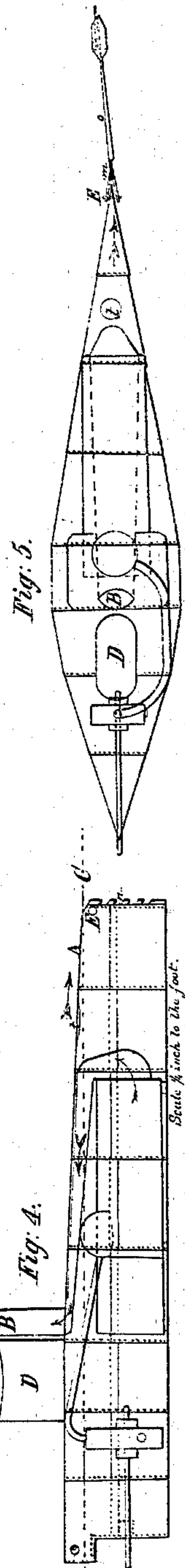
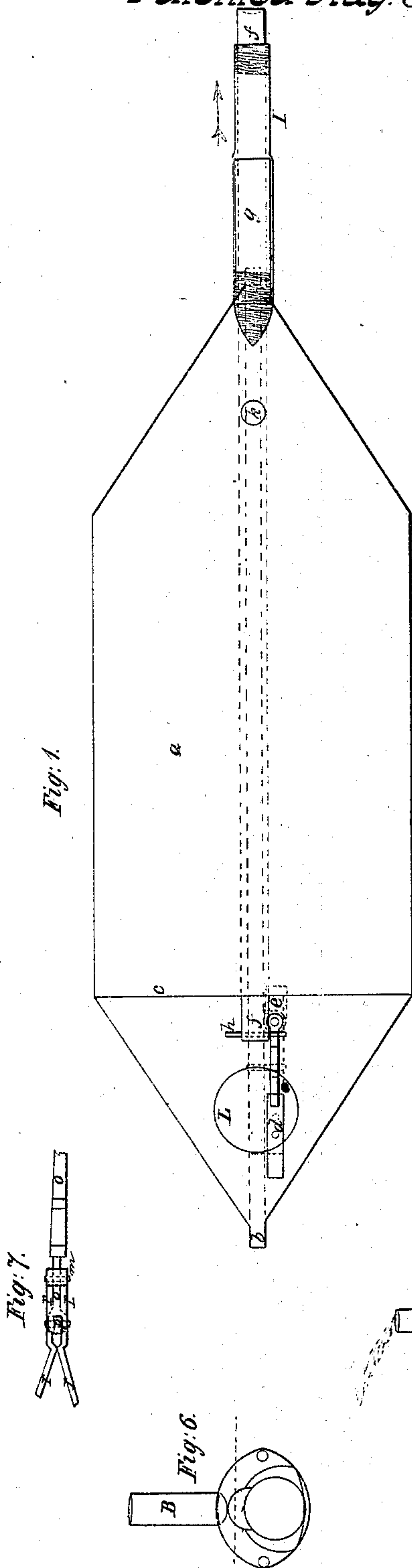
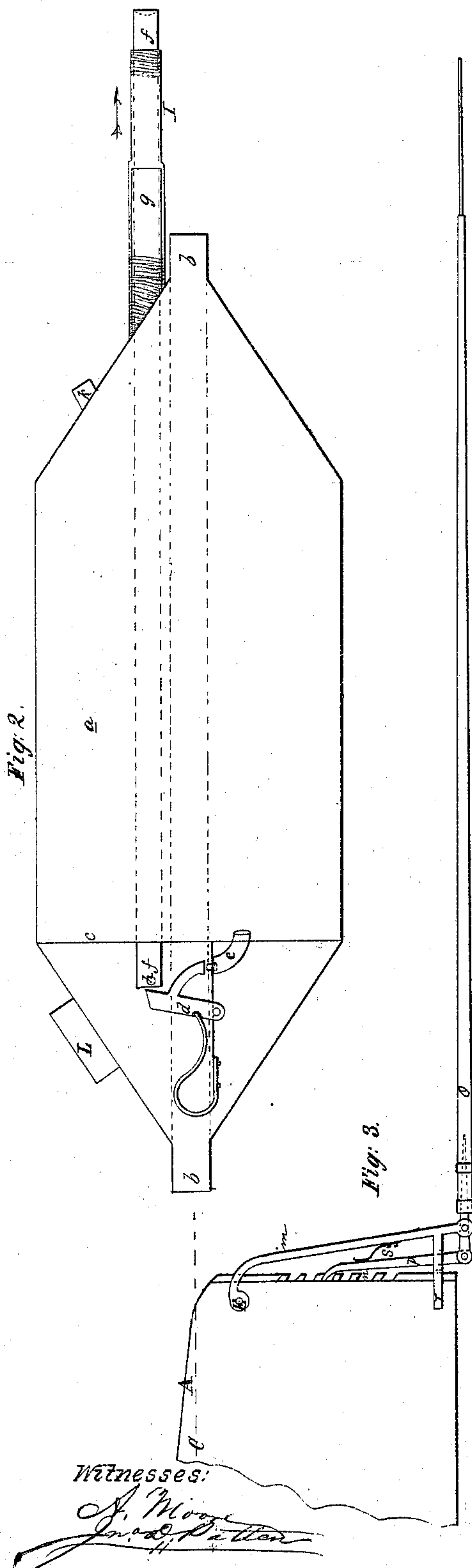


G. M. Ramsay.
Torpedo Boat.

Patented Aug. 8, 1865.

N^o 49,300.



Inventor:
Geo. M. Ramsay

UNITED STATES PATENT OFFICE.

GEORGE M. RAMSAY, OF NEW YORK, N. Y.

IMPROVED TORPEDO-BOAT.

Specification forming part of Letters Patent No. 49,300, dated August 8, 1865.

To all whom it may concern:

Be it known that I, GEO. M. RAMSAY, of the city, county, and State of New York, have invented a new and Improved Torpedo-Boat; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings and letters of reference marked thereon, making part of this specification.

To enable those skilled in naval and submarine operations to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 represents a top view of the torpedo. Fig. 2 represents a side view of the same. Fig. 3 represents a side view of a section of the bow of the boat, including a side view of the arrangement by which the torpedo is attached to the boat. Fig. 4 represents a side view of the boat. Fig. 5 represents a top view of the boat. Fig. 6 represents a perpendicular cross-section of the boat through its greatest transverse diameter.

Like letters refer to like parts in each figure.

The torpedo-boat is made sharp at bow and stern, as represented in Fig. 5, with a gradually-increasing ellipsis from bow and stern until its greatest cross-section is reached, at about two-thirds its whole length from the bow, as seen in cross-section, Fig. 6. The whole boat is constructed like or similar to a boiler in workmanship, with the ends of all the laps of the iron plates forming the joints looking backward, so as to allow the boat to glide through the water with less resistance than when the laps of the joints are made in the reverse direction.

A represents the roof of the boat, inclined from the chimney B to the water-line C. This inclination is for the purpose of enabling the forward part of the boat to run under logs, rafts, or other floating obstructions which may be found placed around (by the enemy) for the protection of the vessel desired to be destroyed from the assault of the torpedo-boat.

D is the hatch-door through which the boat is entered.

E represents a hole through the boat at or below the water-line C. The hole E is made below the water-line C to keep the roof A clear of all impediments. The hole E is fitted with a pipe or tube, riveted at each end, same as a

boiler-tube, to prevent the water from entering the boat.

m, Figs. 3 and 5, represents a forked iron bar, which is attached to the boat on each side by a bolt through the hole E.

n, Figs. 3 and 4, represents a ratch made in the bow of the boat, in which the pawl P is made to operate.

O represents a submarine boom, at the extreme end of which is to be attached the submarine torpedo represented in Figs. 1 and 2, hereinafter explained. The rear end of the boom O is attached by a joint to the bar m, while the hinder end of O extends back a few inches to receive the pawl P, which is also attached by a joint.

rr, Fig. 7, represent two arms, one on each side of the boat, and is made to clasp the boat. The forward ends of rr are bolted or welded fast on each side of m, and also bolted or welded fast together immediately in front of the ratch or bow of the boat and behind the pawl P. These arms are for the double purpose of preventing lateral motion to the bar m; also, to support the bar m in proper position as the pawl P is raised or lowered in the ratch n, whereby the end of the boom O, to which the torpedo is to be attached, is raised or lowered to any desired position under or above the water.

S represents a spring by which the pawl P is kept in proper place.

t represents a man-hole through which to enter the forward part of the boat, and should be water-proof.

a, Figs. 1 and 2, represents the magazine and body of the submarine torpedo with conical ends.

b represents a water-tight tube, which runs through the center of the torpedo and is open at each end, into which and through which the extreme end of boom O is thrust, by which means the torpedo is attached. c represents a division at the base of the rear cone, and divides the entire interior of the torpedo from the rear cone.

The boom O is supposed to be of sufficient length to prevent injury to the torpedo-boat when explosion of the torpedo takes place.

d represents a lock attached to the tube b, and connecting with the tube e, which tube e enters the powder-chamber in a. An ordinary pistol may answer the purpose of d and e.

f represents an iron rod, made to enter the tube *g* and to pass into and through the powder-chamber and through the division *c* at the base of the rear cone. Through the rear end of this rod *f* is a transverse pin, *h*. The external and front end of this rod *f* is laid with steel, the center of which is hollowed out on the end so as to form an edge-like gouge all around to better prevent the end from gliding on the surface of any object it may come in contact with.

i represents a gutta-percha tube of proper size and length to fit and stretch tight over the tube *g* and the rod *f*, leaving a few inches of the front end of the rod exposed. This gutta-percha is to prevent water from entering the torpedo; also to allow the rod *f* to slide back when pressure is made on the front end of *f*, and thus cause the pin *h* to trip the cock of lock *d* and thus explode a cap. The same office of the gutta-percha may be performed by a stuffing-box, but is not so simple, cheap, or effective.

k represents an opening through which the powder is put into the torpedo.

l represents a hand-hole through which the lock *d* is reached, for the purpose of supplying a cap when required.

The openings *k* and *l* may be made watertight by a cover and gutta-percha packing or equivalent devices.

For better security the gutta-percha may be wrapped with wire or thread, and the pin *h* may be made to trip two cocks at the same instant, which is easily attached to each side of *b*.

Having explained the construction of my invention, the operation consists in properly attaching and adjusting the bar *m* and pawl *P*, together with the boom *O*, to the bow of the boat. The pin *h* had better be withdrawn for security. The cap is then supplied to the lock *d*. The torpedo is then filled with powder or other explosive material, except the rear cone, in which the lock *d* is situated. The pin *h* is then replaced and the openings *k* and *l* are made secure against the entrance of water, and the torpedo is slipped on the extreme end of the boom *O* and secured, when the boom is let down into the water (by properly adjusting the pawl *P*) below the surface sufficient to strike the enemy's vessel as near the keel as possible. All being thus made ready, the torpedo-boat is driven by steam or otherwise against the enemy's vessel, and the instant the iron rod *f* strikes the vessel the rod *f* is driven back and the pin *h* trips the cock of lock *d*, bursting the

cap, and the result is instant explosion. The bolt that attaches *m* to *E* or *m* to *O* should be wood, or of such strength and material as to merely carry the torpedo and withstand the concussion necessary to drive the rod *f* sufficient to operate the lock *d* and yet be easily detached by the recoil of the explosion. The arms *r r* may each be made a ratch, and each fitted with a pawl and a staple to keep each close to the sides of the boat, and made concentric with *E*, and should be jointed at *m* when thus made, thus dispensing with *n* and *P*, as shown. Again, the attachment at *E* may be rigid, the arms *r r* same as shown, Figs. 3 and 7, the pawl *P* and ratch *n* dispensed with, and substitute a ratchet-wheel made on the end of *O* at the joint uniting *m* and *O*, and fitted with a pawl. This plan I deem more simple than the former, or the ratch *n* may be made in the rear edge of *m*, and the pawl *P* reversed.

Having fully explained the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The inclination of the roof *A* of a torpedo-boat, as and for the purposes specified.
2. The hole *E*, constructed and situated substantially as described.
3. The ratch *n*, in combination with the pawl *P*, bar *m*, and boom *O*, substantially as and for the purpose described.
4. The springs *s*, in combination with the bar *m*, substantially as specified.
5. The bars *r r*, in combination with the bar *m*, as and for the purpose specified.
6. The tube *b*, running longitudinally through the torpedo, substantially as and for the purpose specified.
7. The division *c*, separating the magazine of the torpedo from the lock *d*, substantially as and for the purpose specified.
8. The lock *d*, in combination with the powder-tube *e*, substantially as and for the purpose specified.
9. The rod *f*, also in combination with the tube *g* and gutta-percha tube *i*, substantially as and for the purpose specified.
10. The pin *h*, in combination with the lock *d* and rod *f*, substantially as and for the purpose specified.
11. The hand-hole *l*, through which the cap is applied to the lock *d*, substantially as and for the purpose specified.

GEO. M. RAMSAY.

Witnesses:

A. MOORE,
JNO. D. PATTEN.