June 7, 1927. 1,631,442

P. WAGICH

SMOKE EXTRACTING DEVICE FOR TUNNELS

Filed Dec. 22, 1925

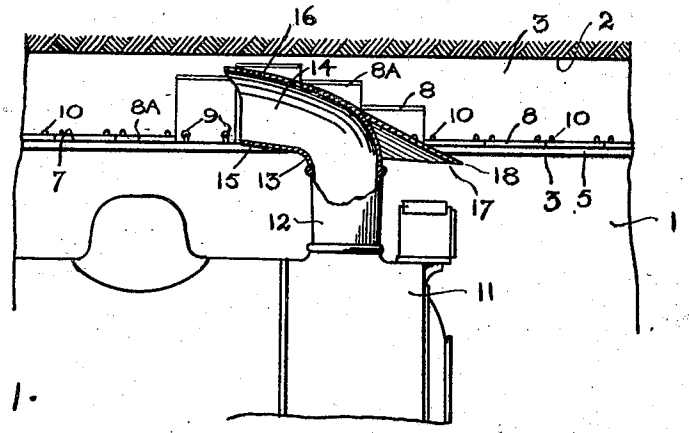


Fig. 1.

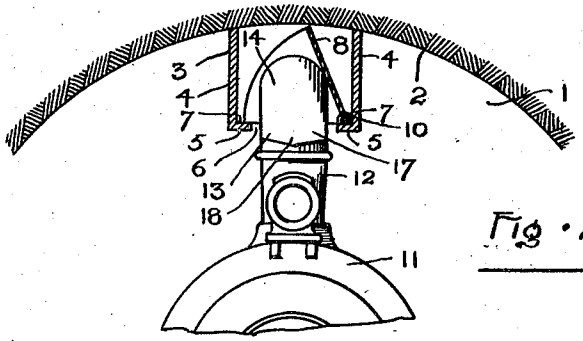


Fig. 2.

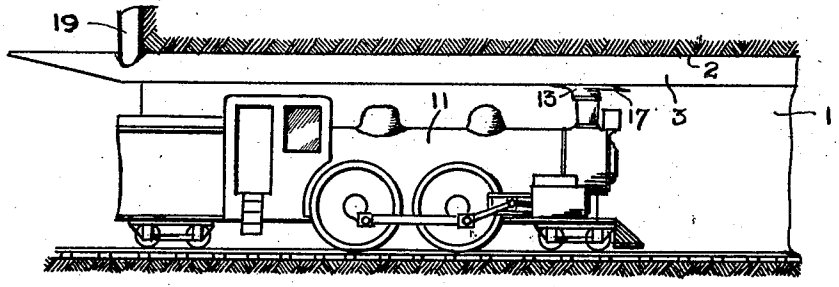


Fig. 3.

INVENTOR
PETER WAGICH
Fetherstonhaugh & Co
ATTORNEYS

Patented June 7, 1927. 1,631,442

UNITED STATES PATENT OFFICE.

PETER WAGICH, OF CONNAUGHT, BRITISH COLUMBIA, CANADA.

SMOKE-EXTRACTING DEVICE FOR TUNNELS.

Application filed December 22, 1925, Serial No. 77,069, and in Canada August 24, 1925.

My invention relates to improvements in smoke extracting devices for tunnels the objects of which are to provide means whereby the smoke emitted from a locomotive is discharged into a duct from whence it is withdrawn by any suitable means to prevent the air of the tunnel being contaminated thereby. A further object is to provide a closure for the duct which is adapted to be opened by a passing locomotive so that no communication exists between the tunnel and the duct except during the passage of the locomotive.

The invention consists essentially of a duct suspended from the roof of the tunnel having a longitudinal slot normally closed by a series of hingingly mounted panels and a cowl mounted upon the stack of a locomotive which is adapted to raise the panels consecutively and conduct the smoke and products of combustion into the duct, as will be more fully described in the following specification, in which:—

Fig. 1 is a fragmentary longitudinal view of the invention.

Fig. 2 is a sectional view.

Fig. 3 is a sectional view of a tunnel with a locomotive passing therethrough.

In the drawings like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates generally, a tunnel having a roof 2 from which is supported a duct 3 having side walls 4 and a pair of fillets 5 projecting inwardly from the lower extremity of the side walls to define an intermediate space 6 for the admission of the products of combustion, and to provide a pair of ledges or rebates 7 upon which a closure 8 normally rests. The closure 8 comprises a plurality of short panels 8^A each of which is apertured as at 9 and is hingingly secured to one of the rebates 7 by staples 10 or other suitable means.

While I have shown the closure hingingly mounted on one side of the panels 8^A, yet it will be obvious that good results will be obtained by mounting it in any manner whereby it is capable of being raised as required for the admission of smoke to the duct and to prevent its being drawn longitudinally.

The numeral 11 indicates a locomotive having a smoke stack 12 to which is fitted a cowl generally indicated by the numeral 13. The cowl 13 is formed with a substantially horizontal header 14 extending rearwardly of the stack 12 and is provided with a horizontal bottom wall 15 which is adapted to lie, when passing through the tunnel, in approximately the same plane as the fillets 5 of the duct 3, so that all products of combustion are delivered from the cowl within the duct. The top wall 16 of the header is preferably semi-circular in cross section and is provided with an extension 17 which projects forwardly of the stack in a downward direction to a point 18 which is adapted to lie in a plane below the bottom of the duct 3, so that as the locomotive passes along the tunnel the closure panels 8^A are raised in succession to the positions shown in Figure 1 by the top wall of the cowl 13 to such an extent as to enable the smoke emitted from the smoke stack to be delivered into the duct and subsequently to permit the panels to resume their normal lowered position.

It will be apparent that the opening formed into the duct by the engagement of the cowl 13 with the closure panels 8^A is sufficient to serve the desired purpose of admitting smoke to the duct and that after the train has passed a given point the duct is immediately sealed on all sides so that the smoke can be extracted therefrom through a flue such as is indicated by the numeral 19 by any suitable exhausting means and that the air of the tunnel will remain fresh and clean for the comfort and convenience of the passengers.

What I claim as my invention is:

1. In a smoke extracting device for tunnels the combination with a duct having a bottom opening extending longitudinally and a plurality of independently displaceable panels normally closing said opening and adapted to be successively displaced to open position, of a locomotive having the stack thereof equipped with a cowl adapted to project upwardly through the bottom opening of the duct and provided at the front with an inclined plane for initiating displacement of the panels to open position.

2. In a smoke extracting device for tunnels, the combination with a duct having a bottom opening extending longitudinally of the tunnel and a plurality of panels extending across and normally serving to close

said opening, with each panel independently pivoted at one edge to one side of the duct and being free of the duct at its opposite edge, of a locomotive having the stack thereof equipped with an upwardly and rearwardly extending cowl adapted to project upwardly through the bottom opening of said duct and provided at the front with an inclined plane adapted to successively engage and lift said panels during passage of the cowl through the duct.

Dated at Revelstoke, British Columbia, Canada, this 14th day of December, 1925.

PETER WAGICH.