

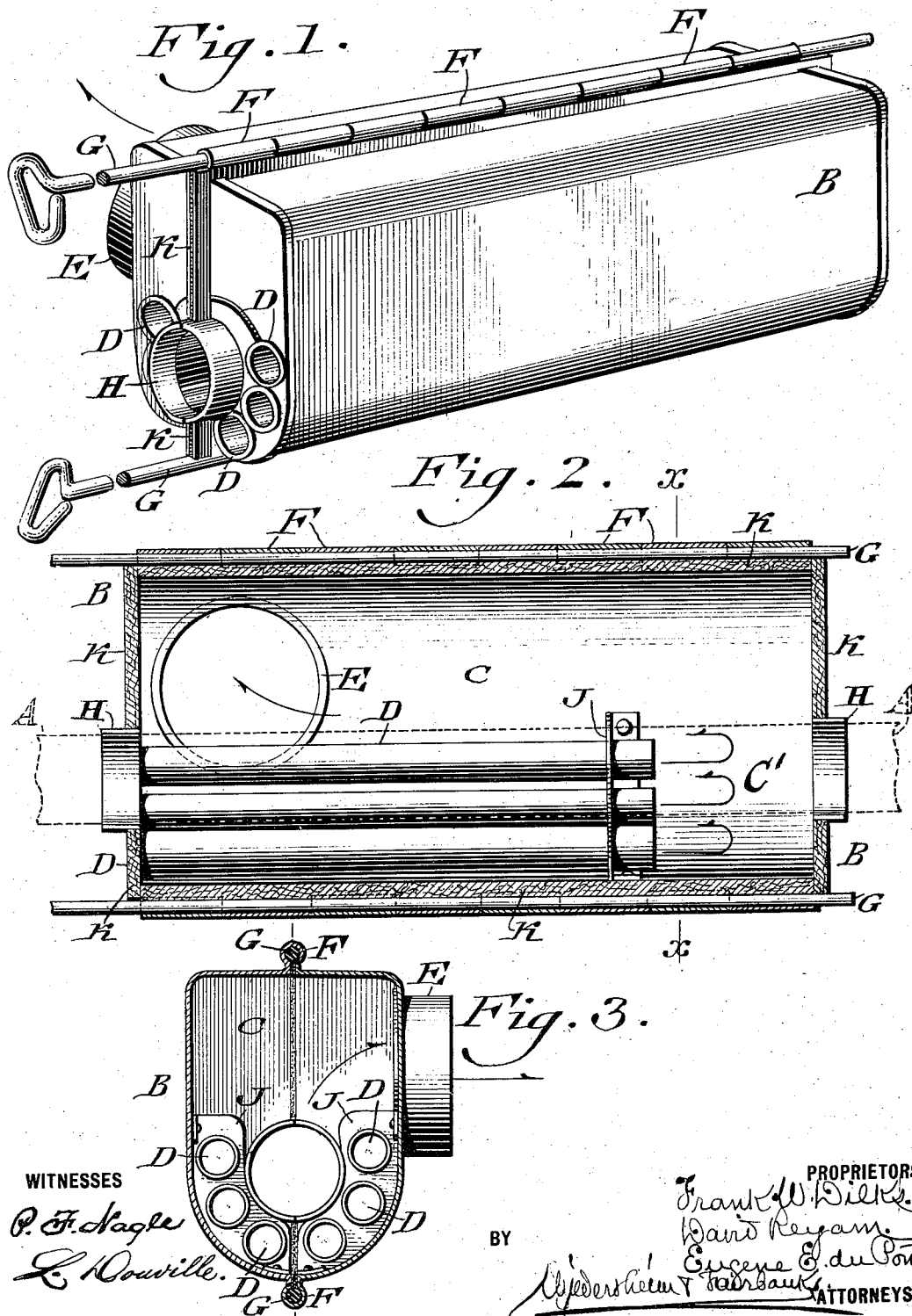
F. W. DILKS, D. REYAM & E. E. DU PONT.

AUTOMOBILE HEATER.

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1,028,553.

Patented June 4, 1912.



UNITED STATES PATENT OFFICE.

FRANK W. DILKS, OF PHILADELPHIA, PENNSYLVANIA, AND DAVID REYAM AND EUGENE E. DU PONT, OF WILMINGTON, DELAWARE; SAID DILKS ASSIGNOR TO SAID REYAM AND SAID DU PONT.

AUTOMOBILE-HEATER.

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Specification of Letters Patent.

Patented June 4, 1912.

Application filed July 12, 1911. Serial No. 638,145.

To all whom it may concern:

Be it known that we, FRANK W. DILKS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, and DAVID REYAM and EUGENE E. DU PONT, both citizens of the United States, residing in the city of Wilmington, county of Newcastle, State of Delaware, have invented a new and useful Automobile-Heater, of which the following is a specification.

Our invention consists of a heater or heating device employed in conjunction with a motor vehicle, motor boat, or other similar structure wherein an engine of more particularly the explosive type is employed, the object of the invention being the utilization of the heat present in the exhaust of such engine. To this end, we employ a casing which is adapted to be fitted over the exhaust pipe, and air supplying means which open into such casing, so that a large volume of air is directed into said casing and discharged therefrom in highly heated condition into a compartment of the vehicle etc. thus warming or heating the same in a simple, inexpensive and effective manner.

The invention is satisfactorily illustrated in the accompanying drawing, but the important instrumentalities thereof may be varied, and so it is to be understood that the invention is not limited to the specific arrangement and organization shown and described.

Figure 1 represents a perspective view of an automobile heater embodying our invention. Fig. 2 represents a longitudinal vertical section thereof. Fig. 3 represents a transverse vertical section thereof, on line $x-x$ Fig. 2.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings:—A designates an exhaust pipe of an engine, and B designates a casing which tightly surrounds the same and constitutes a heat-receiving chamber C, said pipe being shown in dotted lines Fig. 2. Connected with an end wall of said casing are the air supplying pipes D, which are open at said wall to the atmosphere, and they extend in the direction of the exhaust pipe into the casing for a certain distance and open into the same. To the side wall of the casing is secured the collar E, the open-

ing of which constitutes the outlet of the chamber C.

In order to readily apply the casing to the exhaust pipe and adapt it to be removed therefrom, we form said casing of sections, the ends of which are provided with knuckles F, the knuckles of one section inter-fitting those of the other section, and passed through the adjacent knuckles are the rods G which connect said knuckles and consequently the sections of the casing, it being noticed that the end walls of the latter are formed with sectional collars H which are adapted to tightly embrace the exhaust pipe and so assist in retaining the casing in position thereon.

As has been stated, the pipes D are connected with the adjacent wall of the casing, and so sustained thereon at their outer ends. The inner ends of said pipe are connected with and sustained on the rack J which is secured to the interior of the side walls of the casing, said pipes thus being firmly retained in position.

When the rods G are withdrawn, the sections are disconnected and thus the casing may be removed from the exhaust pipe.

The joints of the sections are packed as at K for evident purposes.

It will be seen that when the vehicle is in motion air is drawn into and through the pipes D and as it is impacted on the exhaust pipe A, the latter being in hot condition due to the exhaust passed therethrough, said air will be highly heated in which condition it will occupy the chamber C and from thence be discharged forcibly at the collar E and directed therefrom by a suitable conducting pipe to a compartment of a vehicle etc. so as to warm or heat the same.

As pipes D do not extend the full length of the casing B, the fresh air is injected into the end portion C' of the chamber C, said portion being occupied only by the adjacent part of the exhaust pipe A, see Fig. 2, where said air impinges against and is subject to the direct heating action of said exhaust pipe, the air having been partly heated in its passage through a portion of the pipes D that surround the adjacent part of said exhaust pipe. The air that has entered said portion C' of the chamber C returns in the casing toward the inlet end of the said pipes; is then circulating around the latter as well

as around the adjacent portion of the exhaust pipe that is surrounded by said pipes D, thus preserving its high temperature, in which condition it reaches the outlet of the collar E.

When the vehicle is at rest, the heat that rises from the exhaust pipe enters the chamber C and passes therefrom to the conducting pipe, though not in the volume as when the vehicle is in motion.

Having thus described our invention what we claim as new and desire to secure by Letters Patent, is:—

1. In a vehicle heater of the character stated, a casing forming a heating chamber, the same having openings in its end walls adapted to receive an exhaust pipe of said vehicle extending through said heating chamber, air conveying pipes passing through and supported by one of said end walls parallel with said exhaust pipe, said air conveying pipes being open at one end to the atmosphere with the other ends extending into said casing with such ends terminating at a point remote from the opposite end wall of said casing and emptying into the end portion of said chamber remote from the inlet end, and a hot air outlet connected with said casing in proximity to the said exhaust pipe and air conveying pipes and at the end of the casing opposite to the

discharge ends of said air conveying pipes, the opening for the cold air inlet pipes and the hot air outlet being both at the same end of the casing, whereby the air is forced to traverse over the exhaust pipe toward the front end of the casing to be discharged through said outlet.

2. In a vehicle heater of the character stated, a casing forming a heating chamber, the same having openings in its end walls adapted to embrace an exhaust pipe of said vehicle, air conveying pipes passing through and supported by one of said end walls, said pipes being open to the atmosphere and extending into said casing and having their discharge ends at a point remote from the opposite end wall of said casing, and a hot air outlet in proximity to the exhaust pipe and the air conveying pipes and connected with said casing at the end of the latter opposite to the discharge ends of said air conveying pipes, said casing having its sides and end walls formed of sections with means for detachably connecting the same.

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