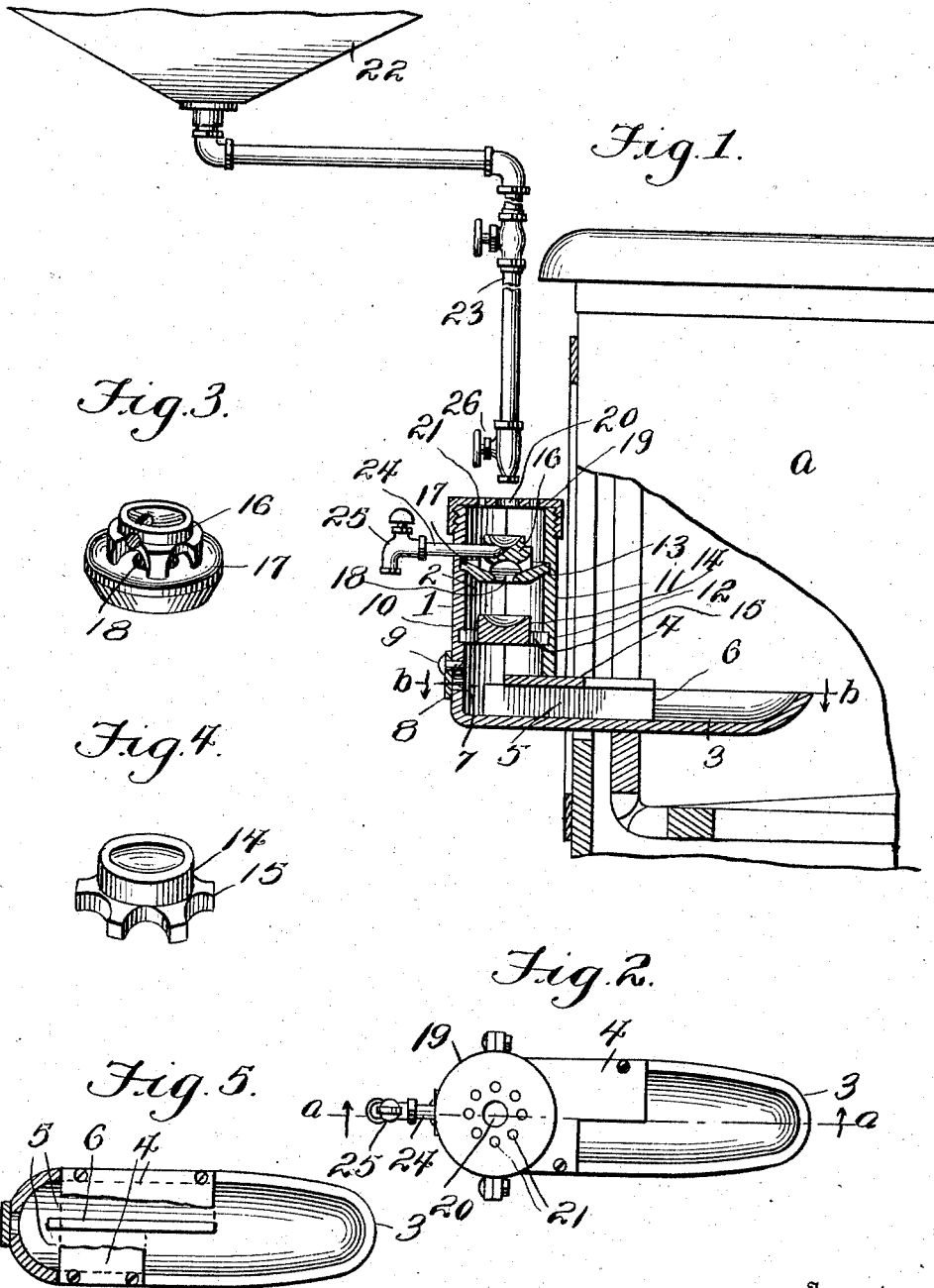


J. A. McCOACH.  
CRUDE OIL BURNER.  
APPLICATION FILED SEPT. 14, 1909.

965,831.

Patented July 26, 1910.



Witnesses

J. L. Wright  
T. Allen

Inventor

John A. McCoach,

By Victor J. Evans,  
Attorney

# UNITED STATES PATENT OFFICE.

JOHN A. McCOACH, OF LA CYGNE, KANSAS.

## CRUDE-OIL BURNER.

965,831.

Specification of Letters Patent. Patented July 26, 1910.

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*To all whom it may concern:*

Be it known that I, JOHN A. McCOACH, a citizen of the United States, residing at La Cygne, in the county of Linn and State of Kansas, have invented new and useful Improvements in Crude-Oil Burners, of which the following is a specification.

This invention is an improved crude oil burner especially adapted for use in an ordinary cooking stove or heating stove but also adapted for other uses, the said invention consisting in the construction, combination and arrangement of devices herein described and claimed.

In the accompanying drawings, Figure 1 is a vertical, longitudinal, sectional view of a crude oil burner, constructed in accordance with my invention, on the plane indicated by the line *a—a* of Fig. 2, showing the same in use for connection with a stove, a portion of the latter being indicated partly in section and partly in elevation. Fig. 2 is a top plan view of the burner. Fig. 3 is a detail perspective view of the separating cup and the drip ring under the same. Fig. 4 is a similar view of the generator. Fig. 5 is partly a plan of the burner and partly a section of the same, on the plane indicated by the line *b—b* of Fig. 1, and with a portion of the cover plate of the horizontal arm broken away so as to disclose the partition.

In accordance with my invention I provide a body or casing 1, which comprises a vertical cylindrical arm 2 and a horizontal trough shaped arm 3, which extends from the lower end of said vertical arm and communicates with the lower end thereof, said trough shaped arm or pan 3 is partially covered at the end next the vertical arm 2 by means of a cover plate 4 and that portion of the pan or horizontal arm which is under the cover plate is divided into two parallel passages 5 by means of a vertical partition 6. The arm 2 is provided near its lower end on its outer side with an air inlet opening 7, which may be covered or opened to any desired extent by means of a cover 8, which is pivoted, as at 9, on the said vertical arm. In practice and as herein shown the vertical arm is made of two sections 10—11, which may be bolted or otherwise secured together and the said sections are provided on their inner sides with annular grooves 12—13, which are disposed at suitable distances from the lower end of said vertical arm and are appropriately spaced apart.

A generator or converter 14, the upper side of which is concave, is placed in the arm 2 and is here shown as substantially cylindrical in form and is provided at its base with radially disposed studs 15, which serve to space the said generator from the wall of the vertical arm 2 and also engage the lower groove 12 so as to support said generator.

A separator or refiner 16, which is cup-shaped, is provided at its base with downwardly extending legs, which bear on a saucer or ring 17, the diameter of which exceeds that of the separator and is sufficient to enable the outer edge of said ring or saucer to engage the groove 13 and thereby support said saucer and hence also said separator in the arm 2 at a suitable height above the generator. The said saucer or ring is provided with a central opening 18 of suitable size and its upper side is concave.

A cover 19 is placed on the upper end of the arm 2 and is provided with a central opening 20 and also with a series of air inlet openings 21.

In practice the major portion of the pan or lower arm 3 is extended through a fire door in a stove and is disposed in the fire box thereof, a stove being indicated in Fig. 1 at *a*, and it will be observed that the vertical arm of the burner is disposed without the stove and is readily accessible and moreover is protected from the heat of the stove. An oil tank or reservoir 22, which is located at a suitable elevation and supported by any suitable means, is provided with a valved discharge pipe 23, the discharge end of which is located above the opening 20 in the cover 19 and the valve 26 in said pipe being opened to a sufficient extent crude oil from the said reservoir is caused to drop through the opening 20 into the separator 16. A discharge pipe 24 leads downwardly and outwardly from said separator and has a cock 25. Initial heat having been applied to the burner, which may be done by igniting oil in the pan or horizontal arm 3, the crude oil, which is fed to the separator, by the heat of the separator, which does not equal the boiling point of water, is separated from the watery contents of the oil, the oil rising to the surface flowing over the upper edge of the separator and dropping therefrom into the saucer, deflector or ring and passing from the central opening in the latter downwardly onto the upper concave surface of

the generator, which being nearer the bottom of the arm 2 is sufficiently hot to convert the oil into gas. Air is drawn in by the draft of the stove through the opening 7 and becomes commingled with the gas from the oil so that the mixture of gas and air is caused to burn in the base of the arm 2 and in the pan 3, as will be readily understood, the cover 4 and partition 6 dividing the blaze of the burning mixture and facilitating the passage thereof to the extreme end of the pan and causing it to be distributed through the fire box of the stove, so that the stove becomes highly heated and may be used either for cooking or heating purposes according to the character of the stove. From time to time such water as accumulates in the separator may be drawn off therefrom through the pipe 24 by opening the cock 25.

It will be understood from the foregoing that my improved crude oil burner is extremely cheap and simple and that it may be readily manufactured at slight cost.

Having thus described the invention what is claimed as new, is:—

1. A crude oil burner comprising a casing having a vertical cylindrical arm, a horizontal trough-shaped arm, the outer end of which communicates with the lower end of said vertical arm, said trough-shaped arm being open at its inner end on its upper side, said vertical arm having a cover on its

upper end provided with air inlet openings and with an oil feed opening, means to cause oil to drip through said oil feed opening, a generating device in the lower portion of said vertical arm and spaced from the wall thereof, a separating cup in the said vertical arm above the generating device, a deflecting element below the separating cup partially closing the said vertical arm at a point above the generating device and having an opening under the separating cup and above the generating device, and means to draw water from the lower portion of said separating cup.

2. A crude oil burner comprising a casing, a generating device therein spaced from the wall thereof, a separating cup in the casing above the generating device, a deflecting element below the separating cup partially closing the casing at a point above the generator and having an opening under the separating cup and above the generator, means to draw water from the lower portion of said cup, and a cover on said casing having an opening for the admission of oil to the separating cup.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. McCOACH.

Witnesses:

J. W. COMSTOCK,  
H. E. TUBBS.