

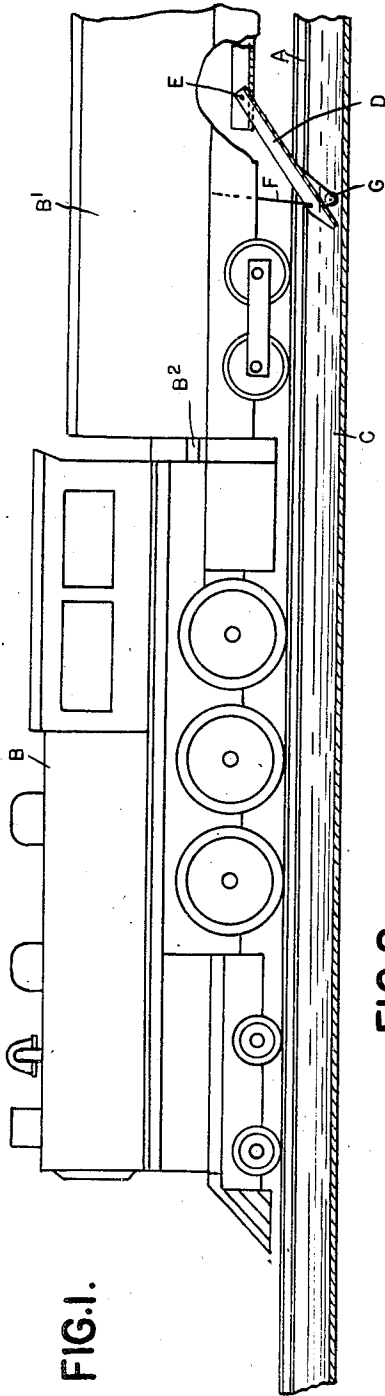
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J. P. GOEBEL

2,370,347

WATER SCOOP FOR LOCOMOTIVE TENDER

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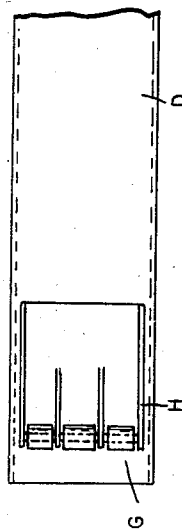


FIG. 3.

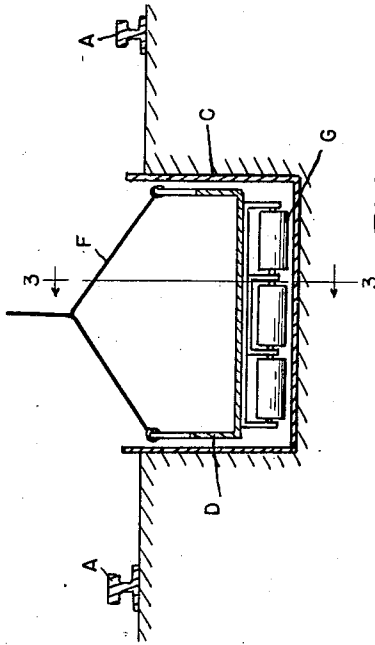
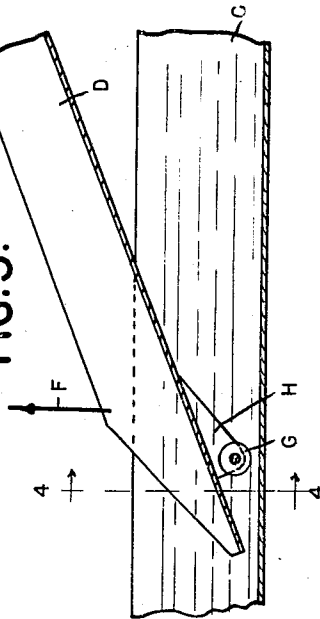


FIG. 4.

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WATER SCOOP FOR LOCOMOTIVE TENDERS

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6 Claims. (Cl. 103—82)

This invention relates to an improved mechanism for effecting the refilling of a locomotive water tender with water without necessitating the locomotive's stopping at a water tank for that purpose. It has for its object improvements in the means presently used, which depend upon long and relatively narrow and shallow water troughs positioned between the rails on a railroad right of way, for enabling a suitable receiving medium, as for example a scoop or an open-ended pipe, to be lowered slightly below the level of the water in the trough as the locomotive approaches an end thereof, the movement of the locomotive therealong serving to force the water through the open end of the lowered water scoop and into a suitable storage tank on the locomotive or its tender.

These water troughs positioned lengthwise of and between the rails are generally made of connected-together lengths of steel trough; but experience has shown that, even though the joints are sufficiently tight to hold water, the meeting ends of adjoining trough sections do not always fit sufficiently smoothly to permit the lowering of an intake pipe end so nearly to the bottom of the trough that it would be safe to risk the possibility of a lowered intake pipe end or specially formed water scoop to ride frictionally along the bottom of the water-filled trough, for if its advancing edge should catch on any irregularity along the trough's bottom, the whole water-receiving installation would be instantly crumpled up under the water tender.

On the other hand, since these water troughs are at the most only eight or nine inches in depth, every inch of distance that the end of the intake pipe or of the water scoop is held away from the bottom of the water-filled trough makes just that much shallower the body of water in the trough upon which the water-indrawing pipe end or scoop can effectively act. And it often happens that a locomotive, after drawing into its water tender what water it can thus get from the water-filled trough, even though this latter may extend along several hundred feet of track, must thereafter come to a time-losing full stop at a supply tank to fully fill up its water tank. This time-and-power wasting stoppage it is the object of my invention to obviate.

In the drawing:

Figure 1 is a side elevational view of a locomotive and its water tender on a track, with my improved water scoop and the water trough parallel to the track shown cross sectionally in relation thereto.

Figure 2 is a plan view from beneath, illustrating

the roller-equipped forward end of the water scoop herein concerned.

Figure 3 is a large-scale sectional elevational view of the roller-equipped scoop shown in operative relation to the water-furnishing trough.

Figure 4 is a largely sectional front elevational view of the water scoop in position relatively to the trough, taken along the dotted line 4—4 of Figure 3 and looking in the direction of the arrows there shown.

At A are shown the usual railroad track rails, along which a locomotive B and its water-tender B' travel. Positioned between the rails A, with its top edge in approximately the horizontal plane thereof, is the water trough C, which is generally installed for a length of several hundred feet, at a convenient point for the locomotive, as it travels along, to scoop up a renewal supply of water for its boiler through the medium of the scoop D, whose lowered forward edge extends therinto, the scoop being pivoted, or otherwise supported at its rear end E, while its forward end is lowerable and raisable by the use of the chain F, or an equivalent leverage or pneumatically operated mechanism, operable from the cab of the locomotive. The receiving tank on the water tender B is connected with the locomotive's boiler by the pipe or hose B².

To avoid the possibility of the lowered forward edge of the scoop catching on any irregularity along the surface of the water trough C it has been the practice to very carefully limit the degree of possible lowering of the forward edge of the scoop, so that its forward edge is on the average several inches above the bottom of the tank. This of course limits the quantity of water which may be taken in therethrough to such a degree that after a locomotive and its attached water tender have passed the full several hundred feet length of the trough, such an insufficient replacement supply of water for the water tender has been picked up that it is thereafter necessary to come to a full stop at a water tank to get the remainder of the quantity necessary.

To provide access of the lowered forward edge of the trough to a large proportion of the full depth of the trough, I therefore provide rollers or equivalent anti-friction members G, secured to the under side of the scoop adjacent the forward edge thereof by some such means as the attaching bracket H. This permits the lowering of the scoop to so nearly the bottom of the trough that practically twice the usual depth or head of water is made available for its locomotive-driven forward movement to pick up and supply to the

water tender. Unlike the relatively sharp edge of the forward end of the scoop D, the rollers G are found to easily and non-catchingly ride over such obstructions as the non-fitting adjoining ends of the cross sections constitute, and the locomotive may accordingly be adequately supplied from the trough due to the much greater depth of water encountered by the forwardly traveling scoop than it has hitherto been possible to pick up. And the total additional height or depth dimension of the forward edge of the scoop thus equipped is so slight that no difficulty is encountered as regards the added space consequently occupied by it under the water tender body.

What I claim is:

1. Means for effecting the refilling of a locomotive tender while in motion along a track, comprising, in combination with a water-supplying trough positioned between the rails of a track and extending lengthwise thereof through a selected distance, a water scoop of substantially the same cross-sectional outline as that of the trough, pivotally carried subadjacently of the body of the locomotive, regulatable means whereby the free forward end of the water scoop may be lowered to approximately the level of the bottom of the water filled trough, and means carried in the vicinity of said free forward edge of the water scoop and potentially engageable with the top surface of the trough's bottom whereby the scoop is prevented from actually engaging the bottom of the trough while permitting its lowering to a degree which permits a maximum head of water as supplied from said trough to enter said water scoop and its fluid-conducting connections adjacent its pivoted rearward end.

2. Means for supplying an adequate quantity of water to the tender of a moving locomotive, comprising, in combination with a water-containing trough positioned subadjacently of the locomotive's path of travel, a water scoop carried by the locomotive and connected at its rearward end with the water tender whose filling is desired, means for lowering the forward end of said scoop member to a position adequately beneath the level of the water in the trough, and antifriction means suspended from the lowerable forward end of the scoop member whereby it is held against actual

frictional contact with the bottom of the trough as the locomotive passes thereover.

3. In combination with a water-supplying trough positioned lengthwise of and substantially at the level of the tracks over which a locomotive travels, a water scoop carried by the water tender of a locomotive and connected at its rearward end with a supply tank thereon, means for effecting the lowering of the forward end of the scoop member to a level beneath that of the water in the trough, and means carried adjacent the forward end of said water scoop member in position of potential engagement with the bottom of the trough whereby the scoop's lowered forward end is held against actual contact with the bottom of the trough.

4. A scoop for supplying water from a subjacent trough to the tender of a locomotive while in motion, comprising a pan member of trough-like cross-sectional contour which is connected at its rearward end with suitable fluid-receiving means on the water tender, means for lowering the forward end of said scoop to a level below that of the water in the supplying trough, and means extending below the lowerable forward end of the scoop whereby actual frictional contact thereof with the bottom of the trough is prevented.

5. In combination with a water scoop connected at its rearward end with the water-supplying system of a locomotive, means for selectively effecting the lowering of the forward end of the scoop to a level beneath that of the water in a subjacent supply trough, and protective rollers positioned at the forward end of the water scoop whereby, regardless of the degree of its lowering, it is held against contact with the bottom of the trough.

6. In combination with a suitable connection with the water supply system of a locomotive, a water scoop member positioned subadjacently thereof, means for lowering the forward end of said scoop member to a level beneath that of the water contained in a supplying trough, and means subadjacently carried by the forward end of the scoop whereby the latter is prevented from frictionally engaging the bottom of the water supplying trough.

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