

W. M. CAMPBELL AND M. S. SMITH,
STEAM LOCOMOTIVE SAFETY APPLIANCE.

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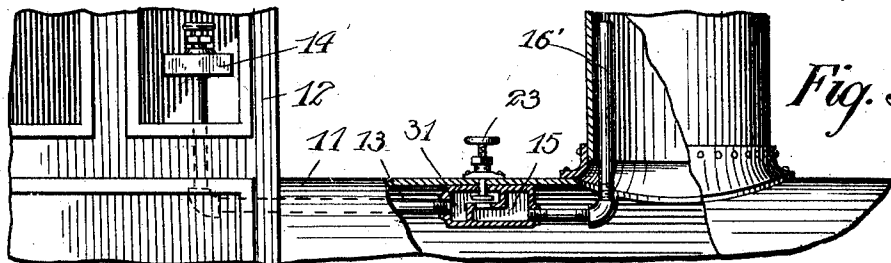


Fig. 3

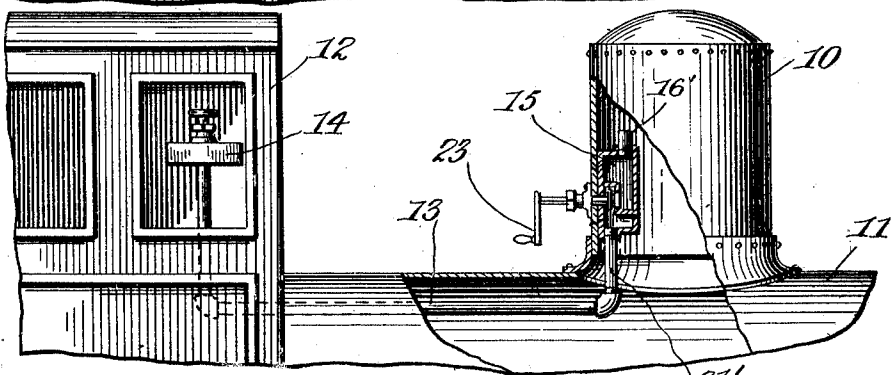
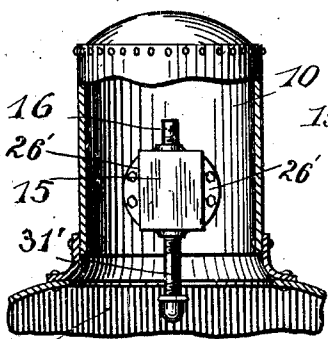


Fig. 2



11 *Fig. 4* 23

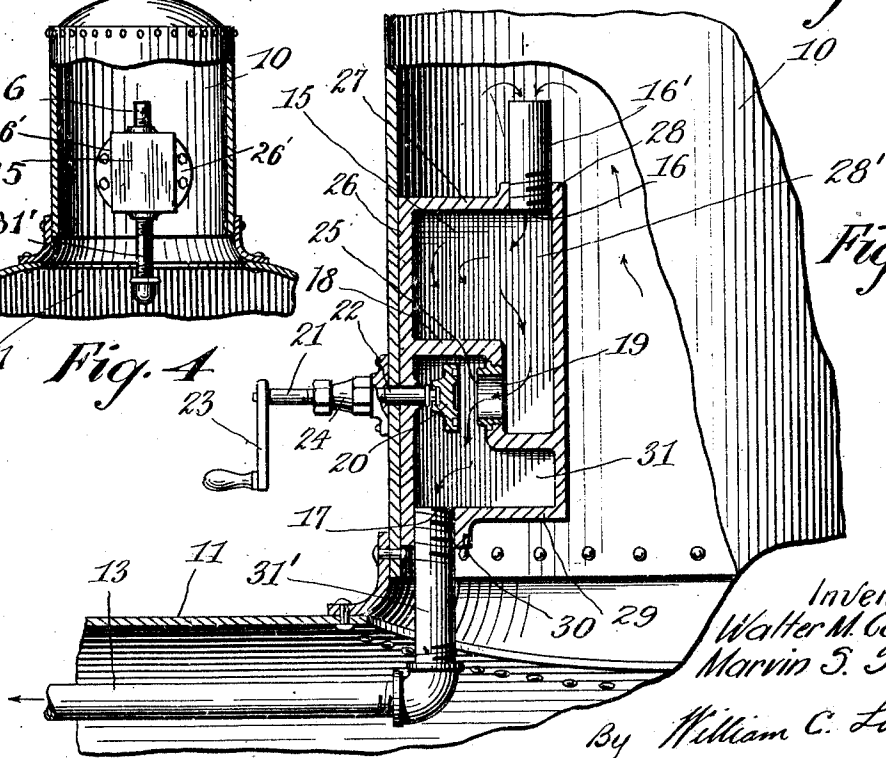


Fig. 1

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STEAM-LOCOMOTIVE SAFETY APPLIANCE.

1,372,600.

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To all whom it may concern:

Be it known that we, WALTER M. CAMPBELL and MARVIN S. SMITH, both subjects of the King of Great Britain, residing at St. John and McAdam, Province of New Brunswick, Canada, respectively, have invented certain new and useful Improvements in Steam-Locomotive Safety Appliances; and we do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to steam locomotive safety appliances, and more particularly to a contrivance which may be readily utilized in view of protecting an engineer, fireman and other men in the cab of said locomotive, in case of accident, this constituting the principal object of the invention.

Another object of same is to provide a safety device located within the dome of a steam locomotive and operated on outside of same, which can be easily and promptly reached and operated by any one of the men in the cab, the moment an accident occurs. A further and more specific object of the invention is to provide a device within the dome, with operating means outside the same, which can be instantly reached by any one of the men in the cab, in view of cutting off the supply of dry steam from said dome to the cab, and, from there to the different parts of the engine, the moment an accident, or more particularly a leakage of steam, occurs at any place throughout the pipe connections, or otherwise, outside of the dome.

A still further object of this invention is to provide a safety contrivance within a dome and operated outside of same, which will have practically the same stability and resistance as the dome itself.

It is a known fact to the men familiar with the trade, in the art of which this invention pertains, that the dome on a steam locomotive is one of the most resisting parts of the machine, while the cab and its contents are generally one of the first things that yield in case of accident, therefore, the

reason for combining the safety appliance embodying this invention with the said dome.

From the dome, the dry steam is led through one or a plurality of pipes, to the cab, from where it is distributed, under controlling means, to the various parts of the engine requiring it. The pipes leading the dry steam to the said various parts of the engine are, when the locomotive is in motion, under a continual and tremendous vibration, and, therefore, or for other reasons, it often happens that a pipe containing the steam under pressure will burst, or that a joint will give way, sometimes causing the men in the cab to be scalded, or, to be rendered absolutely helpless with regard to making any efforts to overcome the accident; many engineers and firemen were nearly or totally scalded to death in such occurrences before any assistance could be given to them, often such assistance being possible only after the supply of steam was exhausted.

Therefore, with a safety device including such objects as are hereabove and will be hereafter disclosed as the description of same continues, all that is required, the moment an accident occurs within the cab, is to have one of the men therein rush out toward the dome and there instantly cut off, by means of the contrivance embodying this invention, the supply of dry steam. Then, after, the men are out of danger, they can effectively proceed toward making the required repairs.

In the hereunto annexed drawings:—

Figure 1 is a partial side elevation of a locomotive showing more particularly the dome thereof in part section with the device interiorly adapted to same.

Fig. 2 is an enlarged sectional view of the device embodying the present invention.

Fig. 3 is a side elevation in partial section of locomotive showing the device interiorly adapted to the shell of the boiler; and,

Fig. 4 is a sectional view taken through the steam dome showing the device in elevation.

Reference is now to be had more particularly to the above drawings wherein like and

corresponding parts are designated by similar reference characters throughout the several views.

Numeral 10 indicates the dome properly adapted to the longitudinal boiler 11 of the locomotive. Numeral 12 shows the cab of the locomotive adapted at its rear end to shelter the engineer and fireman. Numeral 13 illustrates a steam pipe conduit. One end of same is usually adapted to float free within the dome at the upper part of same where the steam is in a drier state, and, provides for supplying said steam to a controllable distributing device 14, from where the steam is regulated and sent to the different parts of the engine.

Sometimes there are more than one steam conduit pipe for leading the dry steam from the dome to the cab, where the distribution is then controlled.

The present invention comprises a box 15 provided with a steam inlet 16, a steam outlet 17, and means for controlling and regulating the outlet of said steam.

These means are herein embodied by a partition 18 within said box. A portion of said partition is perforated, as shown by numeral 19, and serves as a seat for the valve element 20. This valve element is revolvably connected to the end of a metallic spindle 21 which is adapted to project through a steam tight joint 22 on the outside of the dome. The outlet end of same carries a crank handle 23. Said spindle having threaded engagement within the neck 24 of the device is adapted by turning the crank handle 23 to the right to bring the face 20 in contact with its seat 25, thereby effectively obstructing the passage of the dry steam from the dome into the pipe conduit 13.

This device has one of its walls 26 formed with a flange 26' adapted to be rigidly connected to the wall of the dome or of the boiler, on the inside of same, and at any convenient location on said wall of dome or boiler. The upper wall 27 of this steam box 15 is exteriorly provided with one or a plurality of bosses 28 having a hole formed therein and communicating with the interior 28' of said box; said hole provides for the threaded engagement of the pipe stem 16 which is made to project as high as possible within the dome, in order to collect the steam in its driest possible state.

The lower wall 29 of said steam box 15 is also provided exteriorly with a boss or a plurality of bosses 30, having a hole formed therein and communicating with the capacity 31 of said box. The pipe stem 31 is thereby made, through a rigid connection, to communicate with the capacity 31 of the steam box 15, which capacity, when the face 20 has been removed from its seat 25, through the turning to the left of the crank

handle 23, receives through the opening 19 the dry steam unobstructedly admitted through the inlet 16, into the capacity 28'. The steam under pressure is thereby allowed to flow through the pipe stem 31, serving as an outlet, into the pipe conduit 13, from where it is led to the steam distributing and regulating device 14 within the cab.

In the hereabove description and the hereunto annexed drawings have been shown a simple and preferred form of the invention. It is however understood that no limitation is necessarily made to the precise structural details therein embodied, but the right is hereby reserved to any changes, alterations or modifications to which recourse may be had that come within the scope of the claims without departing from the spirit of the invention or sacrificing the efficiency of the same.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. A device of the character described comprising a dome adapted to collect the dry steam from the boiler of a locomotive, a steam box rigidly connected to the interior vertical wall of said dome, inlets and outlets formed with said box, and means for cutting off the flow of dry steam from dome through said box.

2. The combination with a dry steam dome on a locomotive of a steam chest interiorly adapted to said dome, said steam chest provided with inlets and outlets for the flow of dry steam from said dome to the cab of a locomotive, and, means for cutting off within said steam chest the flow of said dry steam.

3. The combination with a dry steam conduit pipe adapted to collect the dry steam from the dome of a locomotive, of a device located within and rigidly fixed to said dome, said device having an inlet and outlet for the flow of dry steam from the dome to the cab of the locomotive, and means for cutting off the flow of said dry steam, from the said dome through the said device.

4. The combination with a dry steam dome on a locomotive of a device adapted for location within said dome and rigidly connected to same, said device comprising an inlet and an outlet for the flow of the dry steam from dome to cab of locomotive and means outside of said dome for instantly cutting off said flow.

5. The combination with a dry steam dome on a locomotive of a steam box having rigid connection with the inner vertical wall of said dome, said box comprising two inner capacities separated by a partition, an aperture formed in said partition, an inlet opening adapted to communicate with one of said capacities, an outlet opening adapted to communicate with other of said capacities.

ties and means for obstructing the communication between the two said capacities, thereby cutting off the flow of dry steam from the dome to the cab of a locomotive.

- 5 6. The combination with a dry steam conduit pipe in a locomotive, of a steam controlling device comprising an inlet and an outlet for said dry steam, and means for

quickly cutting off same in case of accident, substantially as described and for the purpose specified. 10

In witness whereof we have hereunto set our hands.

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