

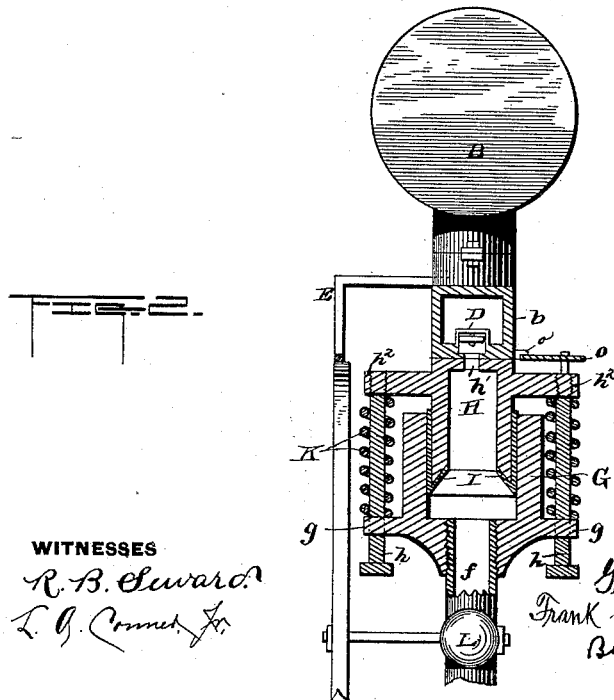
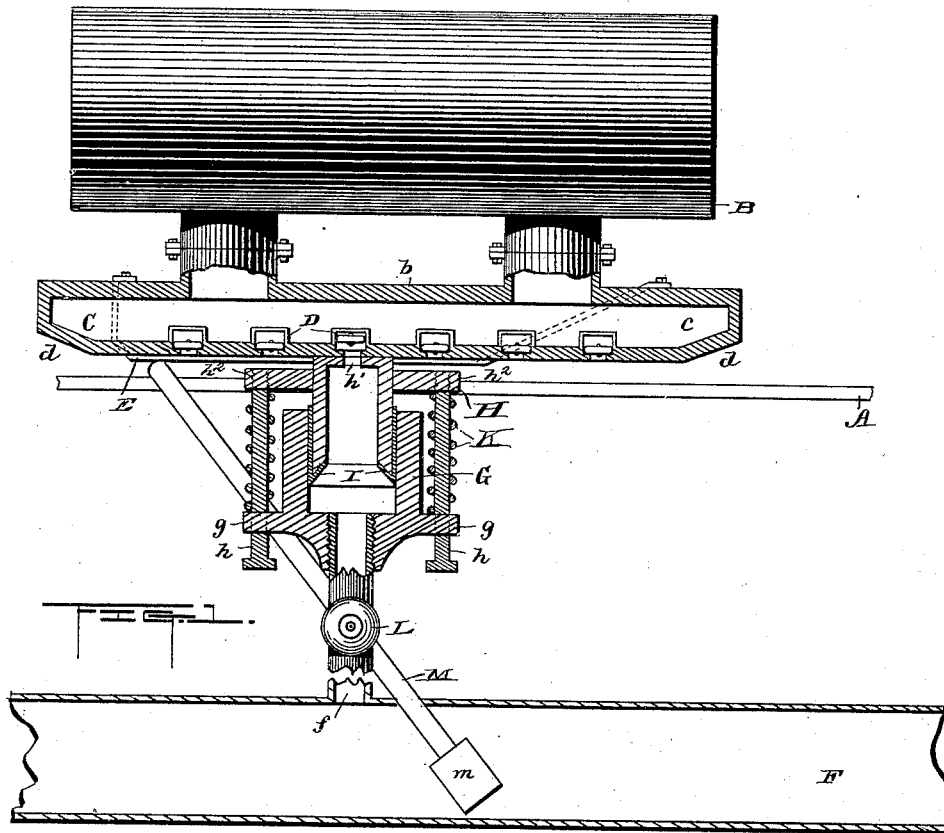
(No Model.)

G. I. McCARTEN & F. C. McNALLY.

MEANS FOR SUPPLYING COMPRESSED AIR TO MOTORS.

No. 421,418.

Patented Feb. 18, 1890.



WITNESSES

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MEANS FOR SUPPLYING COMPRESSED AIR TO MOTORS.

SPECIFICATION forming part of Letters Patent No. 421,418, dated February 18, 1890.

Application filed August 26, 1889. Serial No. 321,998. (No model.)

To all whom it may concern:

Be it known that we, GEORGE I. McCARTEN, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, and FRANK CHARLES McNALLY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Means for Supplying Compressed Air to Motors; and we do hereby 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.

Our invention relates to an improvement in means for supplying compressed air to motors.

The object is to provide simple and practical devices by which a motor while under headway may renew its supply of compressed air.

With these ends in view our invention consists in certain features of construction and combinations of parts, as will hereinafter be described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation, partly in section, showing a motor in position to receive its supply of compressed air; and Fig. 2 is an end view of a portion of the same.

A represents a track upon which a motor is adapted to travel. In the present instance the parts of the motor are such as would belong to a compressed-air engine, the driving-wheels being actuated by a connecting-rod driven by a piston working in a cylinder.

As our present invention relates particularly to the means for supplying the engine-tank with a new charge of air while the engine is under headway, only such parts of the engine or motor as have to do immediately therewith will be particularly described.

The motor is provided with a tank B for the storage of the compressed air which it uses to drive it, and said tank B is provided with a shoe portion *b*, preferably made detachable therefrom, as shown, so that it may be removed for renewal, cleansing, or repairs. The shoe portion *b* is provided with a forward extension C and a rearward extension *c*, in or-

der to give the tank an extended bottom surface in the direction of its line of travel. At short intervals along its bottom it is provided with check-valves D, opening inwardly and held normally closed by the pressure of the air within the tank as well as by gravity. The bottom of the shoe is slanted upwardly at its ends, as shown at *d*, and a tripper-rod E is attached to the side of the shoe, the purpose of which will appear farther along. Along the track and preferably beneath the surface of the ground between the tracks, where a double track is employed, a compressed-air main pipe F is located, and is provided at suitable intervals with branch pipes *f*, leading therefrom up to outlet-nozzles of the following construction: The stationary portion G of the nozzle is of cup shape and preferably cylindrical, open at the top and having the upper end of the branch pipe *f* fitted to its bottom. It is also provided with lateral flanges or lugs *g*, through perforations in which the guide-pins *h* of the movable or male section H of the nozzle freely slide. The movable section H is provided with a depending hollow body portion adapted to fit with an easy sliding movement within the portion G, suitable packing I being employed to make the joint air-tight. The top of the section H is provided with an opening *h'*, and also has flanges or laterally-extending lugs *h²*, in which the upper ends of the guide-pins *h* are secured. The top of the section H is held normally in the path of the bottom of the shoe *b* and slightly above the plane of the bottom of the shoe by means of springs K, inserted between the flanges or lugs *g* and *h²*, and held in position by the guide-pins *h*. The object of so holding the top of the nozzle normally above the plane of the bottom of the shoe *b* is to insure a tight joint between the nozzle and the shoe and prevent the loss of compressed air during its passage from the main to the tank. The opening *h'* is intended to lie in the line of travel of the openings in the bottom of the shoe *b* and to correspond therewith.

A valve L, in the present instance a turn-plug valve, is seated in the branch pipe *f*, and serves to cut off and turn the compressed air

on as it is rocked. A valve-operating lever M, provided at its lower end with a weight *m*, which tends to hold the lever normally upright and the valve closed, projects upwardly into the path of the tripper-rod E. The tripper-rod E projects forwardly such a distance in advance of the foremost opening in the bottom of the shoe *b* that when said opening registers with the opening in the nozzle of the branch pipe the tripper will have effected a full opening of the valve L. A laterally-swinging cover O, to prevent the entrance of dust and foreign substance into the nozzle, is adapted to be engaged by a rod or rib *o* on the side of the shoe and held open while the shoe is passing. A spring of any well-known and approved form may be employed to close the cover after the passage of the shoe.

The operation is as follows: The main pipe F being charged with air under high pressure and the valve L closed, the motor, moving along the track, engages the top of the nozzle with the forward end of the tank-shoe *b*, and at the same time begins to open the valve L by the engagement of the front end of the tripper with the lever M and also swings the cover O open. As the shoe passes along, the several openings in its bottom are successively brought over the opening in the nozzle, and as often as they so register the compressed air from the main rushes into the tank by lifting the check-valve. Before the shoe leaves its engagement with the top of the nozzle the valve L, under the control of the weighted lever M, is allowed to close, and the motor, with its replenished charge of compressed air, passes on.

It is evident that many slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of our invention. Hence we do not wish to limit ourselves strictly to the construction herein set forth; but,

45 Having fully described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

1. In combination, a motor-tank provided with a removable shoe, the latter having a series of valved openings therein, a main supply-pipe, a branch pipe provided with a nozzle extending upwardly into the path of the shoe, and a valve in the branch pipe controlled by the moving motor, substantially as set forth.

2. In combination, a motor-tank provided with a shoe extended along the path in which the motor moves and provided with a series of valved openings in its bottom, a main supply-pipe extending along the track, a yielding nozzle connected with the supply-pipe and projecting upwardly into the path of the shoe, a valve to admit air to the nozzle, a lever to operate the valve, and a tripper on the motor to operate the lever, substantially as set forth.

3. In combination, the tank on the motor, the main supply-pipe along the track, the yielding nozzle consisting of a stationary and a movable section, a valve to admit air to the nozzle, and a cover for the nozzle, substantially as set forth.

4. In combination, the main supply-pipe extending along beneath the track, branch pipes leading up above the tracks, yielding nozzles on the branch pipes, a weighted lever, a valve in the branch pipe controlled by the lever, a tank carried by the motor, and a shoe portion of the tank provided with openings to register with the nozzle and with a tripper to engage the weighted lever, substantially as set forth.

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

GEORGE I. McCARTEN.

FRANK CHARLES McNALLY.

Witnesses:

BESSIE E. YOUNG,

PERRY C. PHILLIPS.