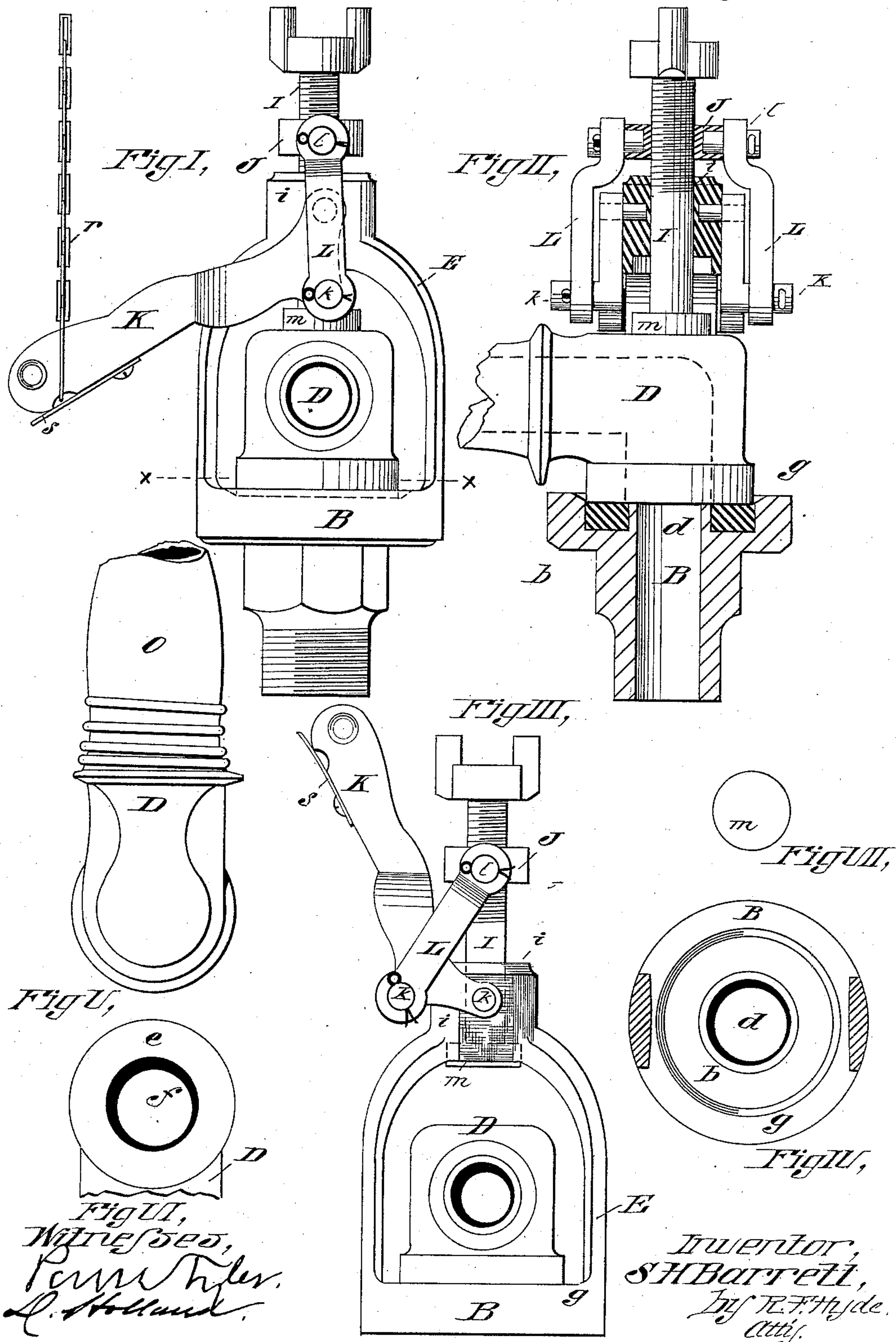


S. H. BARRETT.

PIPE COUPLING.

No. 387,336.

Patented Aug. 7, 1888.



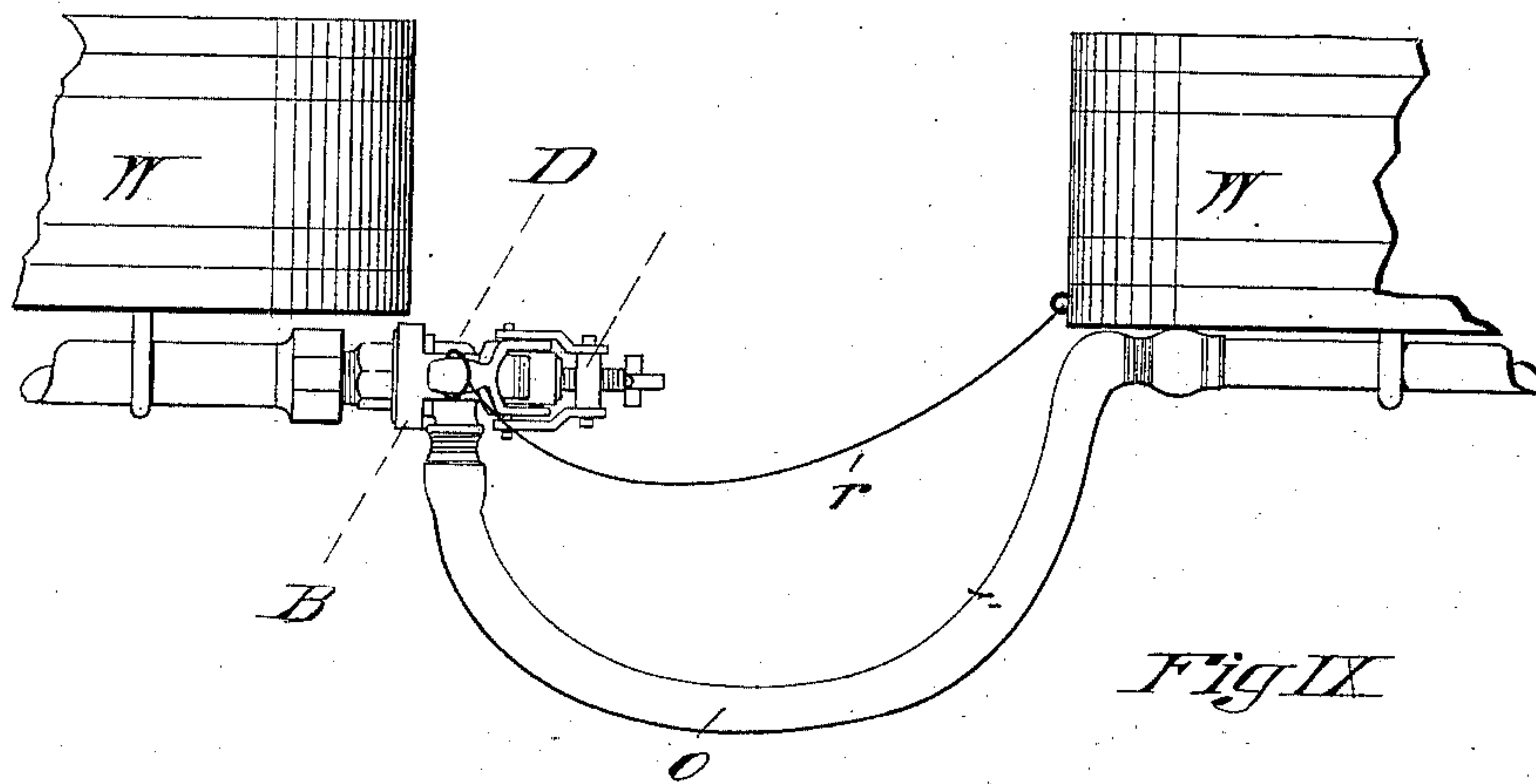
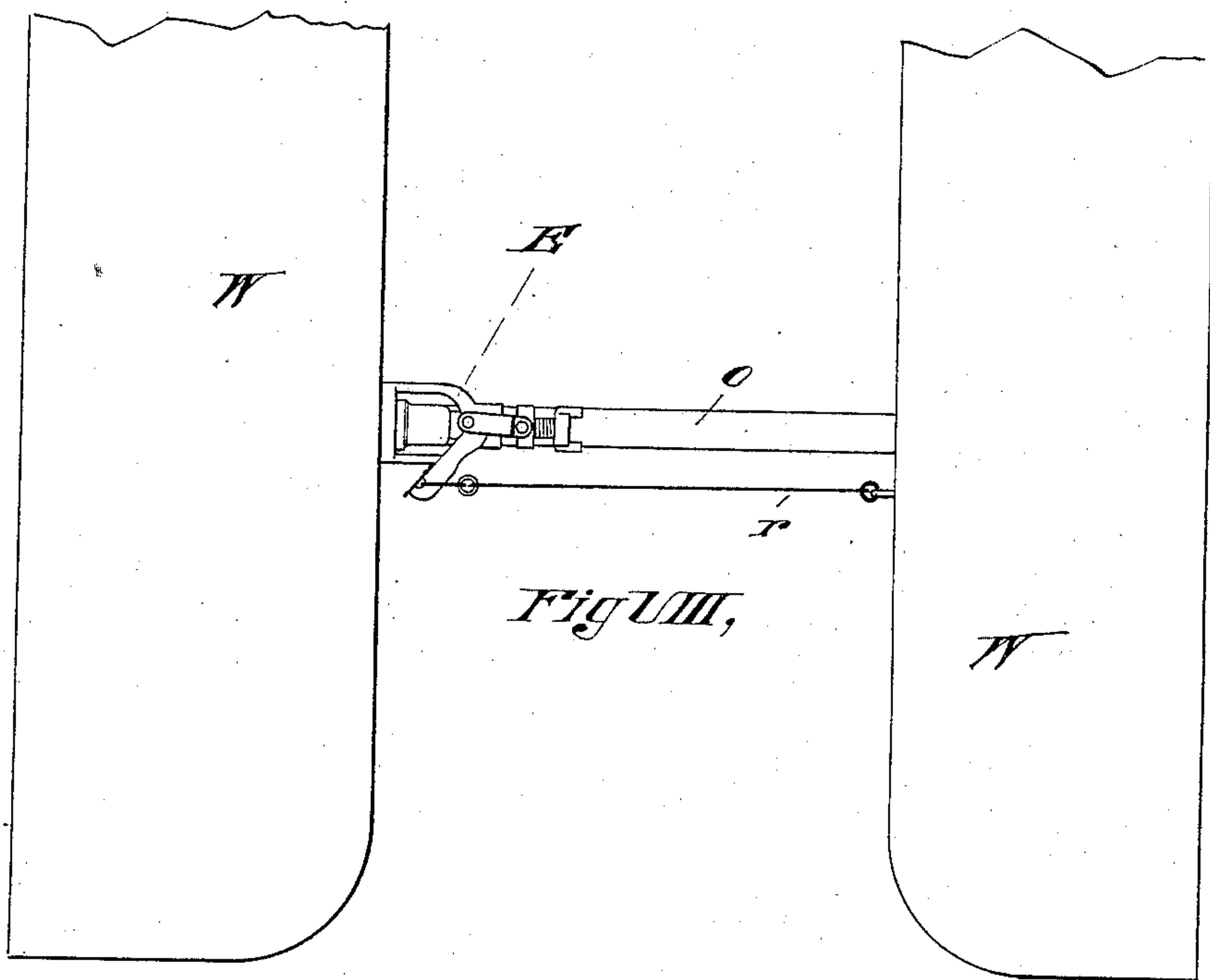
(No Model.)

2 Sheets—Sheet 2.

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Witnesses,  
*A. Holland.*  
*Permy Tyler.*

Inventor,  
*S. H. Barrett,*  
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*att'y.*



# UNITED STATES PATENT OFFICE.

SIDNEY H. BARRETT, OF SPRINGFIELD, MASSACHUSETTS.

## PIPE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 387,336, dated August 7, 1888.

Application filed March 22, 1888. Serial No. 263,133. (No model.)

*To all whom it may concern:*

Be it known that I, SIDNEY H. BARRETT, a citizen of the United States, residing at Springfield, county of Hampden, and State of Massachusetts, have invented a new and useful Improvement in Pipe-Couplings, of which the following is a specification.

My improvements relate more particularly to the class of coupling combined with steam-conveying pipes between railway-cars, and have for their object the maintenance of a tight joint and ease and certainty of manipulation, and the provision of means for automatically uncoupling the pipe between adjacent cars upon the separation of said cars; and the invention consists in the combination and construction as hereinafter described, and more particularly pointed out in the claims.

My invention is fully illustrated in the accompanying drawings, in which—

Figure I is a view of one side of my device in an operative position. Fig. II is a partial longitudinal section of the same in a plane at right angles. Fig. III is the same as Fig. I, with the movable parts in the position taken in uncoupling. Fig. IV is a plan view of one joint-face of the coupling on the dotted line  $x$  of Fig. I. Fig. V is a plan view of one pipe end. Fig. VI is a plan view of the joint-face of the same. Fig. VII is a plan view of a detail. Fig. VIII is a plan view of my device combined with adjacent cars, and Fig. IX is a vertical elevation of the same.

B is one pipe end or section of the coupling, having a joint-face,  $b$ , surrounding the orifice  $d$  therein. D is the other pipe end or section of the coupling in the general form of an elbow-pipe, and having a joint-face,  $e$ , surrounding its orifice  $f$ , and conforming to the one  $b$ , and provided with a bearing-surface upon its outside in prolongation of the orifices  $d$   $f$  when the faces  $b$   $e$  are joined. A rim,  $g$ , upon the outer edge of one joint-face prevents the joint-faces from lateral displacement when held in contact. In the drawings the rim  $g$  is shown upon the section B.

From the section B a support, E, (shown in the drawings in the form of a bridge or arch rising from opposite sides of the joint-face  $b$ ,) has in its apex coincident to the axes of the joint-faces  $b$   $e$  a cylindrical opening forming

a guide,  $i$ , to a stem-follower, I, fitted to reciprocate easily in said guide. The follower I is threaded upon its portion extended outside of the guide  $i$ , as shown in the drawings, and is provided upon its outer end with a handle or fork-head, adapting it to be rotated as a screw-bolt. Upon the threaded portion of follower I, and located outside of the guide  $i$ , is a nut, J.

Hinged to the support E and upon the outer surface of guide  $i$  is a lever, K, and from a crank-arm,  $k$ , upon the lever and hinged thereupon a link, L, is extended to have its other end hinged at  $l$  to the outside of nut J. A surface of the lever is arranged to form a stop with support E, to limit the movement of the lever in one direction, as shown in Fig. I.

The swinging of lever K upon its hinge on the support E will by means of the link L and nut J reciprocate the follower I in the guide  $i$ , and the nut J being held from rotation by the link L a rotation given to the follower I as a screw-bolt will cause it to move longitudinally through the guide  $i$ . The proportionate length of the arms of the lever enables a powerful clamping action to be imparted to the inner end of follower I, and at its maximum inner extension the hinge of the crank-arm, as seen in Fig. I, is arranged to be past the center or outside from the lever-handle of a line through the other two centers of rotation, by means of which the follower cannot be loosened by any outward thrust.

To increase the strength of the clamping mechanism as well as prevent any spring of the parts from the lever and link being all on one side of the follower I, I arrange duplicates of the link and lever-arms upon opposite sides of the follower I, as more particularly shown in Fig. II. To increase the bearing-surface of the end of the follower, I provide it with a head,  $m$ .

In operation the section D is inserted within the support E to have its joint-face  $e$  seated upon the one  $b$  and within the rim  $g$ , and the lever K is swung down to bring the head  $m$  in forcible contact with the top of the section D to at the same time bind the joint-faces in close contact. As from the flying of dust and cinders the joint-faces as well as the joint-surfaces of the head  $m$  and outside of section D



are constantly wearing, said wear is quickly taken up by screwing the follower against the section D when the lever is set, as shown in Fig. I, and when in that position the coupling and uncoupling can be effected by operating the follower as a screw, which is a great advantage as an alternative when from accident the lever becomes out of order or is inaccessible from the position of the operator.

As seen in the drawings, the section D forms one end of a flexible hose, O, extending between adjacent car-ends W, and it will be seen that when the coupler is arranged as shown in Figs. VIII and IX the release of the section D permits one end of the hose O to fall by gravity in uncoupling itself.

To cause the uncoupling to be automatic upon the separation of one car from the other, I attach to the free end of lever K a chain or other flexible connection, r, and carry it to the other car, to which one end of said connection is fast. The end of connection r attached to lever K is arranged therewith, so that upon the swinging of said lever into the position shown in Fig. III the connection r will free itself from the lever, and as a convenient means of securing this result a loop in the end of the connection is hooked over the end of the handle to rest in a groove therein, where it is held by a binding-spring, s, until the angle taken by the lever permits it to pull out between the spring and the lever in bending out the spring. The connection r is given slack enough to leave it unaffected by any movement of the cars while shackled, but with a less slack than possessed by the hose O, so that before the hose could be taut the tension upon the connection r has uncoupled the section D.

Now, having described my invention, what I claim is—

1. The within-described improved pipe-

coupling, consisting of one section, B, having an outside support thereupon forming a guide for a stem in line with its orifice, a stem provided with a thread and adapted to move longitudinally in said guide, a nut inclosing said stem to one side of said guide, a lever hinged to the guide-support, a link hinged to a crank-arm of said lever and to the nut upon the stem and operating to hold the nut from rotation, a stop combined with the lever-handle and guide-support for limiting the swing in one direction of said lever, means combined with the screw-stem for enabling it to be rotated, and a section, D, having a joint-face conforming to that of section B, and an outside surface-bearing interposed between the combined joint-faces of the two sections and the inner end of the stem, all combined and operating substantially as shown and described.

2. The within-described improved pipe-coupling, consisting of a section, B, provided with a support, E, extended above its joint-face, a guide, i, in line with its orifice and in support E, a threaded stem, I, sleeved in said guide and provided upon its outer end with means for rotating it, a nut, J, upon said stem, a forked lever, K, fulcrumed upon opposite sides of stem i and to support E, links L from shorter arms of the lever upon opposite sides thereof to opposite sides of nut J, and operating, as shown and described, to hold the nut from rotating, and a section, D, having a joint-face conforming to that of section B, and an outer bearing-surface in the path of stem I when moved longitudinally inward, substantially as shown and described.

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Witnesses:

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