(No Model.) 2 Sheets—Sheet 1.

E. KASELOWSKY.

AUTOMATIC BRAKE APPARATUS FOR TORPEDOES.

No. 361,525. Patented Apr. 19, 1887.

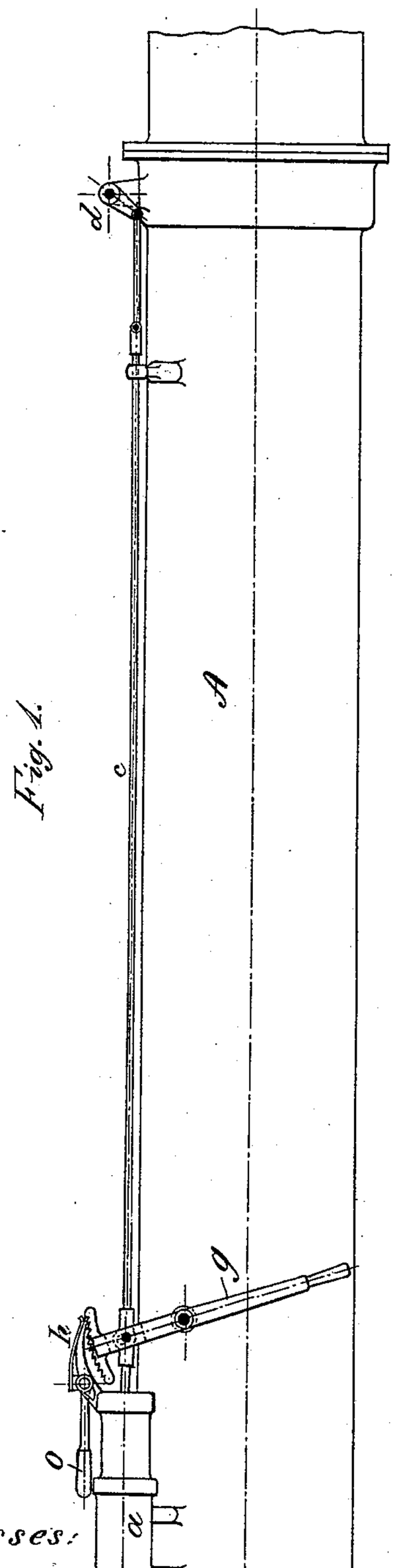

Fig. 1.

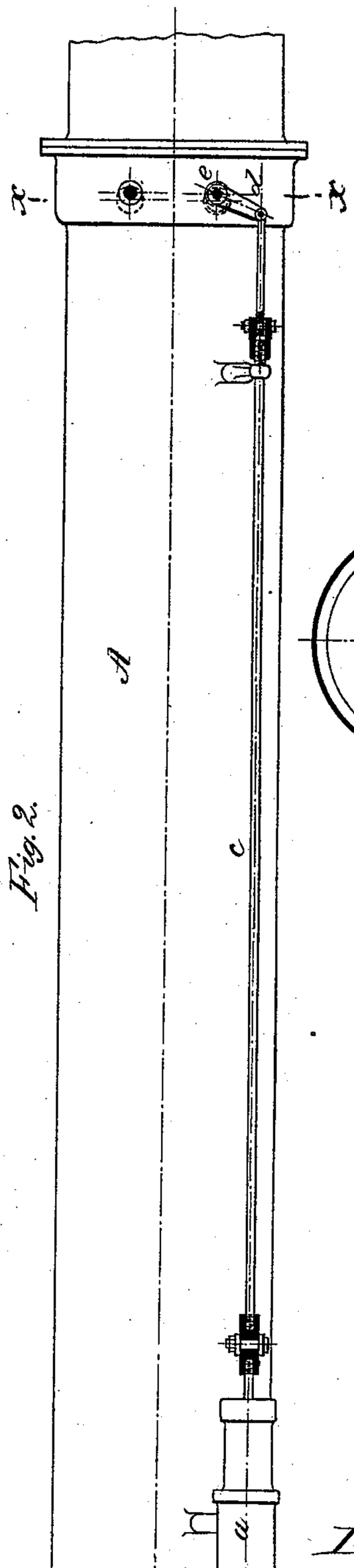

Fig. 2.

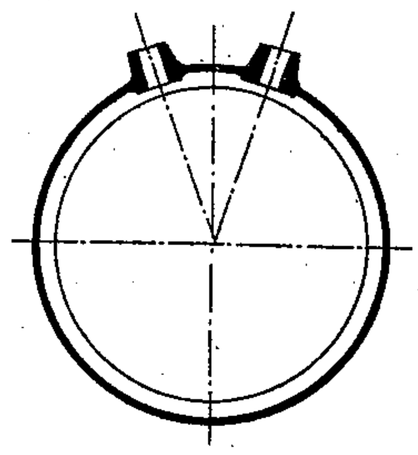

Fig. 2a

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

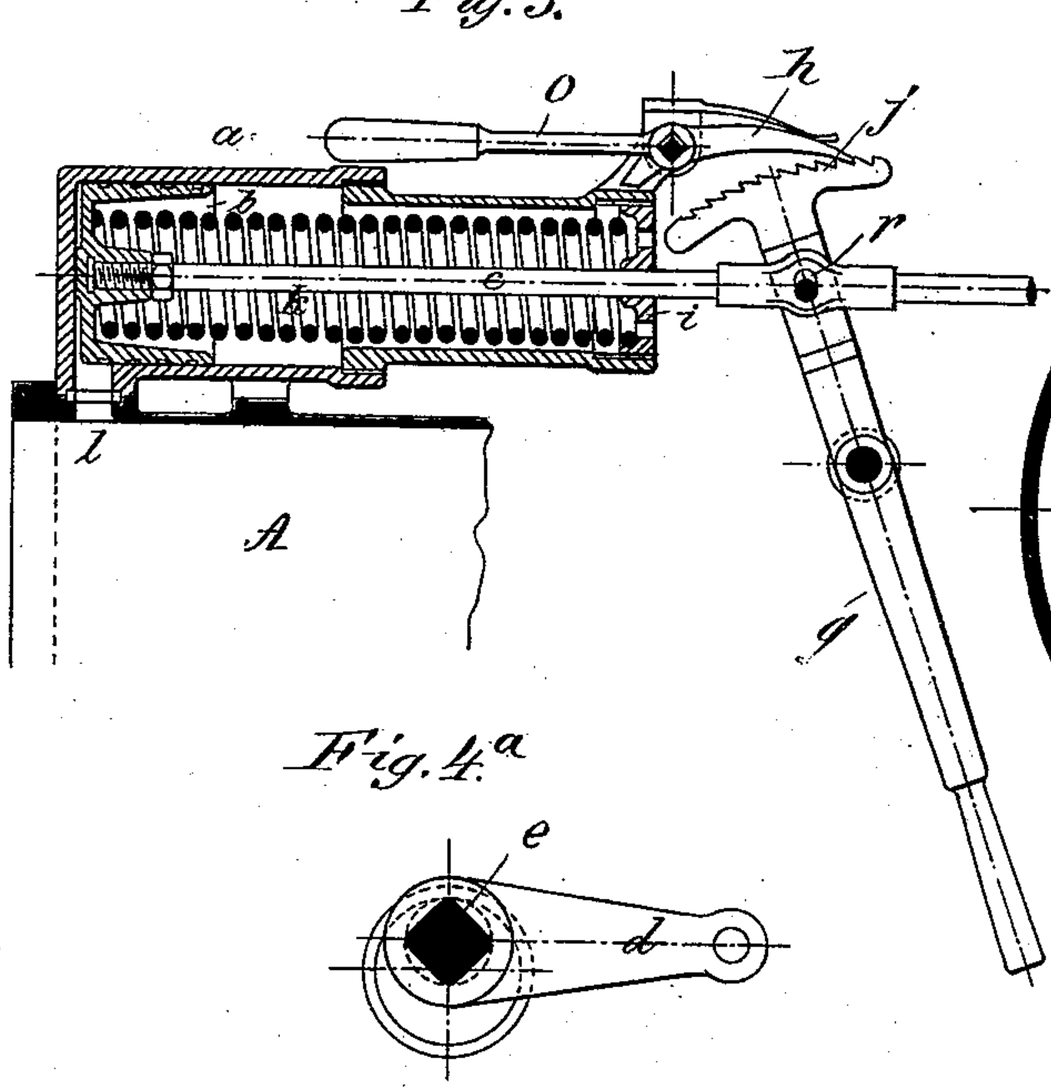


Fig. 4.

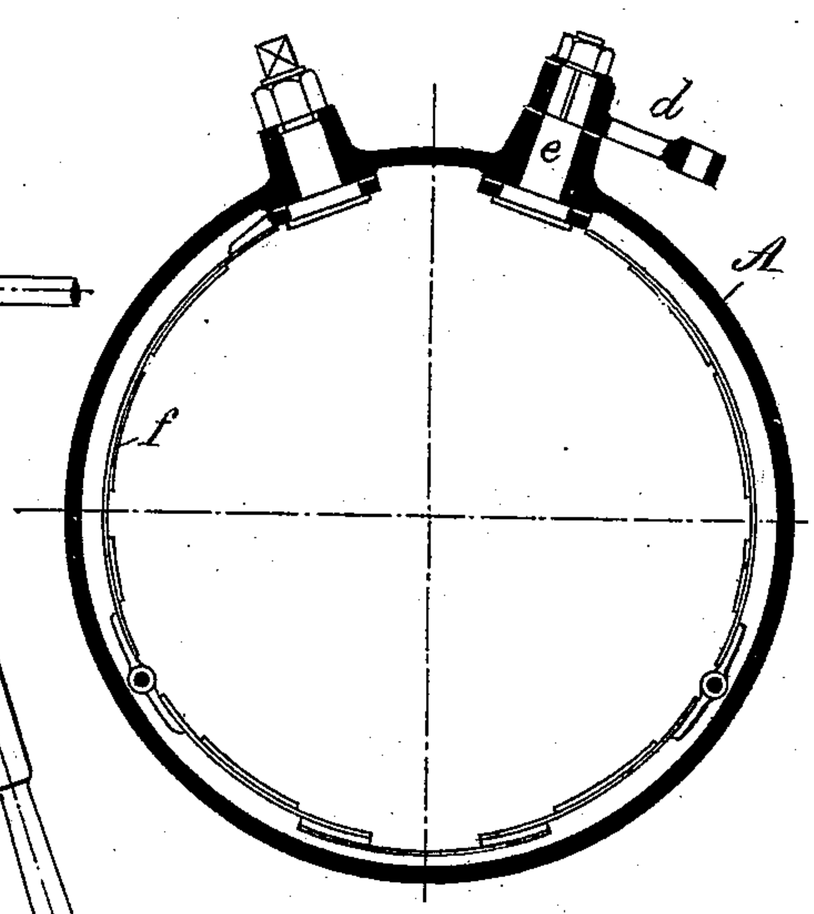


Fig. 4a.

Fig. 5.

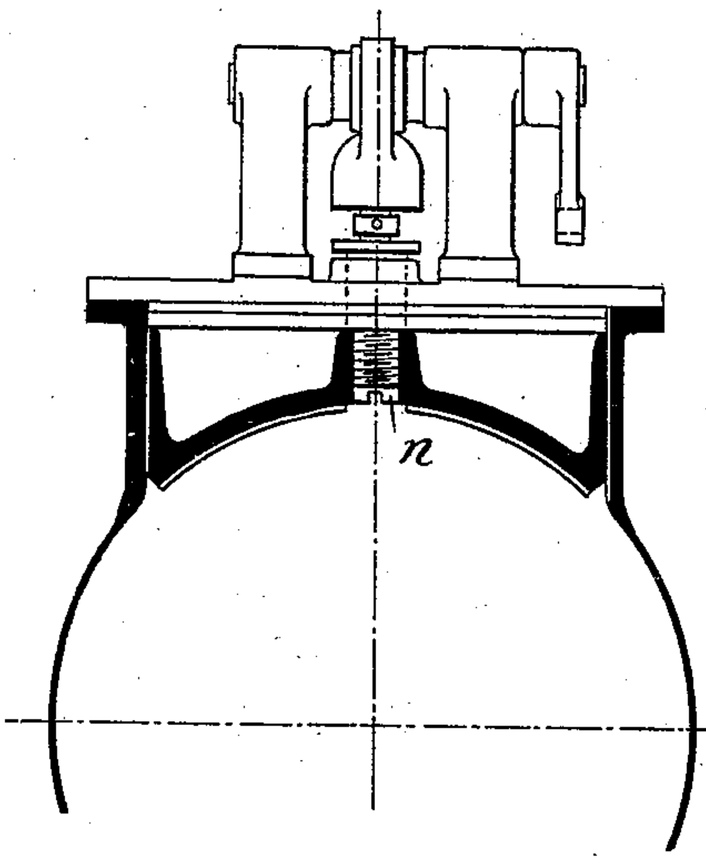
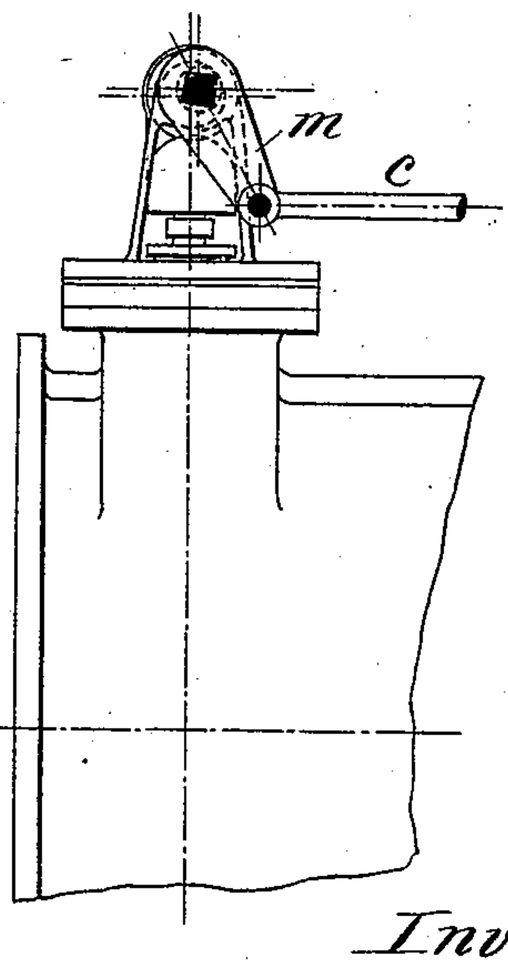


Fig. 6.



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EMIL KASELOWSKY, OF BERLIN, GERMANY.

AUTOMATIC BRAKE APPARATUS FOR TORPEDOES.

SPECIFICATION forming part of Letters Patent No. 361,525, dated April 19, 1887.

Application filed February 4, 1887. Serial No. 226,544. (No model.)

To all whom it may concern:

Be it known that I, EMIL KASELOWSKY, a subject of the King of Prussia, residing at Berlin, in the Kingdom of Prussia, German Empire, have invented new and useful Improvements in Automatic Brake-Releasing Mechanism for Torpedoes, of which the following is a full, clear, and exact description.

In projecting torpedoes by means of compressed air or gas, or by the expansive force of combustible gases, it is very desirable that the brake mechanism be released simultaneously with or slightly before the application of the projecting force to the torpedo, in order to avoid the possibility of the projecting agent being admitted to the torpedo-tube while the brake is applied.

To this end my invention consists in a brake-releasing mechanism operating automatically by the motive agent that effects the projection of the torpedo, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of a torpedo-case having an ordinary brake and my improved brake-releasing mechanism applied thereto, the brake being shown as applied to the torpedo. Fig. 2 is a plan view of the same. Fig. 2^a is a section of the torpedo-tube on the line $x\,x$ of Fig. 2, the brake being omitted. Fig. 3 is an enlarged longitudinal sectional elevation of the brake-releasing mechanism. Fig. 4 is a cross-section of a torpedo case or tube provided with the ordinary band-brake. Fig. 4^a is a detail view, and Figs. 5 and 6 illustrate the ordinary block-brake for torpedo-tubes.

A small cylinder, *a*, is mounted on the torpedo case or tube A, preferably near the rear end thereof, and in the cylinder *a* is fitted a piston, *b*, the piston-rod *c* of which is extended forward longitudinally of the tube A and connected with the arm or lever *d* of the brake, which is located at the forward end of the torpedo-tube, as is usual. The other end of the brake-lever *d* is connected with the eccentrically-operating stud or arm *e*, extending into the torpedo-tube A and secured to one end of the brake-band *f*. When the block-brake shown in Figs. 5 and 6 is used, the rod *c* is connected to the brake-lever *m*, that is connected to one end of the shaft that operates brake-block *n*.

Around the piston-rod *c*, within the cylinder *a*, is coiled a strong spiral spring, *k*, its one end normally acting to press the piston against the rear end of the cylinder *a*, and the other end of the spring *k* bearing against the cover or head *i* of said cylinder *a*. Fulcrumed on the side of the torpedo-tube A is a hand-lever, *g*, the head or upper end of which is formed with ratchet-teeth *j*. In addition to being fulcrumed on the torpedo-tube A, the hand-lever *g* is also pivotally secured to the rod *c* at a point, as at *r*, on the said lever between its toothed head and its fulcrum. On the top of the cylinder *a* is suitably mounted a spring-pressed pawl or dog, *h*, that engages the toothed upper end, *j*, of the hand-lever *g*. Communication is established between the interior of the cylinder *a* and the interior of the torpedo-tube A by means of the connecting way or passage *l*.

In operation, gas or air, being admitted to the torpedo tube or case in the usual manner to discharge the torpedo, will enter the cylinder *a* through the passage *l* in sufficient quantity to force forward the piston *b*, and with it the piston-rod *c*. As the rod *c* moves forward it swings or throws the brake-lever *d*, which turns the eccentric brake-arm or stud *e* and releases the band-brake *f* from the torpedo; or, when the block-brake is employed, the throwing of the brake-lever by the rod *c* acts to release the hold of the brake-block *n* on the torpedo. As the rod *c* moves forward, as described, in response to the movemennt of the piston *b*, it carries forward the toothed upper end, *j*, of the hand-lever *g*, and the return of the said lever, and of course the rod *c*, to the normal position is prevented by the spring-pawl *h* engaging the teeth *j* on said lever *g*. When the brake is again to be applied, the spring pawl is disengaged from the toothed end *j* of the lever *g* by the hand-lever *o*, and the spring *k* will force the piston backward, and with it the rod *c*, and again apply the brake and hold the piston in its normal position until the next charge of compressed air or other agent is admitted to the torpedo-tube.

While it is preferred to locate the cylinder

a near the rear of the torpedo-tube A, it may be located at a more forward point on the same and the passage *l* extended to effect communication with the interior of the torpedo-tube. The advantages of placing the cylinder near the rear of the torpedo-tube will, however, be apparent.

It is evident the details of the invention may be varied without departing from the spirit of my invention. For instance, instead of forcing the rod *c* forward to release the brake, it is very evident that the reverse movement of the rod *c* may readily be made to effect the release of the brake.

With my automatic brake mechanism, above described, the danger of admitting the motive agent while the brake is applied is entirely obviated and accidents arising from this cause made impossible.

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

1. In combination with a torpedo-tube and its brake, a cylinder in communication with the interior of the said tube and a piston in said cylinder, the piston-rod of which is connected with the brake, substantially as described.

2. In combination with a torpedo-tube and its brake, a cylinder mounted on and in communication with the torpedo-tube, and a spring-pressed piston within said cylinder, the piston-rod of said piston being connected with the brake, substantially as described.

3. In combination with a torpedo-tube and its brake, a cylinder in communication with the interior of the torpedo-tube, a piston in said cylinder, the rod of the piston being connected with the brake, and a toothed lever pivoted to the brake-releasing rod and engaged by a spring pawl or dog, substantially as described.

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

EMIL KASELOWSKY.

Witnesses:
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P. WICHMANN.