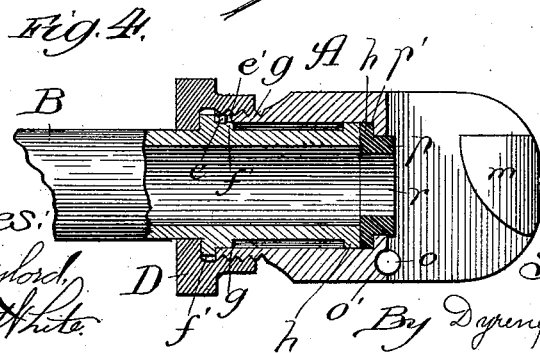
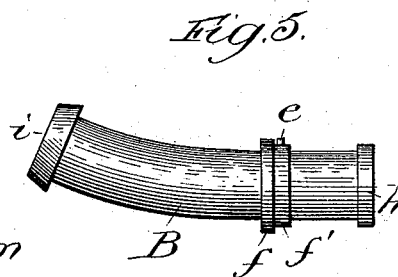
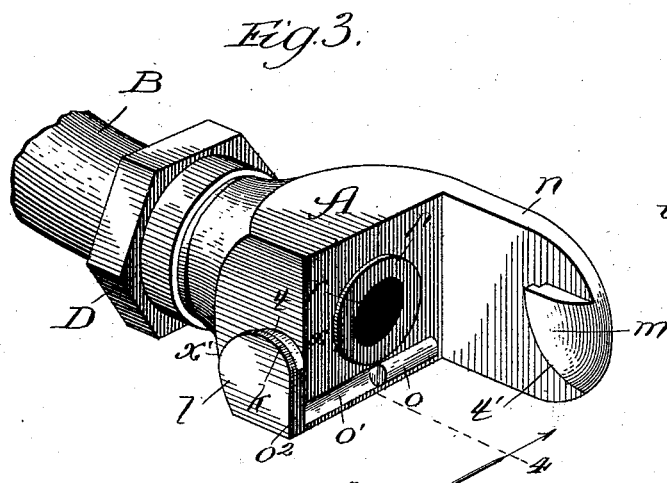
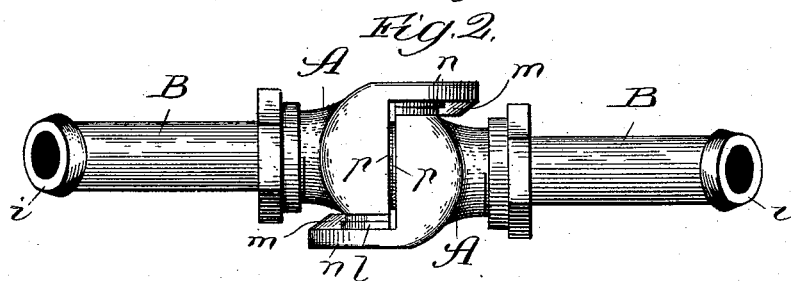
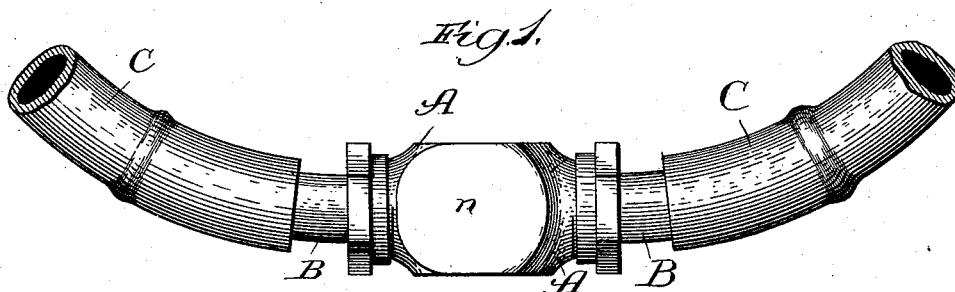


(No Model.)

S. M. BEERY.  
HOSE COUPLING.

No. 494,316.

Patented Mar. 28, 1893.



Witnesses:

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# UNITED STATES PATENT OFFICE.

SAMUEL M. BEERY, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CONSOLIDATED CAR-HEATING COMPANY, OF WHEELING, WEST VIRGINIA.

## HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 494,316, dated March 28, 1893.

Application filed August 8, 1892. Serial No. 442,402. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL M. BEERY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hose-Couplings, of which the following is a specification.

My invention relates to an improvement in the class of so-called gravity-couplings, in which the coupling comprises two interlocking parts or halves each forming the terminal of a hose-connection between cars for steam or other pipes and being adapted to maintain their mutual closure by gravity; and it is designed, especially, to afford improvement upon certain details involved in the hose-couplings set forth in Letters Patent of the United States granted to James H. Sewall and numbered and dated, respectively, 363,553 of May 24, 1887; 375,572 of December 27, 1887; and 421,110 of February 11, 1890.

In the accompanying drawings, Figure 1 is a view in side elevation representing the two parts of a coupling constructed with my improvements, the hose-sections connected by the coupling being shown broken. Fig. 2 is a plan view of the same without the hose-sections. Fig. 3 is a perspective view, somewhat enlarged over the scale of the preceding figures, of one-half of a hose coupling embodying my invention. Fig. 4 is a section taken at the line 4 on Fig. 1 and viewed in the direction of the arrow; and Fig. 5 is a view in side elevation of the gasket-clamping nozzle provided with a guide-feature of my improvement.

In its general construction my improved coupling may resemble that of Sewall, heretofore referred to, that is to say it may involve a hollow head A having a passage *r* through it, and which should be central and packed with a flanged gasket *p*; a hinge near the lower edge of its meeting face comprising a rib *o* extending about one-half of the width of the head, and a recess *o'* adjacent to the rib, the rib and recess being adapted to cooperate, respectively, with a corresponding recess and rib on the companion-half of the coupling to form the hinge; a flat extension or lip *n* projecting forward from one side of the head to overlap the adjacent side of the

companion-half of the coupling and provided on its inner surface with a curved tightening shoulder *m*; a curved tightening-shoulder *l* on the inner side of the head, the shoulders *m* and *l* on the head of one half of the coupling being adapted to engage respectively with the shoulders *l* and *m* on the head of the other half and interlock the parts of the coupling; and a nozzle B on which to attach the hose to be coupled, the nozzle extending into the hollow head from its rear end and bearing therein and being fastened against the gasket to hold the latter in place, by forming about its exterior surface inside the head an air-chamber tending to prevent quick condensation.

My improvements relate particularly to the form and manner of operation of the locking shoulders *l* on the companion-heads A, to insure uniform mutual compression of the annular faces of the gaskets; and the hinge joint between the companion-halves of the coupling, to insure their proper co-adjustment.

A hose-coupling provided with either of the enumerated features of my improvement will be improved to that extent; hence I do not limit my invention to a coupling containing them all in combination, though a coupling is the better adapted for use by being provided with them all.

The locking shoulder *l*, as will be clear on inspection of Fig. 3, (and which is shown to be provided with a rectangular peripheral groove *k*, which is better than a V-shaped groove as employed in practice in the Sewall coupler, because the latter tends to wedge the locking parts together and prevent their ready separation) presents an opposite convex curve to that of the co-operating shoulder *m* (also preferably grooved, as stated of the other) and is widest on the line, or about on the line, indicated at *x*, of the center of the face of the gasket *p*. Hence when the two halves of the coupler are adjusted together in the common manner, by first applying the rib *o* on each to the recess *o'* on the other (whereby the upper or inner end of each shoulder *l*, near the point *t*, engages the lower or outer end of the then adjacent shoulder *m*, near the point *t'*) and then moving the heads toward each other on their hinge-joint *o, o'*, the faces of the heads A are brought together in parallel relation,

wherein the gaskets *p* meet in uniform contact throughout their annular face-ends, when the shoulders *m* will have reached the widest points, at *x'*, on the shoulders *l*, at which position, assumed by gravity, of the coupling on the suspended hose-sections *C*, the mutual tightening effect of the interlocking-shoulders is exerted on said points *x'*. And even if there be occasion to take up wear on the annular ends of the gaskets, the same will be accomplished automatically without spreading the heads *A* apart at the hinge-joint or base, since the reverse curve on the shoulders *m* will cause their bearing, in effecting the tightening, always to be exerted at the points *x'* on the shoulders *l*, thus maintaining the parallel relation of the meeting-faces of the heads and the uniform bearing of the gasket-ends against each other. Thus an accurately uniform mutual compression of the gaskets may be attained under all conditions with the advantage that their junction is equal, or practically equal, throughout and that thereby the wear of one against the other is uniform.

At the outer end of the recess *o* in the lower part of the face of the head *A* will be observed the closing stop *o*<sup>2</sup>. This is provided to insure proper coupling of the heads *A*, or, in other words to prevent the possibility of incomplete coupling, which is liable to be made where the end-stop *o*<sup>2</sup> is omitted, since, as practical application of the coupling without the provision of this feature has demonstrated, two of the co-operating shoulders *m* and *l* may be interlocked in the hurry of coupling, without causing the other two to engage, whereby the junction is faulty and affords a leak. This is impossible with the provision of the end-stop *o*<sup>2</sup>, since the latter precludes the application of one coupler-head to the other without the rib *o* of one entering the recess *o'* in the other with the ribs presenting their outer ends to the inner sides of the stops, which insures engagement of the locking shoulders on both sides of the coupling. Moreover the end-stops *o*<sup>2</sup> afford, in addition to the flanges on the locking-shoulders, if grooved at all, and as they are by preference, safe-guards against lateral mutual displacement of the companion parts of the coupling.

The nozzle *B*, which in this class of coupling usually enters its head *A* on a downward incline or curve to tend the more toward the horizontal position assumed by the base of the coupling in its suspended condition, is commonly provided with a nipple *i* at or near one end, over which the hose *C* is passed to fasten the coupling-head to it; and at the inner end of the nozzle a flange *h* may be provided to widen the surface which bears against the flange *p'* of the gasket *p*. To clamp the nozzle at its position of bearing against the gasket I provide a species of clamping-nut device, comprising a screw-thread *g* on the neck of the head *A*, and a clamp-nut *D* surrounding the nozzle to bear against the flange *f* of a collar *f'* thereon and adapted to be

screwed upon the thread *g*, thereby forcing the nut against the nozzle-flange *f* and through the medium of the latter forcing the bearing-end *h* of the nozzle forward against the gasket. Inasmuch as the heads *A* should be adjusted on their hose-section *C* in a manner always to present when brought together the same relations to each other as represented in Figs. 1 and 2, a guide should be provided to insure such adjustment of a head on its nozzle as will produce that relation, since otherwise, particularly in the hurry of adjustment to which such devices are subjected, heads may be so adjusted as to cause them to present to each other their lips *n* and other parts at angles instead of parallel, for the heads are not turned in fastening them in place, but only the nuts, which would, of course, interfere with their co-adjustment. I provide such a guide in the form of a tongue *e* on the nozzle, and preferably on the collar *f'* thereof, and a groove *e'* in the inner surface of the neck of the head *A*.

By the clamp-nut form of fastening and gasket-clamping device thus described the operation is greatly facilitated of separating the head *A* from its nozzle, as for permitting the withdrawal of an impaired gasket and the insertion of a new one; and, moreover, slight wear on the bearing ends of the gasket may, when desired, be readily taken up by turning the nuts *D* to tighten them.

As an incidental advantage of the described clamp-nut construction may be mentioned that the hose *C* may be adjusted quite closely to the head *A*, sufficient space (if any be left at all, though there need be none) only being required to be left between the end of the hose and the back of the nut *D* to permit the latter to be withdrawn in loosening it, which space need, therefore, only be as wide as the thickness of the nut, whereby that portion of the nozzle which extends outside the head is almost entirely (or entirely) covered by the rubber-hose which insulated it against the condensing-effect on the steam of cold air.

I intend the term "hose-coupling" herein employed to include any flexible, or flexibly jointed, pipe-connection between cars to which my coupler is applicable.

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

1. The hollow head of a hose-coupling provided on one side with a forward projecting lip having on its inner surface a convexly curved locking shoulder, and with a convexly but reversely curved locking shoulder on the opposite side of the head, substantially as and for the purpose set forth.

2. The hollow head of a hose-coupling provided on one side with a forward projecting lip having on its inner side a convexly curved locking shoulder, and with a convexly but reversely curved locking shoulder on the opposite side of the head having its bearing point, for tightening by engagement with the oppositely curved locking shoulder on a com-

panion-head, near the line of the center of the gasket-opening in the meeting-face of its head, substantially as and for the purpose set forth.

3. The hollow head of a hose-coupling provided on one side with a forward projecting lip having on its inner side a convexly curved locking shoulder provided in its periphery with a rectangular groove, and a convexly but reversely curved locking shoulder on the opposite side of the head provided with a rectangular groove in its periphery and having its bearing point, for tightening by engagement with the oppositely curved locking shoulder on a companion-head, near the line of the center of the gasket-opening in the meeting-face of its head, substantially as and for the purpose set forth.

4. The hollow head of a hose-coupling having on one side a forward projecting lip provided on its inner side with a locking shoulder, a locking shoulder on the opposite side of the head, a rib and a recess near the base of its meeting face, and a stop at the outer end of the recess, substantially as and for the purpose set forth.

5. A hollow hose-coupling head A provided on one side with a forward projecting lip *n* having on its inner side a convexly curved locking shoulder *m* and a similarly but reversely curved locking shoulder *l* on the opposite side of the head having its bearing point, for tightening by engagement with the oppositely curved locking shoulder on a companion-head, near the line *x* of the center of the gasket-opening in the meeting-face of its head, a rib *o* and recess *o'* having a stop *o''* at its outer end near the base of the meeting face of the head, a nozzle entering the head to bear against the gasket therein, and a clamp-nut device having a nut D to engage the threaded neck of the head and bear against the nozzle to clamp it against the gasket, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

SAMUEL M. BEERY.

In presence of—

M. E. WINN,

W. N. WILLIAMS.