

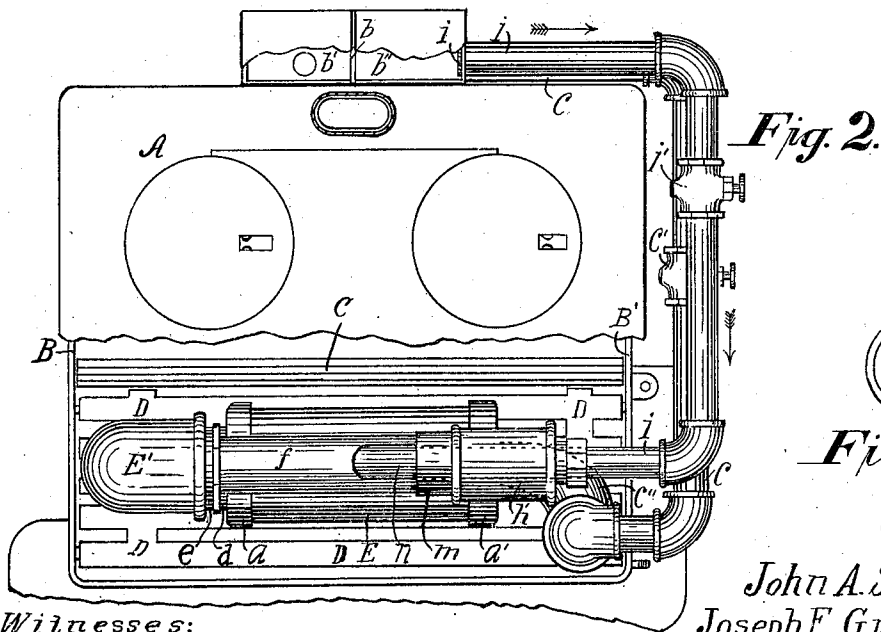
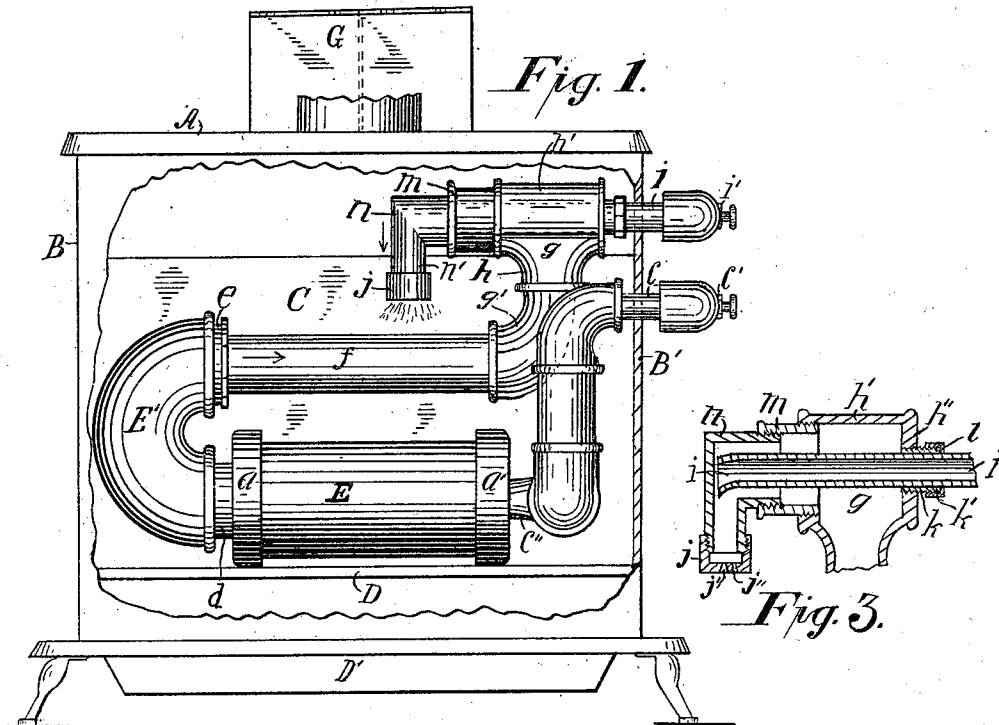
J. A. SCOTT, J. F. GRUBBS & J. E. GOSS.

CRUDE OIL BURNER.

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UNITED STATES PATENT OFFICE.

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981,801.

Specification of Letters Patent. Patented Jan. 17, 1911.

Application filed January 3, 1910. Serial No. 536,077.

To all whom it may concern:

Be it known that we, JOHN A. SCOTT, JOSEPH F. GRUBBS, and JOHN E. GOSS, citizens of the United States, residing at Oklahoma city, in the county of Oklahoma and State of Oklahoma, have invented certain new and useful Improvements in Crude-Oil Burners, of which the following is a specification.

This invention relates to crude oil burners, in which the fuel pipe has a portion near its delivery end pass through a steam chamber which converts the oil into gas to mingle with the steam around the discharge end of the fuel pipe, forming hydrocarbon gas as it issues from the steam chamber through a regulating pipe and cap, all of which will be hereinafter fully explained.

The objects of this invention are; first, to provide a crude oil burner which is well adapted to be used in cook stoves, heating stoves, furnaces and the like; second, a burner producing a maximum amount of heat and a minimum amount of smoke; third, and a burner that is comparatively cheap. We accomplish these objects by the mechanism illustrated in the accompanying drawings, forming a part of this specification, in which:

Figure 1 is a front elevation of a cook stove, having the front portion removed and showing a burner installed therein; Fig. 2 is a plan view of the same, wherein a portion of the stove is broken away to prevent obscuring; Fig. 3 is a vertical section of a portion of the steam system, properly, the steam chamber; Fig. 4 is a plan view of the feeding cap.

Similar letters refer to the similar parts in the several views.

Referring to the drawings, A designates the top of a cook stove, B, the left side and B' the right side; C designates the back of the fire-box and D the grate, upon which rests the water boiler E, consisting preferably of a section of gas pipe having caps *a* and *a'* secured to its ends. To supply the said boiler with water a tank G is secured to the rear portion of the stove, said tank having a partition therein, as at *b*, forming the two compartments *b'* for water and *b''* for the crude oil. See Figs. 1 and 2. A water pipe *c* has one of its ends secured to the said compartment *b'* of the tank G, and its opposite end secured in the cap *a'* of the boiler E, in a manner to lead the water of said tank

into said boiler, a check valve *c'* being provided in said water pipe *c* to control the water therein. Said water pipe may be of any desired size or shape, but preferably it is provided with a forward off-set connection *c''*. See Fig. 2. A short piece of pipe *d* has one of its ends secured in the said cap, *a*, its opposite end being secured in the lower end of the U-shaped pipe connection E', which has a reducer *e* secured in its opposite or upper end; and, secured in said reducer is one end of the horizontal steam pipe *f*, which has its opposite end secured in the foot *g'* of the steam chamber *g* to conduct the steam from the boiler E to the steam chamber. See Fig. 1. The preferred form of the said steam chamber *g* is a T coupling for gas pipe, consisting of a hollow vertical stem portion *h* and a hollow horizontal cylindrical portion *h'* forming a cavity or steam chamber *g* having a head *h''* in one end with a threaded perforation therein, through which the oil pipe *i* passes. Said oil pipe *i* having one of its ends secured in the oil compartment *b''* of the tank G and having its opposite end extended through and a short distance beyond said steam chamber and having its end bent slightly downward to prevent the oil from being driven back in its pipe at any time by the force of the steam contacting therewith. See Fig. 3. To prevent the steam from escaping through the said perforation in the head *h''* of the steam chamber a packing tube *k* encompasses said oil pipe *i* and is threaded into said perforation; the packing is completed by placing a gasket *k'* against the outer end of said packing tube *k* and threading the packing cap *l* thereon. See Figs. 1 and 3. To complete said steam chamber a short piece of pipe *m* is threaded into the inner end of the steam chamber, said pipe having threaded into its inner end an elbow or right-angled pipe connection *n* having its downwardly extending arm member *n'* reduced and male threaded and having a cap *j* threaded thereon; said cap having a central perforation *j'* and other perforations *j''* diverging slightly therefrom to cause the flame to spread; said cap determining, largely, the volume of the flame. See Figs. 1, 3 and 4.

In operation, the boiler E is filled by means of the water pipe *c*, after which the valve *i'* in the oil pipe is opened sufficiently to permit the oil to flow, slowly, through pipe *i* and down onto pipe *f*, the boiler E

and the grate D, when starting a fire. A small amount of the oil may be dropped into the ash box D', see Fig. 1. The valve is then approximately closed, being left sufficiently open to permit the oil to drip. The oil being ignited steam is soon generated, which heats the oil in the pipe *i* causing it to vaporize and flow out of said pipe within the elbow *n* and unite with the steam thus forming an inflammable vapor which, by its own elasticity is forced through the perforations of said feed cap *j*, where it ignites and forms a hot white, flame.

In placing the burner in some styles of cook stoves it is necessary to remove the door in the side B' to make room for the water and oil pipes *c* and *i*, and after the burner is in place a false door cut from sheet iron, or similar material and fitted in place of the original door.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claim.

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

In a crude oil burner; a boiler E for pro-

ducing steam, said boiler having means for supplying the same with water; a steam chamber *g* connected by pipes with said boiler and having a head in one of its ends and in said head a threaded perforation; a packing tube *k* threaded into said perforation to prevent the escape of steam; a short tube *m* threaded into the other end of said steam chamber serving as an extension and as a reducer; a pipe elbow having a horizontal portion threaded into said extension and having its opposite end at a right-angle thereto to direct the flame; a cap *j* having means for securing the same upon the free end of said elbow said cap having orifices to spread the fuel; an oil delivering pipe *i* having one of its ends connected with an oil supply and having its opposite end extended through said steam chamber and terminating in a downwardly projecting lip within said elbow.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN A. SCOTT.
JOSEPH F. GRUBBS.
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Witnesses:

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