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HYDROCARBON MOTOR.
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904,544.

Patented Nov. 24, 1908.

Fig. 1.

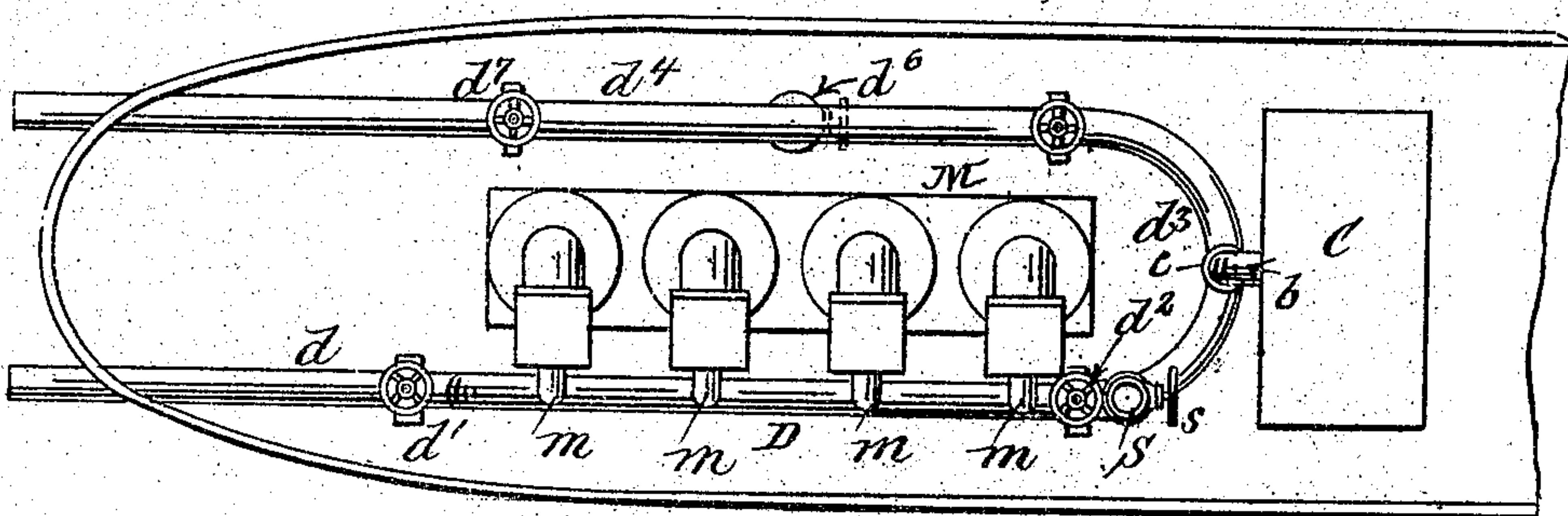
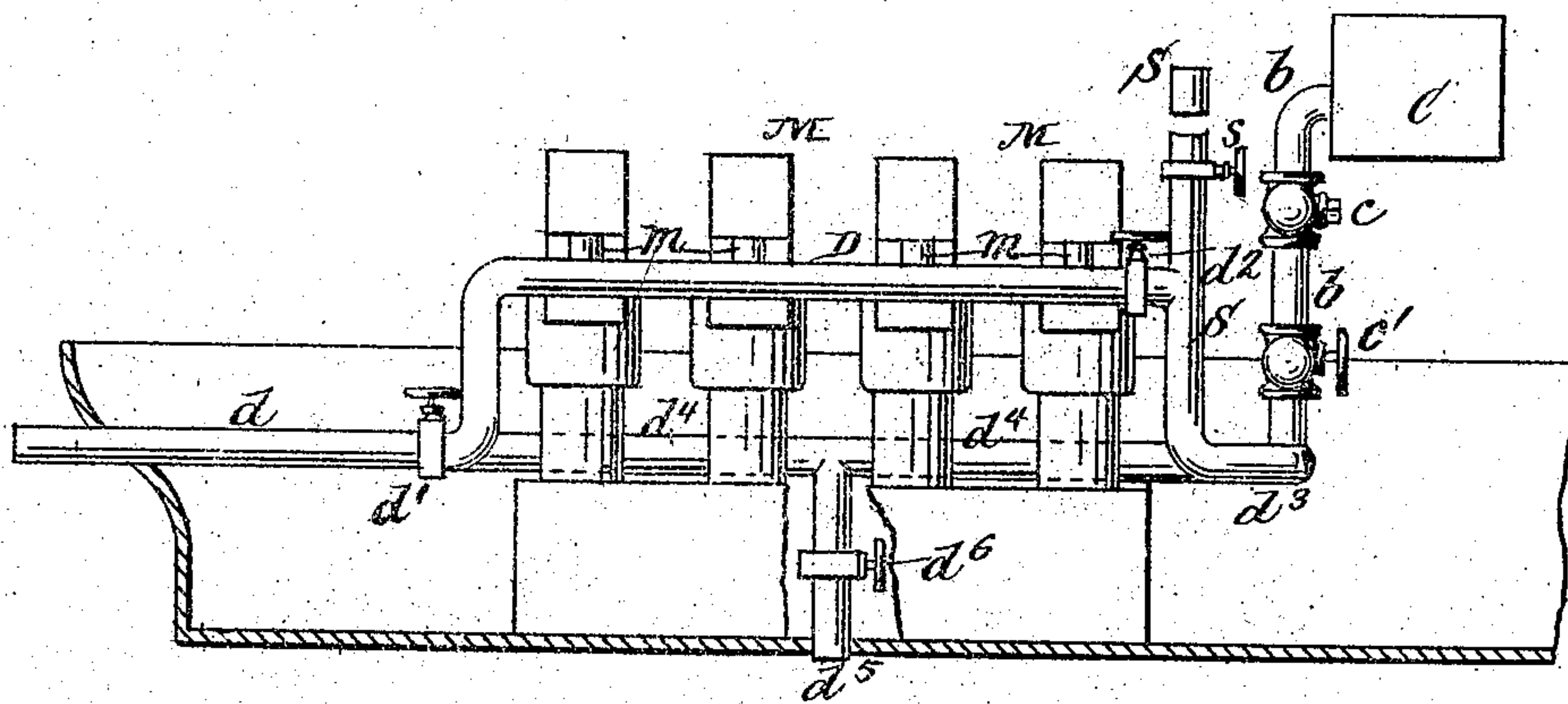


Fig. 2.



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UNITED STATES PATENT OFFICE.

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HYDROCARBON-MOTOR.

No. 904,544.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed October 9, 1907. Serial No. 396,573.

To all whom it may concern.

Be it known that I, ABBOT AUGUSTUS LOW, a citizen of the United States, residing at Horseshoe, St. Lawrence county, and State of New York, have invented certain new and useful Improvements in Hydrocarbon-Motors, of which the following is a specification.

My improvements relate to the class of hydro carbon motors in which a fluid hydro carbon is vaporized and mixed with air in a mixing chamber preparatory to its introduction into the combustion chamber,—the power being afforded by the explosion of the mingled gases. In motors of this class as adapted to marine purposes considerable annoyance and inconvenience has heretofore resulted from the discharge of the products of combustion owing to the noise and concussion involved.

The main object of my present invention is to obviate this difficulty in so far as possible by neutralizing and relieving the pressure or impact exerted by the escaping gases, and incidentally to afford means for condensing such gases in certain contingencies as hereinafter set forth.

The invention consists in the arrangement and construction of parts herein described and claimed specifically.

In the accompanying drawings, Figure 1, is a plan of the stern of a vessel showing diagrammatically the parts essential to an understanding of my invention; Fig. 2, is a sectional elevation thereof.

M, represents a series of hydro carbon motors arranged to act in conjunction with each other in a manner well known,—said motors being of any well known or desired construction. The products of combustion from each motor M are ejected through the discharge pipe *m*, into a common discharge conduit D. This common discharge conduit D, has a rear extension *d*, provided with a valve *d'*. The forward end of the conduit D; is also provided with a valve *d''*, beyond which it is formed with a return loop *d'''*, leading to a supplementary rear extension *d''''*. Interposed in this supplemental extension *d''''*, between the loop *d'''*, and the stern of the boat beyond which the extension *d''''*, protrudes, is a drop pipe *d''''''*, provided with a valve *d'''''''*.

S is a stand pipe communicating with the loop *d'''*, and provided with a valve *s*. A

branch pipe *b*, also projects from the loop *d'''*, and connects it with the condenser C,—said branch pipe *b*, being provided with a check valve *c*, and gate valve *c'*.

By this construction and arrangement of parts I am enabled to dispose of the products of combustion in various ways as may be found most expedient in actual use. For instance by closing the valve *d''*, and opening the valve *d'*, the total discharge may be effected directly through the rear extension *d*. Or, the valves *d'*, *c'*, *d''* and *s*, being closed the discharge may be effected through the loop *d'''*, and supplemental extension *d''''*. Preferably both the valves *d'*, *d''*, are open and the discharge effected through both rear extensions *d*, and *d''''*, in which case the pressure of the discharged gases from the motor is distributed and relieved in either direction and the force or impact materially decreased. In this connection also the stand pipe S, may be used to advantage, since when the valve *s*, is open the pulsations consequent to discharge will be relieved or compensated for by the cushion of atmospheric air within said pipe.

Under certain conditions as in connection with submarine vessels it may be found expedient to condense a portion of the discharged products of combustion which may be done by opening the valve *c'*, admitting the products of combustion through the check valve *c*, into the condenser C.

If it is desired to discharge the products of combustion into the water directly underneath the boat the valve *d'* is closed and the valve *d''* opened, when the discharge may be effected in whole or in part through the drop pipe *d''''*. If it is desired to effect the discharge wholly through the drop pipe *d''''*, a valve *d''''''*, may be inserted in the supplemental extension *d''''*.

By this construction and arrangement of parts all objectionable noise and vibration is avoided as is also to a large extent the disagreeable odor arising from the products of combustion.

What I claim as my invention and desire to secure by Letters Patent is,

1. In combination with a plurality of marine motor cylinders substantially such as designated, a common discharge conduit for the products of combustion formed with a rear extension at one end, and with a loop and supplemental extension at the other end,

and a valve interposed between said common discharge conduit and the supplemental extension, for the purpose described.

2. In combination with a plurality of marine motor cylinders, substantially such as designated, a common discharge conduit for the products of combustion formed with a rear extension at one end, and with a loop and supplemental extension at the other end, and a drop pipe in said supplemental extension for the purpose described.

3. In combination with a plurality of marine motor cylinders substantially such as designated, a common discharge conduit for the products of combustion formed with a rear extension at one end and with a loop and supplemental extension at the other end, a drop pipe in said supplemental extension, a valve interposed in said drop pipe, a valve interposed between said supplemental extension and said common discharge conduit and a valve in the rear extension of said common discharge conduit, for the purpose described.

4. In combination with a plurality of marine motor cylinders, substantially such as designated, a common discharge conduit for the products of combustion, formed with a rear extension, a forward extension commu-

nicating with a condenser, said condenser, and a check valve interposed between said condenser and said common discharge conduit, for the purpose described.

5. In combination with a plurality of marine motor cylinders substantially such as designated, a common discharge conduit for the products of combustion, formed with a rear extension, a forward extension communicating with a condenser, said condenser, a check valve interposed between said condenser and said common discharge conduit and a gate valve interposed between said check valve and said common discharge conduit, for the purpose described.

6. In combination with a plurality of marine motor cylinders, substantially such as designated, a common discharge conduit for the products of combustion, formed with a rear extension at one end, and with a loop and supplemental extension at the other end, and a stand pipe interposed between said supplemental extension and said common discharge conduit, for the purpose described.

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