UNITED STATES PATENT OFFICE.

WILLIAM H. GRAY, OF ST. LOUIS, MISSOURI, AND SAMUEL ROSS, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN LAMP-BURNERS.

Specification forming part of Letters Patent No. 115,953, dated June 13, 1871.

To all whom it may concern:

Be it known that we, WILLIAM H. GRAY, of St. Louis, in the county of St. Louis and State of Missouri, and SAMUEL ROSS, of Washington, in the District of Columbia, have invented a certain Improvement in Lamp-Burners; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making a part of this spcification, in which—

Figure 1 is an elevation of the burner without the wick-tube. Fig. 2 is an elevation of the wick-tube detached. Fig. 3 is a vertical section of our improved burner complete. Figs. 4 and 5 are views of the air-tube surrounding the wick-tube within the perforated shell or basket. Figs. 6 and 7 represent such an air-tube somewhat modified in form.

The same letters of reference are employed in all the figures in the designation of the same parts.

This invention relates to burners for lamps employed in burning light hydrocarbons; and our improvement consists in the construction of the air-tube which surrounds the wick-tube in part, and in its arrangement with reference to some of the parts of such a burner, to be generally explained in the following description and specifically pointed out in the claim.

The wick-tube of our burner, marked A in the annexed drawing, is extended below the screw-cap or plug A′, to extend down into the oil in the lamp-bowl to near the bottom thereof. The hollow screw-plug supports, upon a narrow shoulder formed around it, the perforated tapering shell or basket B, to the upper end of which is hinged the chimney-base C, which latter is provided with a suitable catch to fasten it securely to the shell B. Upon the interior of the shell, near its upper edge, a bead is formed, upon which the circumferential flange *d* of the air-tube D rests. The latter is about half an inch, more or less, in length, of cylindrical form, and is suspended into the perforated shell around the wick-tube to compel a large body of cold air entering through the lower part of the shell to pass up to the flame in close proximity to such wick-tube, so as to maintain the latter at as low a temperature as possible, and prevent the generation of vapor in the lamp-bowl by the heat of the lower end of the wick-tube. The flange *d* has a number of perforations, d^1, near its periphery, to direct streams of air against the interior surface of the cone or deflector E, which forms part of and rises from the chimney-supporting base C, and is provided with the ordinary flame-aperture *e*. The chimney-base is also provided with a series of apertures around the base of the deflector for an upward draft through them directly into the chimney.

The part of the air-tube above the circumferential flange *d*, which is marked D′, is sometimes made cylindrical, slightly contracted toward the upper end, as shown in Fig. 7. This form is used for burning oil of a heavier specific gravity, where there is less liability of generating vapor. The tube D in this case is formed with a series of perforations, d^2, directly under the flange *d*, through which the cold air is compelled to pass in nearly horizontal lines toward the wick-tube.

For burning oils of a less specific gravity the part D′ is made in the curved tapering form best illustrated in Fig. 4, constituting, by preference, a separate piece, and covering, with its larger end resting upon the flange *d*, a series of perforations, d^3, therein, through which the air from the shell enters, and striking the inclined sides of this part D′, is deflected against the wick-tube. This air-tube, beside keeping the wick-tube cool by compelling a large body of cold air to pass up in close proximity to and impinging against the tube, serves to steady the flame by preventing the oscillations of the air in the burner. The tube serves as a chimney, creating a rapid upward draft, and thus supplying a greater quantity of oxygen to the flame, produces a brighter light, and prevents the formation of smoke.

What I claim as my invention, and desire to secure by Letters Patent, is—

T. F. HAMILTON.

Improvement in Corsets.

No. 115,954. Patented June 13, 1871.

fig. 1.

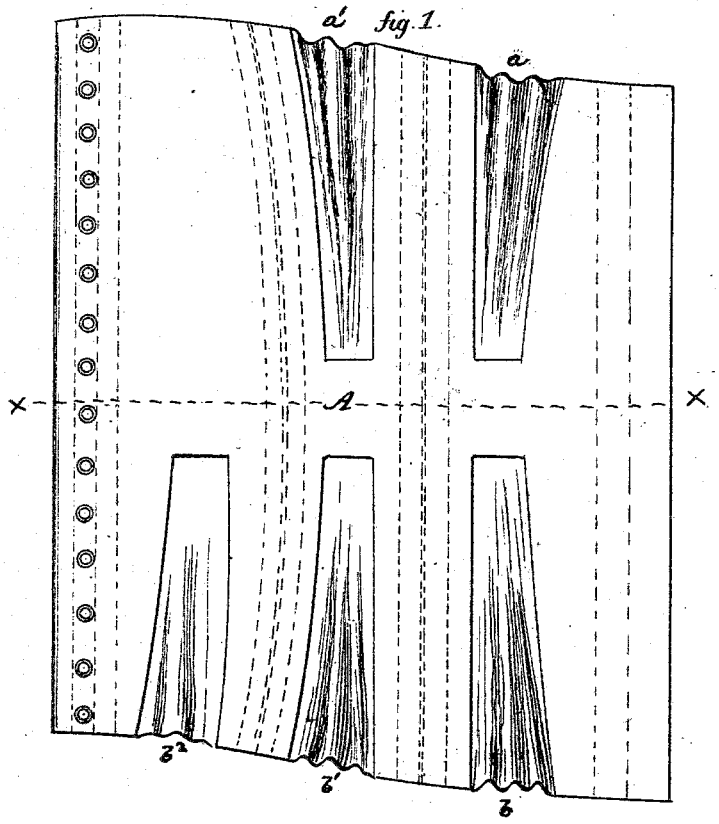
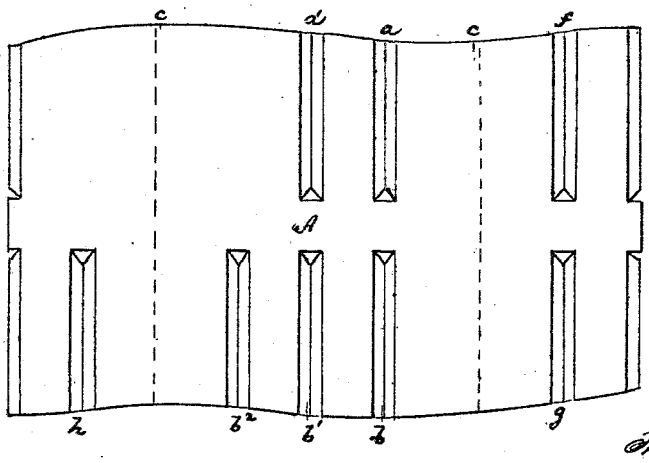


fig. 2.



Witnesses.

John H. Shumway

A. J. Tibbits

fig. 3

Thomas F. Hamilton

Inventor

By his Atty.

Wm. E. Earle