

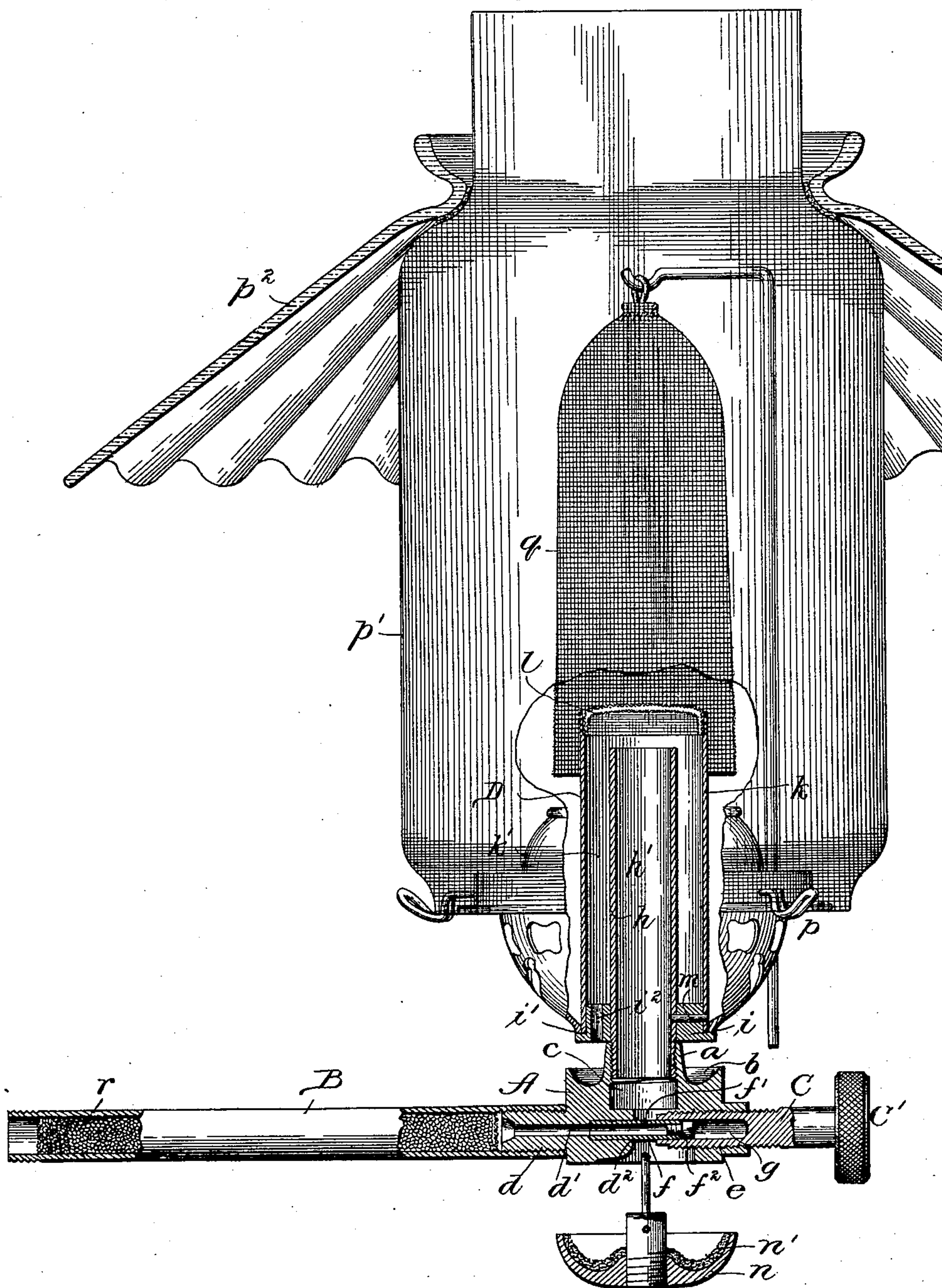
No. 679,015.

Patented July 23, 1901.

J. J. BUSENBENZ.
HYDROCARBON BURNER.

(Application filed June 20, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

JACOB J. BUSENBENZ, OF CHICAGO, ILLINOIS.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 679,015, dated July 23, 1901.

Application filed June 20, 1900. Serial No. 20,978. (No model.)

To all whom it may concern:

Be it known that I, JACOB J. BUSENBENZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hydrocarbon-Burners, of which the following is a specification.

My object is to provide certain improvements in the construction of hydrocarbon-burners generally, though more especially of hydrocarbon-burners for incandescent vapor-lamps, whereby a particularly strong and steady flame is produced and ready access to all parts of the interior of the burner may be had.

My object is, further, to provide such a burner in which the objectionable needle-valve and packing usually provided is dispensed with, and a vaporizing-tube beneath the burner is brought into particularly close proximity to the flame which heats it.

My object is, still further, to provide a simple and durable construction comparatively inexpensive to manufacture and particularly well adapted for the purpose for which it is intended.

The drawing shows in broken section an incandescent vapor-lamp provided with a burner of my improved construction.

A is the base of the burner, comprising a metal block having the central upward-extending boss *a*, trough *b*, surrounding the boss, and opening *c* through the base, threaded in that part which extends through the boss *a*.

B is a vaporizing tube or chamber screwed upon a boss *d* on the side of the base to communicate with a passage *d'*, leading to the opening *c*. In the other side of the base, in line with the passage *d'*, is a threaded opening *e* for a valve C. Fastened in the passage *d'* and extending across the opening *c* is an inlet-tube *f*, provided in its upper side, centrally of the opening *c*, with an outlet or feed-perforation *f'*. The end of the tube *f* is fitted with a removable screw-plug *f²*. The valve C is provided in its end with a deep recess or sleeve portion *g*, at which it is adapted to fit and as it is screwed in and out to slide over the tube *f* to cover and uncover the opening *f'*. When the valve C is closed, it seats at its inner end against a shoulder or valve-seat *d²*.

D is a burner-head, comprising an inner tube *h*, screwed at its lower end into the boss *a*, a ring *i*, surrounding the lower end portion of the tube *h*, an outer tube *k*, fitting at its lower end around the ring *i* against an annular horizontally-extending shoulder *i'*, and a fine-mesh screen or burner-cap *l*, removably fitted into the top of the tube *k*. The tube *h*, ring *i*, and tube *k* are fastened together in a suitable way, as by means of the pin *m*. The tube *h* terminates a short distance below the top of the tube *k*, and the tubes together form an inner chamber or passage *h'*, surrounded by an outer annular chamber *k'*. Extending through the ring *i* are one or more openings *i²*. Suspended from the block or base A is an alcohol-cup *n*, provided with the usual asbestos lining *n'*. In the drawing I have shown a gallery *p*, supported from the shoulder *i'* of the ring *i*, carrying a chimney *p'*, holding a shade *p²* and mounted in the usual way is an incandescent mantle *q*. The vaporizing-tube B is filled with highly-refractory granular material *r*, and I prefer to employ No. 12 corundum. The tube B is fastened at its outer end to a pipe leading from a hydrocarbon-reservoir. The gasoline or other hydrocarbon enters the tube B and passes through the granular filler to the passage *d'*. When the valve C is screwed inward, it effectively closes the outlet *f'* and prevents escape of the gasoline. In operation a little alcohol is poured into the cup *n* and ignited to heat the base A. The valve C is then screwed outward to open the feed-perforation *f'* and permit gasoline vaporized by the heat of the base to escape. The gasoline-vapor will mix with air in the opening *c*, rise in the tube *h'*, and, filling the latter to the top, will sink downward in the chamber *k'*, whereby it will escape through the burner-cap *l* and through the openings *i²*, at both of which points it is ignited. The flame from the burner-cap plays against the mantle *q* to produce the desired incandescent light, and the flames from the openings *i²* play against the base or block A to heat the same and to heat by conduction the vaporizing-tube B.

The construction involving the inner and outer tubes *h k* is very effective in producing a steady strong flame at the burner-cap *l*, while the effect of the flames from the open-

ings i^2 , playing against the base A, is to heat the same and the vaporizing-tube B to a very high temperature with attendant desirable results. The valve C is easily turned, by 5 means of a handle C', to thoroughly shut off the escape of gasoline when desired and possesses none of the objectionable features of the needle-valve usually employed in burners of this class. No packing is required, and 10 this is a material advantage. When it is desired to clean the burner, the valve C may be screwed entirely out of the base A, and the screw-plug f^2 may be removed from the tube f . This gives ready access to the latter.

15 What I claim as new, and desire to secure by Letters Patent, is—

1. In a hydrocarbon-burner, the combination with a base, of a feed-tube therein having at one end a removable plug and between 20 its ends a feed-perforation, a valve-seat surrounding the feed-tube, a valve having a sleeve portion surrounding the plug end portion of said feed-tube and movable longitu-

dinally thereon to and from said seat to open and close the feed-perforation, a vertical 25 burner-head comprising an inner tube secured to the base over the feed-perforation, and an outer tube carrying a burner-cap, and an apertured gallery-supporting ring securing the burner-head tubes together at their 30 lower end.

2. In a hydrocarbon-burner, the combination with a base, of a feed-tube therein provided at one end with a removable plug and between its ends with a feed-inlet perfora- 35 tion and surrounded by a valve-seat, an opening through the base in line with said feed-tube, and a valve in said opening having a sleeve portion surrounding the plugged end portion of said feed-tube and movable longi- 40 tudinally thereon to and from said seat to open and close said feed-inlet.

JACOB J. BUSENBENZ.

In presence of—

JAMES F. KEIR,
HARRIET E. GROW.