

No. 812,027.

PATENTED FEB. 6, 1906.

F. DUTCHER.
FIBROUS PLASTIC RAILWAY TORPEDO.

APPLICATION FILED AUG. 31, 1905.

Fig. 1.

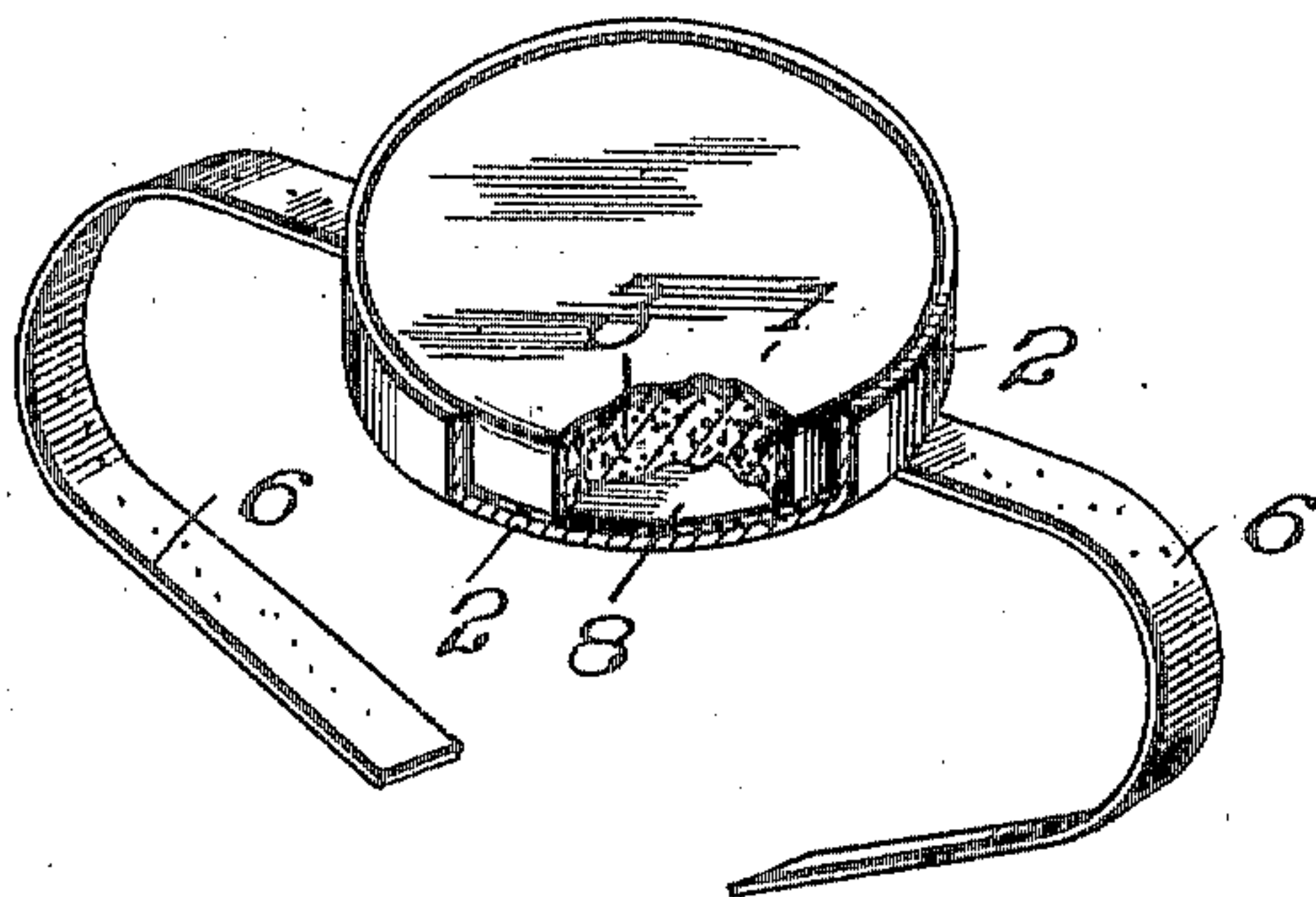


Fig. 3.

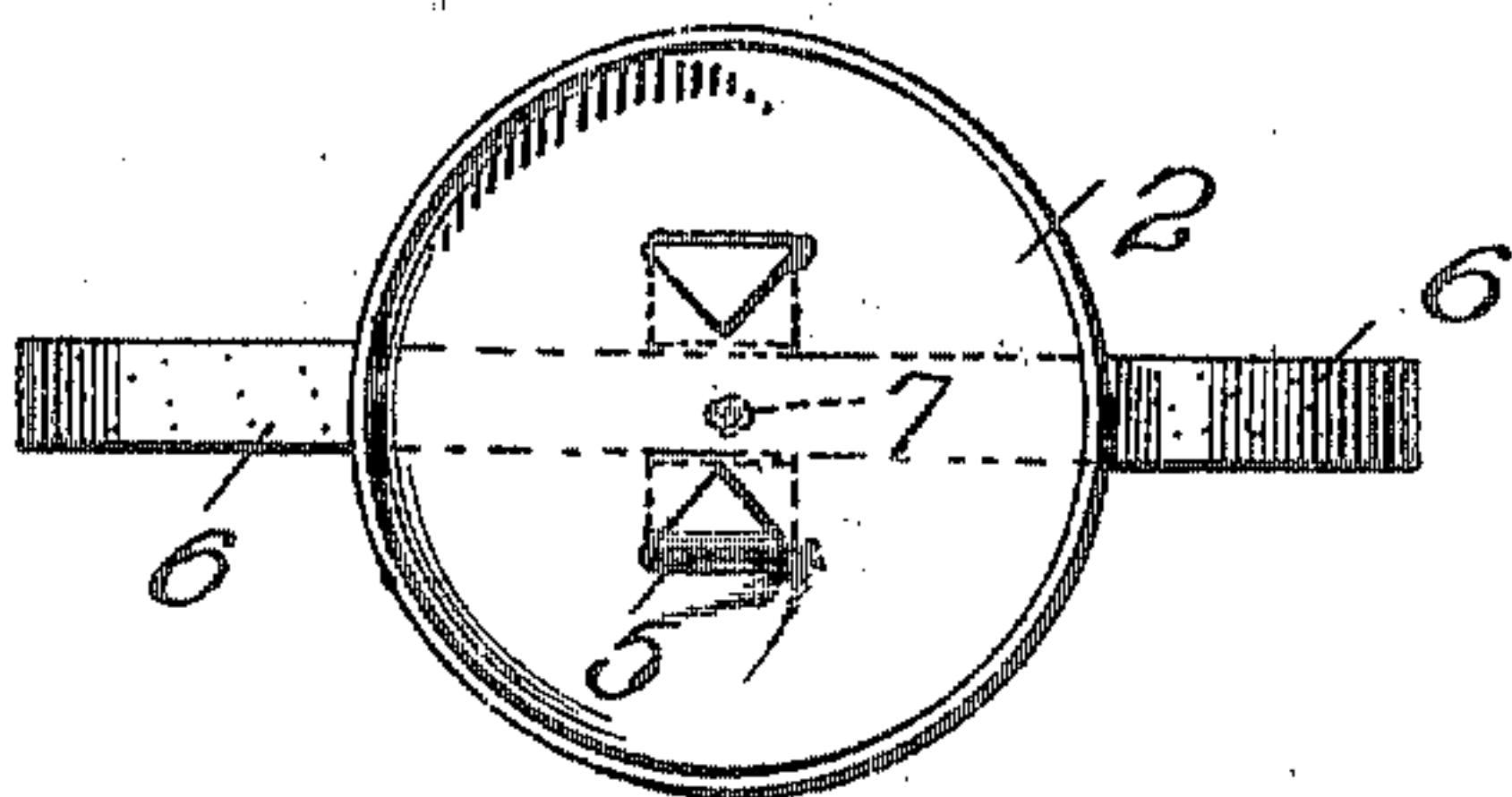


Fig. 2.

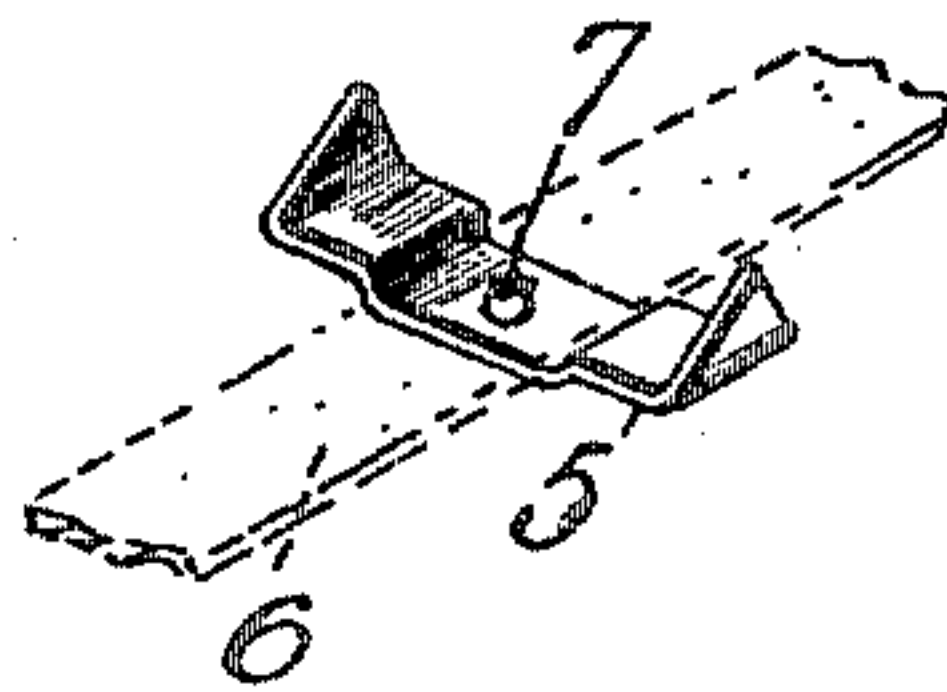
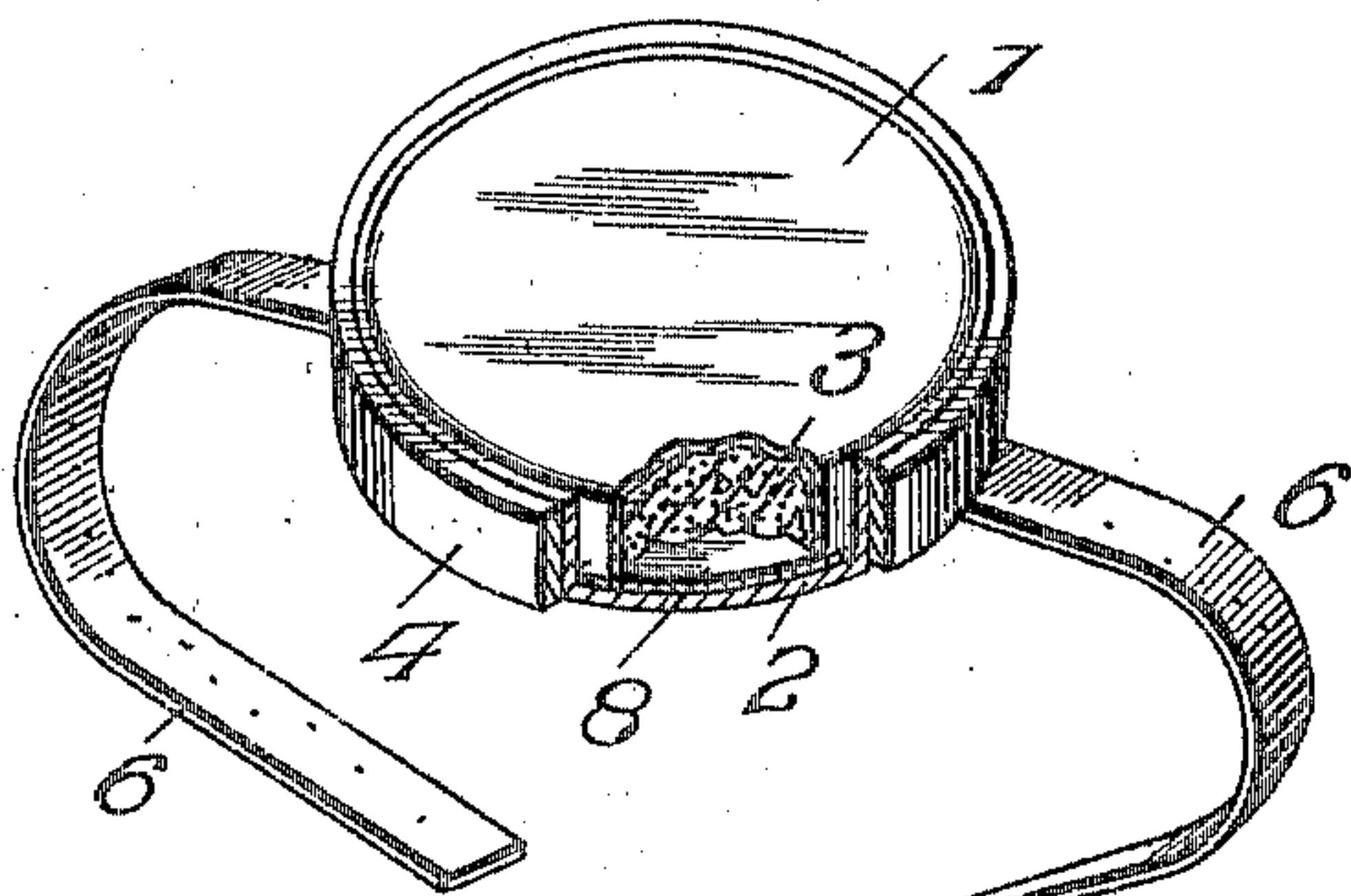


Fig. 4.



Witnesses

Wm. H. Wright
C. P. Wright, Jr.

Inventor

Frank Dutcher,

By

A. J. Pattison,

Attorney

UNITED STATES PATENT OFFICE.

FRANK DUTCHER, OF VERSAILLES, PENNSYLVANIA.

FIBROUS PLASTIC RAILWAY-TORPEDO.

No. 812,027.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed August 31, 1905. Serial No. 276,529.

To all whom it may concern:

Be it known that I, FRANK DUTCHER, a citizen of the United States, residing at Versailles, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Fibrous Plastic Railway-Torpedoes, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to improvements in fibrous plastic railway-torpedoes, the objects of which are, first, to lessen the expense of manufacture of non-flying or fibrous torpedoes; second, to remove the danger of explosion in the process of manufacture; third, to remove from the composition heretofore used in fibrous torpedoes the gravel and other dangerous particles now used in the compound of fibrous torpedoes; fourth, to provide a
15 suitable and efficient strap-fastener for my improved torpedo.

In the accompanying drawings, Figure 1 is a perspective view in section of a torpedo which embodies my present invention. Fig. 25 2 is a detached view of the strap-fastener. Fig. 3 is an interior view of the inner fibrous case without the plastic material and showing the bent-over inner ends of the strap-fastener. Fig. 4 is a perspective view, partly in section, of a modified manner of connecting the inclosing case to the case which contains the plastic compound.

In carrying out my present invention, I provide a fibrous cup-shaped case 1, in which
35 is placed a plastic detonating compound 2. Inclosing this inner case is an outer cup-shaped fibrous case 3, the inner case telescoping the outer case, the two cases forming a complete closure for the plastic detonating compound. The casing forms a protection for the detonating compound and provides means whereby a waterproofed envelop therefor is provided by waterproofing the fibrous casing.

45 I thus produce a composite torpedo consisting of a plastic detonating compound and an inclosing fibrous case. The plastic compound dries out hard and does not contain any gravel or other particles liable to injure
50 a person when the torpedo is exploded, which is true of the powder-detonating compounds heretofore used in fibrous torpedoes. The compound is handled in a wet or plastic state, and is therefore wholly devoid of danger of explosion in the manufacture of the torpedo,
55 which is a very important element in the

manufacture of torpedoes. It removes the danger to the person assembling the torpedo, and it removes danger from fires caused by the explosion in the handling of the dry sensitive granular compound now used in the manufacture of fibrous torpedoes. It also cheapens the cost of manufacture from two points of view: first, it facilitates the filling of the containing-case and the assembling of the parts, and secondly, the torpedo can be reduced in size, thus requiring a smaller amount of the detonating compound to produce the same degree of explosive report and also enables smaller cases to be used, all of which is found to materially decrease the cost of manufacture. A torpedo constructed of a plastic compound within an inclosing case is also easier to waterproof in that the plastic material so completely fills the containing-case that there is no air therein, and hence the changes in temperature caused by the dampening of the case will not cause a vacuum therein and there will be no tendency to draw in the moisture, which is true of a torpedo which is filled with a powder or granular detonating compound.

For the purpose of strengthening and holding the flange of the inclosing case or member 3 I may provide a surrounding fibrous band 4, as shown in Fig. 4, which will serve to hold the outer inclosing case in shape and to prevent it from spreading outward, instead of cementing the flanges of the two cases together, as in Fig. 1.

My improved strap-fastener, which is particularly adapted for the composite torpedo such as herein described, consists of an elongated plate 5, which will preferably be U-shaped in form and have its ends so shaped that it can be forced through the paper wall of the inclosing case 3 and forced downward against the inner side thereof. So far as I am aware, I am the first one to connect the rail-engaging strap to the inclosing member of a two-part torpedo-case, which has special advantages in a fibrous torpedo, whereby the strap is attached to the torpedo before it is assembled and to that part of the case which is not manipulated or handled in the filling of the torpedo. By attaching the strap to the inclosing case instead of the containing-case the strap is not in the way in filling the containing-case, and very greatly facilitates the manufacture and assembling of the torpedo.

The rail-engaging strap 6 is passed be-

tween the plate 5 and the outer side of the inclosing case, and preferably the plate is punched, as shown at 7, to prevent the strap from becoming displaced.

5 In using the term "plastic" in the claims I desire it to be understood that it is used to include the compound after it has become hardened.

I do not make any claim in this application, 10 broadly, for the holding and strengthening ring, because this is made the subject-matter of a copending application, Serial No. 238,651; nor do I make any claim in this application for attaching the rail-engaging 15 member to the inclosing case instead of to the containing-case, with its consequent advantages, as this is disclosed and claimed in my Patent No. 802,919, October 24, 1905.

20 Preferably I place between the plastic detonating compound and the turned-over ends of the strap-attaching plate a paper disk 8, so as to make more certain that there will not be any flying of the strap-attaching plate when the torpedo explodes.

25 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An improved railway-torpedo made of a detonating compound when in a plastic 30 state, and a separate inclosing case therefor.

2. An improved railway-torpedo made of a detonating compound when in a plastic state, and a waterproof inclosing fibrous case therefor.

35 3. An improved railway-torpedo, comprising a fibrous containing-case, a detonating compound placed within the case when in a plastic condition, and an inclosing fibrous case for said containing-case.

40 4. An improved railway-torpedo, comprising a fibrous containing-case, a detonating

compound placed within the said case when in a plastic condition, a fibrous inclosing case, and means for connecting the inclosing case with the containing-case. 45

5. An improved railway-torpedo, comprising a fibrous containing-case, a detonating compound placed within the case when in a plastic condition, and a fibrous inclosing case connected with the containing-case. 50

6. An improved railway-torpedo, comprising a flanged fibrous containing-case, a detonating compound placed within the case when in a plastic condition, a flanged inclosing case, the flanges of the two cases being 55 connected together.

7. An improved railway-torpedo, comprising a fibrous flanged containing-case, a detonating compound placed within the containing-case when in a plastic condition, a flanged 60 inclosing case, and a holding means surrounding the flange of the inclosing case.

8. An improved railway-torpedo, comprising a fibrous case, a detonating compound therein, and a strap-attaching member consisting of an elongated plate having ends 65 passing through the case and bent downward upon the inner side thereof, and clamping the strap between it and the outer side of the case. 70

9. An improved railway-torpedo, comprising a fibrous case, a strap-attaching member extending to the inside of the case, a detonating compound within the case, and a 75 fibrous disk between the detonating compound and the said strap-attaching member.

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

FRANK DUTCHER.

Witnesses:

ROBERT WILSON,
ALVA M. BUNKINS.