T. H. MANCHESTER.

HOSE COUPLING.

APPLICATION FILED SEPT. 8, 1910.

1,019,979. Patented Mar. 12, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

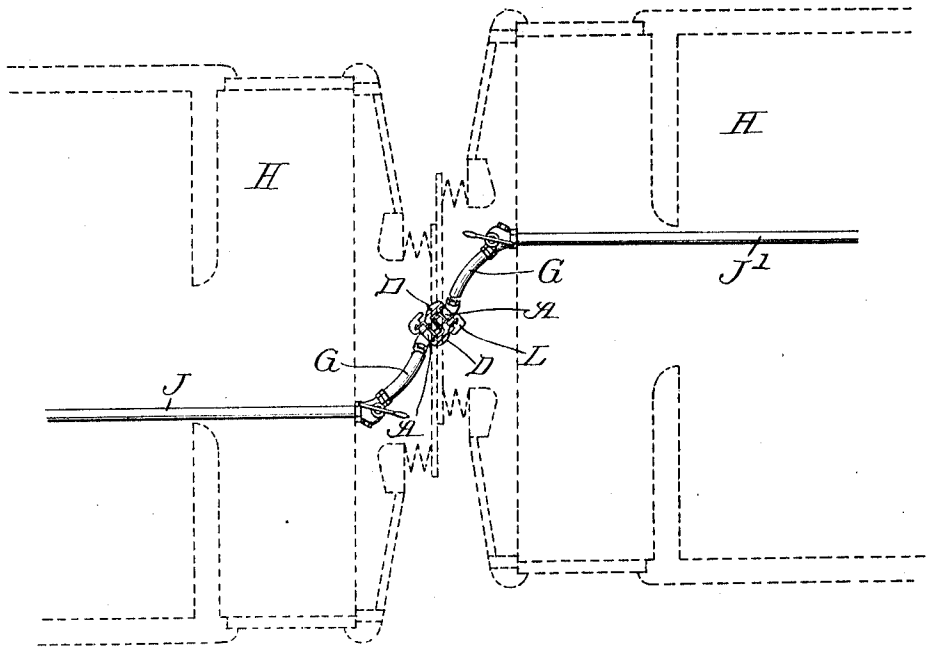
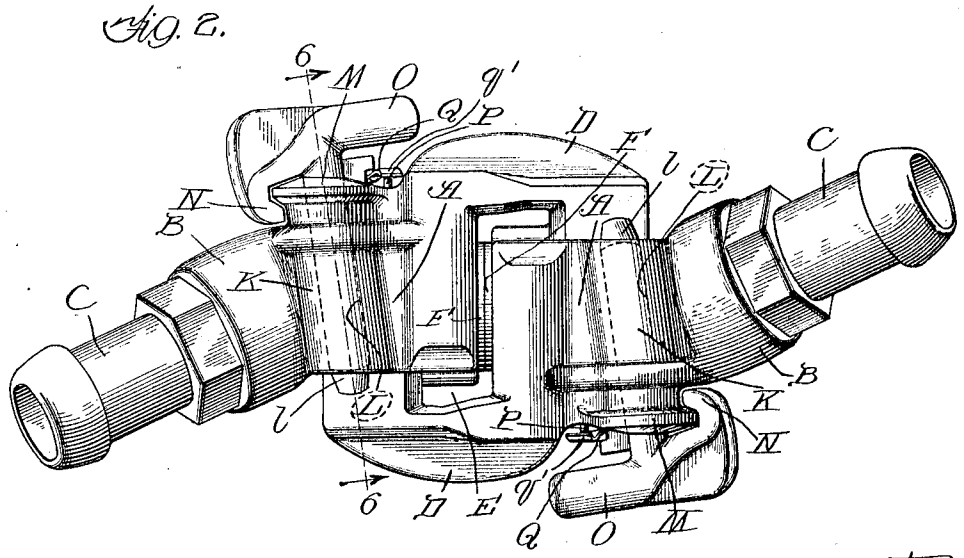


Fig. 2.



Witnesses:

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3 SHEETS—SHEET 2.

Fig. 3.

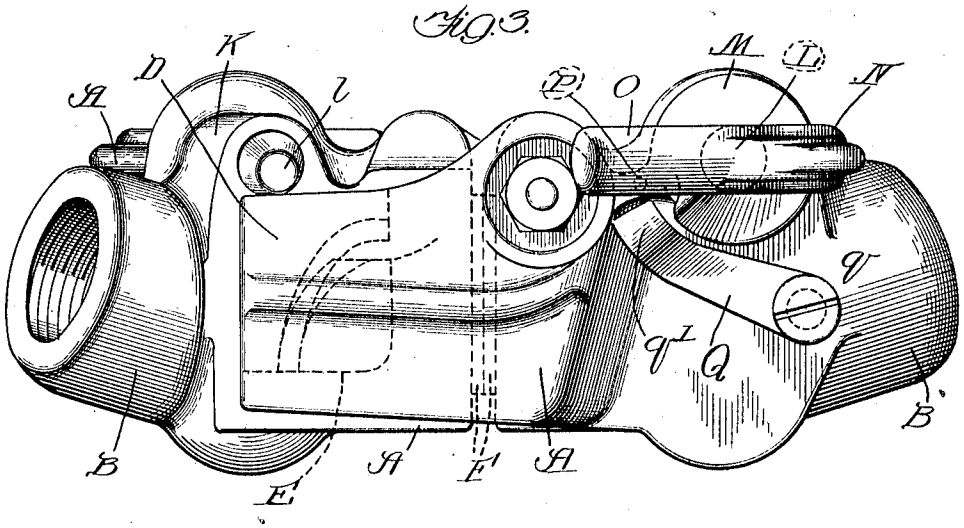
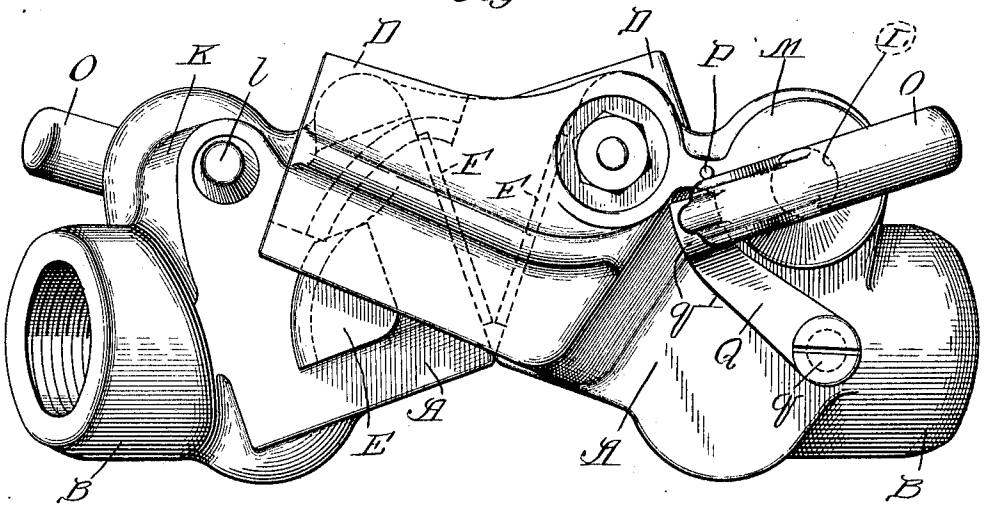


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

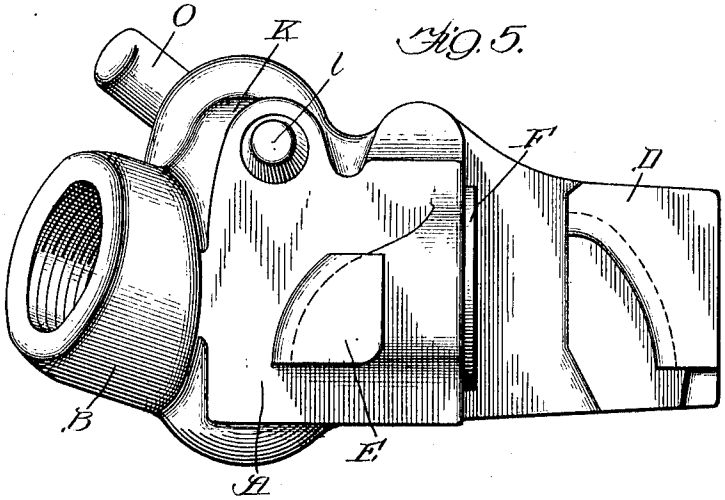


Fig. 6.

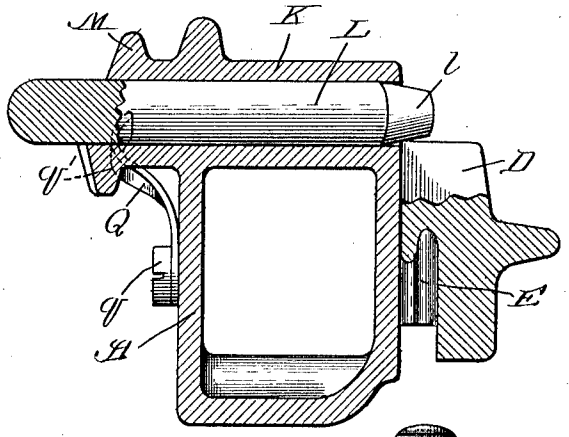
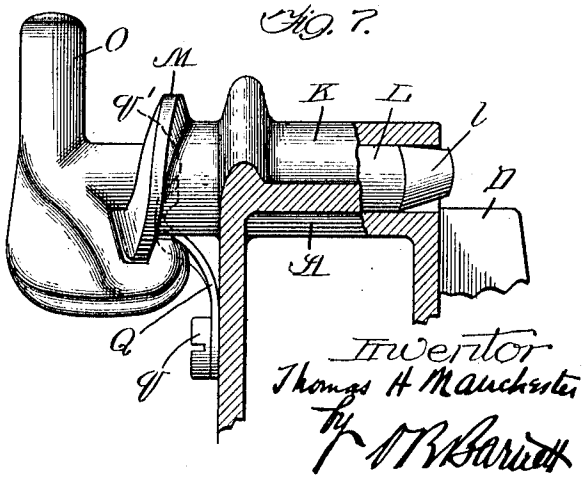


Fig. 7.



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UNITED STATES PATENT OFFICE.

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HOSE-COUPLING.

1,019,979. Specification of Letters Patent. Patented Mar. 12, 1912.

Application filed September 8, 1910. Serial No. 581,039.

To all whom it may concern:

Be it known that I, THOMAS H. MANCHESTER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hose-Couplings, of which the following is a specification.

My invention relates to improvements in hose couplings, of the sort, for example, which are used to couple together the lengths of hose which connect the steam train pipes carried on railway cars; and the invention has for its object to provide a new and improved form of locking mechanism for couplings of this general character which shall provide effective means for preventing the coupling members from becoming disengaged, which will be easy to manipulate and which adds comparatively little to the cost of manufacturing the couplings.

The invention, in a preferred embodiment, is illustrated in the accompanying drawings, wherein—

Figure 1 is a somewhat diagrammatic plan view of the ends of two railway cars showing the application of the coupling to the steam train line. Fig. 2 is a plan view of the coupling of my invention. Fig. 3 a side elevation of the same. Fig. 4 a similar view showing the coupling members partially disengaged. Fig. 5 an elevation of the inside of one of the coupling members. Fig. 6 a section, with some of the parts shown in elevation, taken on line 6—6 of Fig. 2, looking in the direction of the arrows; and Fig. 7 a similar view with the locking pin shown in a different position.

Like characters of reference indicate like parts in the several figures of the drawings.

Referring to the drawings, the coupling is shown as composed of two complementary or mating halves or coupling members, each consisting of a head A, a neck B, which is threaded to receive the nipple C, to which the hose is attached, and a coupling arm D which, in each case, engages with the undercut lug E on the complementary coupling member. The coupling members are, of course, hollow and at their meeting ends provided with the gaskets F. The coupling, as thus described, is of familiar construction. My invention relates to locking mechanism, which will be now described, for preventing the coupling members from becoming accidentally disengaged. Such accidental disengagement is most likely to occur when the hose connections G (Fig. 1) are tautened by the shifting of the cars as the train goes over reverse curves in the track. The cars are shown in this position in Fig. 1, H, H′ representing the cars and J, J′ their respective train pipes.

In carrying out my invention, the head of one, or, if desired, of each, of the coupling members is formed with a boss or projection K having a bore to receive the locking pin L, the locking end *l* of which is adapted to be projected over the coupling arm D of the complementary coupling member, by moving the pin spirally in the bore in which it is mounted. This movement of the pin is accomplished by providing the coupler head with a spiral thread M preferably cast on the head and the pin with a lug or wing N notched so as to engage the thread M. For convenience of manipulation, the pin is formed with the handle O. Preferably the locking end *l* of the pin L is given an eccentricity, relative to its axis, which gives it a cam action against the upper surface of the coupler arm D when turned into its locking position.

It will be observed that the eccentricity of the locking end of the pin and also its tapered configuration results in forcing the co-engaging coupling members into closer engagement. This engagement of the pin and arm also develops friction, which tends to keep the pin in its locked position. More friction is developed as between the lug or wing N and the thread M. Preferably the pin is cast as also the coupler head with its spiral thread M. The engaging surfaces are therefore somewhat rough. Further, the security of the lock is enhanced by the expansion, under steam, of the gaskets F, which, when these gaskets are made of the ordinary rubber composition commonly used for devices of this sort, is very considerable, and exerts a force tending to bring the locked parts in closer engagement.

In order to prevent the pin from becoming disengaged from the coupler head, a stop P is provided, against which the lug N abuts when the pin is turned to its unlocking position. Preferably means is provided for holding the locking pin in its retracted position, so as to prevent it from working out or rattling. For example, a flat spring Q may be attached to the coupler head by a screw

q, the spring being formed with a bulge or bend q' over which the lug or wing N rides when the pin is turned to its retracted position.

It will be understood that the form and construction of the couplers and of the instrumentalities constituting the locking mechanism might be varied without departure from my invention. Therefore, I do not limit myself to the precise details shown and described, except as the same are made limitations on certain of the claims.

I claim:

1. The combination with a gravity coupling comprising mating coupler heads provided with coengaging means, of a locking pin rotatably mounted in one of said coupler heads and adapted to bear against the other coupler head, the coupler head in which the pin is mounted being provided exteriorly with a spiral thread and said pin being provided with a handle and so formed as to engage with and take a frictional grip on said spiral thread; and a spring latch which is adapted to engage said pin and hold the same in retracted position.

2. The combination with a gravity coupling comprising mating coupler heads each formed with an arm adapted to engage with the other coupler head, of a locking pin rotatably mounted in one of said coupler heads and adapted to bear against the arm engaging therewith, said coupler head being provided exteriorly with a spiral thread and said pin being provided with a handle and formed so as to engage with and take a frictional grip upon said spiral thread.

3. The combination with a gravity coupling comprising mating coupler heads each formed with an arm adapted to engage with the other coupler head, of a locking pin rotatably mounted in one of said coupler heads and having a conical end which is adapted to bear against the upper side of the arm engaging with said head; said head having cast on the exterior thereof a spiral thread and said pin being formed with a handle and with a wing notched so that it extends around said thread.

4. The combination with a gravity coupling comprising mating coupler heads each formed with an arm adapted to engage with the other coupler head, of a locking pin rotatably mounted in one of said coupler heads having one end tapered and bearing against the arm engaging with said coupler head, said last named coupler head being provided exteriorly with a spiral thread and said pin being provided with a handle and formed so as to engage with and take a frictional grip upon said spiral thread.

5. The combination with a gravity coupling comprising mating coupler heads, each formed with an arm adapted to engage with the other coupler head, of a locking pin rotatably mounted in one of said coupler heads having one end tapered eccentrically with respect to the axis of the pin and bearing against the arm engaging with said last named coupler head, said last named coupler head being provided exteriorly with a spiral thread and said pin being provided with a handle and formed so as to engage with and take a frictional grip upon said spiral thread.

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Witnesses:
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