W. J. STEVENS.

AIR OR VACUUM-BRAKE.

No. 191,261. Patented May 29, 1877.

Fig. 1.

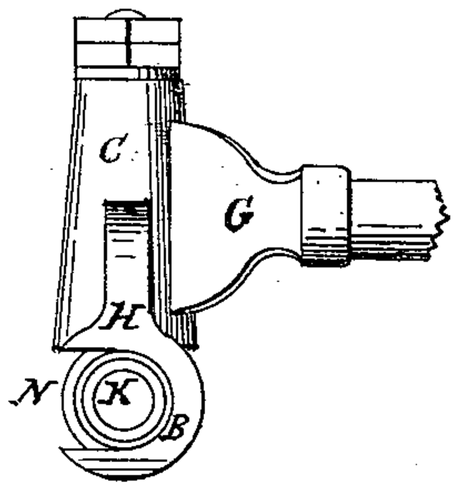


Fig. 2.

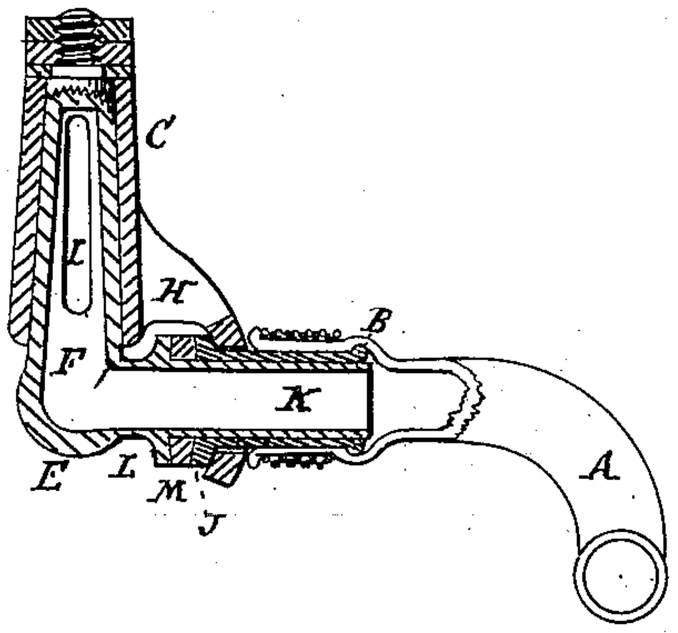


Fig. 3.

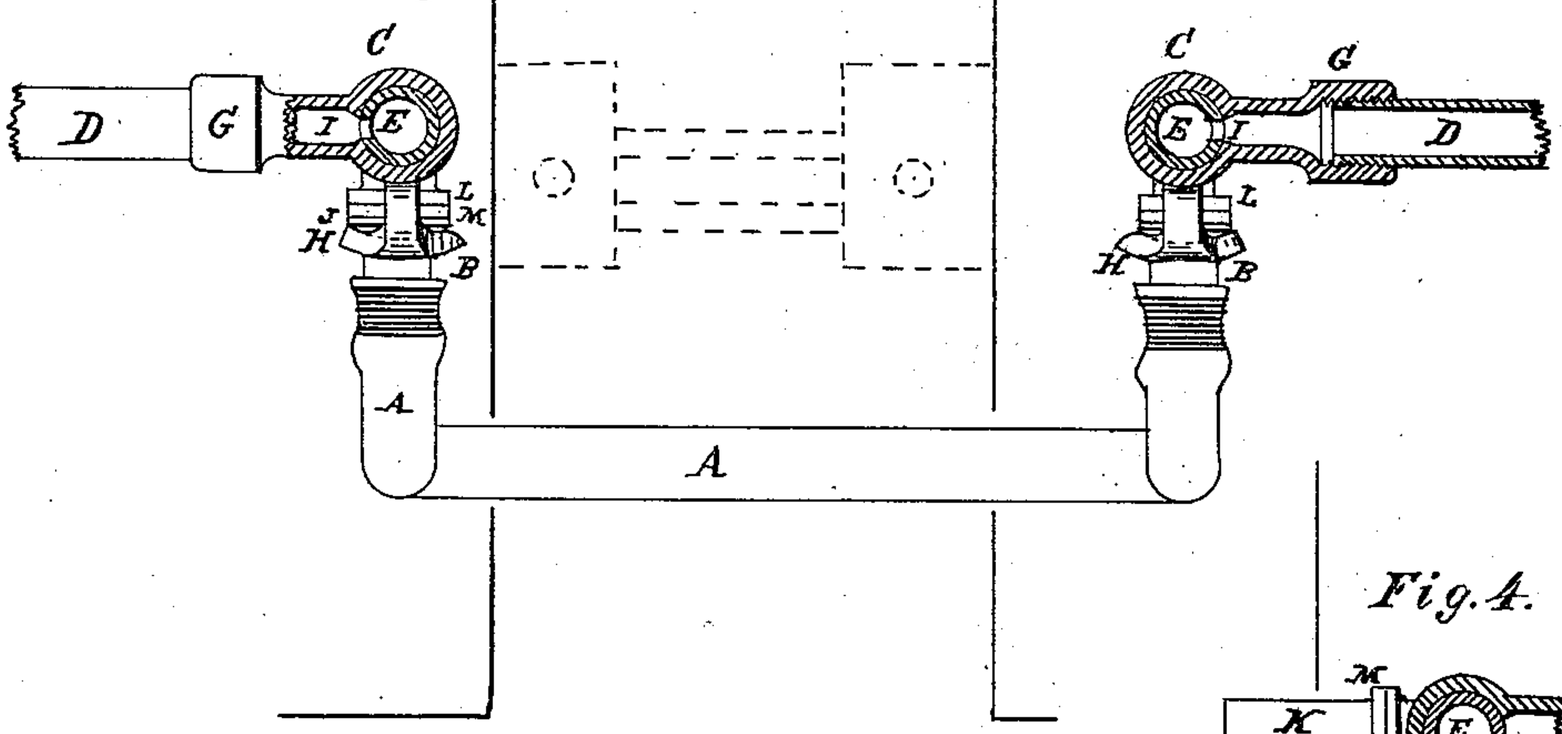
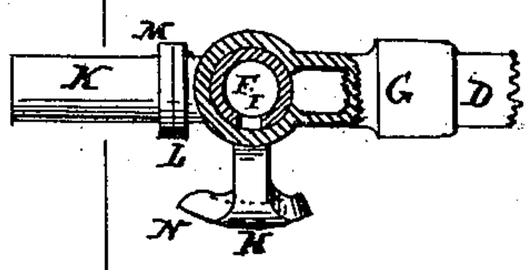


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM J. STEVENS, OF NEW YORK, N. Y.

IMPROVEMENT IN AIR OR VACUUM BRAKES.

Specification forming part of Letters Patent No. **191,261**, dated May 29, 1877; application filed September 30, 1876.

To all whom it may concern:

Be it known that I, WILLIAM J. STEVENS, of the city, county, and State of New York, have invented a new and useful Improvement in Couplings for Vacuum or Air-Pressure Brakes of Railroad-Cars, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of this invention is to stop or plug the ends of the air-pipe at the end of two joining cars with positiveness before they are uncoupled by the separation of the cars. Check-valves have been employed for this purpose on said ends of the air-pipe, but have proved to be unreliable and too late in operation; and the invention herein relates to the combination of plug or stop valves with said coupling or ends joining the air-pipes between the ends of the cars, the plugs of which valves are provided each with an arm connected with a permanent part of the opposite end of the car or valve or end of the air-pipe, in such a manner that the plug of each valve on the ends of the two opposite air-pipes are caused to turn and each close the communication or outlet of the air-pipe by the separating motion of the cars before the coupling is detached.

By this means the vacuum or pressure of air in the air-pipe of the brake is positively retained therein during the separation of the cars, and the brake may be operated as well after the separation as during or before the same.

In the annexed drawings, Figure 1 represents a side view of one of the plug-valves, with which each end of the car is provided on the end of the air-pipe, according to my invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 represents a top view of the connection of the air pipe and valves and coupling between two joining cars in the position while connected. The valves in this view are shown partly bisected to exhibit the air-passage through their plugs. Fig. 4 is a similar view of only one end of the car and air-pipe, showing the position of the valve after the cars have separated.

On each of the opposite ends of the joining cars is attached permanently a plug-valve or stop-cock, C, to the end of the air-pipe D. Each of said plug-valves C is provided with a hollow plug, E, fitted properly air-tight in the seat of the valve and adapted to turn therein. Each of said plugs E has a right-angular hollow arm, K, the opening through it communicating with the central opening F through the plug, and a slot, I, through the side of the plug communicates between said opening F and the opening through the hollow shank G of the valve, and with the end of the air-pipe D. Over the hollow plug-arm K of the valve, attached to the one end of the car, is employed the coupling or pipe A, passing from it over the hollow arm K of the valve attached to the opposite car, as shown in Fig. 3. By this means the air-passage is had from the pipe D of the one car to the pipe D of the adjoining car while they are connected. For the purpose of holding the arms K in right-angular position with the shanks G and the air-pipes D to keep the communication through the valves and through the openings I in their plugs open from car to car during their connection, each valve is provided with an arm, H, projecting at right angles from its shank G, and its end is made with a slot to receive the arm K and a sleeve. Each end of the pipe A is furnished with a sleeve, B, over which the end of the pipe A is tightly secured; and each sleeve B has a shoulder, J, on its end, and is fitted to slide closely over the arm K, with which it is connected; and each arm K is provided with a similar shoulder, L, and with a rubber ring, M, between its shoulder L and the shoulder J of the sleeve B. The inner face of the arm H engages the rear face of the shoulder J in such a manner as to compress the ring M between the shoulders L and J. The face of the arm H is made concave to make a seat for the rear face of the shoulder J, which is made convex. Thus the arms K are held sufficiently secure in their communicating position during the connection of the cars.

The open part of the slot in the arm H is toward the joining car or opposite valve and arm H, so that each of the arms K is allowed to turn out from its arm H and its seat toward the joining car, and the part of the said face of the arm H from the seat toward the end of the slot is tapered outward, to permit

the gradual compression of the ring M by entering the arm K and its sleeve B into the slot of the arm H, as shown.

From the foregoing it will be seen that by the separation of the cars the coupling or pipe A will become stretched and cause the turning of the arms K away from their seats in the arms H, and cause the turning away of the openings I in their plugs E from the openings in the shanks G, consequently closing the valves, and finally causing the withdrawing of one sleeve, B, from its arm K, as one of said sleeves is always separately tied to its arm to prevent the entire dropping off of the pipe A.

With the above means the ends of the air-pipes are positively closed by the separation of the cars on account of the turning of the plug-valves.

The method herein shown for turning the plug-valves may be varied. The arms of said plugs may be connected with other portions of any of the permanent parts of the opposite car, to cause the turning of them by the separation of the cars.

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

The combination, in brakes operated by vacuum or by air-pressure, of the cocks C C, provided with inlets and outlets, and arranged to be turned, and opened or closed, and be held with the pipe A, with sleeves B B, and arranged to be detached by the motion and separation of the adjoining car, substantially as and for the purpose herein set forth.

W. J. STEVENS.

In presence of—
R. BOEKLEN,
GEO. G. ESCHBACH.