No. 714,080. Patented Nov. 18, 1902.

R. WHITSON.

EXHAUST CONDENSER FOR EXPLOSIVE MOTORS OR ENGINES.

(Application filed Mar. 20, 1902.)

(No Model.)

Fig. 1

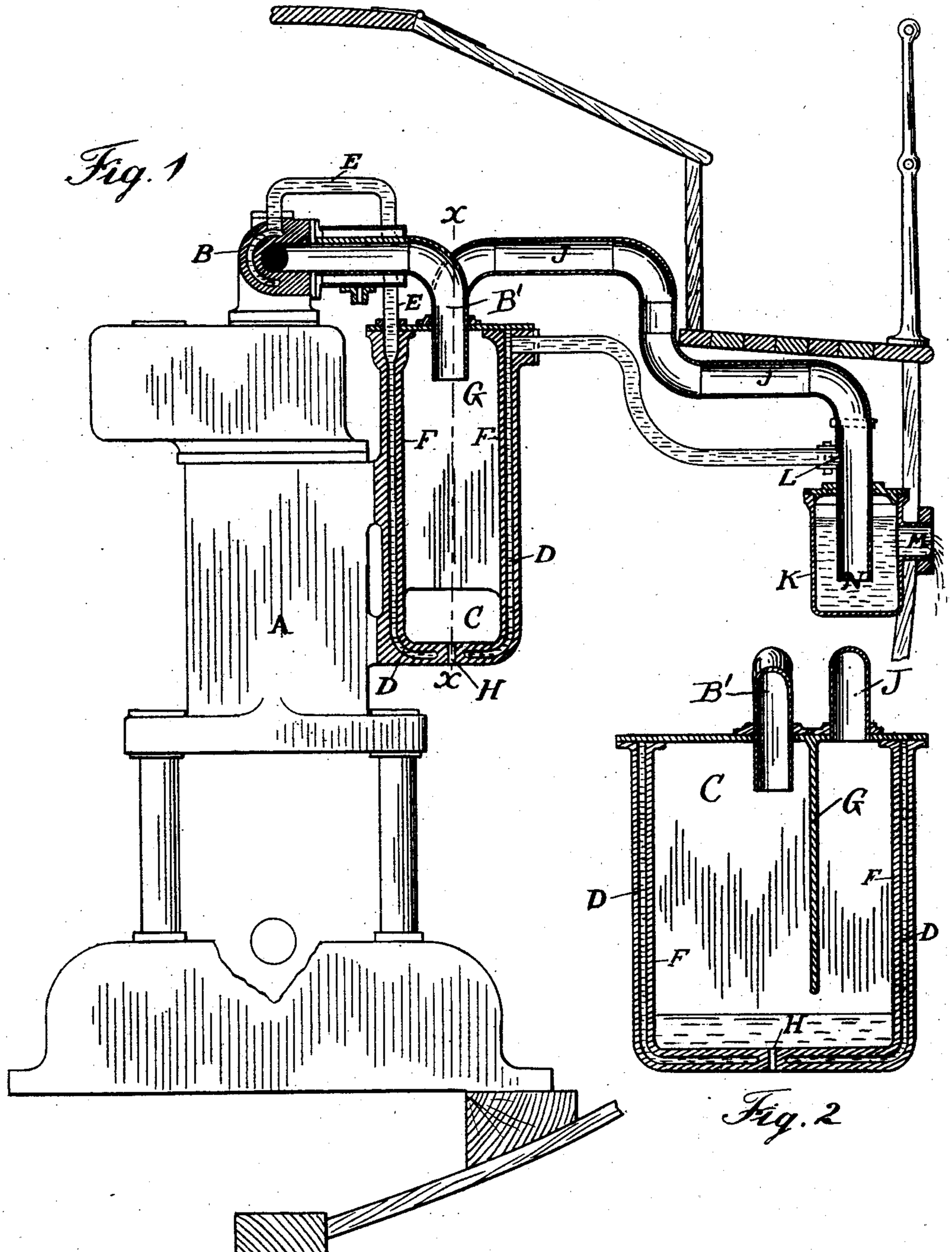

Fig. 2

WITNESSES:
Leon Boillot
Walter F. Dame.

INVENTOR:
Robert Whitson
by N.A. Acker
his Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ROBERT WHITSON, OF AUCKLAND, NEW ZEALAND.

EXHAUST-CONDENSER FOR EXPLOSIVE MOTORS OR ENGINES.

SPECIFICATION forming part of Letters Patent No. 714,080, dated November 18, 1902.

Application filed March 20, 1902. Serial No. 99,183. (No model.)

To all whom it may concern:

Be it known that I, ROBERT WHITSON, engineer, a subject of His Majesty the King of the United Kingdom of Great Britain and Ireland, residing at the city of Auckland, in the provincial district of Auckland and Colony of New Zealand, have invented a certain new and useful Improved Exhaust-Condenser for Explosive Motors or Engines, of which the following is a specification.

The novel details in the construction and arrangement of the parts of the apparatus will be apparent from the detailed description hereinafter when read in connection with the accompanying drawings and the appended claim.

The accompanying drawings show two figures, of which Figure 1 is a sectional elevation illustrating the different parts of the invention, and Fig. 2 is a longitudinal section through the line $x\,x$ of Fig. 1.

With the application of this invention to explosive motors and engines the exhaust-gases which are thrown off therefrom after passing from the cylinder A into a water-jacketed exhaust-piece B are carried from it by a pipe B′ into a receptacle made of cast-iron or other suitable material and of any convenient shape, called the "silencer" or "condenser" C. This silencer C is enveloped or surrounded by a water-jacket D, the water in which is either supplied from the circulating water E of the engine or from any other source. The water in the jacket D is kept in constant circulation by a pump or other means. The exhaust-gases after entering the silencer C become partially condensed and, passing under or by one or more baffle-plates G, fixed in the silencer C, find exit therefrom at a part other than that at which they entered, as shown in Fig. 2. An opening H in the bottom of the silencer C permits the escape of any water of condensation. This opening may communicate with any convenient valved pipe or receiver. (Not shown.) The exhaust-gases having been partially condensed within the silencer C, pass therefrom through the exhaust-pipe J into a discharge-box K, suitably fixed in proximity to the engine and made of brass, iron, or any other suitable material. Water is introduced in the form of a spray, jet, or flow into the pipe J at the part L just before the exhaust-gases passing through the pipe J reach the discharge-box K and is supplied from the circulating water E of the engine, the silencer C, a tank, or any other source, which water mingles with the gases in the exhaust-pipe J before they reach the discharge-box K. The discharge-box K has an outlet M in its side at a suitable distance from the bottom of the box to provide an exit for the final exhaust of the mingled gases and water.

The mingled gases and water on entering the discharge-box K in the pipe J, which can be led into the box K either at its top, bottom, or side, are carried in a continuation of the pipe J to a spot below the level of the final exhaust-outlet M and are emptied from the pipe J at its bottom or lower end N into the box K, in which they have to rise above the level of the bottom N to cause them to finally find exit from the discharge-box K at the outlet M, which thus makes the exhaust into the discharge-box K take place under the level of the water contained therein, and so gives the silent effect to its final exit through the outlet M.

At present the exhaust takes place in a variety of forms from the exhaust-piece over the cylinder, but with the usual noise and tremor, which is completely removed by the invention above described.

Fig. 1 is shown on the drawings inside the partial outline of a vessel. This is done to illustrate the marine application of the invention; but the invention is not confined to marine purposes, as it can be equally applied to explosive motors and engines used on land as on sea and gives the same result with one as the other.

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

In combination with a motor, a jacketed exhaust-condenser, a pipe communication between the exhaust-outlet of the motor and said condenser, an outlet-pipe from the condenser, a discharge-box having an opening in its upper portion through which the exhaust-pipe of the condenser passes and projects downward into the interior thereof, a water-pipe

connection between the motor and the condenser-jacket, a similar pipe connection between the condenser-jacket and the discharge end of the exhaust-pipe of the condenser, and an outlet leading from the discharge-box at a point above the lower end of the condenser exhaust-pipe, whereby the water in the discharge-box normally seals said lower end of the condenser exhaust-pipe, substantially as described.

ROBERT WHITSON.

Witnesses:
GEORGE WILLIAM BASLEY,
PERCY HERBERT BASLEY.