(No Model.)

J. F. BEVIN.

APPARATUS FOR BLOWING SAND FROM RAILWAY TRACK RAILS.

No. 440,690. Patented Nov. 18, 1890.

Fig. 1.

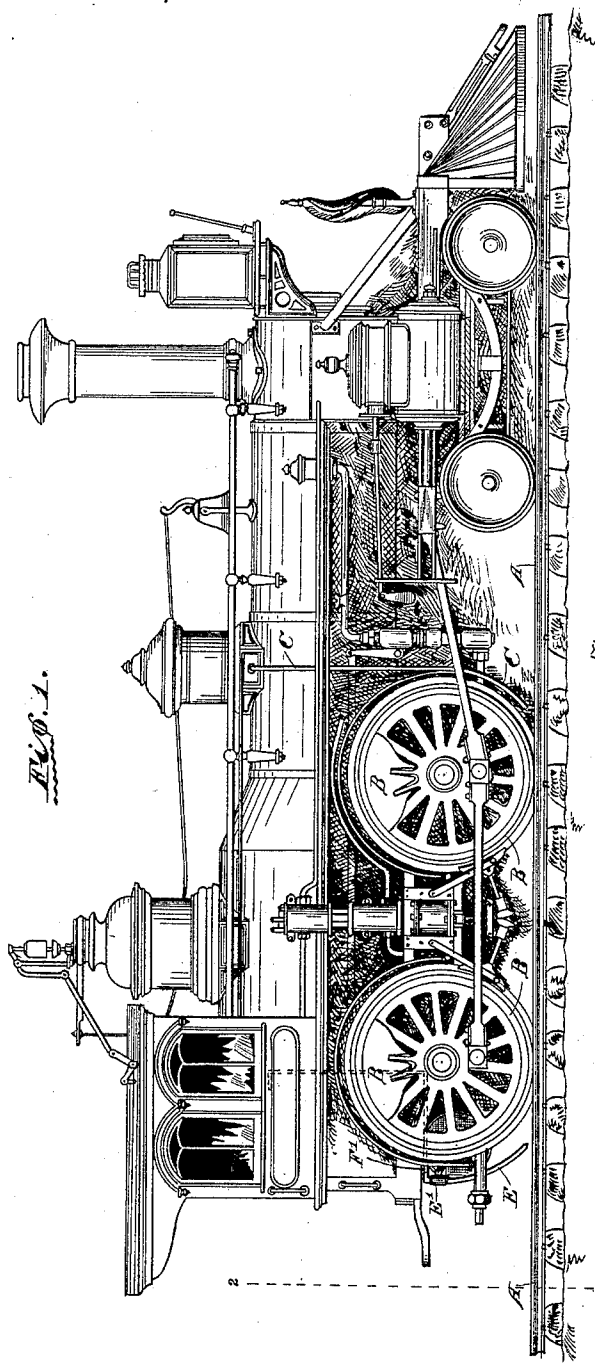


Fig. 4.

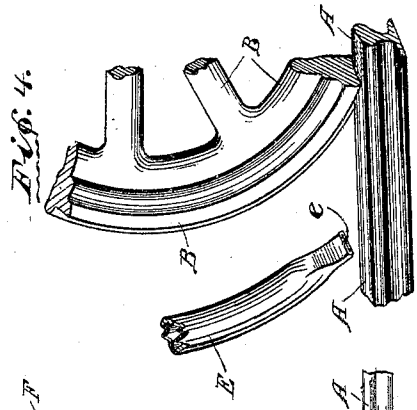


Fig. 3.

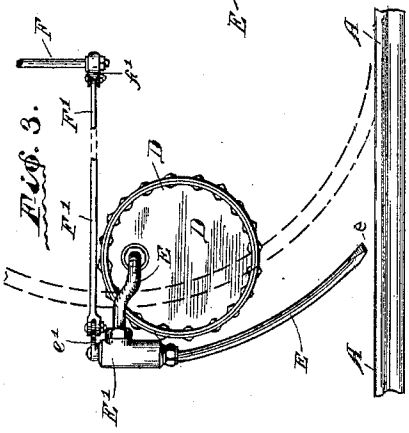
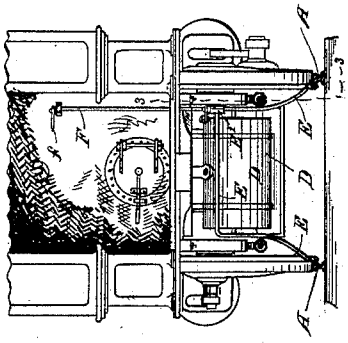


Fig. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN F. BEVIN, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-FOURTH TO EUGENE BRETNEY, OF SAME PLACE.

APPARATUS FOR BLOWING SAND FROM RAILWAY-TRACK RAILS.

SPECIFICATION forming part of Letters Patent No. 440,690, dated November 18, 1890.

Application filed May 1, 1890. Serial No. 350,250. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. BEVIN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Apparatus for Blowing Sand from Railway-Track Rails, of which the following is a specification.

The use of sand on railway-track rails to prevent the slipping of the driving-wheels of locomotives in ascending grades and performing other difficult work is well-known. It is also well known that the sand remaining on the track perceptibly increases the friction between the wheels of the cars and the rails, thus requiring an increased power to draw the load, and in part neutralizing the good effect of the use of the sand under the drivers.

The use of water or steam for the above-described purpose is objectionable, as it wets the mechanism adjacent to the discharging-orifices and causes it to rust. It is still more objectionable in cold weather, as the water or steam will freeze and form masses of ice, which adhere to such parts, and which when they become detached are likely to be thrown among the machinery or against the persons of the operatives, thus being apt to do considerable damage.

The object of my present invention is to provide a means for removing the sand from the rails immediately after the drivers have passed over it, and to do so in a manner which is at once economical and unobjectionable. This object is accomplished by connecting to an air-pumping apparatus (preferably the reservoir of the usual air-brake) pipes leading down to a point in the rear of the drivers, from which an air-blast may be directed upon the rails in a manner which will effectively remove the sand.

This invention will be first fully described, and then pointed out in the claims. By its use the above-described objections are fully overcome, as will be readily understood, the air which is used being perfectly dry.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of a locomotive provided with my invention; Fig. 2, a rear elevation, as seen from the dotted line 2 2 alongside Fig. 1, of so much of the locomotive as includes my invention; Fig. 3, a detail elevation of the structure embodying my invention and immediately adjacent parts on an enlarged scale, as seen from the dotted line 3 3 in Fig. 2; and Fig. 4, a detail perspective view, on a still further enlarged scale, showing the relation of one of the nozzles to the rail and driving-wheel near which it is placed.

In said drawings, the portions marked A represent the railway-track rails; B, the driving-wheels to the locomotive; C, the ordinary sanding-pipe; D, the reservoir to an air-pumping apparatus; E, the pipes leading from said reservoir to near the tracks used in carrying out my invention, and F a handle or lever by which the valve or valves in said pipes may be operated. As will be readily understood, all these parts except the pipes, &c., whereby the air-blast is directed upon the rails, are of an ordinary and well-known construction, and in themselves are not peculiar to my present invention and will not therefore be further described herein, except incidentally in describing said invention.

The pipe E, as preferably arranged, starts from the air-reservoir D of the air-pumping apparatus (although it might be connected to some other portion of said apparatus) as a single pipe, and then branches out into two pipes, which terminate in nozzles *e* at a point adjacent to the track-rails in the rear of the driving-wheels to the locomotive. At the point where this branching occurs I prefer to locate the three-way cock E′, having an arm *e*′, by which, through suitable connections extending to a handle in the cab, it may be operated by the engineer or fireman, as may be desired. The nozzles *e* are arranged, as shown, to discharge quartering upon the rails, and the openings in said nozzles are comparatively long narrow slits, and are arranged diagonally to the rails. They are also somewhat to one side of the rails—preferably inside, as shown. By this arrangement, notwithstanding that the nozzles are quite small and that there is always a considerable vibration of the locomotive on the rails from side to side, the air-blast will be continuously upon the rails whatever the position of the locomotive thereon within the ordinary limits

of its movement. These nozzels I have found in practice are of sufficient capacity if the orifice measures one one-hundredth of an inch in diameter by three fourths of an inch in length; and it is important (when this device is used in connection with the air-brake apparatus, as it usually is) that the orifices should be small, in order that the discharge of air may be continuous for a considerable period without reducing the pressure in the reservoir D, which if permitted would, as will be readily understood, be greatly to the disadvantage of the work of controlling and operating the train, and might, under some circumstances, even result disastrously because of an inability occasioned thereby to properly operate the brakes. With the small orifices which I use, however, there is no such result, and this I have demonstrated by actual practical use of the device.

The handle F is shown as a vertical rod having a suitable hand-hold *f* upon its upper end, which end should extend to a point in the cab of the locomotive convenient to the engineer or fireman and as having an arm *f'* upon its lower end, which is connected by a horizontal rod F' with the arm *e'* on the stem of the cock E'; but obviously the form and arrangement of the handle and connecting devices may be varied at pleasure without departing from my invention.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a railway-track, a locomotive, an ordinary sanding device on said locomotive, an air-pumping apparatus also on said locomotive, and pipes connected with said air-pumping apparatus and leading to points above the track-rails in the rear of the driving-wheels of the locomotive, whereby an air-blast may be directed upon said rails at these points and sand and dirt thus removed, substantially as set forth.

2. The combination, with an air pumping apparatus on a locomotive, of pipes leading to points above the railway-rails to the rear of the driving-wheels of said locomotive and there terminating in nozzles, the orifices of which nozzles are narrow slits and arranged diagonally to the railway-tracks, substantially as set forth.

3. The combination of an air-pumping apparatus on a locomotive and pipes leading from said air-pumping apparatus to points near to the rails at the rear of the driving-wheels of said locomotive, where said pipes are provided with discharging orifices or nozzles arranged to one side of and quartering to said rails, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 26th day of April, A. D. 1890.

JOHN F. BEVIN. [L. S.]

Witnesses:
CHESTER BRADFORD,
JAMES A. WALSH.