

(No Model.)

N. J. PARADISE.
COCK FOR AIR BRAKES.

No. 259,710.

Patented June 20, 1882.

Fig. 1.

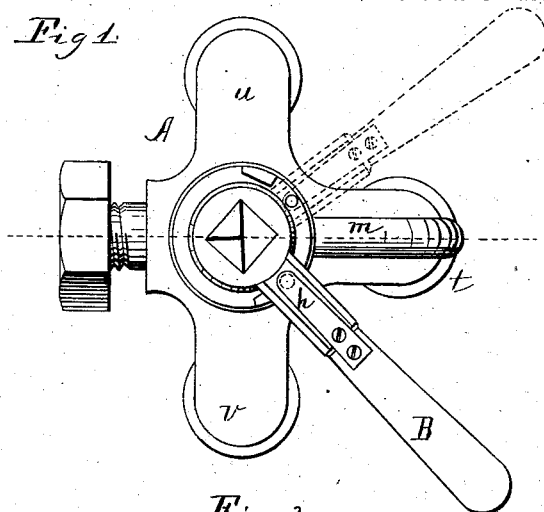


Fig. 2.

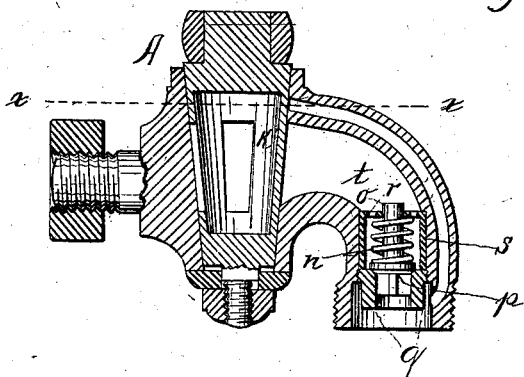


Fig. 3.

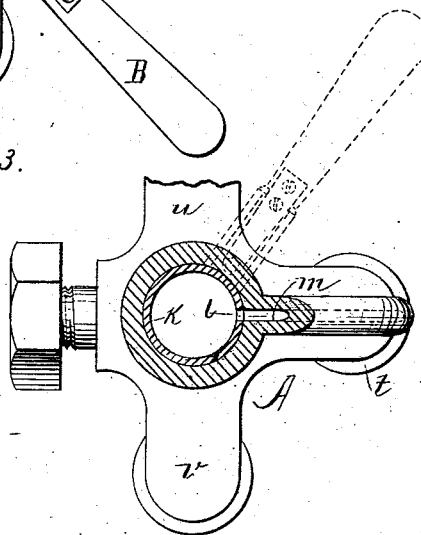
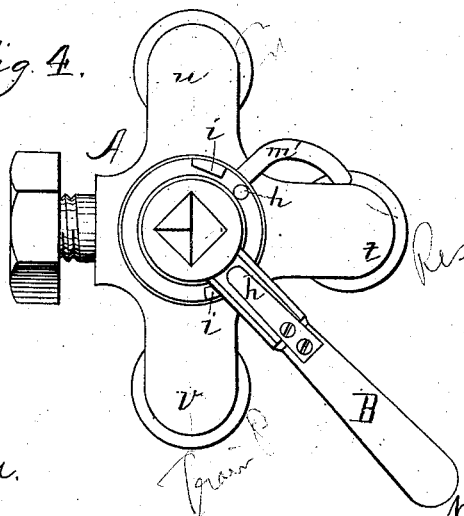


Fig. 4.



WITNESSES—
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COCK FOR AIR-BRAKES.

SPECIFICATION forming part of Letters Patent No. 259,710, dated June 20, 1882.

Application filed March 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, NORMAN J. PARADISE, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Cocks for Air-Brakes; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, of which—

10 Figure 1 is a plan view of my device; Fig. 2, a vertical central section of the same; Fig. 3, a horizontal section on the line *x x*, Fig. 2; and Fig. 4, a plan view showing a modification.

15 My invention relates to a device for effecting the following purpose: In the operation of automatic air-brakes on railway-cars it often happens, especially with long trains, that the impulse of a surplus or reserve pressure of air in the main reservoir is needed to insure the quick release of the brakes. To secure this result cocks have heretofore been constructed which permit a reserve force of compressed air to be retained in the main reservoir, which reserve force may by an extra turn of the handle be admitted at will into the train-pipes, thus giving the sudden additional impulse required.

20 The object of my invention is to produce an improvement in cocks for the above purpose, rendering them simpler in construction and more effective in operation than heretofore.

My invention consists in a three-way cock, having one branch connection for the train-pipe, a second for the exhaust, and a third for the main reservoir, the last-named branch being provided with a spring-valve having a resisting power equal to the reserve force which it is desired to retain in the main reservoir, and being provided also with a supplementary air-passage leading around the spring-valve from a point below it to the interior of the cock, to the end that by an additional turn of the handle, causing this supplementary passage to open into the train-pipe, the reserve force of compressed air may be thrown suddenly upon the triple valves under the several cars.

25 In the drawings, A is a three-way cock, having the branch *v* for the train-pipe, branch *u* for the exhaust, and branch *t* for the reservoir.

In the lower part of the branch *t* is a spring-valve, comprising the cap *s*, provided with air-passages *r* in its top, seat *q*, screwed into the branch *t* below the cap *s*, and maintaining the latter in place, valve *p*, bearing upon the seat *q*, and provided with a stem, *o*, passing through the top of the cap, and spring *n*, surrounding the stem between the top of the cap and the valve.

30 An unobstructed supplementary air-passage, *m*, extends from a point below the seat *q* of the spring-valve in the branch *t* to the interior of the cock, and registers with a corresponding opening, *l*, in the hollow plug *k*, when the handle is turned to a certain position.

The operation is as follows: The normal position of the handle B, when running, is about midway between the exhaust and reservoir branches of the cock, as shown by the dotted lines in Fig. 1. In this position the branches *t* and *u* communicate with each other, but all the air which enters the train-pipe has to pass through the spring-valve, the supplementary passage being closed. To turn on the brakes, the handle is swung to the left of the reservoir branch to the positions shown in Figs. 1 and 4, which causes that branch to open into the exhaust branch, leaving the supplementary passage still closed. For the quick release of the brakes, the handle is swung to the right, close to the exhaust branch, as shown by dotted lines in Fig. 3, which causes the supplementary passage *m* to register with the opening *l*, and thus to open into the train-pipe, when the impulse of air raises the triple valves suddenly, cutting off communication between the auxiliary reservoirs and brake-cylinders. After being allowed to remain in that position for a brief period the handle is returned to its normal position.

35 Stops *i* are provided for the handle, making the extreme left-hand limit of its movement the position for turning the brakes on full, and the extreme right-hand limit the position for quick release. The normal position, when running, may be announced by a spring-click, *h*, or shown by any other suitable indicator.

Of course the above positions for the handle may be reversed or otherwise varied without departing from my invention.

In making new cocks with my improvement

I prefer to core the supplementary air-passage into the reservoir branch, as shown in Fig. 1 of the drawings. In adapting the improvement to old cocks, however, an extra pipe, *m'*,
5 may be run up the outside of the reservoir branch, as shown in Fig. 4, and an opening formed in the plug *k* at the proper point to register with it. If, as is the case with some
10 cocks, the reservoir branch is too small to receive the spring-valve, an attachment of the proper dimensions for this purpose may be screwed to its lower end.

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

15 In a three-way cock for air-brakes, the com-

bination of a spring-valve in the interior of the reservoir branch thereof, and a supplementary air-passage leading from the interior of the reservoir branch, at a point below the
spring-valve, to the interior of the body of the
cock, the hollow plug being provided with a
20 separate opening in a position to register with the supplementary air-passage without cutting off communication with the train-pipe, substantially as described.

NORMAN J. PARADISE.

In presence of—

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CHAS. F. TYLER.