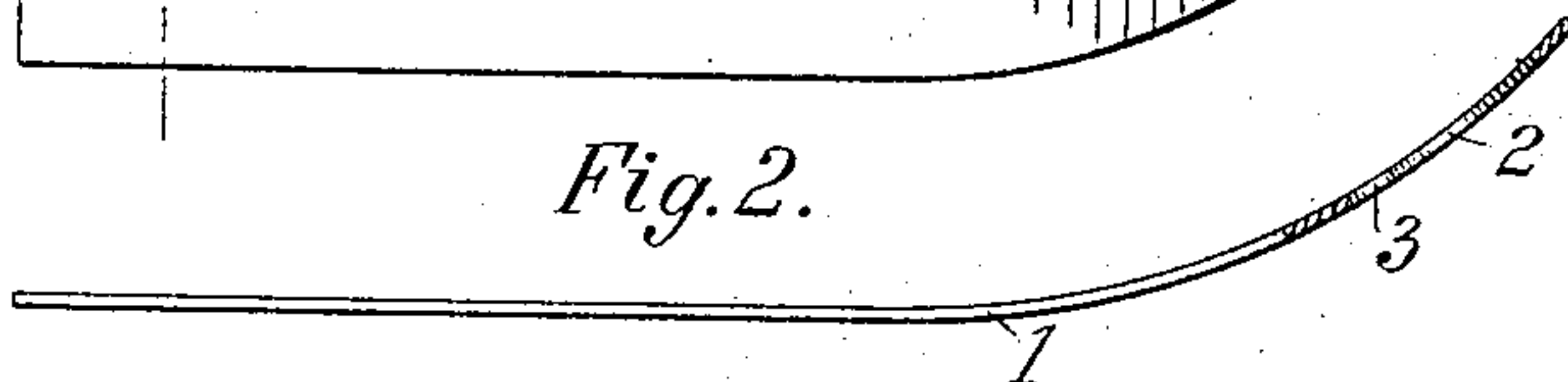


Fig. 7.



Fig. 5.

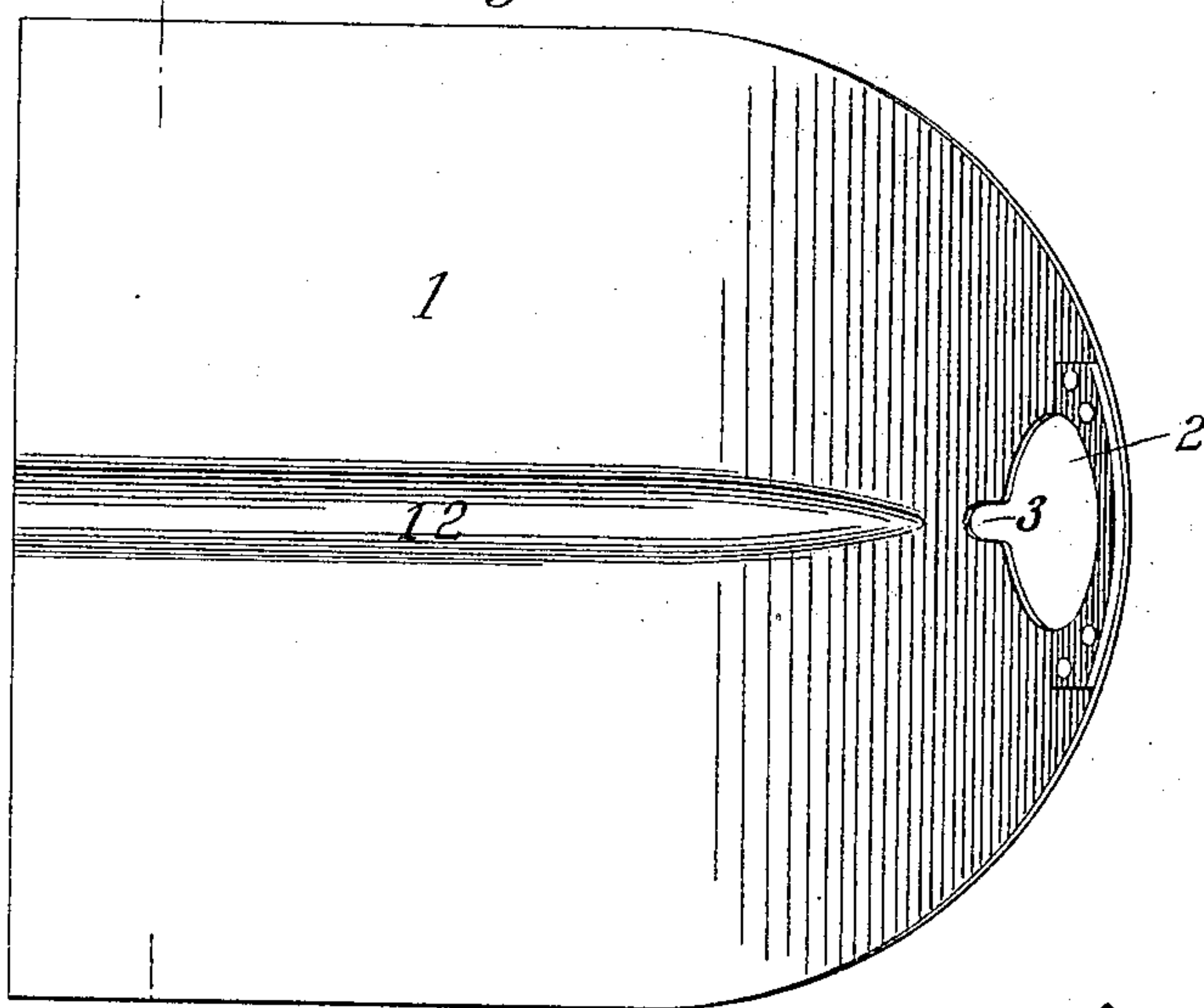
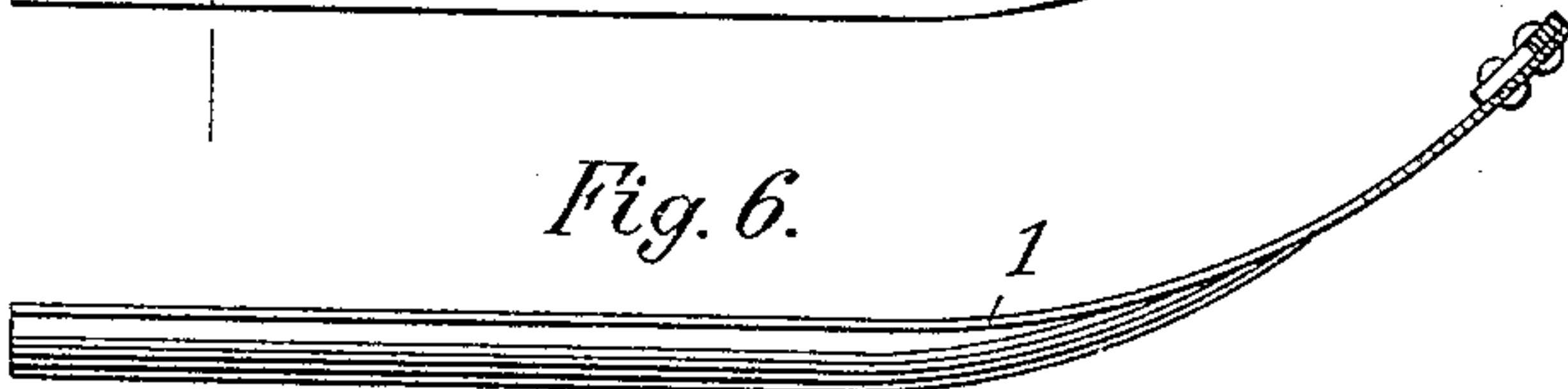


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 8

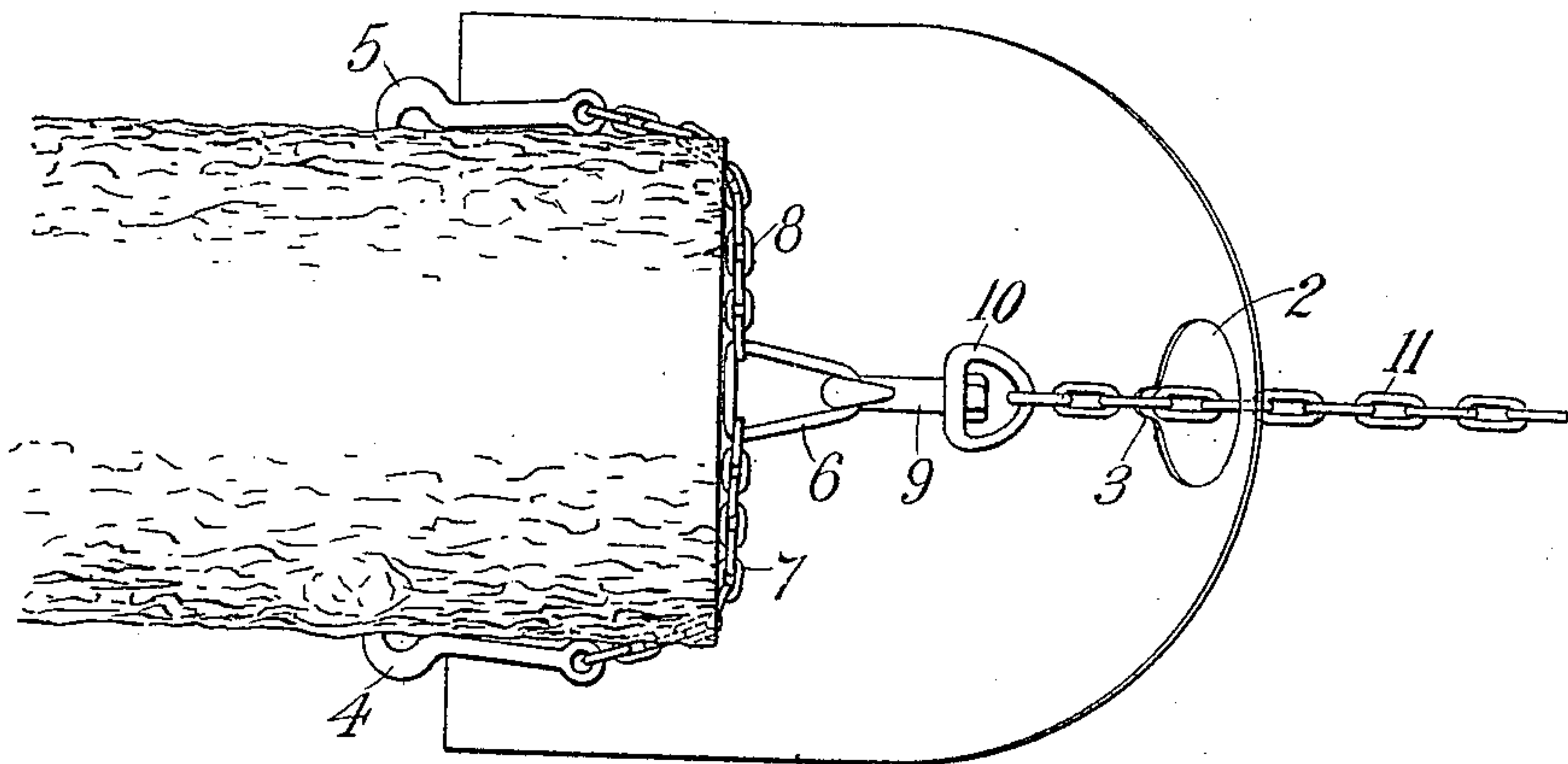


Fig. 9

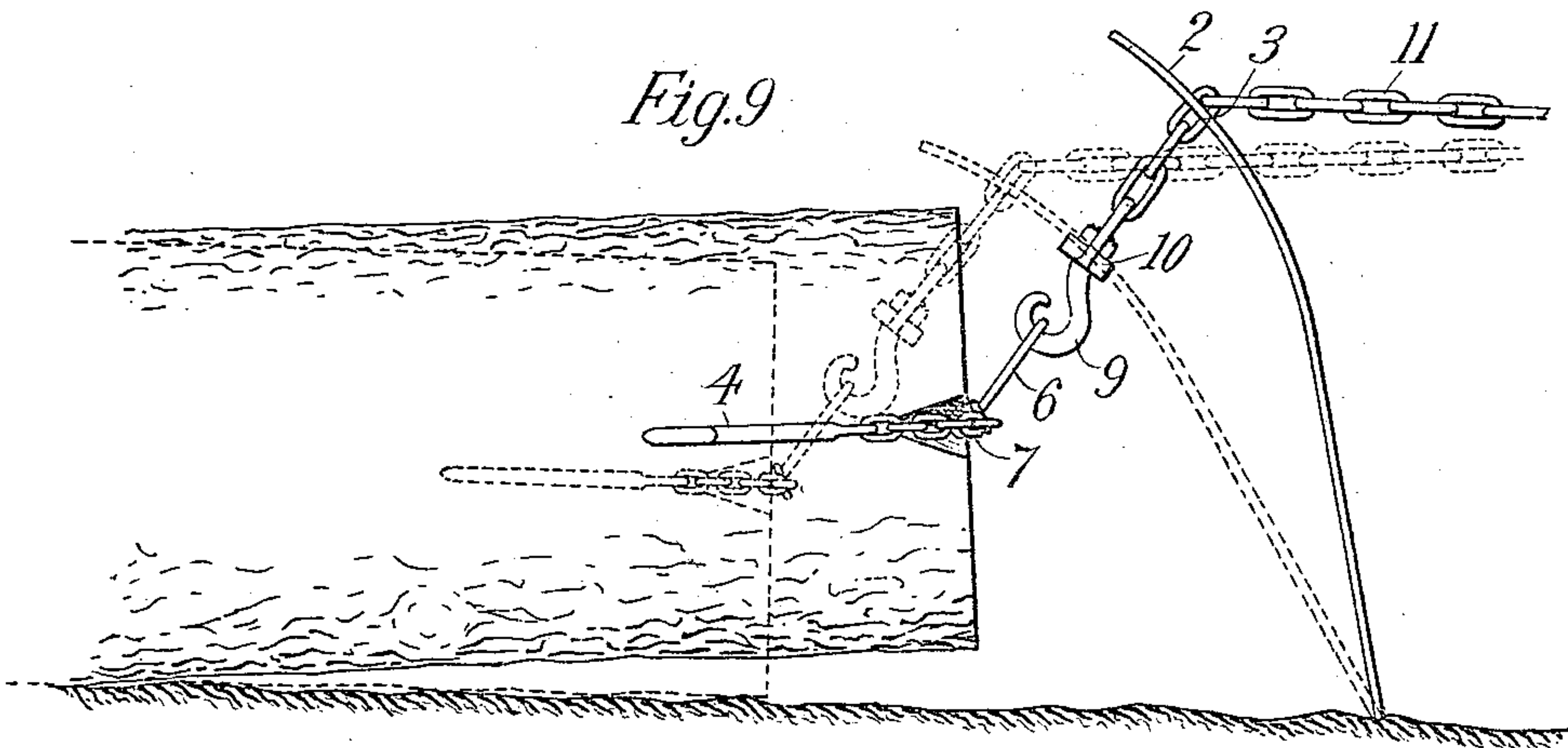


Fig. 10

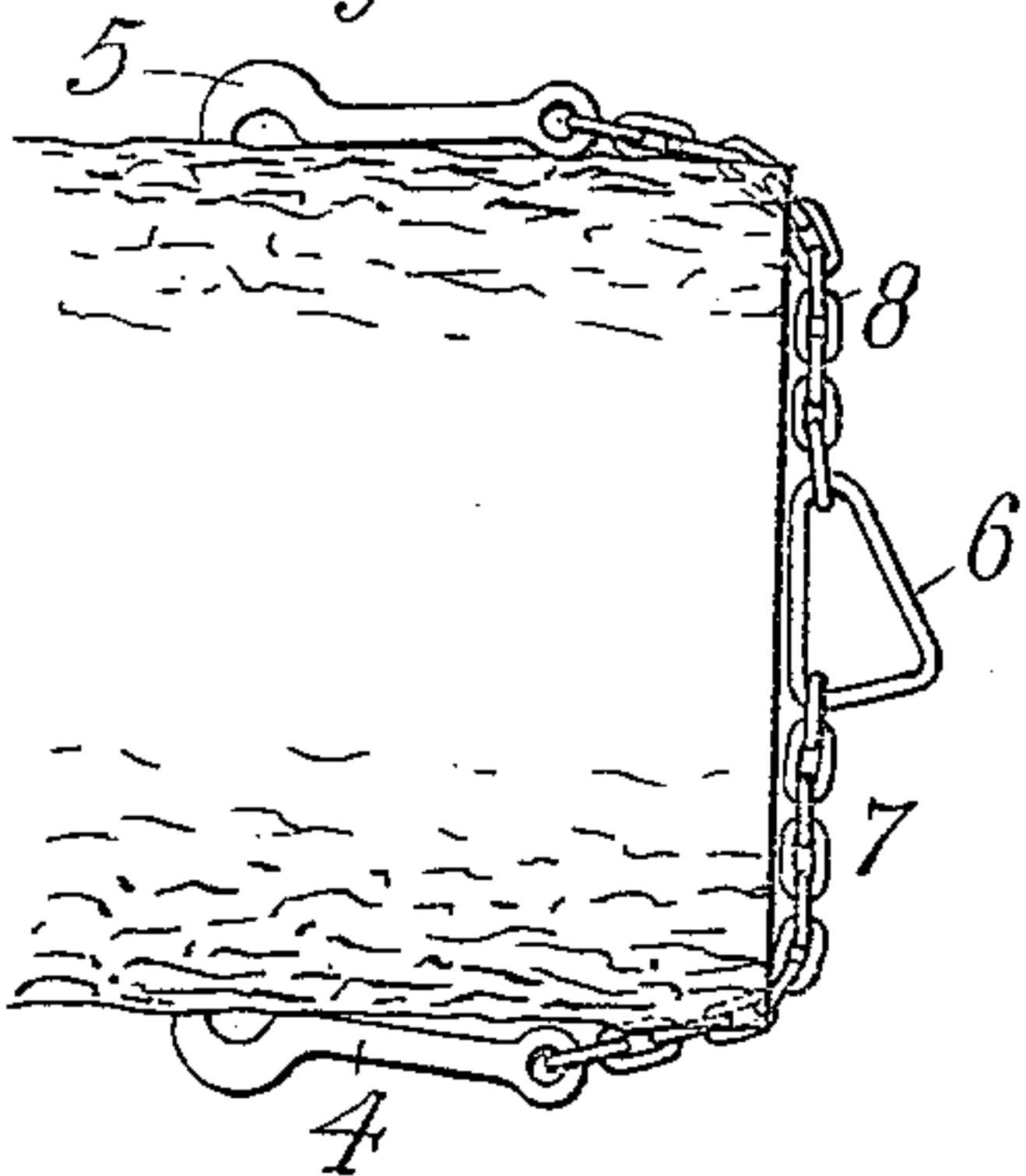
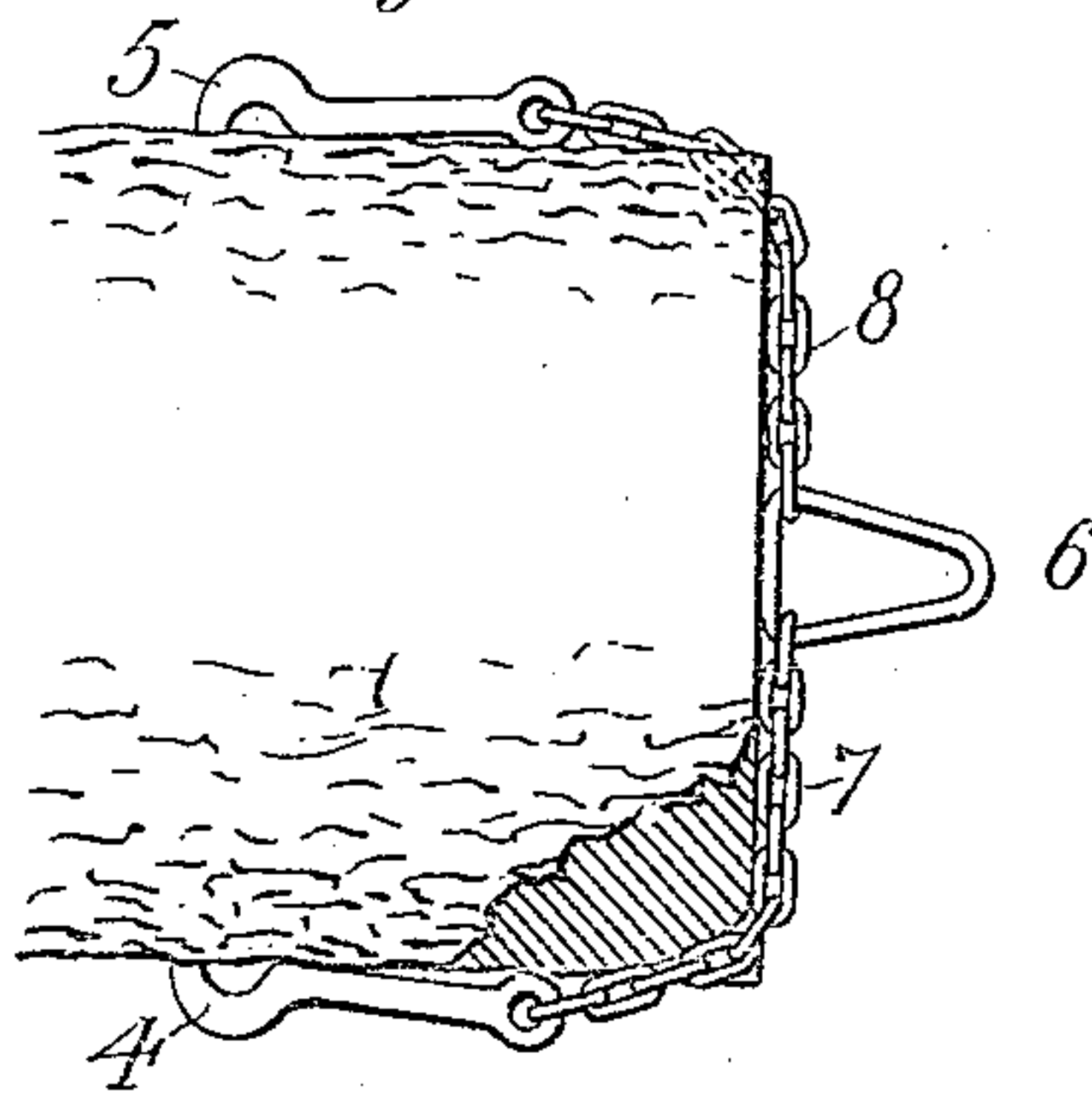


Fig. 11



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UNITED STATES PATENT OFFICE.

JOSEPH BUTLER, OF NAUMAI, NEW ZEALAND, ASSIGNOR TO LIDGERWOOD MANUFACTURING COMPANY, A CORPORATION OF NEW YORK.

LOGGING APPARATUS.

No. 816,640.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed October 8, 1904. Serial No. 227,649.

To all whom it may concern:

Be it known that I, JOSEPH BUTLER, a subject of the King of Great Britain, and a resident of Naumai, New Zealand, have invented a new and useful Improvement in Logging Apparatus, of which the following is a specification.

My apparatus combines the advantages of a cone in the hauling of the log with the advantages of a jacking apparatus, which lifts the end of the log preliminarily to loading onto itself or for the purpose of clearing obstructions.

In the accompanying drawings, Figures 1 to 4, inclusive, are respectively a plan, a side, a cross-section, and a front end view of the shoe portion of my apparatus in the simplest form in which I have heretofore constructed it. Figs. 5, 6, and 7 are a plan, side, and cross-section of the shoe in an improved form. Fig. 8 represents my apparatus in the act of hauling a log. Fig. 9 represents the apparatus attached to the log in end-on position and in the position that the apparatus occupies when in the act of starting and loading the end of the log onto itself. Figs. 10 and 11 are details.

1 is a shoe of sheet metal of sufficient stiffness to withstand all of the strains that it is called upon to bear in the uses herein referred to. This shoe should be approximately of a width at least equal to the diameter of the log and of a length somewhat in excess of said diameter. This shoe in its simplest form, (shown in Figs. 1 to 4, inclusive,) is substantially flat throughout, excepting at and near its forward end, where it is bent upward, as shown. At its forward end it is perforated in the form shown. The enlarged portion 2 of the perforation or eye is adapted for the free movement therethrough of the hauling-chain, while the reduced portion 3 of the perforation or eye acts as a stop to prevent the movement therethrough of the hauling-chain when required. This perforation being in the upwardly-bent portion of the shoe occupies the inclined position shown, so that a forward pull upon the chain has the tendency to disengage the chain from the locking constricted portion 3 and pull it forward through the unlocking enlarged portion 2, whereas a strain in the opposite direction has the contrary tendency.

4 and 5 constitute the dogs by which the end of the log is grappled and which are connected with the triangular link 6 by the chains 7 and 8, for which, of course, ropes are the equivalent.

9 is a hook engaging the triangular link 6 and connected by a swivel 10 with the hauling-chain 11. The triangular link 6 is of the oblong form shown, so that when the dogs are secured to the sides of the log and the chains 7 and 8 are notched in the corners of the logs said chains may be tightened by moving said link 6 from the crosswise position shown in detail in Fig. 10 to the lengthwise position shown in Fig. 11. The links of the chain 11 are so constructed as to properly cooperate with the perforations 2 3 of the shoe.

In the improved form shown in Figs. 5, 6, and 7 the shoe contains a longitudinal downward corrugation 12, (of which there may be one or more,) extending from front to rear, more or less, which acts not merely to stiffen the shoe itself, but also as a keel to steady its movements. The forward part of the shoe may be also upwardly rounded at its edges, so as to produce the form of a scoop, gradually dying into a flat surface approximately midway of its length.

In operation for the purposes of loading the end of the log preparatory to hauling the shoe will be stood up with a backward inclination in front of the log, providing it be end-on, as shown in dotted lines in Fig. 9, and the chains having been adjusted so as to be taut, the hauling-strain will cause the shoe, pivoting on its base, to first lift the end of the log, as shown in full lines, and then drop it onto itself. In dropping upon the shoe the log will commence its forward movement toward the engine, and thus will be overcome, with a minimum of power, the inertia of the log and the other obstacles which always render the starting of the log the most strenuous part of the operation.

The jacking ability of the apparatus will also come into play for causing the end of the log to clear obstructions and also for loading the log onto the shoe when in a side-on position.

In the operation of the apparatus above described the tendency of the chain will be to haul the log up onto the shoe, which it is per-

mitted to do by reason of the free passage in a forward direction, which is afforded for the chain by the large portion 2 of the perforation through which it passes. Every advantage which the chain gains over the log in this respect it retains, because the chain is locked against any return movement by the engagement of its links with the narrow portion 3 of the perforation.

10 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. As an article of manufacture, a logging-apparatus shoe consisting of a log-bearing approximately flat body with an upwardly-curved forward extension having a perforation therein, a chain extending through the perforated portion, and a grappling device carried by said chain.

20 2. As an article of manufacture, a logging-apparatus shoe consisting of a log-bearing corrugated flat body with an upwardly-curved forward extension having a perforation therein, a chain passing through the perforation, a hook connected to the chain, log-gripping

mechanism, and a connection between the hook and the log-gripping mechanism.

3. In a logging apparatus in combination a log-carrying shoe having an approximately flat log-bearing body portion, and a forward extension therefrom, in combination with log-grappling mechanism formed of a plurality of hooks, a flexible mechanism between said hooks, and a hauling-chain passing through the shoe and forming an adjustable locking engagement with the forward portion of said shoe whereby the whole may operate as a jacking device.

4. As a logging apparatus, in combination, a log-grappling device, an oblong link whereby the same may be tightened, a hauling-chain and a shoe containing a perforation through which said hauling-chain extends.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOSEPH BUTLER.

Witnesses:

CHAS. C. PIERCE,
CHAS. G. MUNIER.