

S. BENNIS & J. G. KEPPEL.

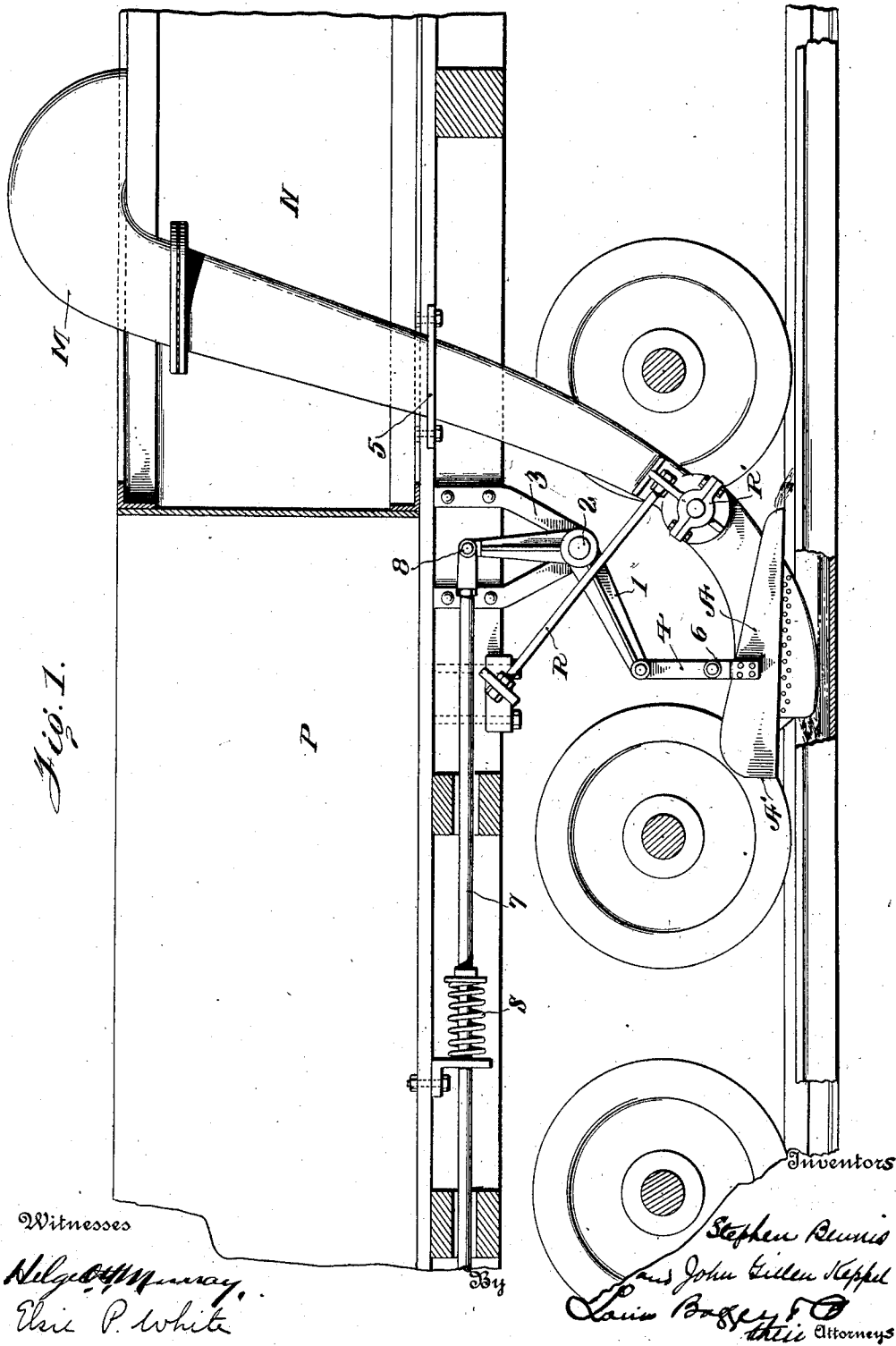
TENDER SCOOP.

APPLICATION FILED OCT. 11, 1911.

1,016,731.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 1.



Witnesses

Melville Munnay,
Eric P. White

Inventors

Stephen Bennis
and John Gullen Keppel
Lavin Bagley & Co.
Attorneys

S. BENNIS & J. G. KEPPEL.

TENDER SCOOP.

APPLICATION FILED OCT. 11, 1911.

1,016,731.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 2.

Fig. 3.

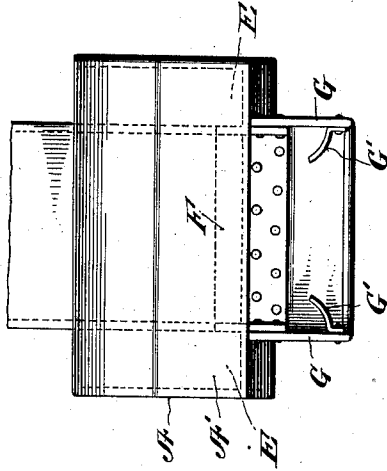


Fig. 2.

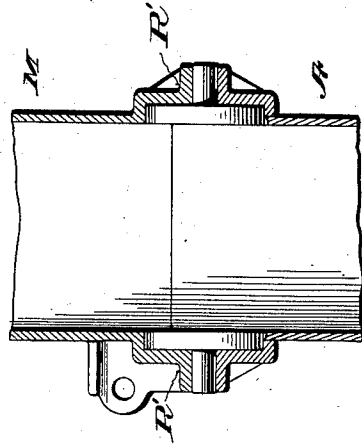
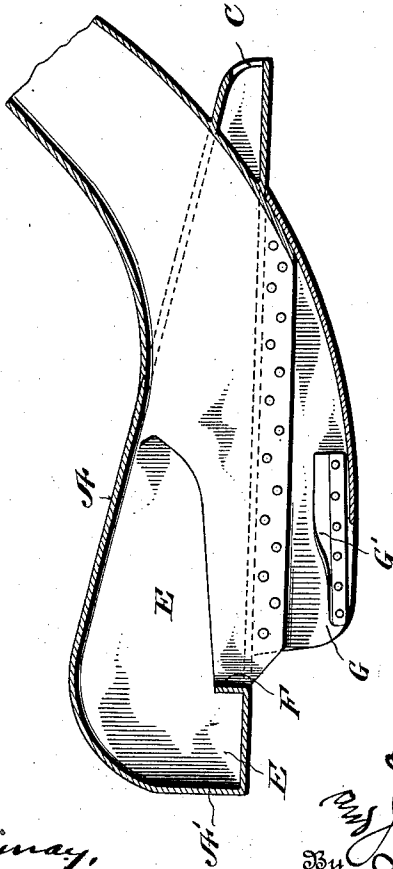


Fig. 4.

Witnesses
Helgel & Minney,
Elsie P. White

Inventors
Stephen Bennis
and John Kellen Keppel
By Louis Wagner & Co.
their Attorneys

UNITED STATES PATENT OFFICE.

STEPHEN BENNIS AND JOHN GILLEN KEPPEL, OF NEW YORK, N. Y.

TENDER-SCOOP.

1,016,731.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed October 11, 1911. Serial No. 654,154.

To all whom it may concern:

Be it known that we, STEPHEN BENNIS and JOHN GILLEN KEPPEL, a subject of Austria-Hungary and a citizen of the United States, respectively, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Tender-Scoops, of which the following is a specification.

Our invention relates to tender scoops, which are designed to raise water from a trough usually placed between the rails of a railroad track, and convey it into a tank usually carried by the tender of the locomotive. As heretofore constructed, a serious defect in these devices has been that, when a scoop on a rapidly moving tender is in operation, part of the water in the trough intended to be conveyed, or raised by the scoop into the tank on the tender is thrown out or splashed upon the roadway, bridge, or trestle, and is therefore wasted or not utilized for its desired purpose.

The action of a scoop while taking water from a trough is more or less like a blunt plow. At speeds of the tender below thirty-five miles per hour, a wave action is set up in front of the scoop; the water being piled up until it falls over the sides of the trough; and at speeds of the tender above thirty-five miles per hour, a large part of the water is splashed or thrown out upon the roadway, bridge, or trestle, due to the inertia of the water—the fact that the velocity of the water entering the scoop is less than the velocity of the tender.

The main object of our invention is therefore to so design and construct the scoop that when it is in operation, it will convey the water from the trough into the tank on the tender in a manner to greatly reduce the waste of water that has been heretofore splashed or thrown out of the trough, upon the roadway, bridge, or trestle.

Our invention further consists in various details of construction of the scoop, which will be more definitely pointed out hereinafter.

In the accompanying drawings:—Figure 1 is a side view of our scoop in position in side elevation; Fig. 2 is an enlarged sectional view of the scoop proper; Fig. 3 is a front view of the scoop looking from the left of Fig. 2, and Fig. 4 is a detail section through joint R'.

A, is the dipper attached to the joint R'.

This joint R' may be of any design sufficient to allow the dipper A to swing when the dipper is raised or lowered.

R is a connecting rod which braces and holds the conduit, to which joint R' connects the dipper, in position.

A projection A' formed on the end of the dipper prevents the splash or spray from leaving the limits of the dipper. The splash or spray will therefore strike this projection and fall along its sides into the side chambers E, E, which are situated in the front and on both sides of the dipper (see Fig. 3). The water which is thus collected will be conveyed by these chambers to the rear of the dipper, and then discharged through the outlet C. This outlet is situated directly over and near the water-trough, thus allowing the accumulated or excess water to return to the trough. The side chambers are given a slight incline toward the rear end of the dipper, as shown in Fig. 2, to facilitate this action. Likewise that part of the water which is piled up in front of the dipper will fall over the side flanges F, F, and into the side chambers E, E, and thence out at the discharge opening C into the trough. The sides of the dipper below the side chambers at G, G, form the mouth or inlet, and the inward projection of the bottom part G', G', are for the purpose of preventing water which is piled up in front of the dipper from passing along the sides of the dipper, and thence over the sides of the trough, but on the contrary permit the water to pile up in front and fall over the flange walls F, into the side chambers E, E.

M, is a suitable conduit or tube projecting upward from the dipper, it being rigidly secured in place by the bracket 5 and brace rods R, and serves to convey the water raised by the dipper and discharge it into the tank N of the tender P.

Any suitable means may be employed for the purpose of raising and lowering the dipper into the trough, and it is optional with those wishing to use this form of dipper which method they may prefer to employ. As a feasible means for accomplishing this, however, we have devised the following. A bell crank lever 1 is fulcrumed at 2 on the bracket 3 secured to the tender, and links 4 depend from the forward end of the bell crank lever to the dipper to which they are connected as at 6. A rod 7 is slidably connected with the truck or other part of the

tender, and is employed by the engineer to raise and lower the dipper, it being pivotally connected at 8 to the upper end of the bell-crank lever. A spring S on this rod is employed to counterbalance the weight of the dipper, it tending to normally hold the dipper in an elevated position, so that to lower the latter this rod is pulled in the opposite direction by the engineer. When the dipper is lowered into the trough when the tender is in operation, water will immediately rush into it, and part will be conveyed through the dipper into the tube or conduit M, and thence into the tank N. Part of the water will also splash or spray into a forward or sidewise direction, while some will pile up in front of the dipper. This is taken care of by the special construction of dipper as hereinbefore described.

It is evident that more or less slight changes might be resorted to in the form and arrangement of the several parts described without departure from the spirit and scope of the invention, and hence we do not wish to be limited to the exact construction herein set forth, but:—

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

1. In a tender scoop, the combination with a suitable supporting frame, of a dipper having a forwardly-projecting chamber above the inlet which will prevent the splash or spray from discharging upon the roadway, bridge, or trestle, while the scoop is in operation.

2. In a tender scoop, the combination with a suitable supporting frame, of a dipper formed with forwardly and laterally projecting communicating chambers located above the inlet of the dipper which will prevent the splash or spray from discharging upon the roadway, bridge, or trestle while the scoop is in operation.

3. In a tender scoop, the combination with a suitable supporting frame, of a dipper formed with forwardly and laterally projecting communicating chambers located above the inlet of the dipper, said chambers

decreasing in height toward the rear, and having a discharge outlet at the rear of the dipper located over the trough.

4. In a tender scoop, the combination with a suitable support, of a dipper formed with a projecting chamber, side chambers and side flanges all located above the inlet of the dipper, said chambers communicating and having a common outlet at the rear of the dipper.

5. In a tender scoop, a dipper having an inlet which leads to a discharge conduit or tube, and provided with a chamber which projects forward of the inlet and side chambers on either side thereof, said chambers located above the inlet with a flange wall partially separating said chambers from the inlet, and a centrally located rear outlet from said chambers.

6. In a tender scoop, a dipper having an inlet which leads to a discharge conduit or tube, and provided with a chamber which projects forward of the inlet, side chambers on either side thereof, said chambers located above the inlet with a flange wall partially separating said chambers from the inlet, and a centrally located rear outlet from said chambers, said chambers decreasing in size and capacity from their forward to their rear ends.

7. In a tender scoop, the combination with a suitable supporting frame, of a dipper having a forwardly opening inlet and rearwardly discharging outlet, and provided at the sides of the inlet with inwardly projecting flanges and chambers to take the splash and spray located above the inlet and extending forwardly and laterally upon either side thereof, said chambers reducing in size toward the rear and provided with an outlet at or near their rear ends.

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

STEPHEN BENNIS.
JOHN GILLEN KEPPEL.

Witnesses:

JAMES S. DARCY,
ROBERT J. BOLE.