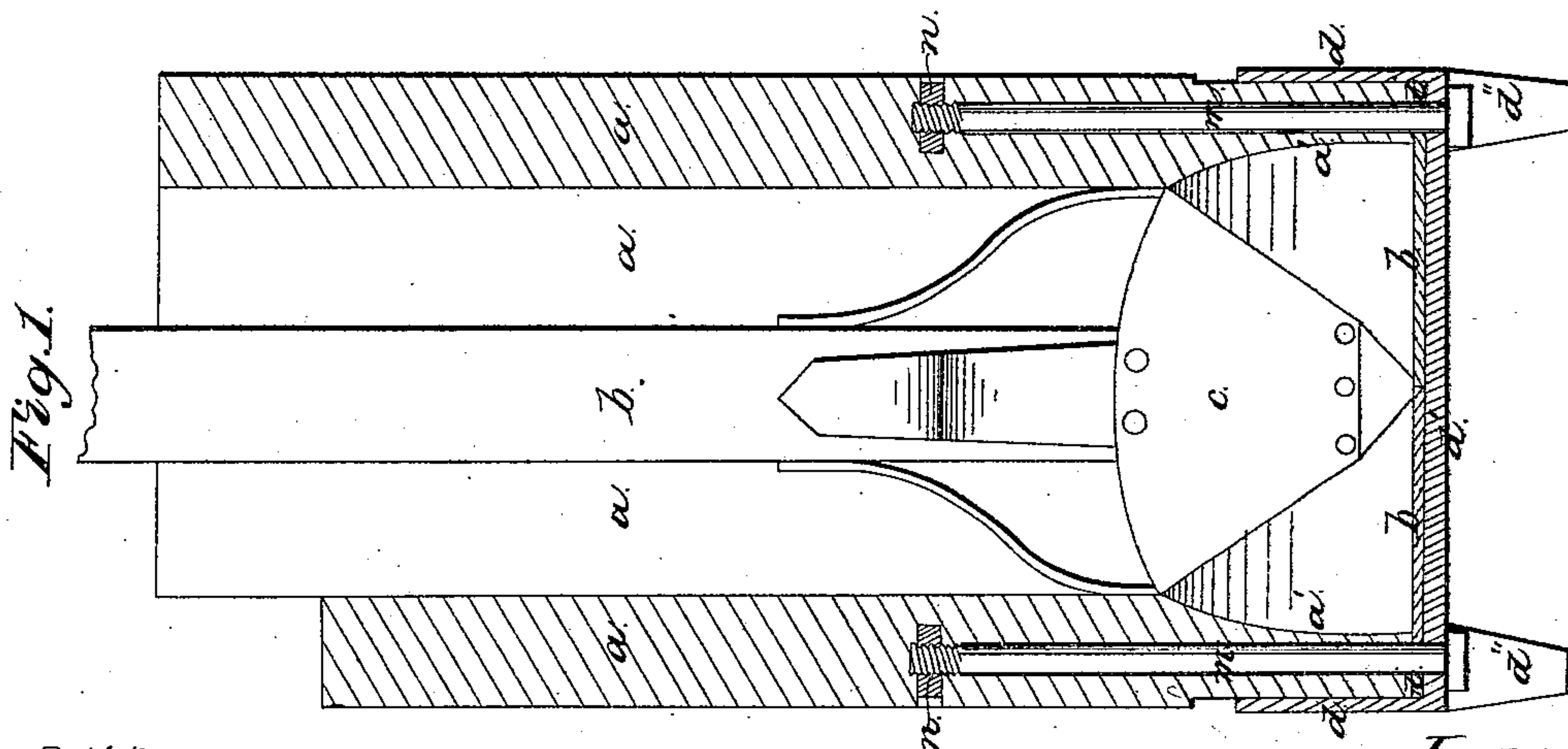
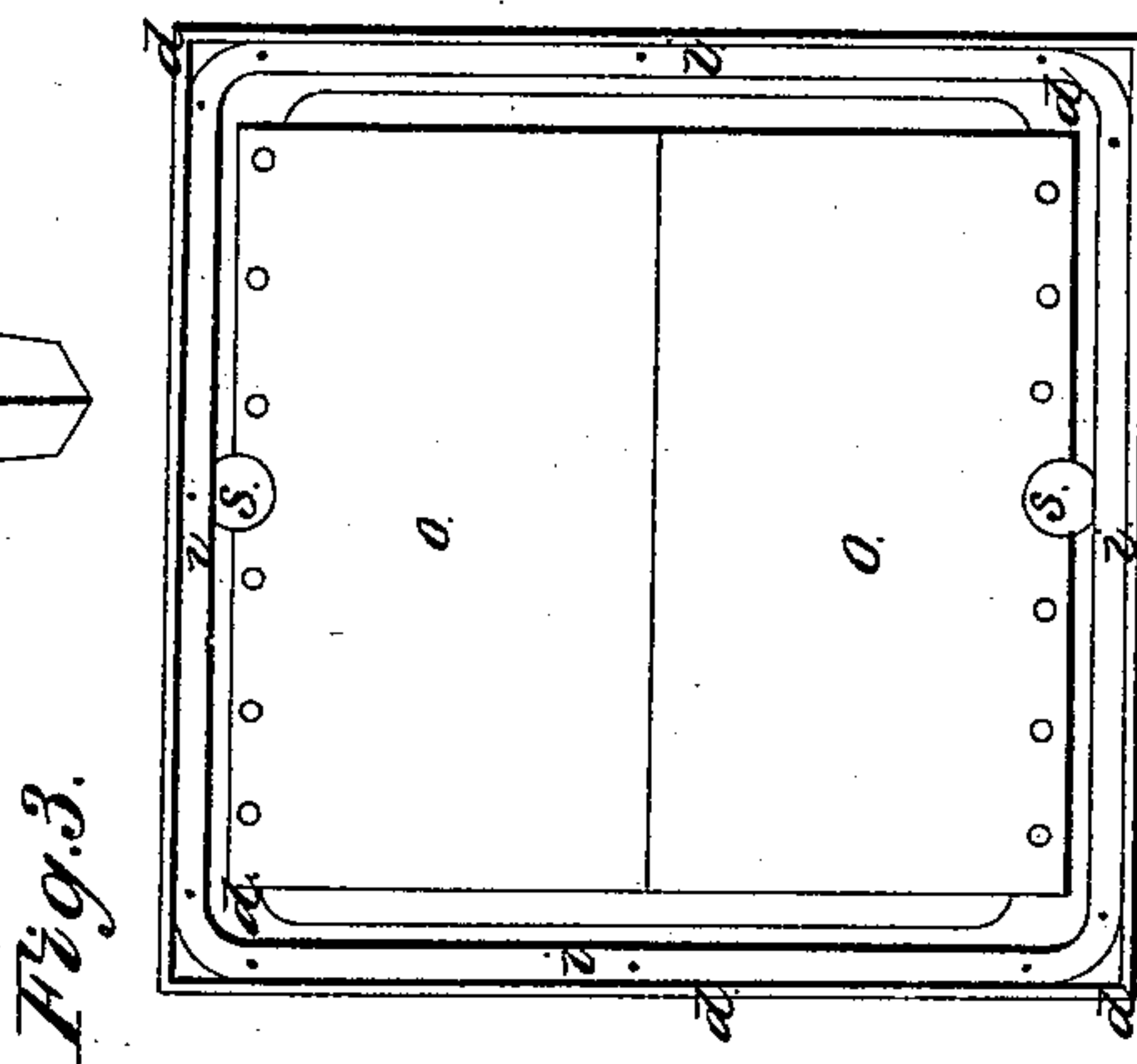
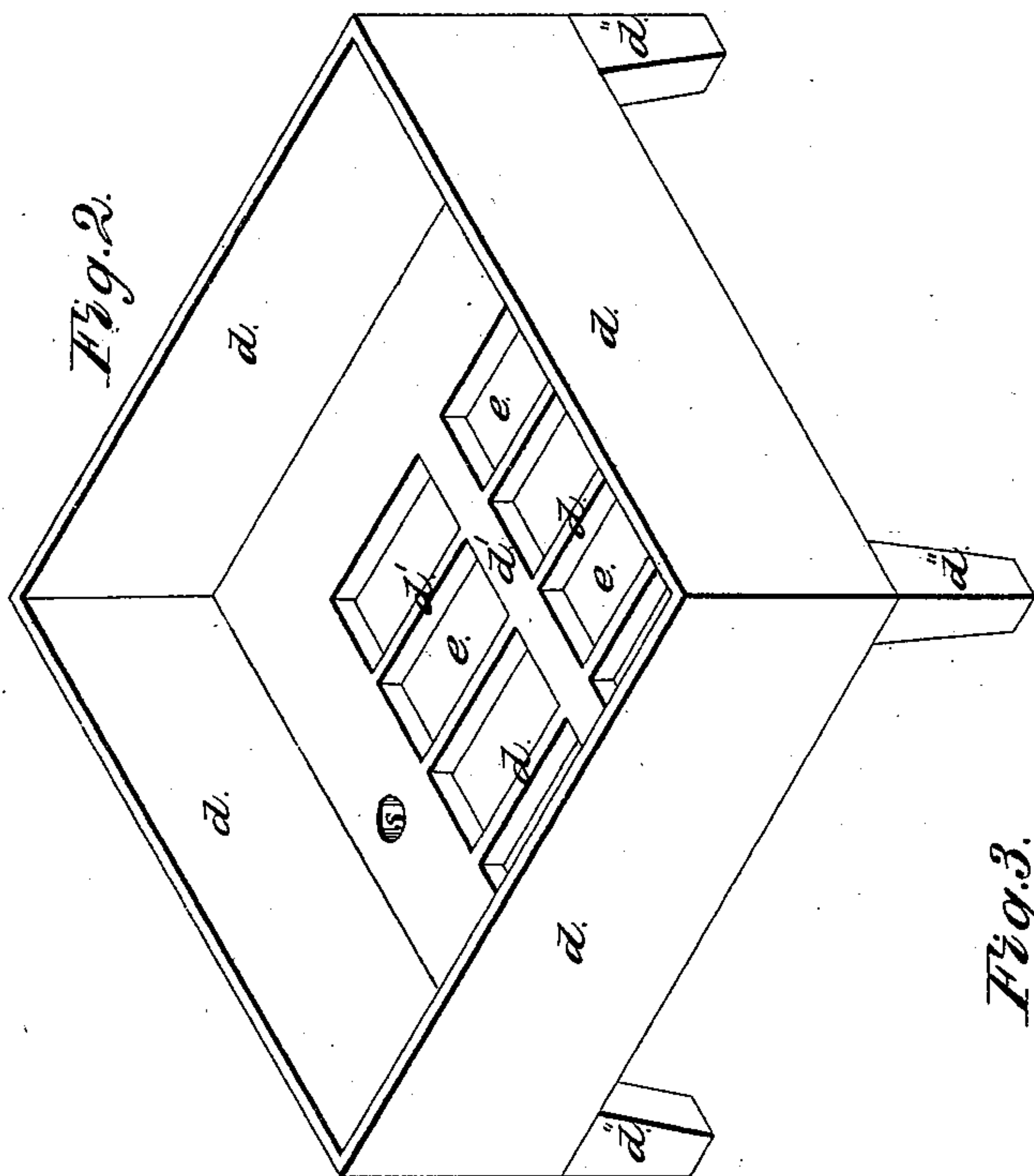


S. Benson,

Ship Pump,

N^o 85,270.

Patented Dec. 29, 1868.



Witnesses.

W. D. Lewis.
Thos B. Kerr

Inventor.

Samuel Benson
by Bakewell & Christy
his Attys.

United States Patent Office.

SAMUEL BENSON, OF ALLEGHENY CITY, PENNSYLVANIA.

Letters Patent No. 85,270, dated December 29, 1868.

IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, SAMUEL BENSON, of the city of Allegheny, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Pumps; and I do hereby declare the following to be a full, clear, and exact description thereof.

In pumping bilge-water from the barges, coal-boats, &c., used on our western rivers, a pump is usually employed, which consists of a box-like tube or pipe, fitted with a common valve and hopper-shaped bucket, worked by a spring-pole, or other well-known device. The chief difficulty connected with the construction of such pump is to provide a strong, efficient, simple, and durable valve.

My invention relates to an improvement in this part of the pump; and the nature of it consists in the construction of a metallic valve-box, which is fitted on to the lower end of the pump; also, in the mode of fitting and attaching such box to the pump, and in the use, in connection therewith, of a flap-valve, of India rubber, or other similar material.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and manner of use, referring, for that purpose, to the accompanying drawings, making a part of this specification, in which—

Figure 1 shows a pump and valve-devices, in vertical longitudinal section, and the bucket or sucker in side elevation;

Figure 2 is a perspective view of the valve-box; and

Figure 3 is a top or plan view of the valve-box, and shows the gasket and flap-valves, which are interposed between it and to the lower end of the pump-box.

Like letters of reference indicate like parts.

The pump-box *a*, I make of square shape, as is usually done.

b is a sucker-rod, and

c is the ordinary hopper-shaped bucket.

The valve-box *d*, I make of the required size, to fit snugly on to the lower end of the pump-box *a*, which may be bevelled off or shouldered for that purpose.

The bottom of this box *d* is made with a grating, *d'*, or suitable apertures, *e*, are left for the admission of water, the bars *d'* preventing the passage into the pump-box *a* of solid objects, so large as to interfere with the proper operation of the bucket *c*.

The box *d* has legs, *d''*, which rest on the bottom of the boat, and between which the water flows into the pump through the grating *d'*.

To the lower end of the pump-box *a*, and extending entirely around it, I attach a gasket, *i*, of India rubber, or other suitable packing-material.

I also nail to the bottom of the pump-box *a*, flap-valves, *o*, also of India rubber, or other similar material which is not liable to warp.

These flap-valves *o*, when the valve-box *d* is attached, rest on the top of the grating *d'*, and, of course, open upward, when the bucket *c* is raised. To secure its full and free operation, I hollow out the lower end of the pump-box *a* as at *a'*.

The valve-box *d* has bolt-holes, *s*, through which, and through holes bored up the sides of the pump-box *a*, any desirable distance, I pass the headed screw-bolts *m*, and screw them into the nuts *n*, which are inserted in mortises, properly cut in the pump-box *a* for the purpose.

In this way, the valve-box *d* is held firmly against the lower end of the pump-box *a*, and as its sides enclose the lower end of the pump-box *a*, and the gasket *i* is compressed between the two, a good firm joint is secured.

The novelty and utility of my improvement will be apparent from the following considerations:

First, the grating *d* prevents the flap-valves *o* from being injured.

Second, the valve-box *d* must occasionally be removed, that the valves *o* may be renewed. If attached by screws, the bite of the screw-threads in the wood of the pump-box *a* is soon lost, and a new pump-box is required. By the use of the bolt *m* screwing into nuts *n*, I avoid this source of loss, since the valve-box *a* can be removed as often as may be necessary, without injury to any part of the pump.

Third, the sides of the valve-box *d*, enclosing the lower end of the pump-box *a*, prevent the valve-box from being knocked off or displaced, which is an important feature, in view of the rough usage to which, in the hands of coal-boat men, such pumps are necessarily liable.

Fourth, by the use of India-rubber valves, *o*, instead of the leather valves ordinarily used, I save a considerable amount of loss, since rubber is much less liable to displacement after being used in water for a considerable time.

Hence,

What I claim as my invention, and desire to secure by Letters Patent, is—

A valve-box *d*, resting against and enclosing the lower end of a bilge-water pump, such box having a grated bottom *d'*, flap-valves *o*, of India rubber or other like material, and being secured to the pump-tube *a* by screw-bolts *m* and nuts *n*, substantially as and for the purposes hereinbefore set forth.

In testimony whereof, I, the said SAMUEL BENSON, have hereunto set my hand.

SAML. BENSON.

Witnesses:

A. S. NICHOLSON,

G. H. CHRISTY.