June 25, 1935. M. BETZLER 2,006,258

DEVICE FOR BLOWING FIRE EXTINGUISHING GAS INTO STORAGE BINS CARRYING MORE OR LESS FINE MATERIALS

Filed Sept. 24, 1934

Fig. 1

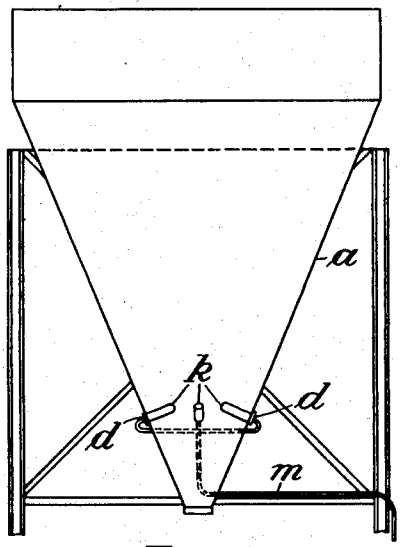


Fig. 2

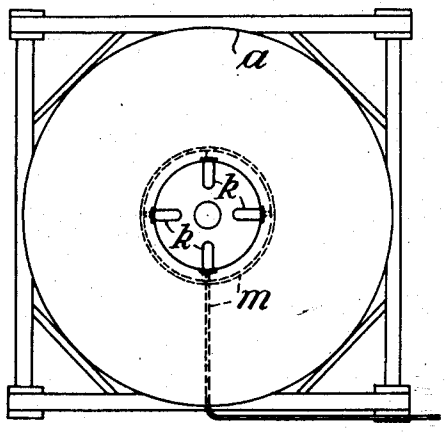
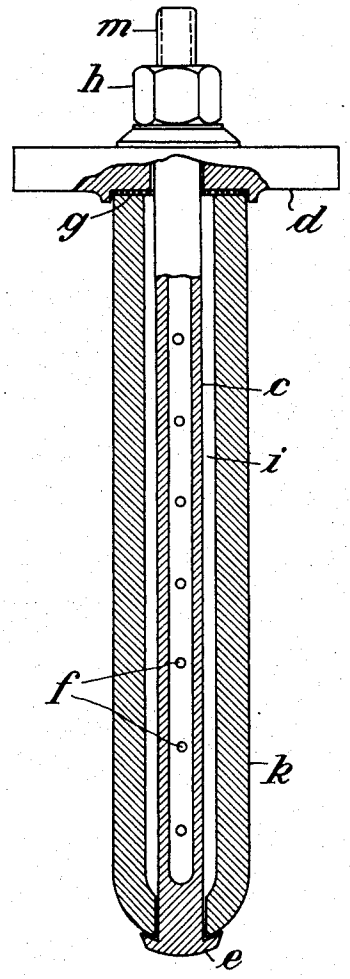


Fig. 3



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DEVICE FOR BLOWING FIRE-EXTINGUISHING GAS INTO STORAGE BINS CARRYING MORE OR LESS FINE MATERIALS

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3 Claims. (Cl. 169—2)

When using any of the heretofore known devices for the introduction of fire-extinguishing gases into stored goods by means of a pipe projecting into the material and provided at its end with lateral exit-openings, an explosion may easily occur owing to the pulverized coal or other stored material, in a more or less finely divided state, being subjected to a very strong turbulent action by the extinguishing gas escaping through the nozzle-opening with great rapidity.

This disadvantage and danger of the older devices are overcome by the present invention, providing a porous hollow body, for instance, a porous tube or pipe surrounding the pipe-end carrying the exit-openings. By means of such a device the extinguishing gas is introduced into the stored material through exceedingly small pores distributed over a large surface. Owing to the frictional resistance offered by the porous body against the passage of the extinguishing gas the speed of the latter is reduced to such extent as to destroy nearly completely its turbulent effect. Furthermore, this porous hollow body having such fine pores as to obstruct the passage of any particles of the coal-dust or other material, prevents also effectively the entrance of any dust into the feed-piping of the extinguishing gas when there is no pressure therein. Thus it will be unnecessary when employing the object of this invention, to place into the gas feed-piping special throttle-media, such as, for instance, sealing discs to be destroyed by the pressure of the extinguishing gas when starting the device in operation.

One form of executing this invention is shown in the accompanying drawing as applied to a pulverized coal feed-bin.

Fig. 1 shows a sectional elevation of this coal-dust bin embodying the invention.

Fig. 2 is the corresponding plan-view.

Fig. 3 shows a longitudinal sectional view of a device serving for blowing in the extinguishing gas in accordance with this invention on an enlarged scale.

With reference to this drawing: In the lower part of a pulverized coal feed-bin or container *a* the devices *k*, serving for blowing in the extinguishing gas, are arranged in such manner as to project into the coal-dust within said bin. Each device *k* consists of a pipe *c*, connected to a feed-pipe *m* for the extinguishing gas. This pipe *c* is provided over its entire length with exit-openings *f* and is secured to the wall of the feed-bin *a* by a flange *d*. The end of the pipe *c* projecting into the coal-bin *a* is closed, and terminates in a flange *e*, overlapping the end of the porous tube *k'*, loosely fitting over the entire inner pipe *c* and forming with the latter a tubular space *i*. By means of a sealing ring *g*, this porous pipe *k'* forms a tight fit with the flange *d* pressed against the latter by the use of a nut *h*.

The extinguishing gas enters the tubular space *i* through the openings *f* in the pipe *c*. After filling this space *i* completely, the gas pours into the coal-dust-bin *a* by filtering through the porous pipe *k'* in a finely distributed form.

This mode of executing the object of the present improvement may be, of course, varied in many ways within the scope of this invention which consists in the arrangement of a porous envelope surrounding the feed-pipe for the extinguishing gas projecting into the storage bin, containing the more or less pulverized material, and preferably of a space between said feed-pipe and the porous envelope to insure a perfectly uniform distribution of the gas during its entrance into the storage bin or the pulverized material stored therein, respectively, for maintaining the least possible pressure or speed of the gas so as to avoid all risks of explosions.

What I claim is:

1. In an apparatus for blowing fire-extinguishing gas into material in a finely divided state, a container for said material, a feed pipe for the gas extending into said container in position to be covered by said material, and a porous envelope surrounding the discharge end of said feed pipe for obtaining a distribution of the extinguishing gas at low speed to prevent any turbulent action of the finely divided material and consequent explosions.

2. In an apparatus for blowing fire-extinguishing gas into material in a finely divided state, a container for said material, a feed pipe for the gas extending into said container in position to be covered by said material, lateral discharge openings in said feed pipe, and a porous envelope surrounding said feed pipe at said discharge openings for obtaining a distribution of the extinguishing gas at low speed to prevent any turbulent action of the finely divided material and consequent explosions.

3. In an apparatus for blowing fire-extinguishing gas into material in a finely divided state, a container for said material, a feed pipe for the gas extending into said container in position to be covered by said material, lateral discharge openings in said feed pipe, and a second pipe of porous material surrounding said feed pipe at said discharge openings and spaced therefrom for obtaining a distribution of the extinguishing gas at low speed to prevent any turbulent action of the finely divided material and consequent explosions.

MARTIN BETZLER.