

(No Model.)

W. M. HARRISON.
LAMP.

No. 535,135.

Patented Mar. 5, 1895.

Fig. 1.

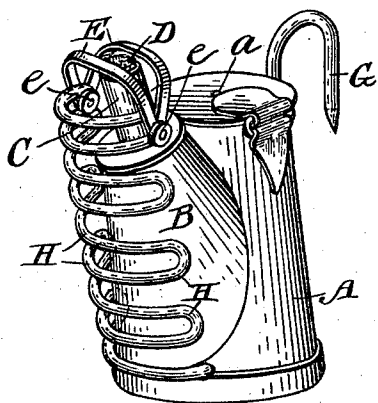


Fig. 2.

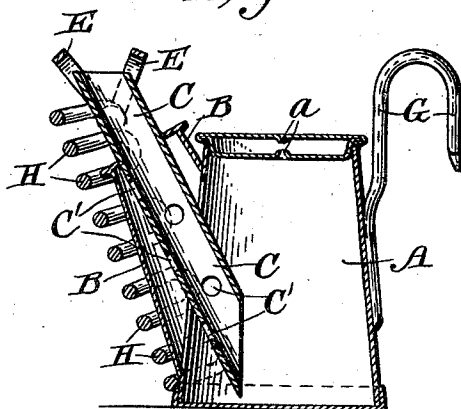
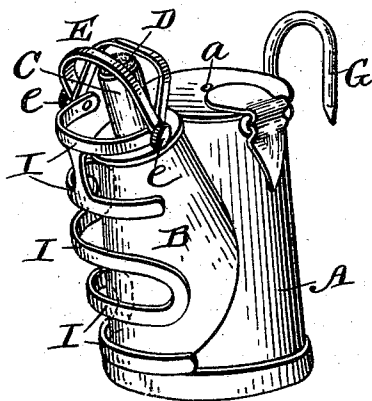


Fig. 3.



WITNESSES

Everance
Carrs R. M. Bride

INVENTOR

William M. Harrison
by
W. H. Babcock
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM MURRAY HARRISON, OF WILLIAMSPORT, PENNSYLVANIA.

LAMP.

SPECIFICATION forming part of Letters Patent No. 535,135, dated March 5, 1895.

Application filed December 7, 1894. Serial No. 531,118. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MURRAY HARRISON, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Flame-Controlling Devices for Miners' and other Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Heretofore miners' lamps have sometimes been provided with a bail or pivoted device adapted to be turned up into or against the flame for conducting the heat to the body of the lamp and melting paraffine or similar fuel employed therein; also a lamp has sometimes been provided with a wire or other metallic piece held against one side of the flame but leaving the other side free; also, a device having the form of a shears with curved blades has been applied below or around the flame of a candle or lamp, so as to affect the supply of air thereto.

The object of this invention is to lessen the smoking of lamps by applying governing devices to opposite sides of the flame, whereby the latter is compressed into a flatter form than it otherwise would take, but the air is not cut off from the edges of the flame. This compressing action secures for the flame its maximum candle power without smoking; an important consideration in miners' lamps especially, as miners' oil, though nominally vegetable, is habitually adulterated with smoke-evolving petroleum. To effect this I employ pivoted bails, which are turned up at against the opposite sides of the flame, so that the flame is compressed and flattened for controlling it substantially as hereinafter more particularly set forth and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of a miner's lamp provided with a pair of pivoted bails constituting a flame-controlling device and embodying one form of my invention. Fig. 2 represents a vertical central section of the same from the wick-tube to the hook. Fig. 3 represents a view similar to Fig. 1 of a miner's lamp provided with a somewhat different

means of attaching the flame controlling device.

A designates a miner's lamp of the ordinary form, having an air-inlet *a*, a suspending hook *G*, a spout *B* and a wick-tube *C*. The said wick-tube incloses a wick *D* and is provided with opening *C'* to let the oil or other fuel of the lamp have access thereto.

E, designates a pair of bails mounted on pivots *e* and turning up against opposite sides of the flame to regulate it. When such bails are pivoted directly to the wick-tube they heat the lamp too much. Therefore it is found best to make use of intervening supports or means of attachment which by their construction or material reduce the heat thus transmitted to an imperceptible amount. As shown in Figs. 1 and 2, a wire *H* bent in numerous folds and attached to the lamp at its bottom only may be thus employed; or I may substitute therefor a sheet of metal *I* cut into corresponding form and similarly fastened. In either case the heat is dissipated in the air in passing through the length of wire or narrow metal, exposed on every side to the air. When the bails composing the said heat controlling device *E* are turned up against the opposite sides of the flame, they compress the same slightly giving it a flatter form, but not inclosing the edges of the flame. The said flame controlling device also protects the flame somewhat against currents of air; and makes combustion more perfect by reason of its heat acquired from the said flame. It must not be brought together sufficiently to obstruct the said flame or draw it down, but only so as to keep it compact and symmetrical. The bails constituting the said flame-controlling device press against the flame on two sides only and thus flatten it, while leaving free and absolutely unobstructed access of the air to the edges of the flame. The practical effect is a very decided reduction of smoke or total illumination thereof, while retaining the full illuminating power of the lamp.

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

1. A lamp provided with a flame controlling device, consisting of separate parts adapted

to be adjusted into position against opposite sides of the flame, thereby compressing and flattening the latter, while leaving free and unobstructed access of air to the edges of the flame substantially as set forth.

5 2. A lamp provided with a flame controlling device, consisting of a pair of pivoted balls arranged to be turned up against opposite sides of the flame, thereby compressing and flattening the latter while leaving free and unob-
10 structed access of air to the edges of the flame substantially as set forth.

3. A lamp provided with a flame-controlling device consisting of separate parts adapted
15 to be adjusted into position against opposite

sides of the flame, thereby compressing and flattening the latter while leaving free access of air to the edges of the flame, the said flame-controlling device being connected to the said lamp solely by a long bent wire H or equivalent support whereby the heat of the flame is prevented from reaching the body of the lamp substantially as set forth. 20

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

WILLIAM MURRAY HARRISON.

Witnesses:

PARKS R. MCBRIDE,
E. L. WHITE.