

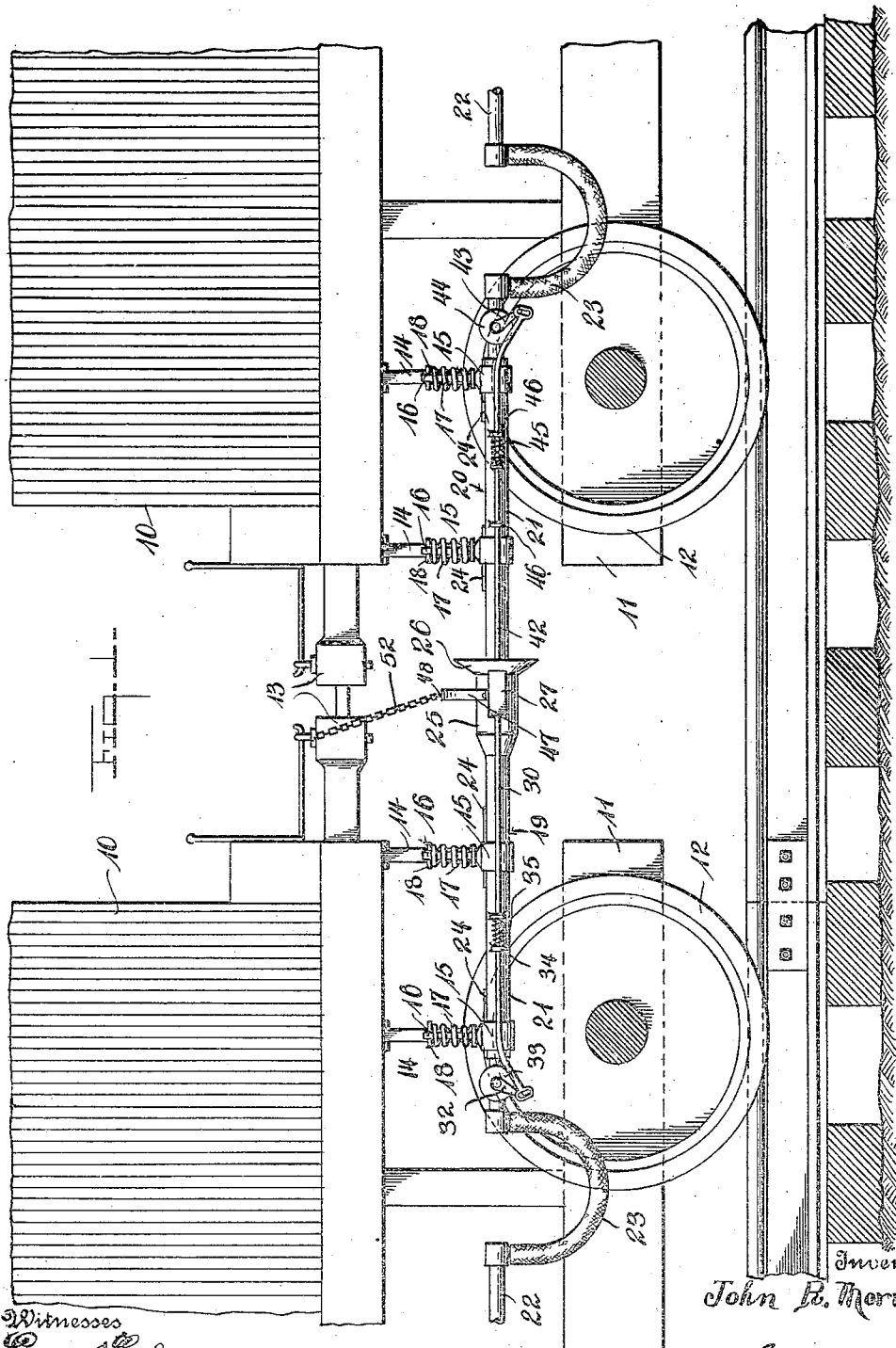
J. R. MORRIS.
PIPE COUPLING.

APPLICATION FILED OCT. 15, 1909.

955,663.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.



Witnesses
Ernest Becker

J. O. [Signature]

Inventor
John R. Morris

By

[Signature]

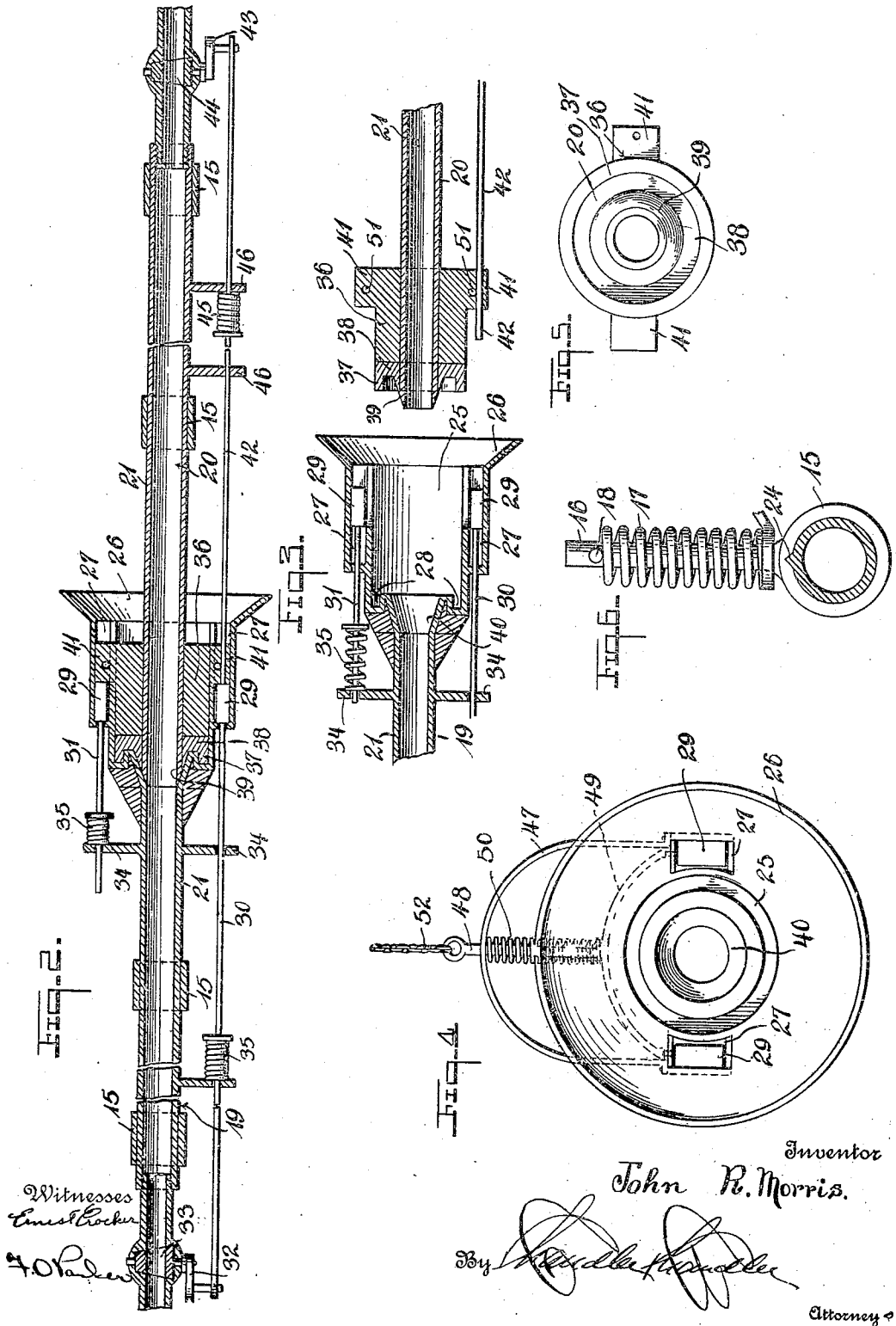
Attorneys

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UNITED STATES PATENT OFFICE.

JOHN R. MORRIS, OF COBB, FLORIDA.

PIPE-COUPLING.

955,663.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed October 15, 1909. Serial No. 522,851.

To all whom it may concern:

Be it known that I, JOHN R. MORRIS, a citizen of the United States, residing at Cobb, in the county of Santa Rosa, State of Florida, have invented certain new and useful Improvements in Pipe-Couplers; and I 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.

The invention relates to pipe couplings and more particularly to the class of train pipe couplings.

The primary object of the invention is the provision of a coupling in which the air pipes used in connection with air brake systems and pneumatic systems generally upon railway cars shall be automatically united to form a continuous conduit when the railway cars are joined by coupling the same together in the ordinary well known manner.

Another object of the invention is the provision of a coupling of this character in which the fluid controlled valve cocks will be automatically opened upon the joining of the coupling for connecting the fluid pipe of an air brake system upon railway cars and also that will enable the automatic closing of the cock when the coupling is broken.

A further object of the invention is the provision of a coupling which while being extremely simple in arrangement and construction will be efficient and will not be likely to become broken or deranged and also one that is inexpensive in the manufacture.

In the drawings accompanying and forming part of this specification is illustrated the preferred form of embodiment of the invention, which to enable those skilled in the art to carry the invention into practice, will be set forth at length in the following description, while the novelty of the invention will be set forth in the claims hereunto appended.

However it is to be understood that the invention is not confined to the detail features herein shown and described but changes, variations and modifications may be resorted to, such as come properly within the scope of the appended claims, without departing from the spirit of the invention or sacrificing any of its advantages.

In the drawings:—Figure 1 is a frag-

mentary side elevation of adjacent railway cars with the invention applied thereto shown in coupled position. Fig. 2 is a fragmentary horizontal longitudinal sectional view through the train pipes and coupling, the same being shown in coupled position. Fig. 3 is a fragmentary sectional view through the coupling the same being in uncoupled position. Fig. 4 is a front elevation of one of the coupling sections. Fig. 5 is a front elevation of the other coupling section. Fig. 6 is an enlarged detail view of one of the hangers for supporting the coupling.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings by numerals 10 designates the end portions of adjacent railway cars which are of the usual construction mounted upon truck frames 11 supporting the ordinary car wheels 12 and these cars are united by the usual draft couplings 13 of the link type although the couplings may be of any other desirable construction.

Depending from and secured to the adjacent ends 10 of the cars are alining brackets 14, which are spaced from each other longitudinally of the cars and these brackets support automatically adjustable hangers each comprising a sleeve 15, having an integral shank 16, passed vertically through a perforation in the lower end of the bracket 14, and surrounding this shank 16 is a coiled compression spring 17, the latter having one end bearing against the lower extremity of the bracket and its opposite end against a cross pin 18 detachably secured in the upper end of the shank so that the said hanger is capable of vertical displacement in the bracket.

Mounted within the hangers are coupling sections 19 and 20, each being formed with a short pipe 21, the same having communication with the air train pipes 22, through the medium of a flexible tube 23. The said short pipes 21, are formed with longitudinal ribs 24, the same engaging correspondingly-shaped grooves formed in the sleeve 15, of the hangers so as to enable slight longitudinal displacement of the coupling sections but preventing the said sections from rotating within the hangers.

The coupling section 19 has formed at the outer end of the short pipe 21, an enlarged coupling head 25, provided with a flared fun-

nel-shaped mouth 26, and at diametrically opposite points of this head are provided guide cavities or recesses 27, while in the inner end of the head is formed an annular groove 28, the purposes of which will be hereinafter described. Mounted within the cavities 27 are slidable blocks 29, carried at the ends of push rods 30 and 31, the rod 31 being of considerably less length than the rod 30, which has loose connection with the turning crank 32 of a cutoff valve plug 33, mounted within the short pipe 19, which plug controls the supply of fluid through the train pipe on one of the cars. The rods 30 and 31 are loosely passed through a bearing bracket 34, mounted on the coupling section 19, and these rods are acted upon by expansion springs 35 to hold the blocks 29 near the forward end of the cavities 27, adjacent the mouth of the head 25, of the coupling section 19, so as to be operated upon in the manner as will be hereinafter described.

The coupling section 20, has formed at the outer end of the short pipe 21 a cylindrical head 36, which is adapted to fit within the enlarged hollow head 25 and is formed with an annular resilient rib or flange 37, on a resilient cap 38, the rib 37, being adapted to fit within the annular groove 28, so as to effect a fluid tight joint between the head when connected. The outer end of the pipe 21, is beveled as at 39, to engage a flared terminal 40, of the pipe 21, when the head 36 telescopes within the head 25, in the uniting of the coupling sections.

Projecting laterally at diametrically opposite points from the head 36, are stationary abutment blocks 41, which latter are adapted to engage the slidable blocks 29, to displace the same when the coupling heads are united and in this manner the valve rod 30 is operated to open the valve plug 33, in the train pipe. Passed loosely through one of the stationary blocks 41 is a push rod 42, which latter has loose connection to the turning lever 43 of a cutoff valve plug 44, and the opposite free end of this lever is adapted to engage one of the slidable blocks 29, when the coupling heads are united so that this push rod 42 will be moved to open the valve plug 44, which serves to control the fluid in the coupling section 20 of the train pipe. This push rod 42, is acted upon by an expansion spring 45, which serves to normally project the free end of the rod 42 beyond the stationary block 41, so that it will be automatically actuated to open the valve plug 44, upon the joining of the coupling sections. This rod 42 is suitably mounted in bearing eyes 46, projecting from the short pipe 21, of the coupling section 20.

Fixed to the enlarged head 25, of the coupling section 19, is an arcuate-shaped yoke 47, forming a bracket for a latch member

comprising a shank 48, having forked terminals 49, the same being freely passed through suitable openings in the top walls of the cavities 27, and normally resting upon the slidable blocks 29 therein. Surrounding the shank 48, is a coiled expansion spring 50, the latter acting upon the latch member so as to automatically bring the terminals 49, into locking engagement in apertures 51, in the stationary blocks 41, when the latter displace the slidable blocks 29, upon the uniting of the coupling sections 19 and 21, when the heads 25, and 36, have been joined. In this manner the coupling sections will form a continuous conduit between the train air pipes on the cars. The shank 48, of the latch member is connected to the locking pin of one of the draw heads of the draft couplings on the car by means of a chain 52, so that when the locking pin is released it will simultaneously release the latch member for disconnecting the coupling sections.

In operation presuming that the adjacent cars 10 are to be coupled together and that normally the plugs 33, and 44 in the coupling sections 19 and 20 of the respective cars are in a position for shutting off the air supply through the train pipe, the said cars are brought together and coupled in the usual manner by the draft couplings 13 and simultaneously the head 36, of the coupling section 20 enters the enlarged head 25, of the coupling section 19, and the same are locked automatically by the latch member to unite them. During this operation the slidable blocks 29, within the head 25 are displaced which moves the valve rod 30, and also the valve rod 42 is moved and in this manner the valve plugs 33 and 44, are turned to open the same and thereby establish a continuous conduit for the passage of air through the train pipes.

What is claimed is:—

1. A device of the class described comprising fluid pipe coupling sections, heads formed on the sections, one of said heads containing opposed cavities, displaceable means slidable in said cavities, normally closed valves located in the pipe section, a connection between one of the valves and one of said displaceable means, an abutment element carried by the other head and operating said displaceable means for opening the said valves upon the joining of the heads, and a connection between the other valve and said abutment means and operated by the displaceable means.

2. A device of the class described comprising pipe sections, heads on said sections, one head adapted to fit within the other, cutoff valves within said pipe sections, a slidable block mounted within one head, a stationary abutment block carried by the other head and operating the slidable block and push rods actuating the valve and acted

upon by the slidable block upon the uniting of the heads.

3. A device of the class described comprising pipe sections, heads on said sections, one head adapted to fit within the other, 5 cutoff valves within said pipe sections, a slidable block mounted within the head, a stationary abutment block carried by the other head and operating the slidable block, 10 push rods actuating the valve and acted upon by the slidable block upon the uniting of the heads, and means automatically locking the heads united.

4. A device of the class described comprising pipe sections, heads on said sections, 15 one head adapted to fit within the other,

cutoff valves within said pipe sections, a slidable block mounted within the head, a stationary abutment block carried by the other head and operating the slidable block, 20 push rods actuating the valve and acted upon by the slidable block upon the uniting of the heads, means automatically locking the heads united, and automatic vertically adjustable hangers supporting the pipe sec- 25 tions.

In testimony whereof, I affix my signature, in presence of two witnesses.

JOHN R. MORRIS.

Witnesses:

G. F. MORRIS,

A. B. MORRIS.