March 29, 1932. A. R. FRANKHAUSER 1,851,624

LOCOMOTIVE STOKER

Filed Sept. 25, 1928

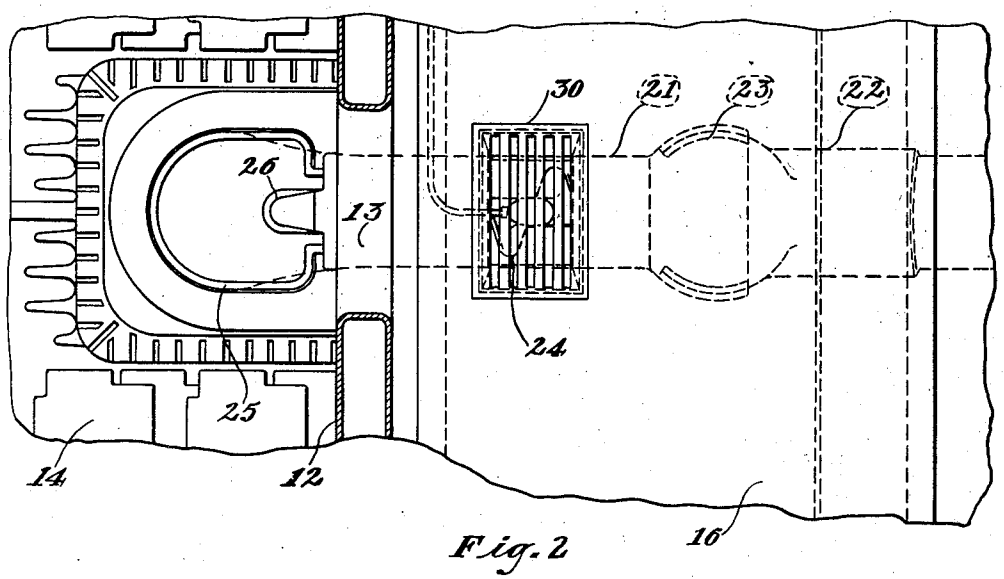

Fig. 2

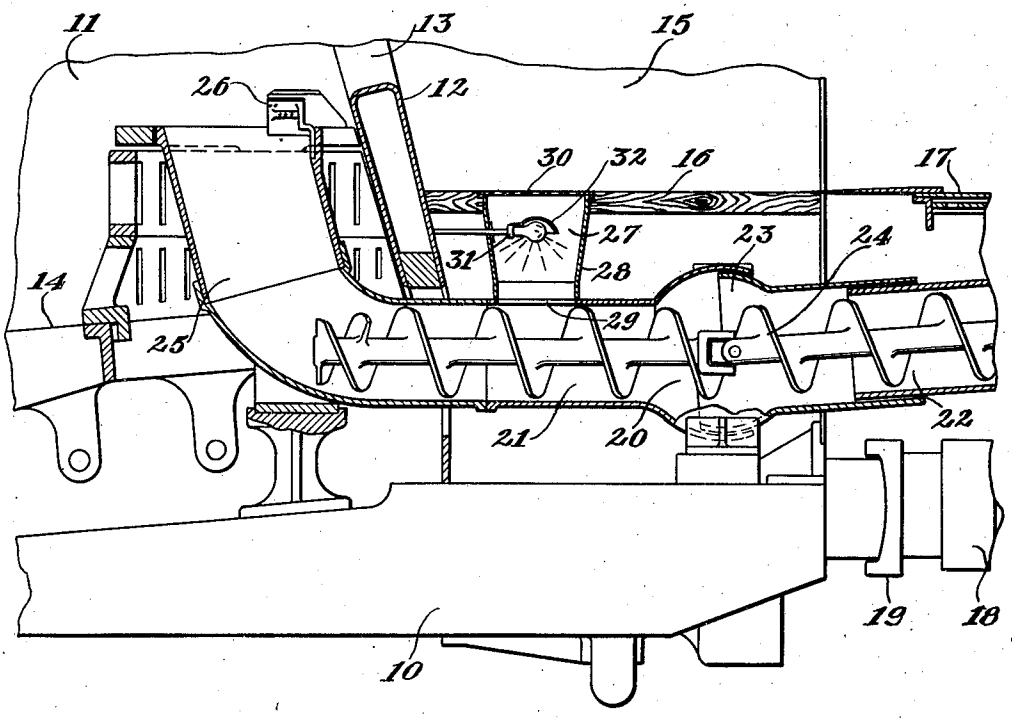

Fig. 1

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UNITED STATES PATENT OFFICE

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LOCOMOTIVE STOKER

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My invention relates to locomotive stokers of the type in which the stoker fuel conveying system or that portion of it which acts directly to convey the fuel is disposed beneath the floor of the locomotive cab and the fuel bin of the tender; and has for its object to provide in a stoker application of this character an illuminated observation means by which the fireman may observe the operation of the stoker from his position in the cab.

Prior to the using of this invention in stoker installations of this type, the fireman was unable, without opening the fire door, to observe the operation of the stoker from his position in the cab, to determine the rate at which the fuel was being delivered to the firebox or to observe whether or not the stoker conveyor stopped or stalled as it sometimes does, due to foreign material in the coal wedging in the conveying system. In order to observe the operation of the stoker from his position in the cab it has been necessary for the fireman to open the firing door of the firebox and watch the fuel emerging from the conveying system into the path of the distributing means, which in addition to inconveniencing the fireman and withdrawing his attention from other duties, had a tendency to decrease economical efficiency of the combustion of fuel within the firebox by admitting an excess supply of cold air over the fire.

This invention consists in providing an illuminated observation passage from the locomotive cab to the stoker conveying system as will be hereinafter described in detail and as illustrated in the accompanying drawings, in which

Fig. 1 is a fragmentary central longitudinal vertical section through the rearward or cab portion of a locomotive and the stoker applied thereto;

Fig. 2 is a plan view corresponding to Figure 1 with the firebox backwall in section in a plane taken through the firing opening therein.

On the drawings the locomotive or the rear portion thereof, is indicated generally at 10, its firebox at 11, the backwall of said firebox being indicated as at 12 and the usual firing opening therein at 13, and the numeral 14 indicating the grate structure of the firebox. The locomotive is provided to the rear of the firebox with the usual cab 15 having a floor 16, said floor being in substantial alignment with a floor 17 of the locomotive tender, a portion of it being indicated as at 18, the tender being flexibly connected with the locomotive by the usual coupling member 19.

Any form of conveying system that is wholly or partially disposed below the floors 16 and 17 may be used with this invention, but for the purpose of best illustrating the invention a specific form of conveyor of common usage is shown and hereinafter described.

The fuel is brought forward from the tender by a conveying system comprising a substantially horizontal section generally indicated as at 20, being formed of two sections 21, 22, both sections being connected by a universal joint 23, section 21 being disposed preferably, centrally on the locomotive beneath the floor 16 of the cab and the section 22 mounted in flexible relation with a rearward trough portion of usual construction not shown in these drawings. A jointed screw 24 is mounted within the conduits 21, 22 for conveying fuel forwardly from the tender through the conduits 21 and 22 and delivering it into the firebox 11 through the elevator or rising element 25 of the conveying system from which the fuel is distributed over the firebox by pressure fluid issuing from a distributor head 26.

It being desirable for the fireman to observe the fuel from his position in the cab without disturbing any part of the locomotive or of the stoker, there is provided for this purpose a novel form of an illuminated observation passage indicated as at 27, extending between the floor 16 of the cab and the conduit 21 of the stoker conveying system. Passage 27 is formed by a four-sided box-like structure 28, its lower end being open to communicate with an opening 29 in the upper face or wall of the conduit 21, and is supported upon the upper wall of the conduit, the walls of the box 28 forming a closure about the opening 29. The upper end of the box 28

fits into a correspondingly shaped opening in the floor 16, thus holding the box 28 in its upright position as shown. The upper end of the box-like passage is provided with a cover 30 having elongated openings therein forming a grate-like cover, the top of the cover being flush with the upper side of the cab floor 16.

The observation passage 27 is illuminated by any suitable illuminating device, preferably, an electric light or lamp 31 placed within the passage below the grated cover 30 at a suitable height above the opening 29 to direct its rays of light through said opening into the conduit 21. The shade or guard 32 deflects all of the rays of light downward. The electric current may be supplied to the lamp or bulb 31 by suitable wiring from the locomotive generator not shown.

The box-like structure 28 forming the observation passage 27 functions to prevent diffusion of the light rays, concentrating them upon the open section of the conduit 21 and illuminating the fuel passing therethrough by the action of the screw 24, so that the fireman through the grated cover 30 may readily observe the action of the stoker conveyor. This box-like structure also serves to prevent the rush of air or wind into the cab through the grated observation opening and is especially desirable for this purpose in cold weather.

My invention resides in the specific form of illuminated observation passage as disclosed in the drawings and is hereinafter claimed.

I claim:

1. In combination with a locomotive firebox having a cab therefor, a floor for said cab, conveying means including a conduit beneath said floor and adapted to deliver fuel to the firebox, an opening in the upper wall of said conduit at a point beneath said floor, a grated opening in the floor and an enclosed passage connecting said openings, and illuminating means in said passage for the observation of the conveying means from the cab.

2. In combination with a locomotive firebox having a cab therefor, a floor for said cab, conveying means including a conduit beneath said floor and adapted to deliver fuel to the firebox, an opening in the top of said conduit beneath said floor, an opening in said floor and a tubular member forming an enclosed passage between said openings, a perforated cover over said passage and forming a separable part of the cab floor and illuminating means within the passage.

In testimony whereof I affix my signature.

AITKEN R. FRANKHAUSER.