

(No Model.)

E. A. EDWARDS.
HYDROCARBON BURNER.

No. 256,304.

Patented Apr. 11, 1882.

Fig. 1.

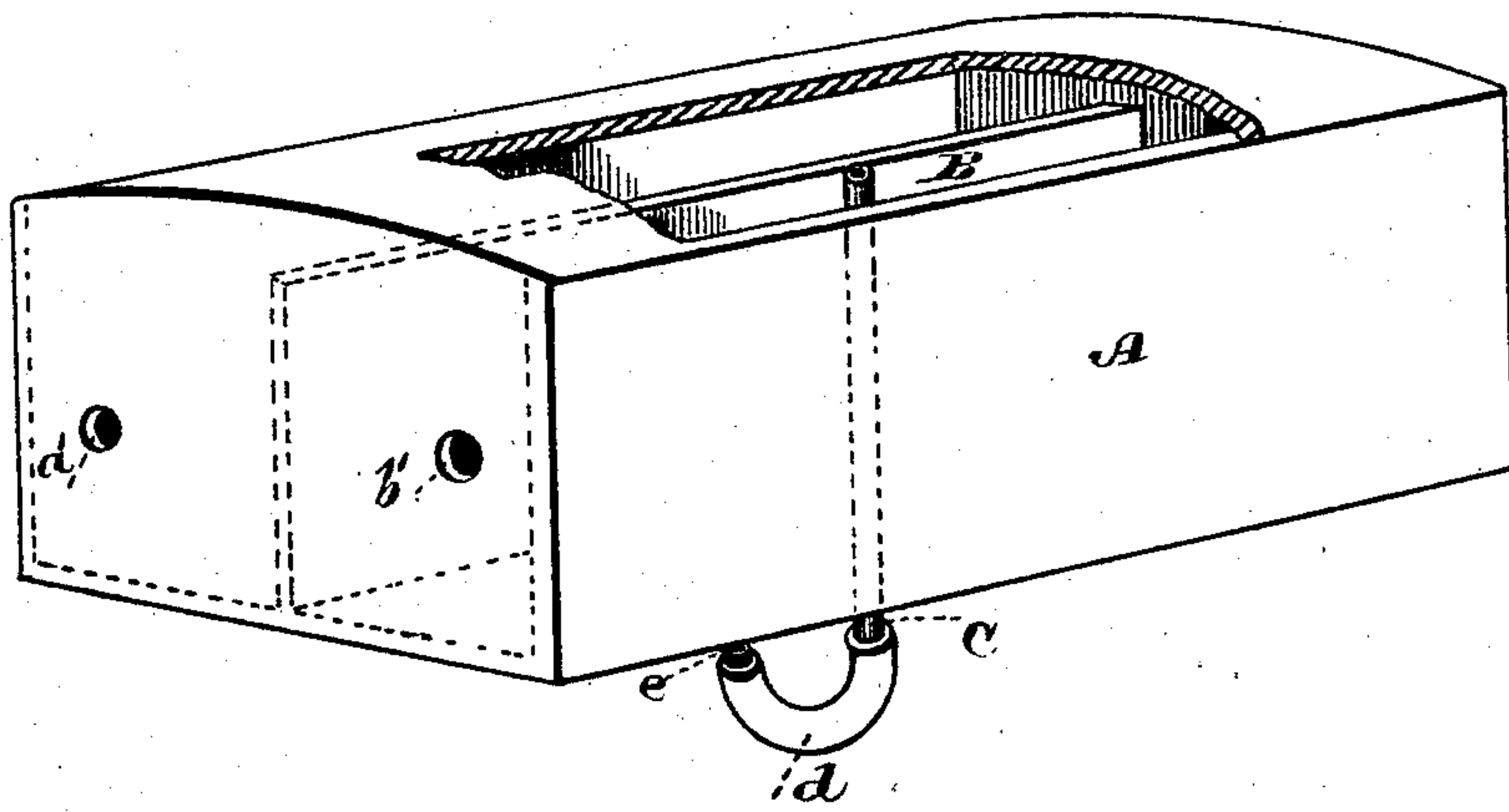
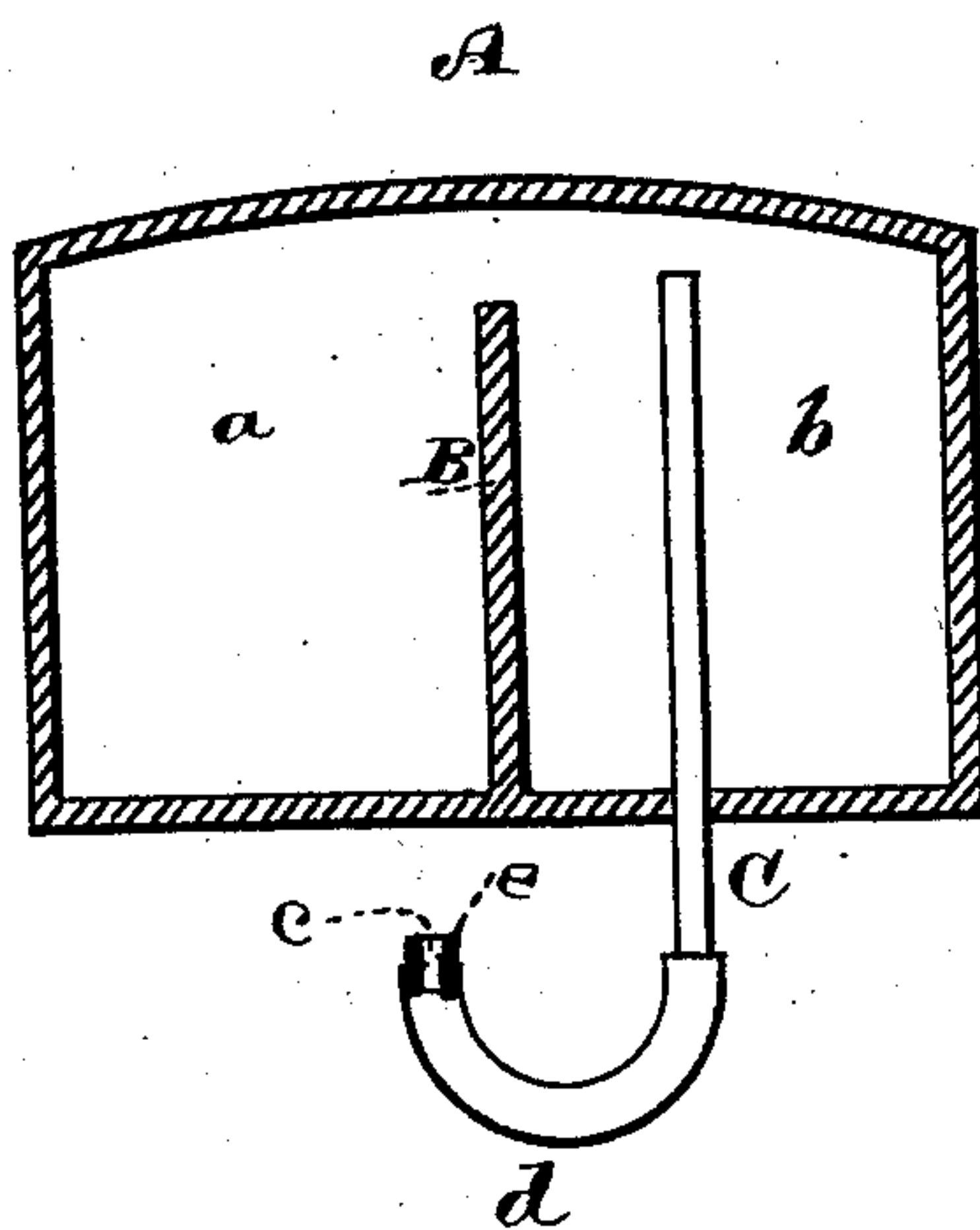


Fig. 2.



Witnesses,

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UNITED STATES PATENT OFFICE.

EVAN A. EDWARDS, OF LOS ANGELES, CALIFORNIA.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 256,304, dated April 11, 1882.

Application filed February 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, EVAN A. EDWARDS, of the city and county of Los Angeles, State of California, have invented a Liquid-Hydrocarbon Burner; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful liquid-hydrocarbon burner; and it consists of a box or casing having within it a vertical longitudinal partition or diaphragm, extending from the base to within a short distance of the top, dividing the box into two compartments opening into each other over the top of the diaphragm, said compartments having separate entrances and a common exit or exits through a pipe or pipes leading from the upper part of the compartments, and opening out under the casing or box, as will hereinafter be more particularly described, reference being made to the accompanying drawings.

Figure 1 is a perspective view of my burner. Fig. 2 is a transverse section.

Let A represent a box or casing, preferably made of cast-iron, of any convenient shape. Within it is a vertical longitudinal diaphragm, B, extending from the base to within a short distance of the top, thus dividing the box into two compartments, *a b*, which open into each other at the top over the partition B. An aperture, *a'*, through the end of the box is intended to admit an entrance-pipe into compartment *a*, and a similar aperture, *b'*, to admit an entrance-pipe into compartment *b*. Through the bottom of the box is screwed a pipe, C, which extends upward within compartment *b* to about the same height as or little higher than the partition B. The pipe C, below the box, has a return-bend, *d*, and its end thus lies close under the box, about the center, as shown. The pipe C is provided with a small aperture, *e*, in its end under the box. I prefer to make the pipe C of an ordinary gas-pipe nipple, and fit it with a common return-bend, closing its end with a plug, *e*, in which a small hole, *e*, is made. If the box is a large one, I can attach a gas-pipe to the nipple, and provide it with several return-bends, the ends of which will open out under the box in several places.

Instead of a pipe, as here shown, screwing through the bottom of the box, I could lead it from the top of the compartments through the top of the box and around under it; but I prefer to make the device as here shown.

The operation of the burner is as follows: It is specially adapted for use in kitchen stoves and ranges. It is placed in the fuel-chamber of the stove and a small fire kindled under it to heat it up to a degree to vaporize the oil and water when first admitted. Oil is allowed to flow from a suitable reservoir through the entrance-pipe in aperture *a'* into compartment *a* of the box, and water flows in compartment *b* in like manner. Both liquids may be regulated by the employment of valves or stop-cocks in the entrance-pipes. As soon as the oil falls upon the hot bottom of the box it is converted into gas, and the water is likewise turned into steam. The two gases, rising to the top, and each striving to go through the common exit C, become thoroughly mingled and atomized, and pass together through pipe C and under the box, and will ignite upon leaving the aperture *e*, forming a flame which will be directed upon the bottom of the box, thus continuing the heat and rendering the burner automatic. This may be continued as long as the supply is kept up.

By the employment of several exits or jets, as before mentioned, I could have several flames.

The heat from the device will subserve all necessary cooking purposes.

In liquid-hydrocarbon burners it is necessary to have a complete union of the steam and oil vapors, that the latter may be atomized and assisted by the former to produce complete combustion. This object is gained in the present device by having the open partition and allowing the two gases to mingle within the confined space of the box, so that in issuing forth they are thoroughly mixed and will produce a hot white flame.

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

1. A liquid-hydrocarbon burner consisting of the box or casing A, provided with a verti-

cal longitudinal diaphragm, B, open above and dividing said box into separate compartments *a b*, connected above over the top of the diaphragm, and having separate entrance-apertures and a common exit or exits, substantially as herein described.

2. A liquid-hydrocarbon burner consisting of a box or casing, A, provided with a vertical longitudinal diaphragm, B, open above, dividing said box into separate compartments *a b*, connected above over the top of the diaphragm, and having separate entrance-apertures *a' b'*, and a common exit-pipe, C, opening from within the box near the top, and extending down under the box and turned upward, as shown, substantially as herein described.

3. A liquid-hydrocarbon burner consisting

of a box or casing, A, provided with a vertical longitudinal diaphragm, B, open above, dividing said box into separate compartments *a b*, connected above over the top of the diaphragm, and having separate entrance-apertures *a' b'*, in combination with a common exit pipe or nipple, C, opening from within the box near the top and extending downward, and provided with a return-bend, *d*, the end of which extends upward under the box, and is closed with a plug, *e*, having a small opening, *e*, as shown, substantially as herein described.

In witness whereof I hereunto set my hand.

EVAN A. EDWARDS.

Witnesses:

C. D. COLE,

J. H. BLOOD.