

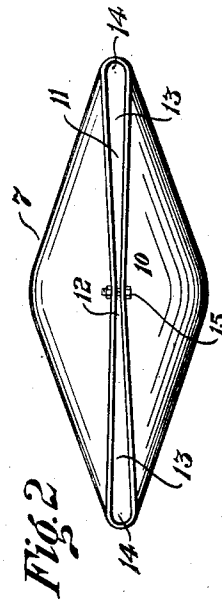
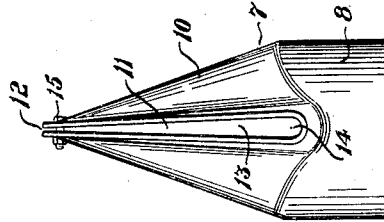
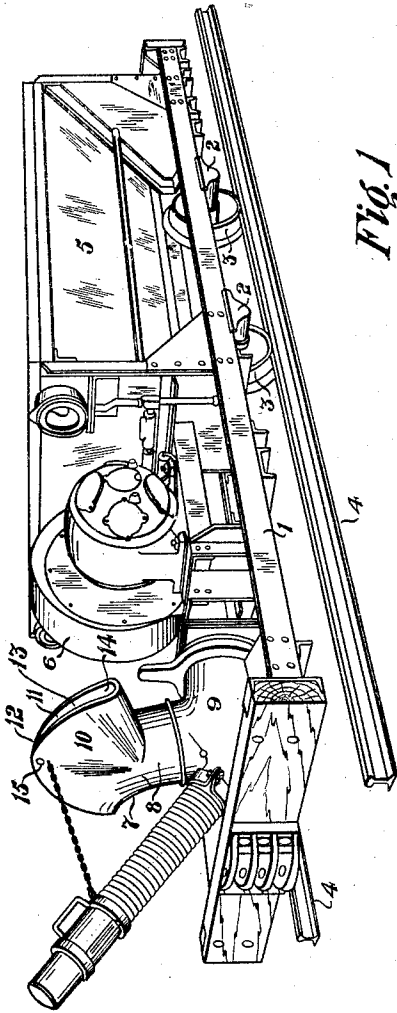
**April 5, 1932.**

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**1,852,649**

## NOZZLE FOR ROCK DUSTERS

Original Filed Nov. 15. 1927



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## UNITED STATES PATENT OFFICE

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## NOZZLE FOR ROCK DUSTERS

Original application filed November 15, 1927, Serial No. 233,407. Patent No. 1,781,509, dated November 11, 1930. Divided and this application filed May 12, 1930. Serial No. 451,827.

The invention relates to apparatus for spraying or spreading rock dust or the like in mine tunnels and similar places in order to cover or mix with the coal dust which ordinarily is deposited upon the floor, walls and ceiling of such tunnels, for the purpose of preventing explosions of this coal dust, and more particularly to an improved form of nozzle for such apparatus, and the present application is a division of my prior Patent No. 1,781,509.

The object of the improvement is to provide a nozzle for such apparatus, so designed that it will spread or spray a uniform amount of rock dust over the surfaces to be covered.

The above and other objects, which will be readily apparent or further described in the following detail description of the invention, may be attained by forming the nozzle of substantially fan shape, having an arcuate mouth or slot around its peripheral portion, said slot being restricted at its center and gradually increasing in width, in both directions, from its center toward its ends, thus preventing the greater portion of the powdered material from being blown out through the central portion of the nozzle and permitting an even distribution of material throughout the entire length of the slot or mouth of the nozzle.

A further object is to provide means for varying the width of the central portion of the slot or mouth of the nozzle in order to compensate for different conditions under which the apparatus may be used, and for different kinds of powdered material which may be used in the apparatus, as well as for varying the proportion of the material which may be sprayed directly through the central portion of the nozzle slot or mouth.

An embodiment of the improved nozzle to which the invention pertains is illustrated in the accompanying drawings, in which

Figure 1 is a perspective view of a rock dusting apparatus provided with the improved nozzle to which the present application pertains;

Fig. 2, an enlarged top plan view of the nozzle; and

Fig. 3, a side elevation of the nozzle.

Similar numerals refer to similar parts throughout the drawings.

The apparatus, upon which the improved nozzle may be used, is designed to be moved through a mine tunnel and the like, and may be arranged to be conveyed upon a railroad track, by a locomotive or the like, and for this purpose may comprise the frame 1 upon which are mounted the journal boxes 2 in which are journaled suitable axles for the flanged wheels 3, designed to run upon rails such as shown at 4.

A hopper 5 may be carried upon the frame for holding a supply of powdered limestone or the like, and suitable conveyer mechanism may be located within the hopper for feeding this rock dust to the blower 6, and then to the nozzle to which the invention pertains, indicated generally at 7.

This nozzle has the tubular neck 8 for connection to the discharge neck 9 of the blower, the upper portion of the nozzle being fan-shaped as shown at 10, and being provided at its peripheral portion with the elongated arcuate mouth or slot 11, having integral, arcuate lips.

It is obvious that the tendency of the rock dust, carried through the nozzle by the air blast, is to follow the lines of least resistance, and if the mouth of the nozzle were the same width throughout its length, substantially all of the dust-laden air would be ejected through the central portion of the mouth, in line with the neck 8, while little or no dust would be sprayed from the end portions of the mouth.

In order to obviate this condition and to provide for a uniform and even distribution of the rock dust through all portions of the mouth, the same may be restricted at its central portion, as shown at 12, and gradually increased in width, in both directions from its center toward its ends, as shown at 13, terminating in the rounded or arcuate ends 14.

For the purpose of varying the width of the central portion of the mouth in order to compensate for variations in the air blast, and other conditions which may be encountered in the operation of the apparatus, means,

such as the bolt 15, may be provided for adjusting the width of this portion of the mouth and holding the same in any desired adjustment.

5 By so constructing the mouth of the nozzle, at its central portion, the rock dust will be discharged substantially uniformly from all parts of the mouth, a fan-shaped spray of the rock dust being delivered from the nozzle  
10 to the walls and ceiling of the tunnel, a certain portion of the dust, of course, dropping upon the floor of the tunnel, thus covering or mixing with the coal dust sufficiently to prevent explosion of the same.

15 I claim:

1. A nozzle for connection to a blower, said nozzle having an elongated mouth increasing in width from the center toward both ends, and means for varying the width of the  
20 central portion only of the mouth.

2. A fan-shaped nozzle for connection to a blower, said nozzle having an arcuate mouth at its peripheral portion, said mouth increasing in width from the center toward both  
25 ends, and means for varying the width of the central portion only of the mouth.

3. A fan-shaped nozzle for connection to a blower, said nozzle having integral arcuate lips of resilient material forming a mouth  
30 at its peripheral portion, and means for drawing the central portions only of the lips together to form a mouth increasing in width from the center toward both ends.

In testimony that I claim the above, I have  
35 hereunto subscribed my name.

ALBERT J. GURNEY.

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