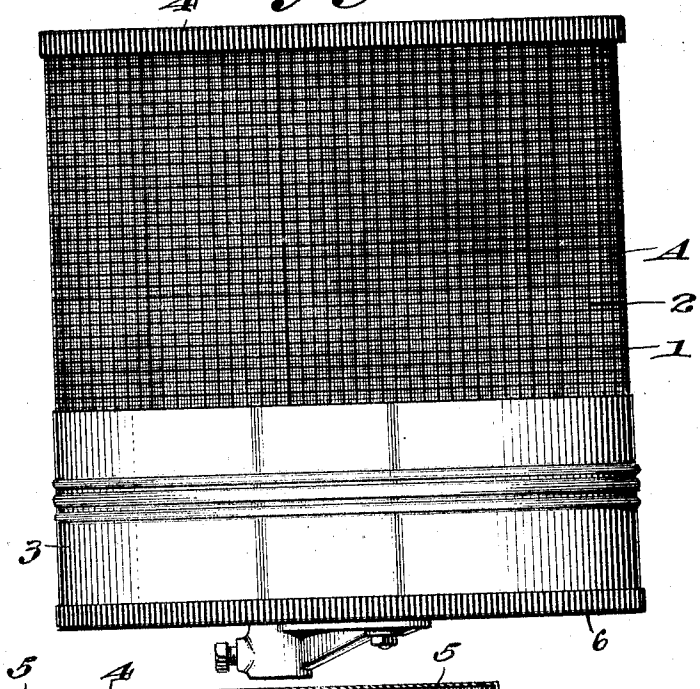
Sept. 15, 1925. 1,554,045

L. SNOW

PROTECTING BURNER SCREEN

Filed Dec. 19, 1923

Fig. 1.



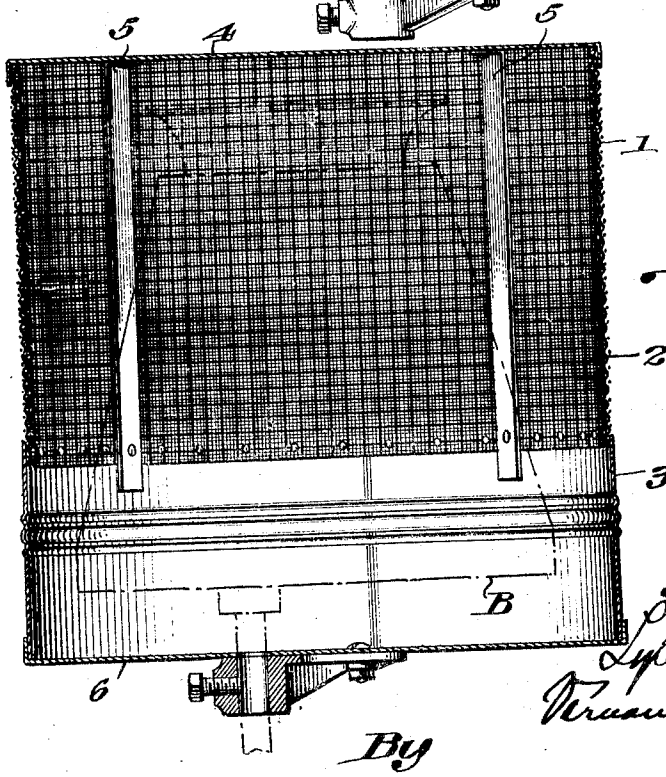


Fig. 2.

Inventor;
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his Atty.

Patented Sept. 15, 1925. 1,554,045

UNITED STATES PATENT OFFICE.

LYLE SNOW, OF QUINCY, ILLINOIS, ASSIGNOR TO H. M. SHEER COMPANY, OF QUINCY, ILLINOIS, A CORPORATION OF ILLINOIS.

PROTECTING BURNER SCREEN.

Application filed December 19, 1923. Serial No. 681,556.

To all whom it may concern:

Be it known that I, LYLE SNOW, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Protecting Burner Screens, of which the following is a specification.

My invention relates to an improvement in protecting burner screens.

Dust-laden air has proven a source of danger in the use of brooders and incubators, especially in confined spaces, as in barns, where straw, alfalfa, and similar inflammable materials are likely to be used under and near the brooder canopies. Material of this character sooner or later becomes very dry, and the dust therefrom when fanned into motion is highly inflammable. In fact this dust has been known to explode in the air upon reaching the flame of a burner. In consequence of this, certain experiments have been made, such, for example, as the covering or partial covering of the burner with a scientifically planned and proportioned fine-mesh screen; and to test its efficiency some absorbent material, such as cloth, has been saturated with gasoline and placed against this screen, but the flame of the burner did not ignite it, whereas a burner without the screen while operating a few feet away from the gasoline caused the cloth to burst immediately into flames when brought near the open flame of the burner. This experiment has been tried repeatedly to test thoroughly the efficiency of a screen.

My invention is the result of these tests, and consists of a portable screen of fine mesh made to surround the burner partly or completely. Several advantages have been found to result from the use of this screen, one or two of which might be mentioned:—

First, it absolutely prevents dust explosion by keeping the inflammable dust away from the flame, and by confining the flame within the screen.

Second, it eliminates drafts reaching the flame with sufficient strength to cause flaring or extinguish the flame.

Third, it has the effect of preheating the intake air which has to pass through a warm screen with more perfect combustion, a clear blue flame, and greater intensity of heat as a result.

In the accompanying drawings:—

Fig. 1 is a view in side elevation of one form of the invention; and

Fig. 2 is a vertical section.

A, represents the screen illustrated in the drawings. This is made in the form of a cylinder, but of a diameter to allow ample space around the burner B, which it completely surrounds and encloses. While the dimensions and the shape, of course, might be varied indefinitely, it is of importance that the size be sufficient to keep outside inflammable particles in the air from coming close enough to the flame to cause combustion or explosion. This diameter, and in fact the dimensions, have been easily determined by experiment, so that the screens may be made with comparative precision and uniformity.

In this preferred form, the major portion of the screen is made of fine mesh woven wire 1 on the outside, and this is preferably lined inside by a wire of coarser mesh 2, to give it strength, thus making two concentric circles of wire mesh of different size. The lower portion 3 in this form of the screen is of sheet-metal, the parts being preferably spot-welded or otherwise secured together, and over the top is a cover of sheet-metal 4, and connecting strips or braces 5 extend inside the screen and from the top to the lower sheet-metal portion 3.

This forms a portable device apart from the burner itself when made in this form, but of a size to surround it and keep the surrounding inflammable particles with which the air may be charged from coming too close to the flame. It has the added purpose of eliminating drafts and of preheating the air that is sucked in through the screen to support combustion.

A base 6 is attached to the bottom of the burner, and has an upturned flange. The screen rests detachably upon this base, and within or outside the flange, which latter centers the screen and holds it in proper relation to the burner and the flame.

It is evident that other more or less slight changes might be made within the scope of the invention, without the necessity of illustrating and describing all conceivable forms.

I claim:

1. A protecting burner screen having the walls thereof formed of fine wire mesh and

having similarly shaped walls of coarse wire adjacent to and for reinforcing the first mentioned walls.

2. A device of the character described including a cylinder of fine wire mesh and a cylinder of coarse wire adjacent to said first mentioned cylinder for reinforcing the same.

3. A device of the character described including a cylinder of fine wire mesh and a cylinder of coarse wire adjacent to said first mentioned cylinder for reinforcing the same, and means for fastening said cylinders together.

4. A device of the character described including a cylinder of fine wire mesh and a cylinder of coarse wire within and supporting said first mentioned cylinder for reinforcing the same, and a cover for said cylinders having a downturned flange to which the cylinders are, both, secured.

In testimony whereof I affix my signature.

LYLE SNOW.