

H. F. HICKS.
TORPEDO-BOAT.

No. 174,628.

Patented March 14, 1876.

Fig. 1.

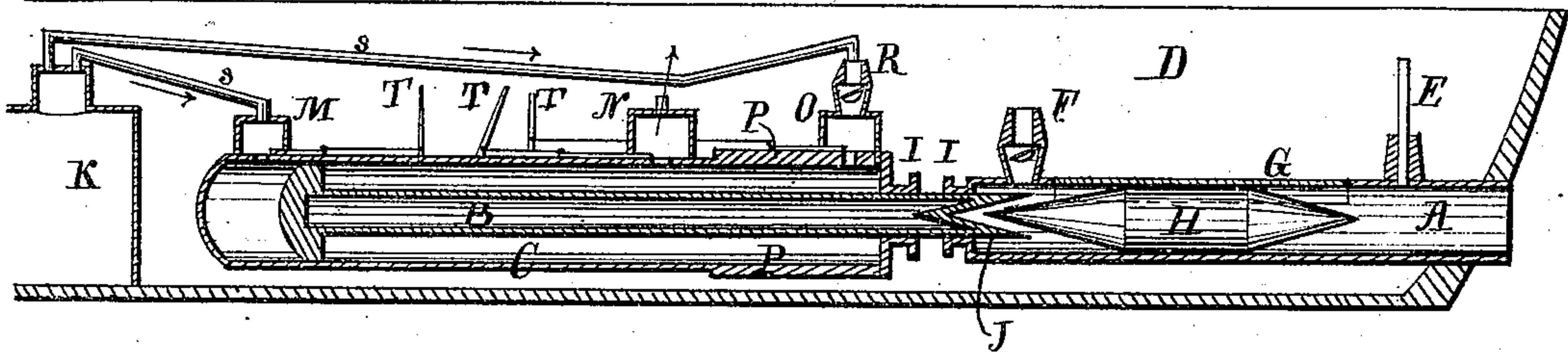
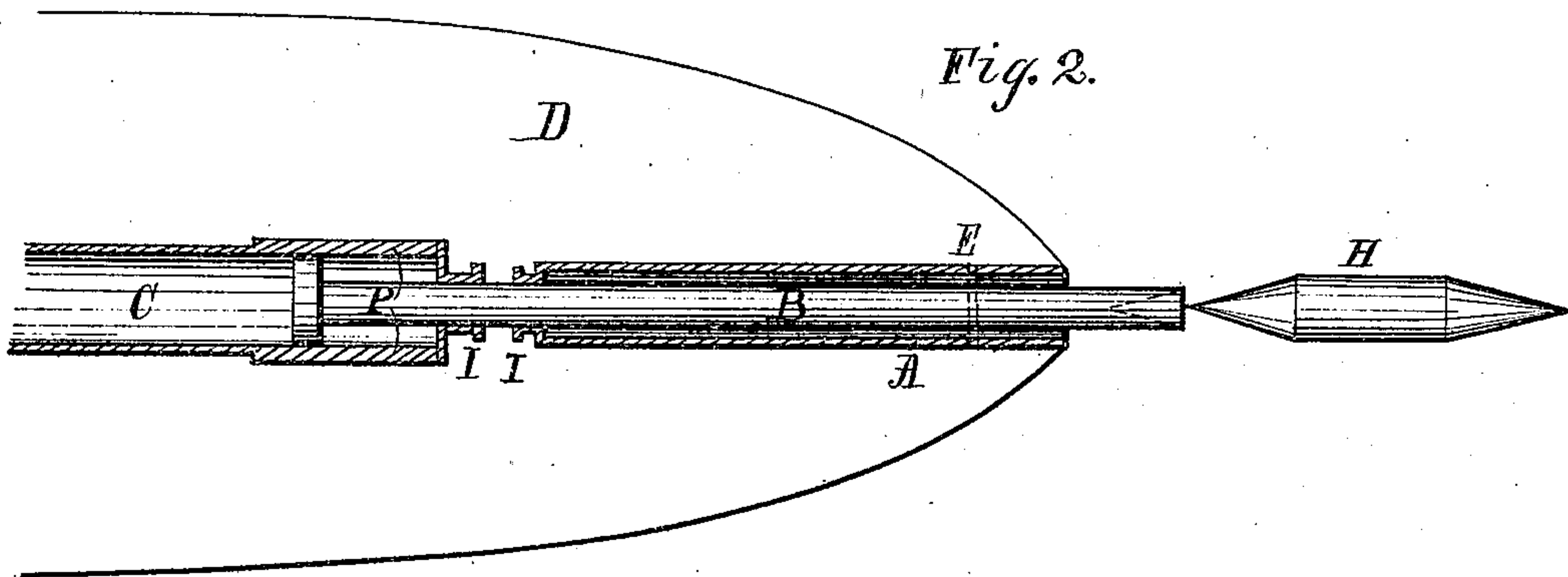


Fig. 2.



Witnesses:

Bohn C. Hicks
Flavins J. Hicks.

Inventor:

Horatio F. Hicks.

UNITED STATES PATENT OFFICE.

HORATIO F. HICKS, OF ST. PAUL, MINNESOTA.

IMPROVEMENT IN TORPEDO-BOATS.

Specification forming part of Letters Patent No. **174,628**, dated March 14, 1876; application filed July 26, 1875.

To all whom it may concern :

Be it known that I, HORATIO F. HICKS, of St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Improvement in a Torpedo-Hurl, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to hurl torpedoes through the water at a specified object, for war or other destructive purposes, by the combination of hurl-barrel A, piston-rod B, and cylinder C. D, as shown in Fig. 1 of the accompanying drawing, is a hurl-boat. A is a hurl-barrel, which penetrates the bow of boat D. E is a gate, which can be operated to open or shut barrel A, as required. Cap G is hung on substantial hinges, and opens to admit torpedo H, is water-tight when closed and securely fastened to withstand the pressure of water when gate E is opened.

Piston-rod B is constructed hollow, with the specific gravity of water, operates in cylinder C, and extends through packing-boxes I I into barrel A, with socket J for the reception of the shaft of torpedo H. Cylinder C is constructed with three steam-chests, M N O, within which are valves of any approved construction, with ports to admit and emit steam to give motion to the piston. P is a stop-chamber, extending from N to O, for checking the piston. R is a check-valve to prevent the steam from being forced back into the boiler by the force of the piston in checking its motion in stop-chamber P. F is an air-

valve, to allow air to fill barrel A behind torpedo H when hurled. K represents a steam-boiler, which furnishes steam to operate the piston through steam-pipes S S. Levers T T T operate the valves in steam-chests M N O. Cylinder C is made substantially heavy at stop-chamber P to withstand the pressure of steam in checking the velocity of the piston.

To operate the hurl, gate E is shut to keep out the water; cap G is opened; torpedo H is placed in barrel A, with the shaft of torpedo H inserted into socket J; cap G is closed and substantially fastened to resist the pressure of water; gate E is opened; steam is admitted at M and exhausts at N, which drives the piston forward, and hurls the torpedo H through the water beyond the muzzle of barrel A. Steam is cut off at M, and as the piston passes exhaust-port N the steam exhausts; the steam being admitted at O checks the motion of the piston B; exhaust-port N is closed to exhaust at M, and the piston is carried back to M.

Fig. 2 of the accompanying drawing is a view of hurl-barrel A, piston-rod B at full stroke, and stop-chamber P.

I claim as my invention—

In a torpedo-boat, the combination of the hurl-barrel A, piston-rod B, and cylinder C, with their operating devices, substantially as and for the purpose set forth.

HORATIO F. HICKS.

Witnesses :

BOHN C. HICKS,
FLAVIUS J. HICKS.