

No. 632,241.

Patented Sept. 5, 1899.

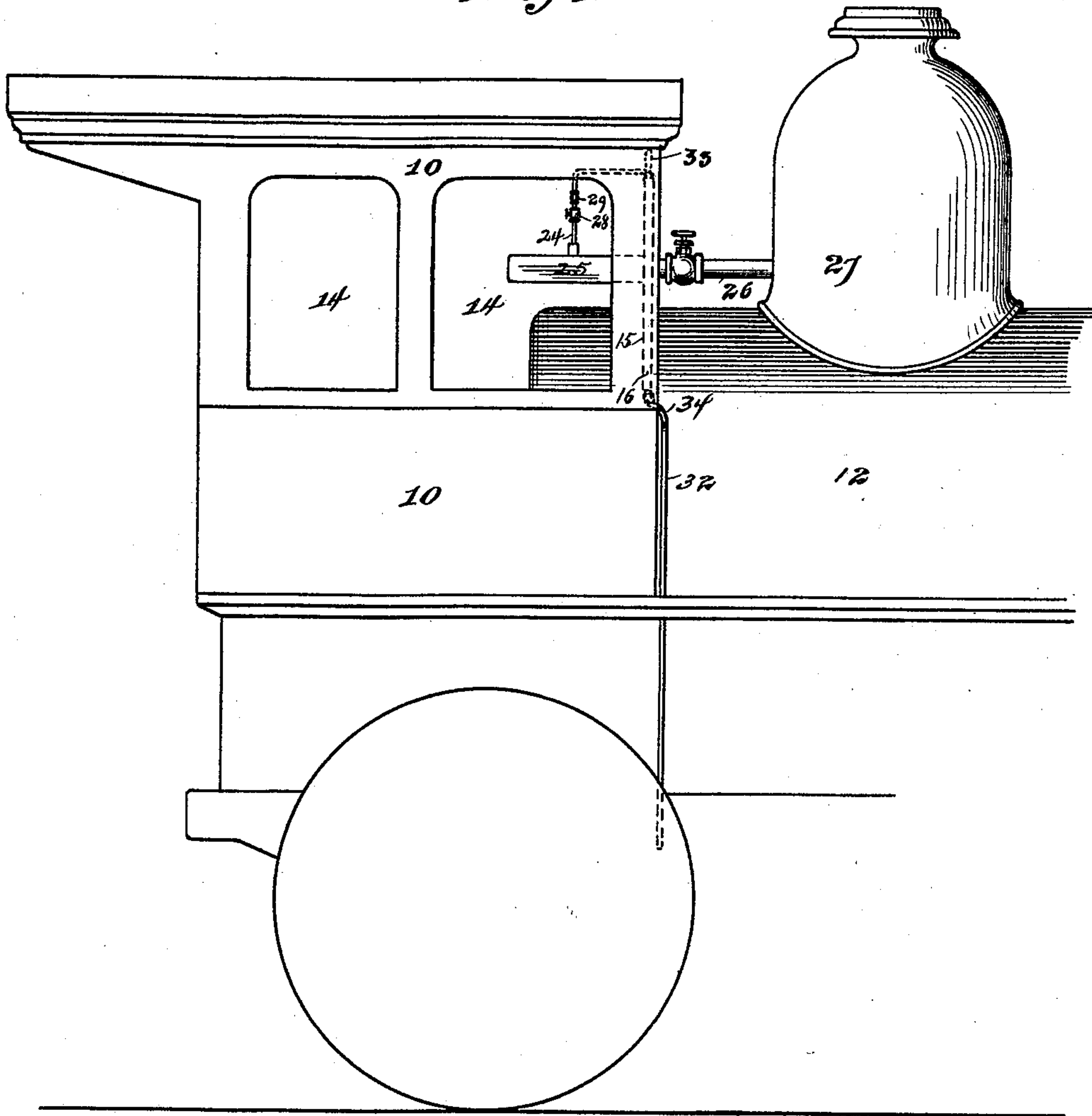
W. H. CLOWRY.
LOCOMOTIVE WINDOW.

(Application filed Oct. 3, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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2 Sheets—Sheet 2.

Fig. 2.

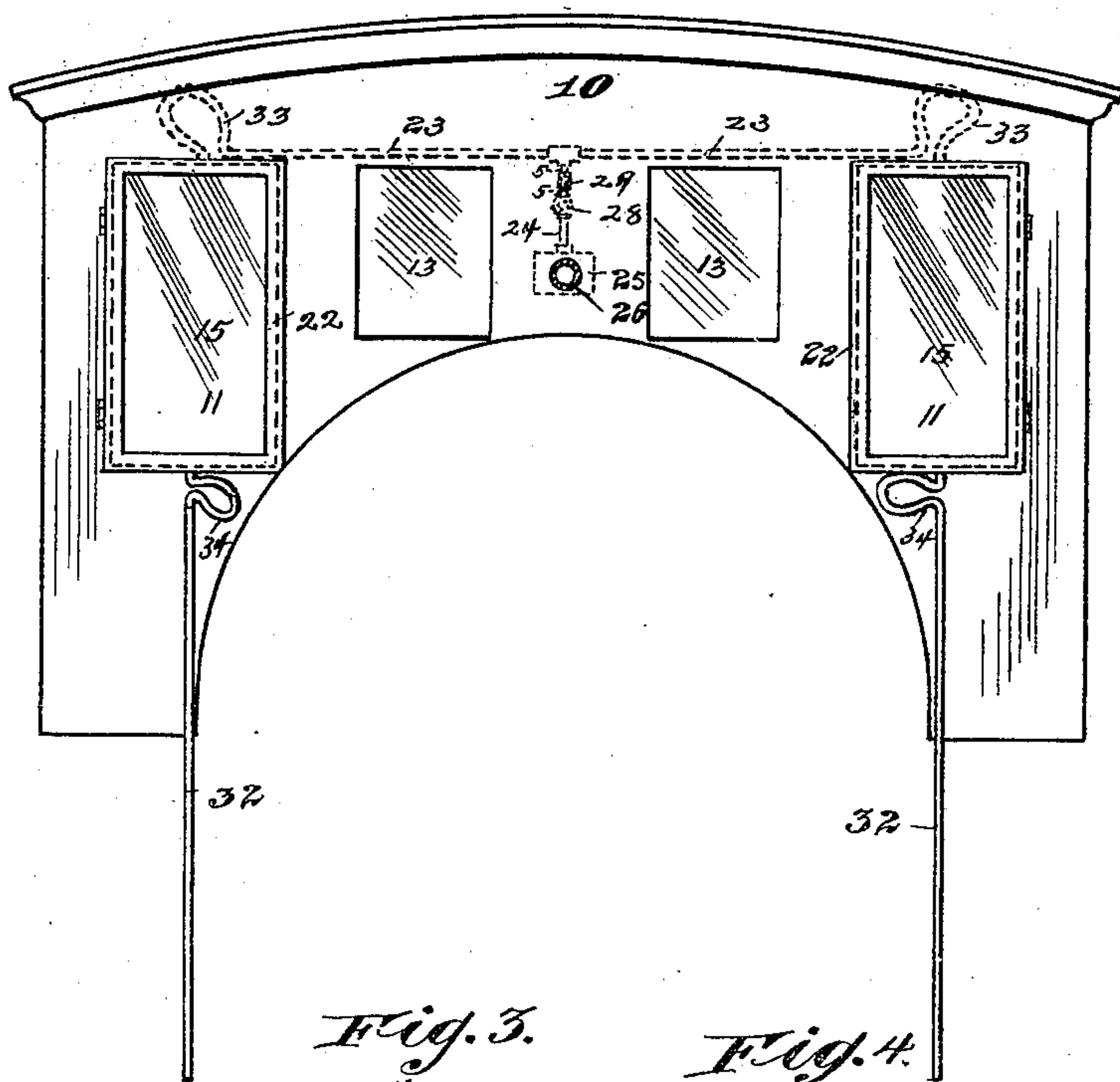


Fig. 3.

Fig. 4.

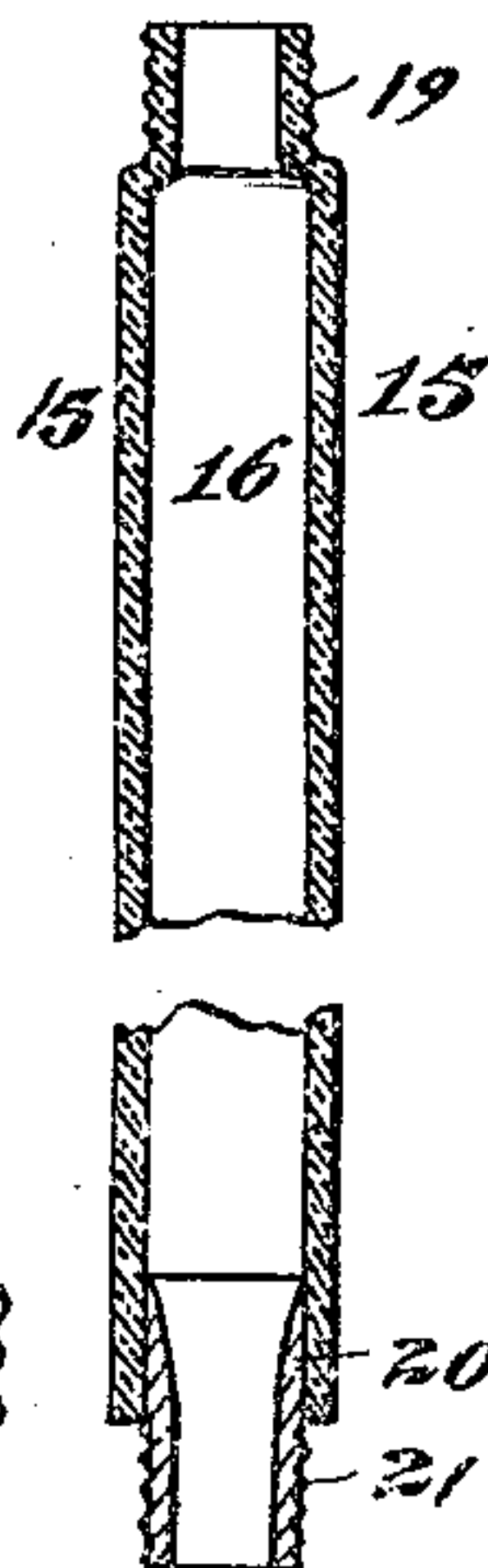
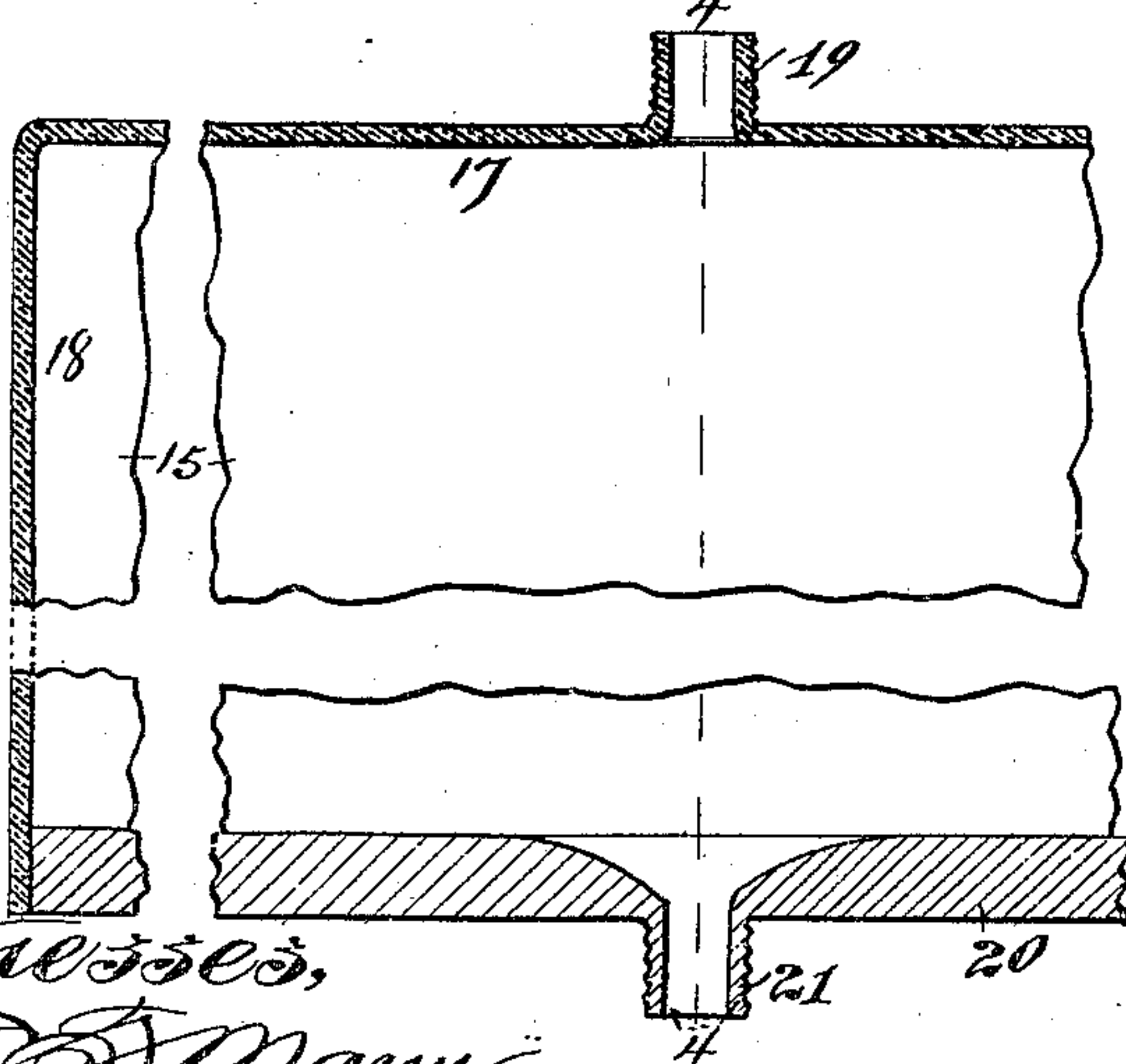
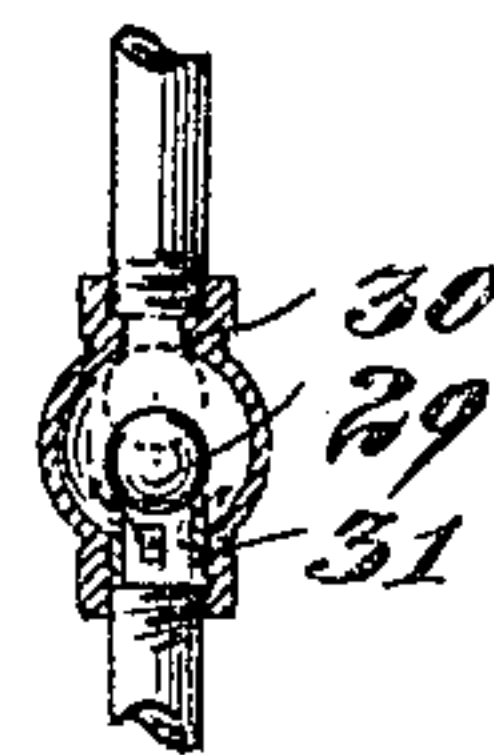


Fig. 5.



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LOCOMOTIVE-WINDOW.

SPECIFICATION forming part of Letters Patent No. 632,241, dated September 5, 1899.

Application filed October 3, 1898. Serial No. 692,458. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CLOWRY, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Locomotive - Windows, of which the following is a specification.

This invention relates to locomotive-windows, or, in other words, to windows for locomotive-cabs, and has for its object to provide
10 a construction whereby such windows may be prevented from being obstructed by snow or ice or other forms of congealed water so as to obscure the vision of the engineer.

To this end my invention consists in certain novel features, which I will now proceed to describe and will then particularly point out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a locomotive
20 having my invention applied thereto; Fig. 2, a front elevation of the cab; Fig. 3, a vertical longitudinal sectional view, partly broken away, of one of the cab-windows. Fig. 4 is a similar view, in transverse section, taken on the line 4 4 of Fig. 3; and Fig. 5 is an enlarged detail sectional view taken on the line 5 5 of Fig. 2.

In said drawings, 10 indicates the locomotive-cab, having the front outlook-windows 11
30 located in the front of the cab at each side of the boiler 12 of the locomotive. The cab may also be provided with smaller lookout-windows 13 in the front of the cab and with windows 14 in the side thereof, and it is within
35 the scope of my invention to construct any or all of these windows in the manner herein-after specified; but in practice I find it sufficient to so construct the main lookout-windows 11 in the front of the cab. These win-
40 dows are composed of two parallel plates of glass or other transparent material 15, having between them a steam-space 16, which is in communication with the boiler at one end and with the open air at the other. In prac-
45 tice I prefer to have the two sheets 15 formed by blowing or otherwise in one piece, in the form shown in detail in Figs. 3 and 4 of the drawings, wherein said sheets 15 are connected by integral top pieces 17 and end pieces 18, the
50 whole structure being somewhat in the form of a very large flattened bottle without a bot-

tom and there being provided at the top a neck or nipple 19 to afford means for attaching the steam connections. The structure may be provided with an integral bottom of
55 the same material; but I prefer to provide a removable bottom strip 20, having a nipple 21 for the exhaust connections, for the reason that by the provision of this removable strip access may be had to the interior of the steam-
60 spaces for the purpose of washing and cleaning the inner surfaces of the plates or sheets 15. The structure thus constituted is mounted within a suitable sash or frame 22, which is mounted in the wall of the cab in any ap-
65 proved manner.

To each of the nipples 19 there is connected by a suitable coupling a steam-supply pipe 23, and these in turn are connected by a pipe
70 24 to the fountain 25, which latter is in turn connected by a pipe 26 to the steam-dome 27 of the boiler. This is, however, simply a convenient and efficient way of supplying dry steam from the steam-dome to the steam-
75 spaces 16, and such connection may be effected by any other suitable system of piping.

I provide in the pipe 24 a valve 28, whereby the supply of steam to the steam-spaces 16 may be controlled, and I also provide in said pipe 24 a ball float-valve 29, which in case of
80 water being carried from the boiler into the pipe 24 will rise and seating itself against a suitable seat 30 prevent the passage of water to the steam-spaces 16 in the windows. Nor-
85 mally this valve 29 rests on a suitable support 31, so that the steam may pass freely around it. While this float-valve may be omitted, I deem its employment desirable for the reason that in case the water should pass
90 from the boiler into the steam-spaces 16 it would discolor the sheets or plates of glass which form the walls thereof and would thereby obscure the vision of the engineer.

From each steam-space 16 there extends an exhaust-pipe 32, which is preferably carried
95 downward and which is open to the outer air, its upper end being attached by a suitable coupling to the nipple 21.

It will be understood, of course, that the pipes 23 and 32 are both comparatively small,
100 so that while there is a constant flow of dry steam through the steam-spaces 16 the amount

of steam consumed is comparatively small and the discharge through the exhaust is not noticeable.

I have found in practice that in winter or extreme cold weather snow, ice, or sleet will gather upon the glass of the cab-windows and will obscure the vision of the engineer, it being practically impossible to remove the same in an efficient manner. By the employment of my invention this snow, ice, or sleet is prevented from forming, being melted as soon as it begins to form, by reason of the heat supplied by the steam in the steam-spaces of the window-panes, and the windows are thus kept clean and the engineer has an unobstructed vision.

In practice the windows are hinged, so as to permit them to be opened when necessary or desirable, and in order to permit this opening and closing of the windows I provide between the pipe and the steam-spaces in the said windows a flexible connection, consisting, preferably, of a loop of steam-hose, and I also provide between the exhaust-pipes and the steam-spaces within the windows similar flexible connections, the connections being of sufficient length to permit the windows to be opened and closed without necessitating interruption of the connections between said windows and their supply and exhaust pipes.

I have shown my invention as applied to the two main lookout-windows, as these are the ones most used and most affected; but it is obvious that the invention may, as hereinbefore stated, be applied to the other windows of the cab as well. Moreover, I do not wish to limit myself to the specific details of construction hereinbefore set forth and shown in the drawings, as it is obvious that they may be modified without departing from the principle of my invention.

I am aware that it has been proposed heretofore to provide a locomotive-window comprising two sheets or plates of glass having between them a space in which is located a steam-coil connected with the boiler to heat the air within the inclosed space. I am also aware that it has been proposed to provide a similar window having the space between the sheets or plates of glass filled with clear wa-

ter or other analogous transparent heavy fluid and to provide a chamber connected to said space, in which is located a coil of pipe connected to the boiler or having a gasolene-burner or other suitable means for heating the fluid interposed between the panes of glass. My invention differs from these constructions just referred to in that the space between the sheets or plates of glass is in direct communication with the boiler and is not filled with water or the like, but is constantly kept filled with live steam from the boiler by reason of its connection therewith and the provision of an exhaust-outlet, so as to secure a constant passage of live steam through the space.

I claim—

1. A window for locomotive-cabs, comprising two transparent sheets or plates having between them an inclosed space, a pipe or conduit connecting said space directly with the boiler, whereby live steam may be admitted to said space, and an exhaust-outlet communicating with the atmosphere, substantially as described.

2. A window for locomotive-cabs, comprising two sheets or plates of glass having an inclosed space between them, a supply-pipe directly connecting said space with the boiler, whereby live steam may be admitted to said space, a controlling-valve on said supply-pipe, and an exhaust-pipe having an open connection with the atmosphere, substantially as described.

3. A window for locomotive-cabs, comprising two sheets or plates of glass having an intermediate steam-space and an exhaust-outlet, and a supply-pipe suitably connected with the boiler and provided with a float-valve, whereby access of water to the steam-space is prevented, substantially as described.

4. A window for locomotive-cabs, comprising a hollow pane of glass having parallel front and rear plates or sheets and integral top and side connecting portions, and a removable bottom strip, substantially as described.

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