

(No Model.)

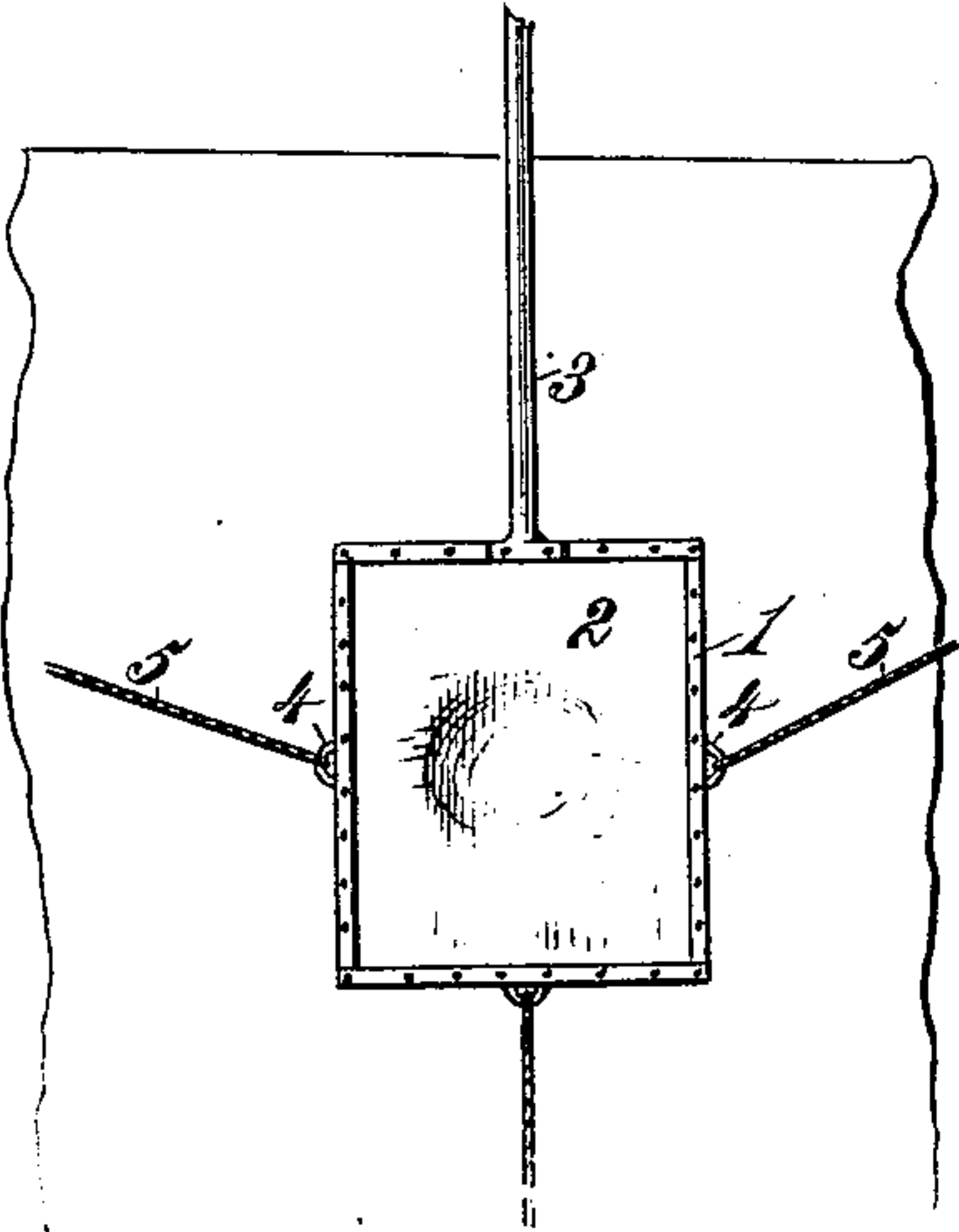
P. B. VIELE.

LEAK STOPPER FOR HOLDS OF VESSELS.

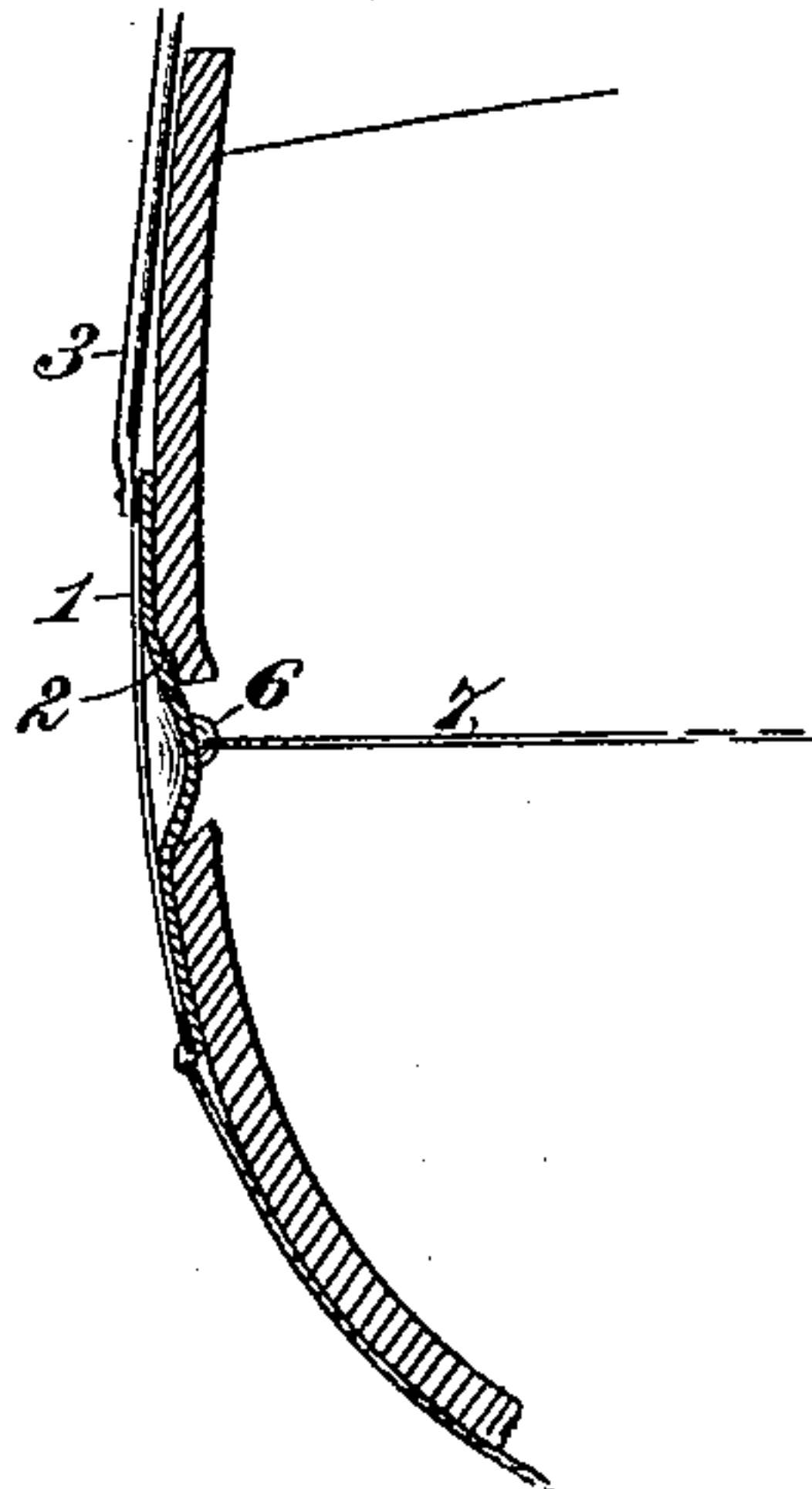
No. 396,016.

Patented Jan. 8, 1889.

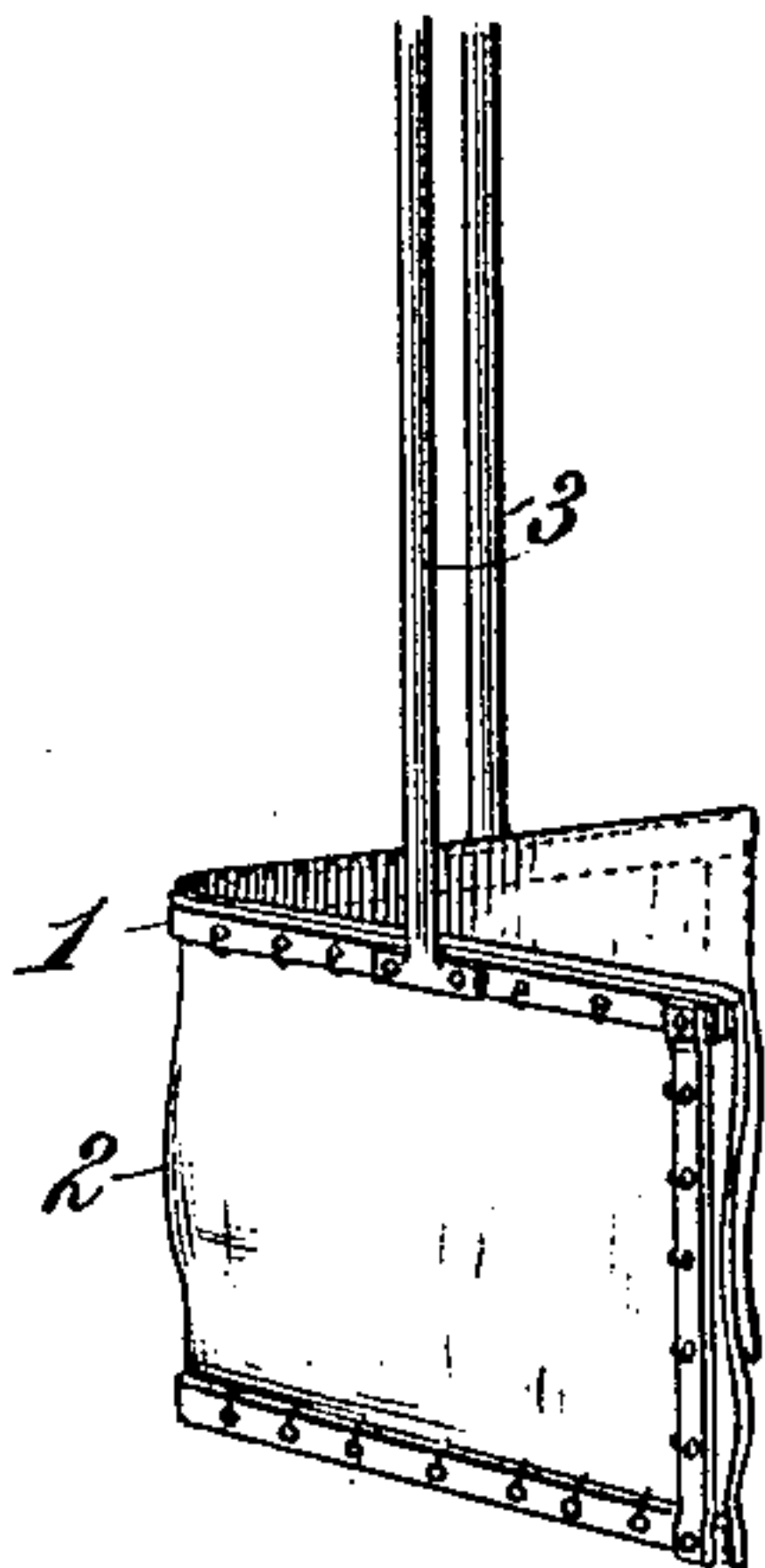
*Fig. 1.*



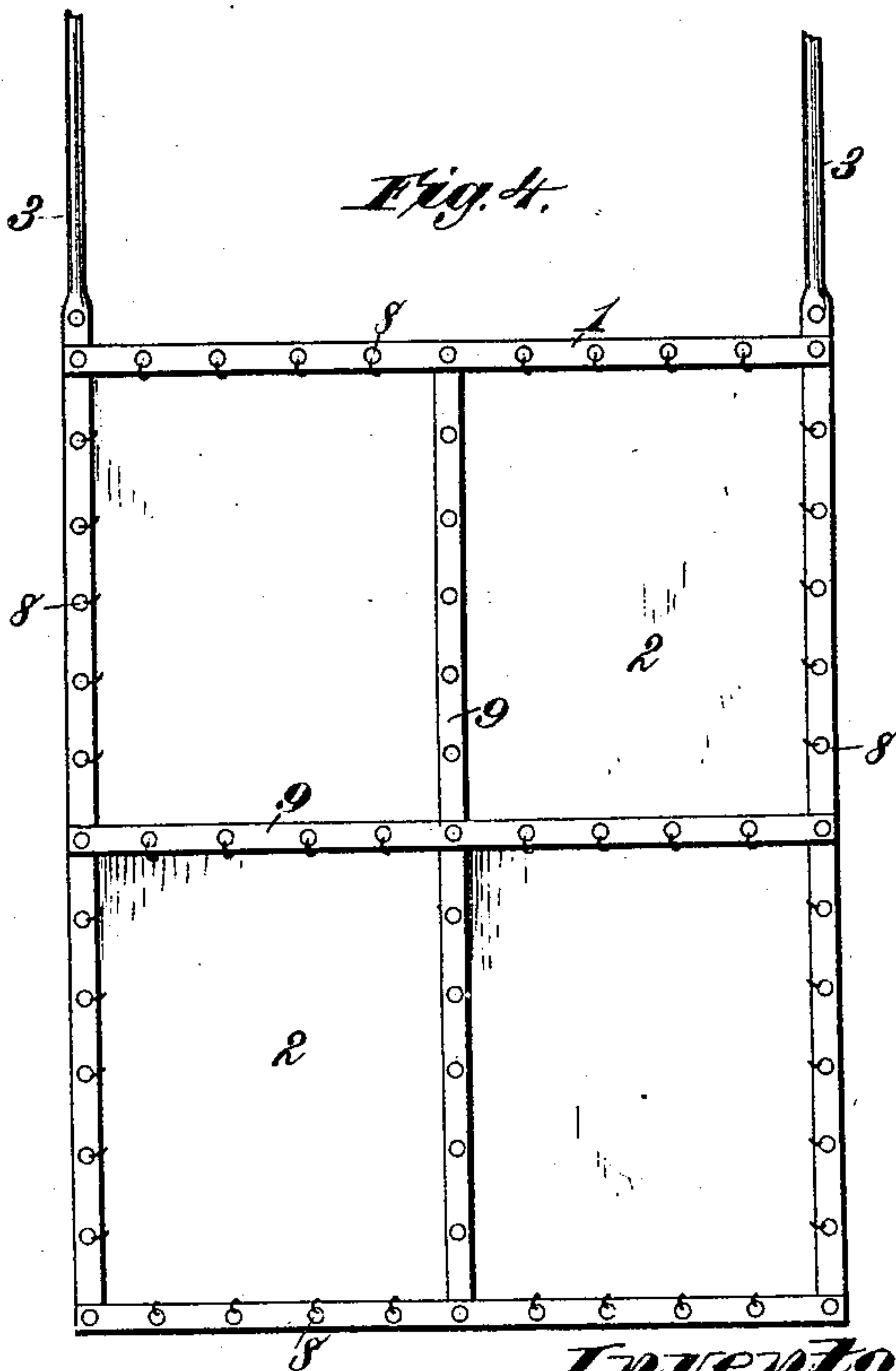
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses.  
*Robert Swatt.*  
*Samuel Lumbly.*

Inventor.  
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# UNITED STATES PATENT OFFICE.

PLATT B. VIELE, OF ROCHESTER, NEW YORK.

## LEAK-STOPPER FOR HOLDS OF VESSELS.

SPECIFICATION forming part of Letters Patent No. 396,016, dated January 8, 1889.

Application filed April 10, 1886. Renewed June 14, 1888. Serial No. 277,091. (No model.)

*To all whom it may concern:*

Be it known that I, PLATT B. VIELE, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Leak-Stoppers for Holds of Vessels, of which the following is a specification.

This invention relates to an improved means for applying a leak-stopper to the outer side of a ship to stop holes or leaks in the hold of the vessel.

The invention will be first described, and then pointed out in the claims at the end of this specification.

In the annexed drawings, Figure 1 shows my improved leak-stopper applied over the side of a vessel. Fig. 2 is a cross-section of the same. Fig. 3 represents the leak-stopper shaped to cover a space on each side of the bow. Fig. 4 is a view of the inner side of one of the flexible leak-stoppers, illustrating one mode of constructing the stopper-supporting frame.

Referring to the drawings, the numeral 1 designates a frame of rectangular or other suitable form for supporting a covering, 2, of leather, canvas, rubber, or other flexible or elastic material.

The frame 1 may consist of metallic rods or strips or of wooden bars having sufficient strength and weight. I prefer, however, to make the frame of flat steel strips so arranged that when the frame is covered and applied the flat sides of the steel strips will by their flexibility more readily conform to the contour of the vessel. The flexible covering 2 is securely attached to the frame 1 by any suitable means, and is preferably somewhat larger than the frame, so as to be capable of becoming closely applied to and over a hole in the side of a vessel under the pressure of the water.

To the upper end of the frame 1, at the center or at or near each corner, is attached a suspension-rod or handle, 3, by which the frame and its covering can be lowered over the side of the vessel and brought opposite the leak or hole to be stopped. The handle or handles 3 can be made in sections suitably connected, if necessary.

On each side of the frame 1 is a loop or eye,

4, for attachment of guys 5, that can be so arranged as to facilitate the proper location of the leak-stopper and assist in securing it in place.

For the purpose of holding the frame and its covering securely in place, I attach a number of staples or rings, 6, to the inner side of the flexible covering, so that there may be an inner fastening made through the hole, thus keeping the stopper more securely in place than by the outer fastenings alone. The inner fastenings may consist of ropes 7, passed through the loops, rings, or staples 6 and secured, as shown in Fig. 2, or otherwise in any convenient manner.

It will be seen that in the event of an accident by which a hole is stove in the side of a vessel the frame 1, with its attached flexible covering 2, can be lowered over the side and speedily secured in place to stop the leak. By this means the vessel can be temporarily patched until it becomes convenient to properly repair the injury, or the vessel can be kept afloat a sufficient length of time to facilitate the escape of passengers and crew.

Vessels can be supplied with different sizes of these leak-stoppers, or the rods for making the frames 1 can be provided in various lengths to enable a frame of any size to be quickly constructed. The frames and the coverings, being made detachable, can easily be disconnected and stowed away until required for use.

For the bow of the vessel a frame and its covering can be bent, as shown in Fig. 3, so as to cover a space on each side of the bow. When the hole in the vessel is above the water-line, or when the water-pressure is not sufficient to hold the leak-stopper firmly against the vessel, ropes or guys may run from the frame 1 under the vessel and be fastened on the opposite side. This may be particularly desirable when there is a rough sea.

I prefer to make the frames 1 of flat material, with perforations 8 at equal distances and a few inches apart, so that the frames can be put together in any desired shape to meet the emergency. These same perforations can be used in fastening the covering 2 to the frame, and also for attachment of the guys 5 and inner fastenings, 7, when the latter are used.



With this device the same material as the frames can be used for handles for the frame by being bolted thereto. Where the frames are made large, they can be strengthened by having cross-bars 9 to keep them in proper shape.

By providing the frame-bars 1 and 9 with perforations 8, disposed at regular intervals, it is obvious that said bars can be connected at various points by means of bolts passed through said perforations, so as to vary the size of the stopper-supporting frame as required. Frames of various sizes can thus be quickly put together without requiring the employment of very long bars, thus enabling the parts of the leak-stopper to be easily and compactly stowed away when disconnected.

What I claim as my invention is—

1. A leak-stopper for vessels, composed of a frame of detachable and flexible flat steel bars or strips that will conform to the shape of the vessel and a flexible covering secured to said frame, substantially as described.

2. A leak-stopper for vessels, composed of a supporting-frame provided with handles and a flexible covering secured to said frame, and having loops or rings attached to its inner side for attachment of ropes or guys to pass through the opening in the hull of the vessel, substantially as described.

3. A leak-stopper for vessels, consisting of a frame and handles therefor composed of detachable bars provided with perforations, a flexible covering secured to said frame and having loops or rings on its inner side, and guys attached to said frame and to the loops on the inner side of its covering, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PLATT B. VIELE.

Witnesses:

T. G. MURPHY,  
WM. E. CRAIB.