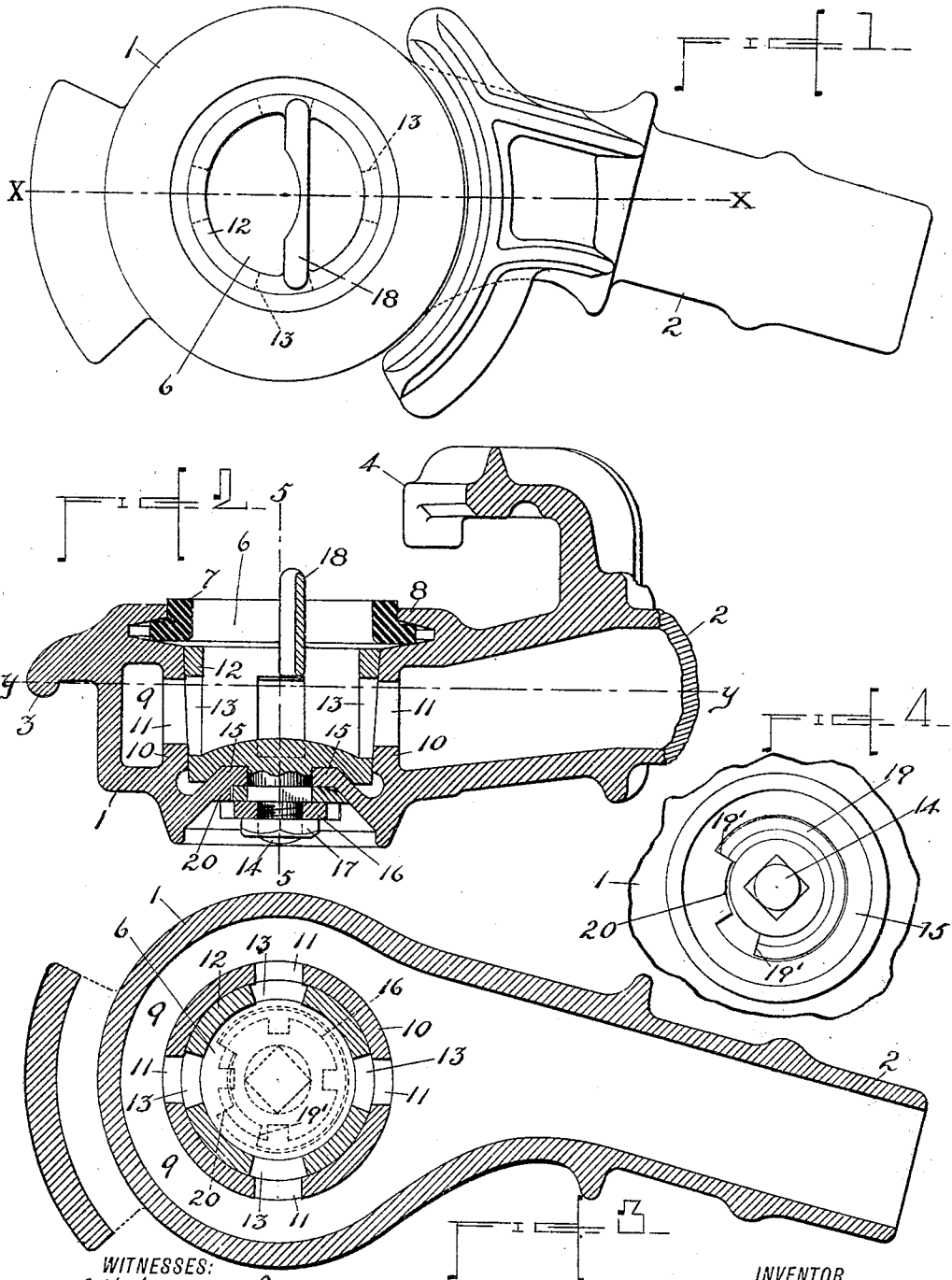


No. 813,747.

PATENTED FEB. 27, 1906.

A. H. SKILLINGS.
AUTOMATIC AIR BRAKE COUPLING.

APPLICATION FILED DEC. 15, 1904.



WITNESSES:

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ARTHUR H. SKILLINGS, OF BROOKLYN, NEW YORK.

AUTOMATIC AIR-BRAKE COUPLING.

No. 813,747.

Specification of Letters Patent.

Patented Feb. 27, 1906.

Application filed December 15, 1904. Serial No. 236,924.

To all whom it may concern:

Be it known that I, ARTHUR H. SKILLINGS, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, (with post-office address 455 Argyle road, Flatbush,) have invented a certain new and useful Improved Automatic Air-Brake Coupling, of which the following is a specification.

My invention relates to hose-couplings used for the air-brake or steam-pipes of railway-cars, and is designed more particularly to simplify and cheapen the construction of that type of coupling in which a valve is employed for automatically shutting off the passage of air by the act of partially rotating the two members of the coupling in the usual operation for disconnecting them from each other and for reestablishing the passage when said members are rotated to connect them.

The invention relates more particularly to the construction of the coupling-shell and manner of mounting and securing the rotary valve portion in place therein.

The invention relates also to the construction of the devices for insuring a full movement of the valve in both of the complementary members of the coupling.

The invention consists in the novel features of construction and combinations of devices more particularly hereinafter described and then specified in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan of one member of a coupling embodying my invention. Fig. 2 is a vertical section in the line $x x$, Fig. 1. Fig. 3 is a longitudinal section in the line $y y$, Fig. 2. Fig. 4 is a partial plan looking from beneath.

In the drawings one member of the coupling only is shown, the complementary member being of similar construction to adapt it for coöperating use, as is well understood in the art.

1 is the coupling-shell proper, provided, as usual, with the laterally-extending pipe or nipple 2, adapted for attachment of the hose. Said shell is also provided with the flange 3 and the overhanging lip 4, which coöperate with similar parts on the complementary member and lock said members together in the usual manner when the opening 6 in the meeting face or front wall of one member is brought into opposition with the similar opening in the face of the other member, and

said members are then rotated on an axis 5 transverse to the axis of pipe 2.

7 indicates a gasket surrounding the opening 6 and held in place beneath the annular lip or flange 8 on the front wall or meeting face of the coupling-shell.

The rear wall 15 of the shell has a central opening, through which passes a stud projecting from the rotary valve, and which stud, as will be presently described, is adapted to receive a fastening-nut or suitable fastening devices, all located in the depression in the outer face of said rear wall 15, as shown. The shell itself is of cast metal, cast in such form as to provide an annular chamber 9, the inner wall or partition of which (indicated at 10) constitutes a part of the cast-metal shell, being cast integral therewith. Said inner wall or partition is provided with a number of ports or openings 11, through which by rotation of the valve member free communication is established between chamber 9 and the interior of the chamber having the port or opening 6.

Seated in the inner face of the wall is the hollow cylindrical valve 12, which is substantially concentric with the opening 6 and has its open upper end in free communication with opening 6. In the walls of valve 12 are ports 13, which coöperate with the ports 11 to establish communication between the annular chamber 9 and the port or opening 6, when the members of the coupling are turned so as to lock them together, the valves 12 being at such time interlocked. When turned in the opposite direction to disconnect the members, the ports 11 13 are moved out of registry and the communication is cut off. The face of said valve has, preferably, a slight taper, diminishing from the end of the valve nearest the front wall or face of the cast shell toward the rear wall, and is held down to its tapered seat on the inner face of the wall 10 by any suitable means—as, for instance, by a stud 14, which projects from the lower end of the valve-cylinder through an opening in the back or rear wall 15 of the shell and is tapped for the reception of the clamping and lock nuts 16 17. These devices, which hold the valve to its seat, are located, as shown, in the depression in the outer face of the rear wall and are thereby protected to a great extent from accidental contact with foreign objects.

The interlocking of the valves is effected

by any suitable means when the meeting faces of the complementary members are brought together preparatory to rotating them to cause them to interlock. Such means may consist of an axially-projecting lug or web 18, projecting from the top of the cylindrical valve.

To limit the relative rotary movement of each valve and its shell and insure a full movement of the valve in both of the complementary members of the coupling, I provide each valve with a stop-piece 19, adapted to be engaged by a stop pin or stud 20 on its own coupling member. Said stop-piece 19 may consist of a plate secured against rotation on the stud 14 outside the rear wall 15 and held in place by being located between the nuts 16 and the outside face of the rear wall 15. This plate 19 is cut away to provide two shoulders 19', adapted to be engaged by the pin or stud 20 when the relative turning movement of either shell and its valve has been completed in either direction. The stud 20, of the shape shown more fully in Fig. 4, is formed upon the outer face of the wall 15. By this means should there be any disparity in the freedom of movement of the valves, respectively, in their seats the more-freely-moving one will open first, after which the relative movement of said valve and its shell will cease by engagement of the pin 20 and one of the shoulders 19', depending upon the direction of movement whether to open or close the valve. Thereafter said valve and its shell will be held against turning independently of one another, and the valve in the complementary member will be compelled to move should it have failed to move in the previous turning movement of the shells with relation to one another in the act of coupling or uncoupling said members.

As will be seen, the above-described construction of metal shell cast with the wall or partition 10 to form the annular chamber 9 and the securing of the valve in place by means of a stud or projection therefrom passing through the rear wall of the casting or

shell produces an automatic coupling having maximum simplicity of construction and minimum number of parts. It will also be seen that the valve may be very readily removed for repair or cleaning and that through the large number of ports 11 that may be provided an unobstructed passage of the fluid is secured when the valve is open.

What I claim as my invention is—

1. In a hose-coupling, a cast-metal coupling-shell cast with an annular interior perforated partition adapted to form an annular chamber within the shell, a rotary cylinder-valve seated on the inner face of the annular partition or wall and having a taper from its end next the meeting face or front wall of the casting toward the rear wall of the shell, a stud or projection extending from said valve through an opening in the rear wall, and means cooperating with said stud to hold the valve down to its seat.

2. In a hose-coupling, the combination of rotary valve-cylinders, seated in the cooperating members of the coupling, and each provided with a stud or projection extending through the rear wall of the coupling-shell, a stop-piece secured against rotation on said stud and secured thereon outside the rear wall of the shell, and a cooperating stud formed on the outer face of said back or rear wall, as and for the purpose described.

3. In a hose-coupling, a cast-metal coupling-shell having an annular chamber formed by an interior wall or partition cast in one piece with the shell and perforated for cooperation with a valve-cylinder, said shell having a perforated back or rear wall provided with a cavity or depression on its exterior, as and for the purpose described.

Signed at New York, in the county of New York and State of New York, this 3d day of December, A. D. 1904.

ARTHUR H. SKILLINGS.

Witnesses:

C. F. TISCHNER, Jr.,
A. FRANKENTHALER.