(No Model.)

2 Sheets—Sheet 1.

J. S. HUNTER.

COUPLING.

No. 442,809. Patented Dec. 16. 1890.

Fig. 1.

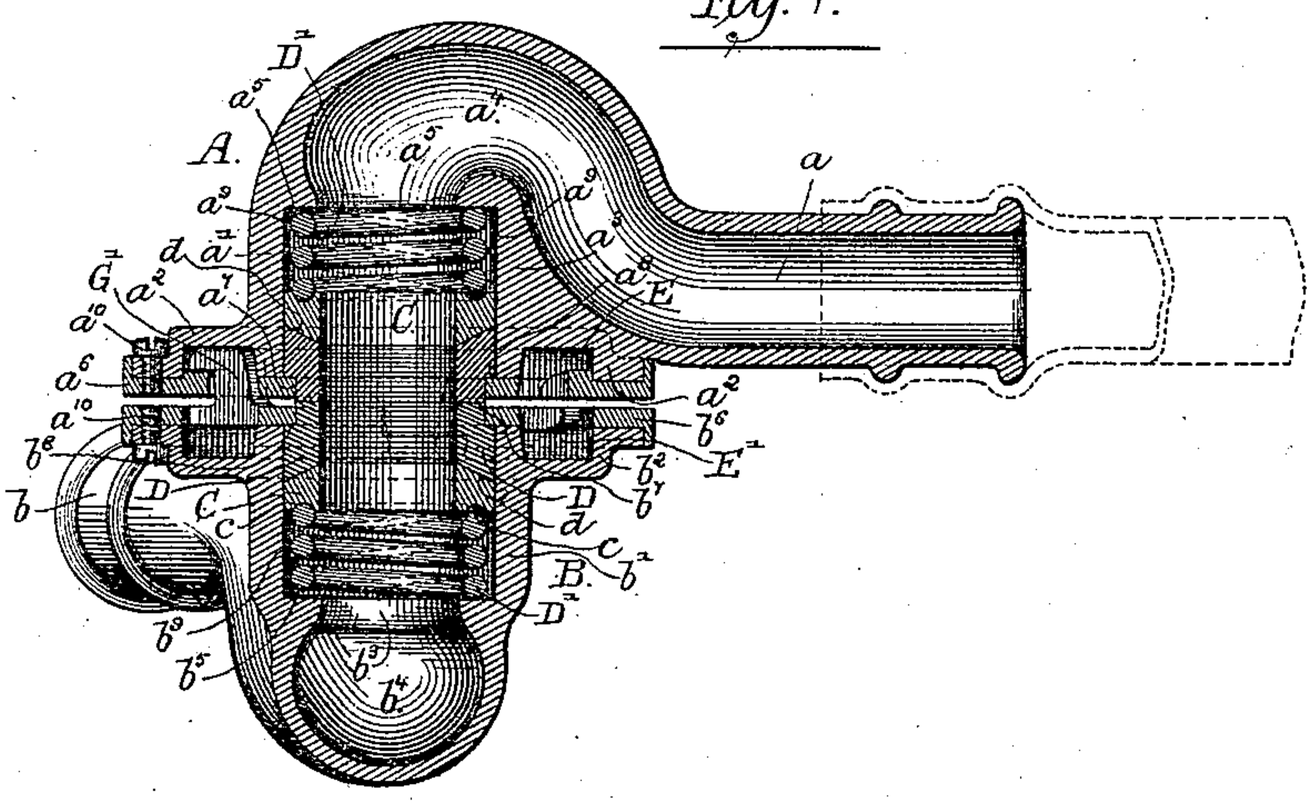


Fig. 2.

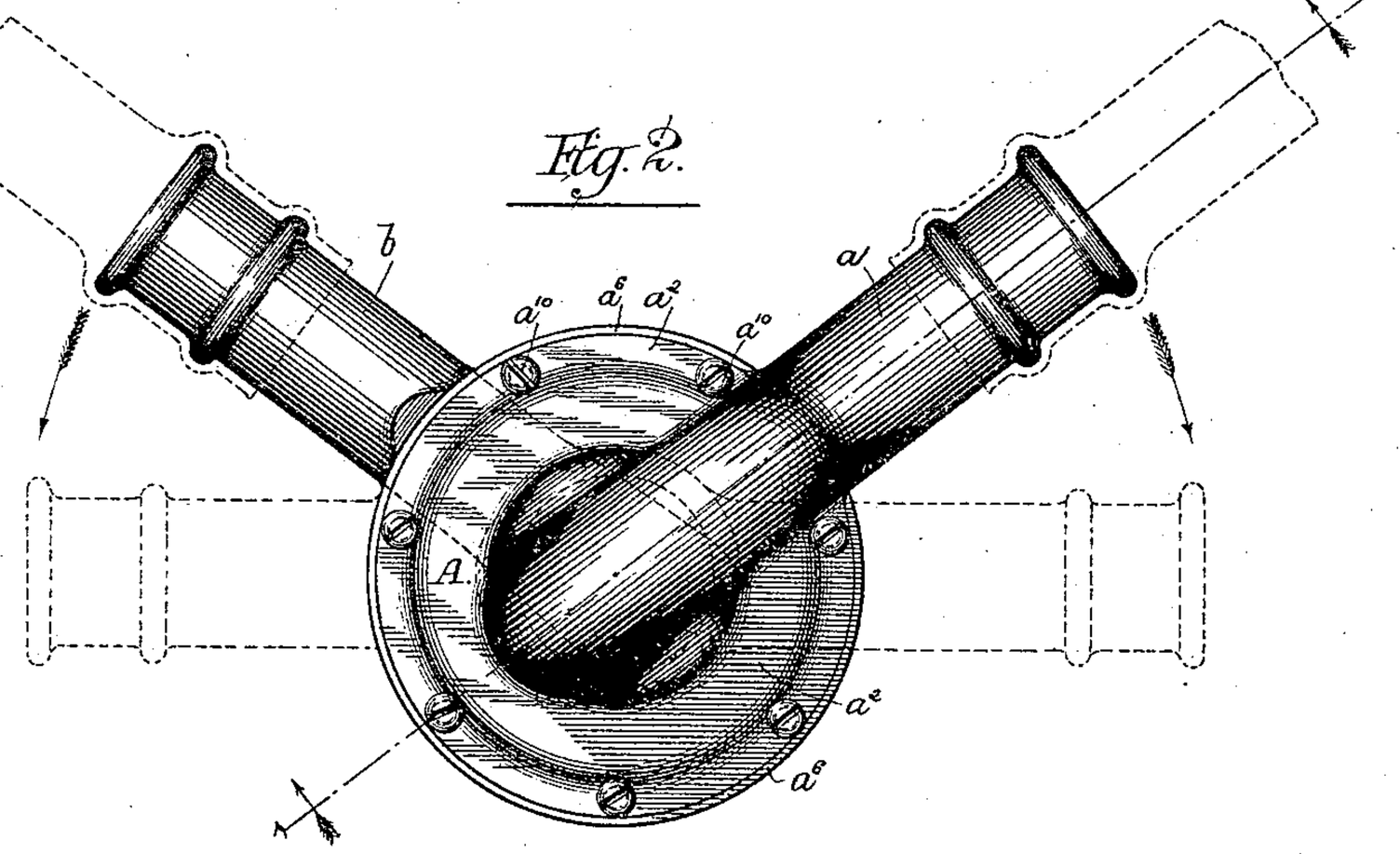
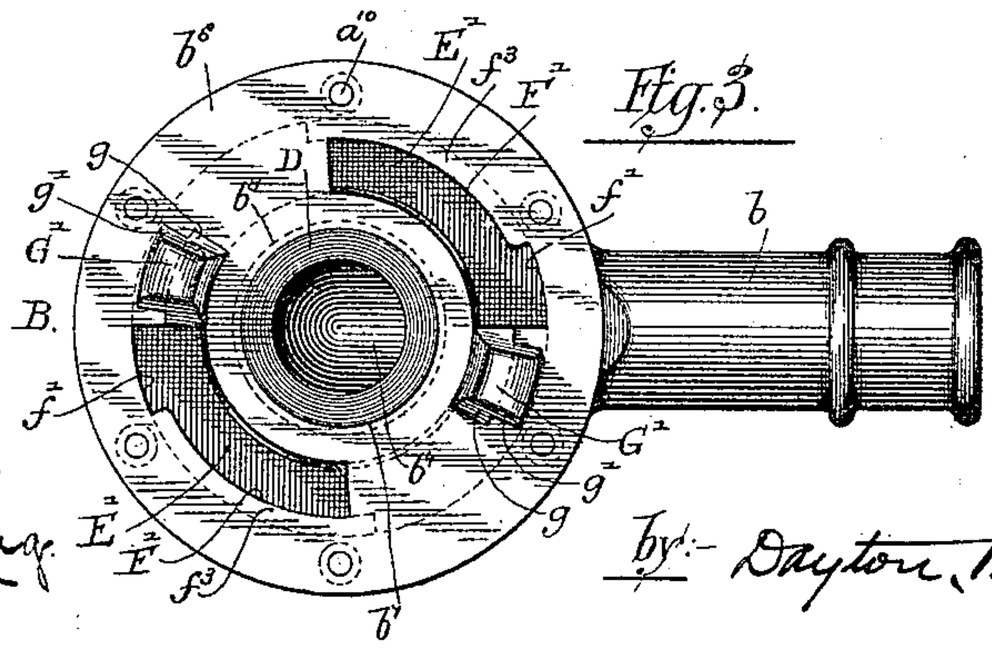


Fig. 3.



Witnesses:-

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Inventor:-

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(No Model.)

2 Sheets—Sheet 2.

J. S. HUNTER.

COUPLING.

No. 442,809. Patented Dec. 16. 1890.

Fig. 4.

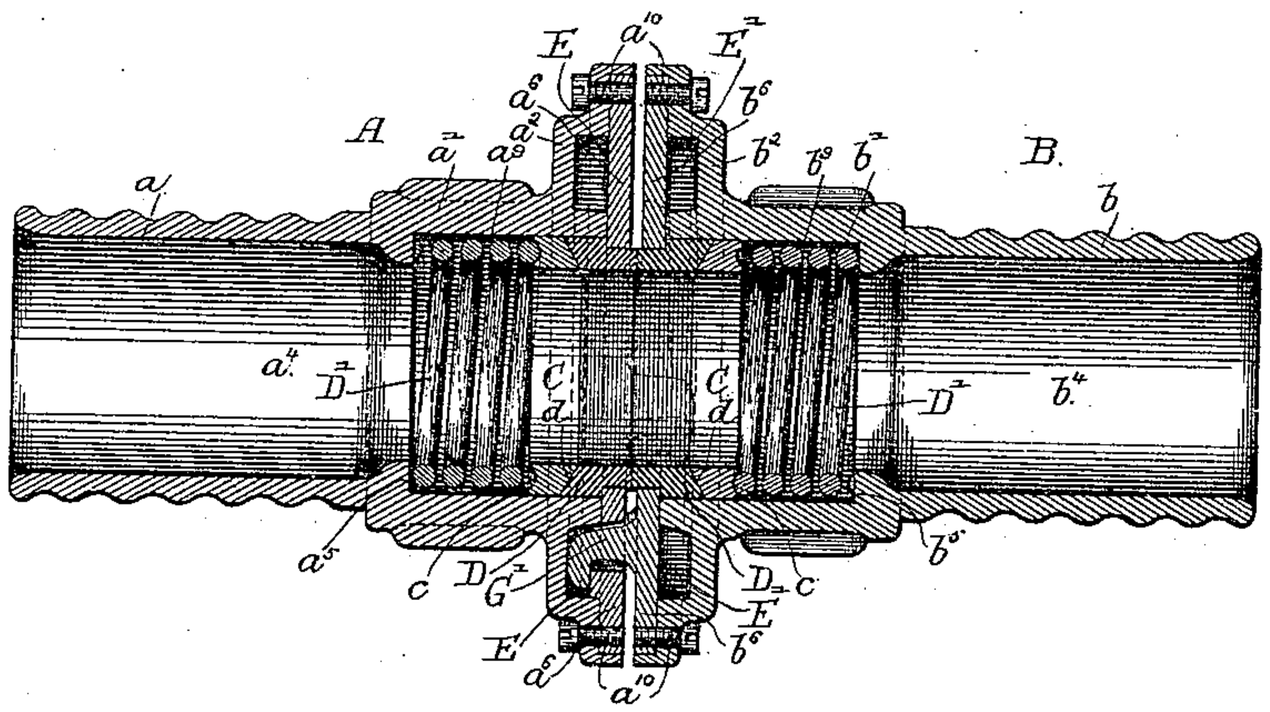


Fig. 5.

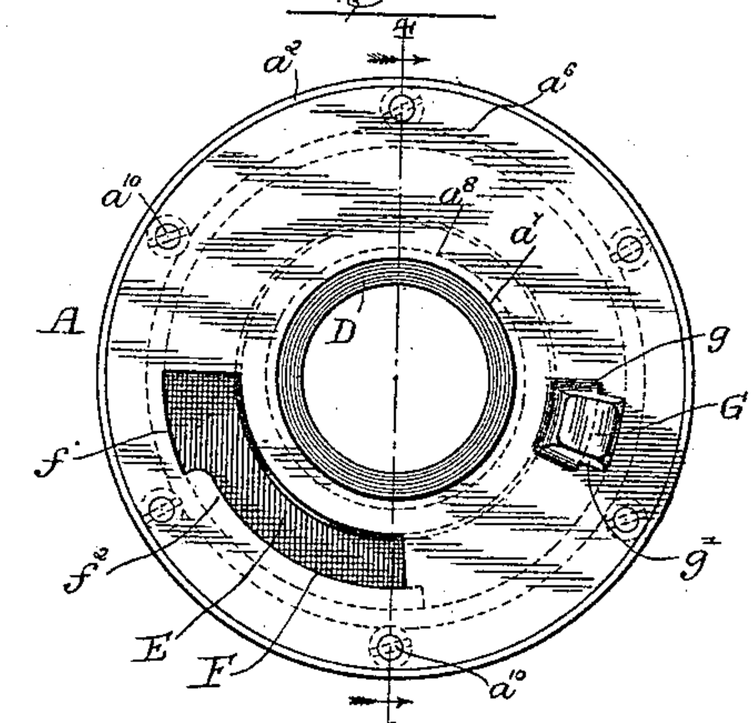
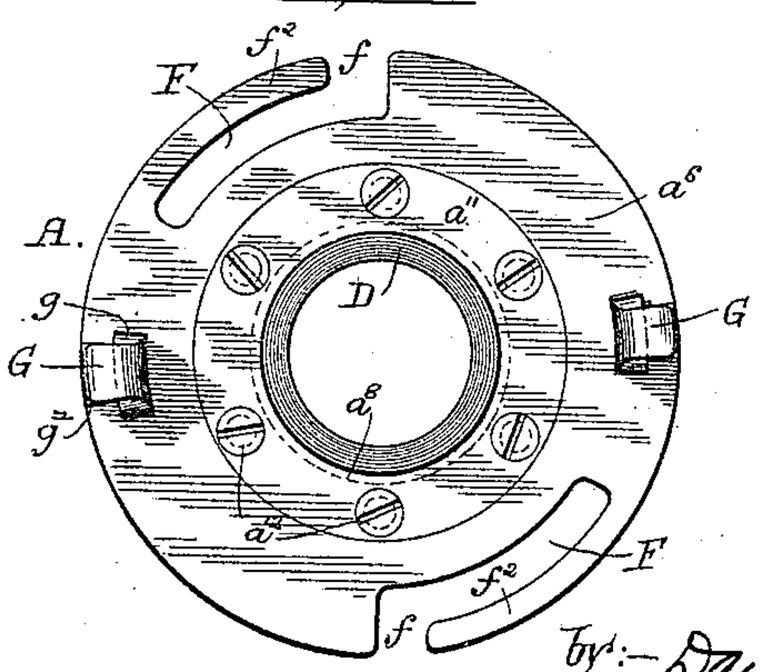


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN S. HUNTER, OF CHICAGO, ILLINOIS.

COUPLING.

SPECIFICATION forming part of Letters Patent No. 442,809, dated December 16, 1890.

Application filed March 4, 1890. Serial No. 342,533. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. HUNTER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Couplings; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in couplings for pipes or hose.

The general object of my invention is to produce a coupling the two parts of which may be readily united and securely joined together by a simple or single twist of the parts in opposite directions, but which will be readily and easily separated by a simple untwisting of the parts, while at the same time it shall be cheap and durable.

My invention is designed, primarily, for use in connection with steam-heating apparatus employed upon railway-trains. In such cases it is desirable to have a union or coupling which may be very quickly and easily put together by the train-men, but at the same time one which may be automatically uncoupled or separated when the two cars between which it is located are uncoupled or separated, either by accident or design.

The invention may be applied to other uses, however.

My invention consists in the novel devices and combination of devices hereinafter illustrated and described, but more particularly pointed out in the appended claims.

In the drawings, Figure 1 represents a vertical sectional view of my improved coupling as applied to the heating apparatus of railway-cars, the same being taken upon line 1 1 of Fig. 2. Fig. 2 is an outside plan view of the same, showing in dotted lines the relative location of the parts when in position to be uncoupled or separated from each other. Fig. 3 is a plan view of one-half of the coupling. Fig. 4 is a central vertical sectional view of a slightly-modified form of the invention when used, preferably, as a coupling for hose, the same being taken upon line 4 4 of Fig. 5. Fig. 5 is a plan view of one-half of the form of coupling shown in Fig. 4, and Fig. 6 is a plan view of one-half of still another modification.

In the drawings, A B represent, respectively, as a whole the two parts of the coupling, each part being the duplicate of the other. The part A, for example, comprises a shank or pipe a, to which the hose or other flexible connection is secured in the usual manner, a body portion a', and a flange or face a^2. Within the body portion a' is a wall a^3 and a passage a^4, the latter extending from the mouth of the shank a around one end of the wall a^3 to the face of the flange a^2. An annular shoulder a^5 is formed in the body A for the purpose hereinafter set forth. A separate part or face-plate a^6 is placed over the flange a^2, and may be secured to the flange a^2 by screws or otherwise, or may be cast integral therewith. This face-plate a^6 has a central opening a^7 therein of lesser diameter than the passage-way a^4, thus forming on its under side, in connection with the walls a^9 of said passage, a shoulder a^8.

D is an annular gasket, preferably of rubber, having a central opening of diameter equal to that of the opening forming the passage-way a^4 through the annular shoulders a^5. Said gasket is of diameter sufficient to fit within the walls a^9 of the body portion a' and rests against the shoulder a^8, as clearly shown in Fig. 1. The under side d of the gasket is tapered outwardly, as shown. Beneath the gasket D, but resting against it, is a ring or collar C, having its upper edge flared to register with the flare or taper of the gasket D, and having its under side provided with an annular recess or groove c.

D′ is a spiral spring having one end resting in the recess c and the other end resting upon the annular shoulders a^5. By this construction it will be seen that the spring D′ presses the collar C outwardly or toward the flange a^2, thus pressing the gasket D in the same direction against the shoulder a^8. The gasket D is of such depth as to extend at all times slightly beyond the outer face of the cap or plate a^6.

The part B is shaped and provided precisely similar to the part A above described, corresponding parts being similarly lettered, using B instead of A.

In each of the flanges a^2 b^2 is a concentric depression-groove E E′. In each of the face-plates a^6 b^6 are two concentric slots F F′, diametrically opposite each other. Each of the slots F F′ is provided at diametrically-opposite points with an enlargement $f f'$, the width of said slots at the enlargement being equal to the width of the concentric depressions or grooves E E′. The width of the slots F F′ proper being less than the width of said recesses E E′, a portion of the face-plates a^6 b^6 forms an overhanging shoulder at f^2 f^3 above the grooves E E′, as clearly shown in Figs. 1 and 3.

Upon each face-plate a^6 b^6 are two projecting studs G G′, each comprising a stem g and an overhanging head or flange g'. The size of the overhanging flange g' is such as to permit it to enter the enlarged portion $f f'$ of the slots F F′ in the opposite face-plate. It will be obvious that after having entered said slots a simple twist or turn of either the part A or part B will cause the under face or shoulder g^2 of the studs to engage beneath the overhanging flanges f^2 f^3, and thus become locked therewith.

If the parts A and B are placed in the relative positions indicated in dotted lines in Fig. 2, with the face-plates a^6 b^6 adjacent to each other, the studs G G′ may be freely inserted in the enlarged portions $f f'$ of the slots F F′, in which position the outer faces of the gaskets D D will rest against each other. By pressing the parts A and B together slightly for the purpose of compressing the gaskets D D the parts A and B may then, by a turning or twisting motion, be brought into the position shown in full lines in Fig. 2, with the studs G G′ securely engaged through the slots F F′ in the recesses E E′, in which position steam or other fluid may freely pass through the passage a^4 b^4.

The parts A B may be separated by reversing the movement just described, as will be obvious. It will also be obvious that a straight horizontal strain on the stems a b will cause the parts to move in the direction indicated by the arrows in Fig. 2 and automatically disengage the parts A and B. This feature is very desirable in case of the accidental uncoupling of the cars, which often occurs and produces more or less damage, but with the use of the present invention will result in no permament injury to the coupling.

I may not always deem it advisable to use two sets of studs G G′ and two sets of slots F F′, and for that reason I have illustrated in Figs. 4 and 5 a slightly-modified form, showing but one slot and one stud on each face-plate. In this form the passage-way a^4 b^4 may extend directly away from the flange a^2 b^2. This form will be found very practicable for use with the ordinary water-hose.

It may sometimes be advisable to place the studs G G′ upon the periphery of the flange or face-plate a^6 b^6, in which case the enlarged parts $f f$ of the slot in which said studs should fit and engage must also extend to the periphery of the face-plate. Such construction I have shown in Fig. 6. Its operation will be obvious from an inspection of the drawings without further exemplification. In this form it is desirable to cast the face-plate a^6 b^6 integral with the flange a^2 b^2.

What I claim is—

1. The herein-described two-part coupling, each member provided with a body portion, and a flange thereon having a groove or grooves, face-plates secured to said flanges, a slot or slots in said face-plates, and a lug or lugs projecting from the face-plates and adapted to enter the slots and grooves in the opposite member.

2. The herein-described two-part coupling, each member provided with a body portion and a flange thereon having a groove or grooves, face-plates secured on said flanges, the stem a b, interior passages a^4 b^4, shoulders a^5 b^5, spring D′, ring C, gasket D, projecting slightly beyond the face-plate, the concentric slot or slots F F′, each having an enlarged portion, and a lug or lugs adapted to engage said slots and grooves.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

JOHN S. HUNTER.

Witnesses:
TAYLOR E. BROWN,
GEORGE W. HIGGINS, Jr.