No. 675,795. Patented June 4, 1901.

E. RYAN & O. JOHNSON.

LOCOMOTIVE TENDER.

(Application filed Aug. 28, 1900.)

(No Model.)

Fig. 1.

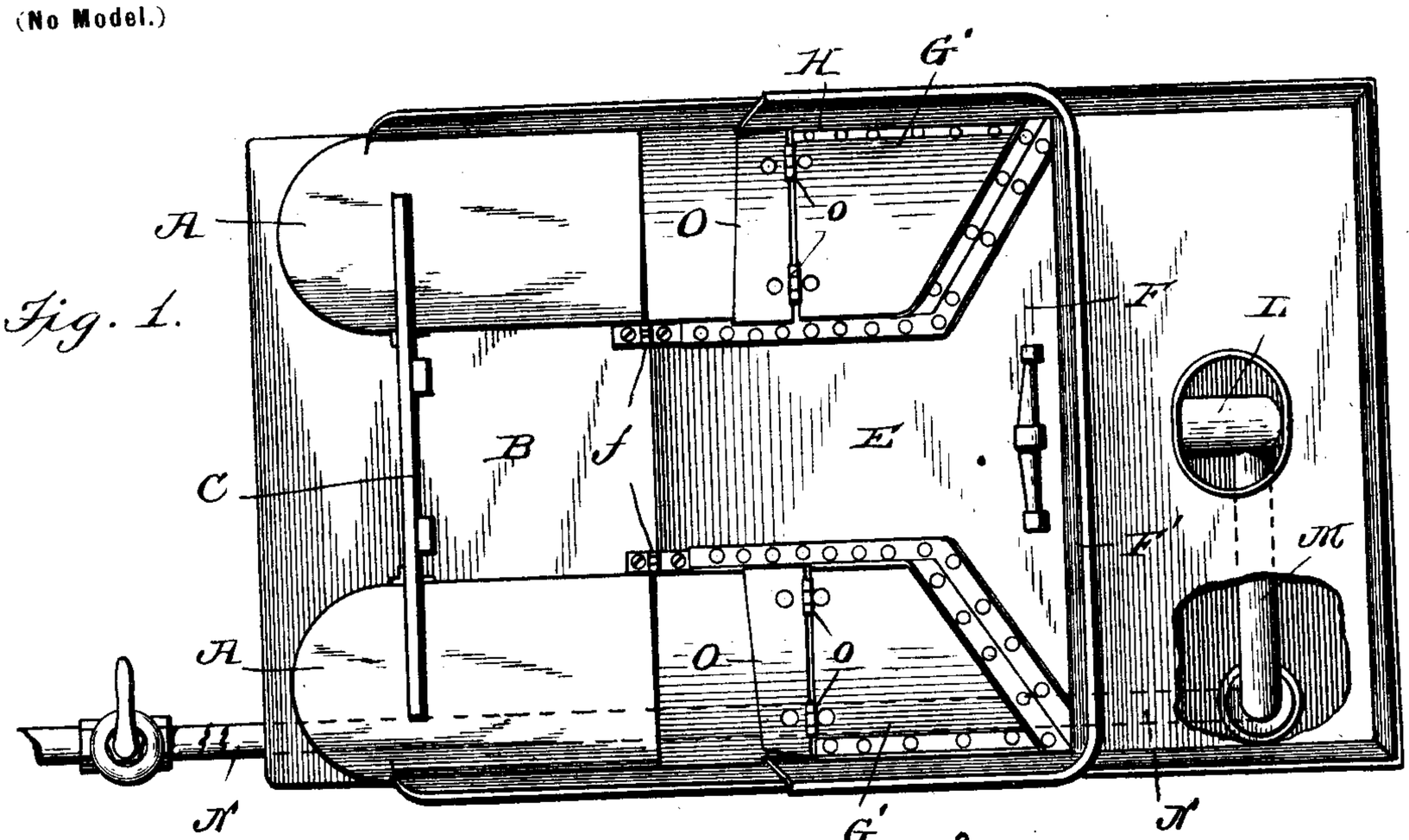
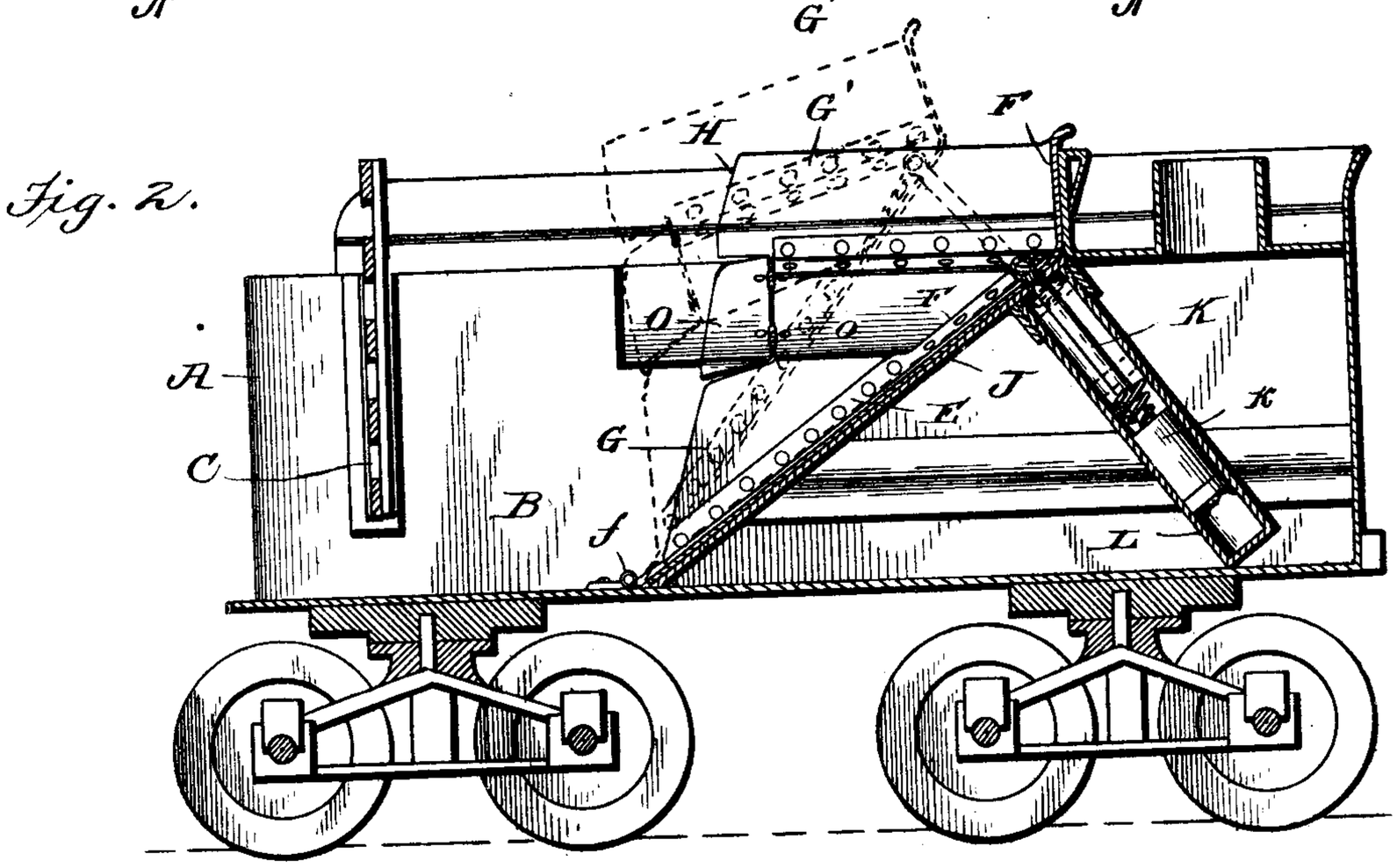


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDWARD RYAN AND OSCAR JOHNSON, OF CLINTON, IOWA.

LOCOMOTIVE-TENDER.

SPECIFICATION forming part of Letters Patent No. 675,795, dated June 4, 1901.

Application filed August 28, 1900. Serial No. 28,283. (No model.)

To all whom it may concern:

Be it known that we, EDWARD RYAN and OSCAR JOHNSON, citizens of the United States, residing at Clinton, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Locomotive-Tenders; and we do declare the following to be 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in locomotive-tenders, the object of the invention being to provide means which can be readily operated from the forward end of the tender, the cabin of the engine, or at any other suitable or desired point for agitating the coal in the coal-pit or moving the same forward, so that it can be readily reached by the fireman without having to enter the tender to agitate the coal or move the same forward.

Locomotive-tenders as usually constructed are provided with a water tank or tanks and a coal-pit surrounded by the tank or tanks, except at the forward end of the tender, which is usually provided with a gate or door, and it often happens that the coal, being used from the forward end, clogs in the rear end of the pit or is so far back that it is difficult for the fireman to reach the same with his shovel, and it thus becomes necessary for him to enter the pit and loosen the coal or move the same forward, where it can be easily reached from the forward end of the tender.

It is one object of our invention to provide means for obviating this labor on the part of the fireman and which can be readily operated from any desired point to loosen the coal or move the same forward in the pit.

A further object is to provide such means with fluid-pressure-operating means controllable within the engine-cab or at any other desired point.

A further object of the invention is to provide a tender of the usual construction with a movable back or side for the coal-pit and means for moving the said part to loosen the coal or move the same forward in the pit.

A further object of the invention is to provide a movable side or back for the coal-pit and provide means to prevent the coal getting behind or under the back or side to prevent its proper operation.

A further object of the invention is to provide a locomotive-tender with simple and effective means for agitating, loosening, or moving the coal in the pit.

With such and other objects in view the invention is embodied in the novel parts, arrangement, and combinations of parts hereinafter described, and particularly set forth in the claims.

In the accompanying drawings is illustrated a practical embodiment of the invention; but it is to be understood that the invention is not to be limited in its useful application to the construction which for the sake of illustration is there delineated.

In the drawings, Figure 1 is a plan view of a locomotive-tender provided with the invention. Fig. 2 is a longitudinal sectional view through the tender shown in Fig. 1, showing in dotted lines and full lines the different positions of the coal moving or loosening means.

In the drawings we have shown only the body of a tender, which is conveniently of the usual known construction and is provided with the side and rear water-tanks or substantially U-shaped tank, (indicated at A.) Between these tanks or the space formed between the sides of the tanks is the coal-pit B, as is usual in the common construction of tenders, and it is believed that a detailed description of the tender-body and tanks is not necessary to an understanding of this invention.

C indicates a gate or door at the forward end of the tender between the parts of the tank A for the purpose of preventing the escape of the coal from the pit. This gate is such as is usually employed.

E indicates a movable part, back, or side of the coal-pit which by a movement thereof is adapted to agitate, loosen, or move the coal in the pit. Preferably this part is fashioned as a supplemental back or side for the coal-pit and has the inclined body F extending down into the coal-pit and hinged, as by hinges *f*, in the bottom of the pit. Secured to the body part F are side flanges G, fashioned to conform to the vertical lower side

portion and upper inclined side portion of the parts of the water-tank A. The parts F and G are preferably provided with vertical flanges F′ and G′, lying against the sides of the body of the tender above the water-tank and indicated at H. It will thus be seen that the movable means or part E is substantially the shape of the rear portion of the coal-pit and rests upon the inclined back J and sides of the coal-pit. By a movement of this part E on its hinges the coal which rests thereon is moved to loosen the same or move the same forward, and for the purpose of moving or oscillating the part E the same is shown as being provided with a piston-rod K, hinged in any convenient or desired manner to the part E and provided at its end with a piston *k*, working in a cylinder L, located beneath the part E. The cylinder is shown as being mounted within the rear portion of the water-tank. This cylinder has connected to it, conveniently at the lower end thereof, a supply-pipe M for a motive fluid—such as water, steam, or air—and the pipe M may be connected by a suitable flexible hose N or otherwise to any source of fluid-pressure, such as a steam-pump or the air-brake system or reservoir of the locomotive. Suitable means (not shown) is provided for controlling the admission and exhaust of the fluid motive medium to the cylinder L to control at will the operation of the piston therein to oscillate or agitate the part E.

It is apparent that when the part F is moved on its hinges the side flanges G move up and away from the underlying inclined faces of the water-tank, and if not provided with means to prevent the same the coal in the tank is apt to work under the side flanges G and prevent the proper operation of the part E. To prevent this, each flange G is provided at its forward edge with a hinged wing O, hinged, as by means of hinges *o*, to the flanges G. The forward edges of the wings O in the movement of the part E rest and slide on the inclined faces of the water-tank, thus always effectually closing the spaces between the wings or flanges G and the inclined faces of the water-tank.

It will be understood that the controlling means for the motive fluid to the cylinder L can be located and operated from any desired point—as, for instance, the cab of the engine. It is not, however, believed necessary to particularly describe or illustrate any particular means for the controlling of the motive fluid.

Having thus described the invention, what is claimed is—

1. A locomotive-tender having a coal-pit and an opening at the forward end to permit access to the coal, and provided with movable means for loosening or moving the coal therein, and means for operating said movable means, substantially as described.

2. A locomotive-tender having a coal-pit and an opening at the forward end to permit access to the coal, and provided with movable means located in the coal-pit thereof for loosening or moving the coal therein, and fluid-operated means for moving said movable means, substantially as described.

3. The combination with a tender, of movable means for loosening and moving the coal therein, and means controllable from without the tender for operating said movable means, substantially as described.

4. The combination with a locomotive-tender, of movable means located in the coal-pit thereof for loosening and moving the coal, and fluid-pressure-operated means controllable from without the tender for operating said movable means, substantially as described.

5. The combination with a locomotive-tender of a movable part, located in the coal-pit thereof, for the purpose described, constituting a portion of the wall of the coal-pit, and means for operating said movable part, substantially as described.

6. The combination with a locomotive-tender, of a movable back or side, located in the coal-pit thereof, and fluid-pressure-operated means for operating said movable back or side, substantially as described.

7. The combination with a locomotive-tender, of a movable part located in the coal-pit thereof, a piston connected to said part, a cylinder in which said piston operates, and means for supplying said cylinder with fluid-pressure and controlling the admission and exhaust thereof to and from the cylinder, substantially as described.

8. The combination with a locomotive-tender, of a side or back hinged in the coal-pit thereof, a piston connected to said hinged side or back, a cylinder in which said piston operates, and means for supplying said cylinder with fluid-pressure, for operating the piston, substantially as described.

9. The combination with a locomotive-tender, of a part F hinged to the bottom of the coal-pit thereof, and having side wings, means for moving said part, and wings hinged to said side wings, substantially as described.

10. The combination with a locomotive-tender having a water tank or tanks at the side thereof, and a coal-pit between the same having an inclined back, of a movable part comprising an inclined back F hinged to the bottom of said coal-pit and having inclined side flanges or wings resting on inclined faces of said coal-pit, means for moving said part, and wings hinged to said inclined side flanges or wings, and adapted when the part is moved to rest and slide on the inclined faces of said coal-pit, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWARD RYAN.
OSCAR JOHNSON.

Witnesses:
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GEO. B. MARBLE.