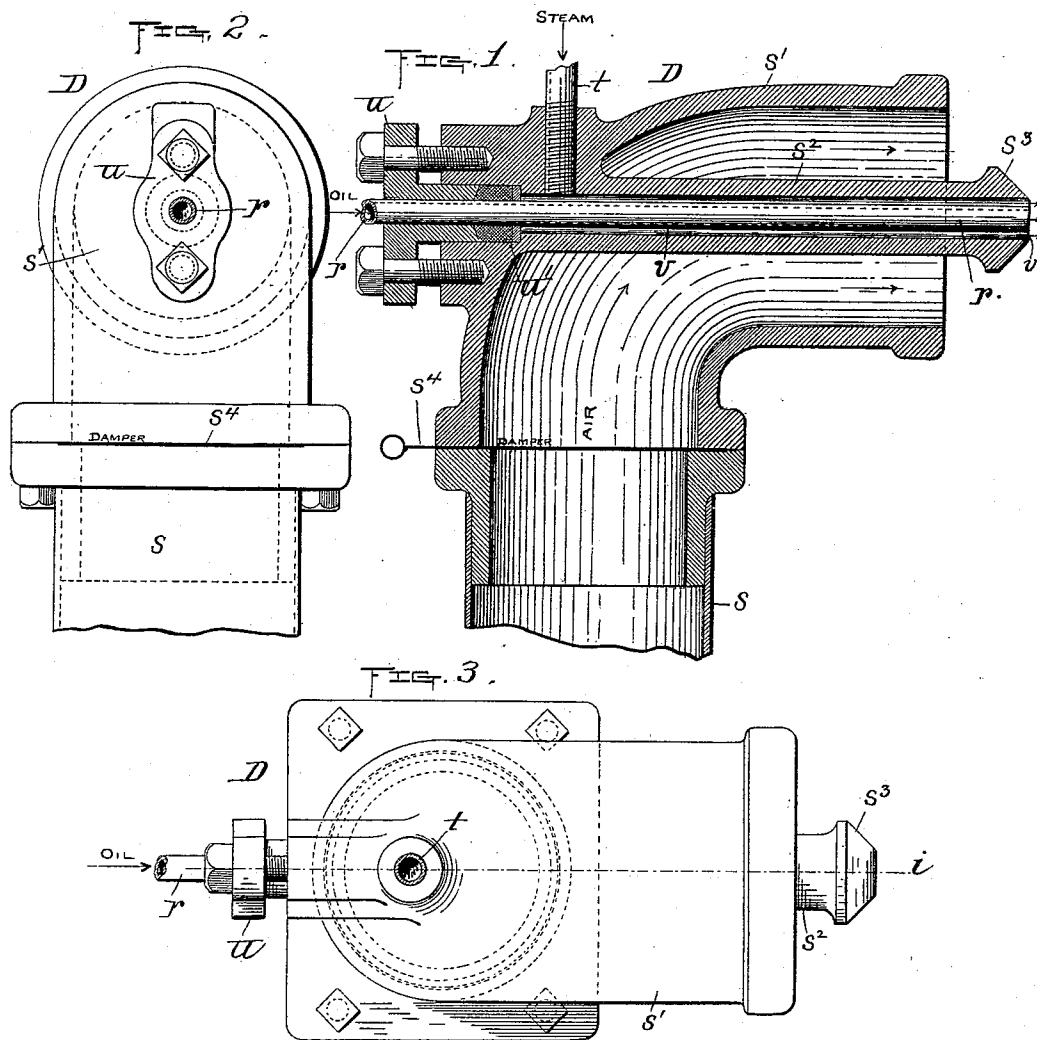


(No Model.)

G. H. SCOTT.
HYDROCARBON BURNER.

No. 472,231.

Patented Apr. 5, 1892.



Witnesses;

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UNITED STATES PATENT OFFICE.

GEORGE HASKELL SCOTT, OF WORCESTER, MASSACHUSETTS.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 472,231, dated April 5, 1892.

Application filed March 18, 1890. Serial No. 344,331. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HASKELL SCOTT, of the city and county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Hydrocarbon-Burners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a central vertical longitudinal section through my said improved hydrocarbon-burner. Fig. 2 is a rear end view thereof, and Fig. 3 is a top or plan view of said burner.

My invention relates to hydrocarbon-burners, and is designed more especially for use in wire-tempering apparatuses in which oil is used for fuel in the furnaces thereof.

It consists of certain improvements in the construction of said hydrocarbon-burners, as will be hereinafter more fully set forth.

To enable those skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe it more in detail.

In the drawings, D represents my improved hydrocarbon-burner, which is provided with the oil-supply pipe *r*, as well as with the air and steam supply pipes *s* and *t*, respectively. That for supplying air is of large size and is provided with an elbow or head *s'* for directing the air into the combustion-chamber of the apparatus to which the burner is applied. Said elbow or head *s'* is provided with an internal central horizontal pipe *s²*, having the nozzle end *s³* preferably projecting a little outside of the open end of the head *s'*. The opening therein extends clear through and is provided at the outer end with the adjustable stuffing-box *u* and packing *u'* to make a steam-tight joint around the oil-pipe *r*. Said pipe *r* passes centrally through the internal pipe *s²*, thus leaving an annular space *v* around the same, and it extends to or nearly to the end of said internal pipe *s²*. The steam-pipe *t* connects with the annular space *v*—in this instance at right angles thereto—

the connection being made just in front of the packing *u'*. If desired, said connection may be made at any other point in the length of said annular space.

In practice I prefer to pass a portion of the steam-pipe through the combustion-chamber of the apparatus to which the burner is applied for the purpose of superheating the steam therein. Said superheated steam subsequently passing through the pipe *s²* around the oil-pipe *r* partially heats the oil therein preparatory to its discharge into said combustion-chamber, and thus in a measure assists the combustion.

By the use of a burner thus constructed it will at once be apparent that as the oil is discharged into the combustion-chamber it is expelled by the force of the superheated steam in a thoroughly-vaporized state, and a large volume of fresh air also being introduced around the nozzle into said chamber in conjunction with said vaporized oil a most thorough and perfect combustion may be maintained within said combustion-chamber.

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

In a hydrocarbon-burner, the air-supply pipe *s*, having the head *s'* at or about right angles thereto and open at the end, said head in turn having an internal central pipe or nozzle *s²* projecting horizontally toward said open end, in combination with the oil-pipe *r*, extending longitudinally through the internal pipe *s²*, leaving an annular chamber around said pipe *r*, packing *u'*, fitted around pipe *r* against a shoulder on head *s'*, stuffing-box *u*, also fitted over pipe *r* against said packing, means for fastening said stuffing-box to the head, and steam-pipe *t*, extending transversely into the head and connecting with the annular space around pipe *r* in front of its packing, substantially as and for the purposes set forth.

GEORGE HASKELL SCOTT.

Witnesses:

A. A. BARKER,
W. B. NOURSE.