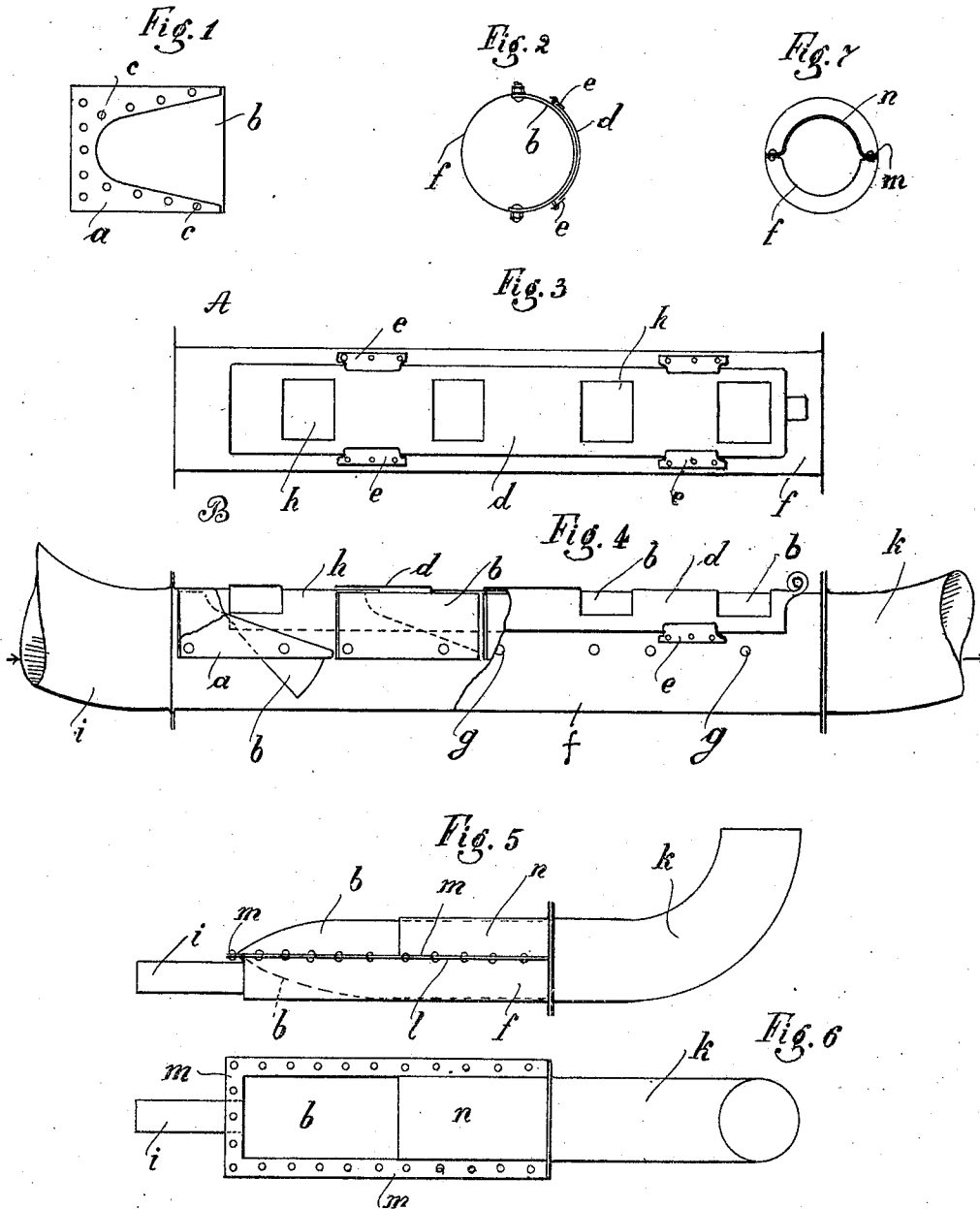


No. 827,831.

PATENTED, AUG. 7, 1906.

P. E. VAN BERENDONCK.
LOADING AND UNLOADING DEVICE.
APPLICATION FILED SEPT. 15, 1905.



Witnesses:
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UNITED STATES PATENT OFFICE.

PHILIPPE EMILE VAN BERENDONCK, OF BRUSSELS, BELGIUM.

LOADING AND UNLOADING DEVICE.

No. 827,831.

Specification of Letters Patent.

Patented Aug. 7, 1906.

Application filed September 15, 1905. Serial No. 278,606.

To all whom it may concern:

Be it known that I, PHILIPPE EMILE VAN BERENDONCK, a subject of the King of Belgium, residing at Brussels, Belgium, have invented certain new and useful Improvements in Loading and Unloading Devices, of which the following is a specification.

This invention relates to new and useful improvements in loading and unloading devices, and relates more particularly to that class known as "pneumatic."

This invention is intended more especially to be used in conjunction with the loading and unloading of ships, and is for the purpose of conveying subdivided substances which may be coal, grain, or the like.

It is the object of this invention to provide a device of the character noted possessing advantages in points of simplicity, efficiency, and durability, proving at the same time comparatively inexpensive to produce and maintain.

With the foregoing and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts in the several views, in which—

Figure 1 is a plan view of a valve employed in conjunction with this invention. Fig. 2 is a sectional view taken on the lines A B of Fig. 3. Fig. 3 is a plan view of a complete apparatus. Fig. 4 is a view in side elevation. Figs. 5, 6, and 7 are views illustrating a modified form of the invention.

In the drawings, *f* indicates a metallic receptacle which is preferably cylindrical or tubular and which may be of any desired length or diameter. This tubular receptacle is provided with a series of openings in which fits a frame *a*. Carried by the frame *a* is a flexible membrane *b*, which may be of leather or other flexible material. Arranged on the receptacle *f* is a slide *d*, provided with a series of openings *h*. This slide is arranged over the membranes *b* of the receptacle and

moves in the guides *e*, carried by the receptacle.

In the operation the slide *d* is so manipulated as to cause the openings *h* to lie over the membranes *b* of the receptacle and the weight of the material to be conveyed will overcome the resistance of the membranes and fall within the receptacle *f*. When said receptacle is filled, the slide may be moved so as to carry the openings thereof out of registry with the membrane. To convey the material from the receptacle *f*, air is caused to enter said receptacle, which will force the material within the receptacle to any predetermined point. This may be done in any manner, but it has been found preferable to arrange the ends of the receptacle *f* with flanges. To one end of the receptacle is secured an air-inlet pipe *i*, which may come from any source and is secured to the opposite end of a discharge-pipe *k*, which may lead to any predetermined point. The passage of the air through the receptacle will also cause the membranes to assume their normal or closed position.

It may be added that letting in of material through overweighting the membranes *v* occurs alternately with the entrance of a blast of air through the pipe *i*, so that when the membranes *b* deliver one load to the receptacle *F* a blast of air must then be let in to return them to their normal or closed position, said blast carrying away the material that has been entered into the receptacle.

In the modified form is shown a receptacle *f*, which has a portion of its upper surface cut away and inclosed by a membrane *c*. This device is operated the same as in the preferred form, except it has no protecting-slide *d*.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A receptacle having openings, membranes for normally closing said openings and an air-inlet communicating with the receptacle and a discharging-channel therefor.

2. A receptacle having openings, membranes for normally closing said openings, an air-inlet communicating with the receptacle,

a discharging-channel therefor, and a protecting-slide for the membranes.

3. A receptacle, an inlet therefor, an outlet therefor, means for communicating with
5 the interior of the receptacle and a yieldable means normally obstructing said communicating means.

4. A receptacle having openings, membranes for closing said openings, an air-inlet

communicating with the receptacle, a discharge-channel therefor, and a protective means for the membranes.

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

PHILIPPE EMILE VAN BERENDONCK.

Witnesses:

GREGORY PHELAN,

MAURICE GERBAULT.