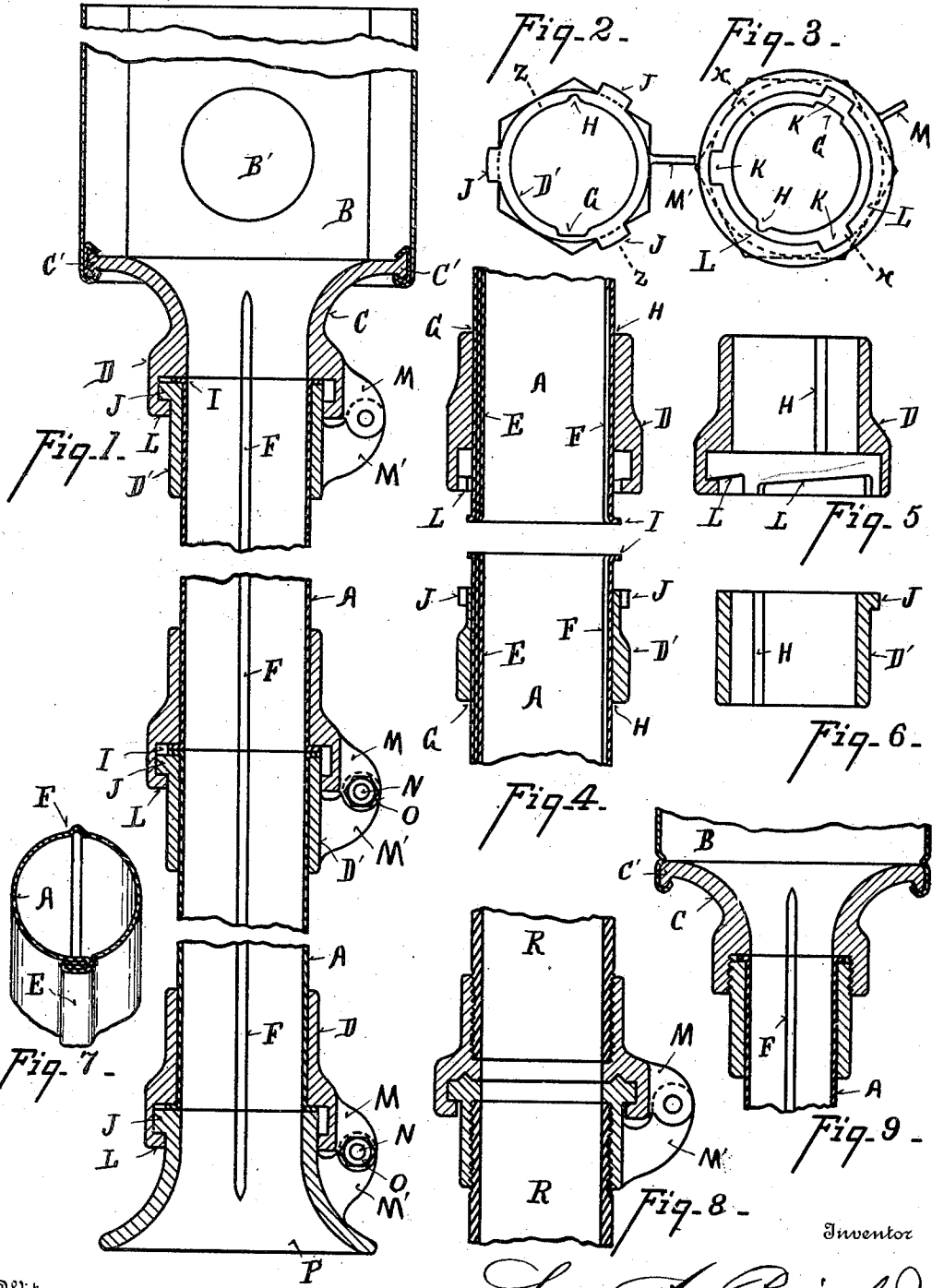


L. A. BRIGEL, JR.
CHAIN PUMP TUBE COUPLING.

(Application filed Apr. 10, 1901.)

(No Model.)



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LEO A. BRIGEL, JR., OF CINCINNATI, OHIO.

CHAIN-PUMP-TUBE COUPLING.

SPECIFICATION forming part of Letters Patent No. 699,648, dated May 13, 1902.

Application filed April 10, 1901. Serial No. 55,181. (No model.)

To all whom it may concern:

Be it known that I, LEO A. BRIGEL, Jr., a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Chain-Pump-Tube Couplings, of which the following is a specification.

My invention relates to improvements in chain-pump tube and coupling therefor.

One of its objects is to provide an improved discharge-reservoir and means for coupling the same to the tube.

Another object is to provide improved means for coupling the pipe-sections together and for coupling the funnel thereto at the bottom of the tube.

My invention consists in certain details of form, combination, and arrangement, all of which will be more fully set forth in the description of the accompanying drawings, in which—

Figure 1 is a central vertical section through a pump-tube and reservoir embodying my improvements. Fig. 2 is an end view of the male section of the coupling. Fig. 3 is an end view of the female section of the coupling. Fig. 4 is a central vertical section through the coupling members before attachment and on a line at right angles to that of Fig. 1. Fig. 5 is a section through one of the female couplings on line *xx* of Fig. 3. Fig. 6 is a section on line *zz* of Fig. 2. Fig. 7 is a detail sectional view through the pump-tube. Fig. 8 is a central vertical section showing a modification of the coupling. Fig. 9 represents a modification of the reservoir and manner of attaching the same.

A represents the tube, which is of sufficient length to reach the water of the well or cistern and through which the water is drawn by means of a chain of buckets or pistons and discharged into a reservoir B, from which it escapes through the orifice B'. The reservoir is formed with sheet-metal side walls and a cast bottom plate C, joined together by turning a flange of the sheet metal over an enlarged annular rib C' on the outer edge of the bottom. The lower end of the bottom plate of the reservoir is formed into one section of a coupling D, the counterpart section D' of which embraces the upper end of the pump-tube, which tube is preferably formed of sheet

metal with the edges lapped, as shown in Fig. 7, to form a seam E.

F represents a groove formed in the tube, preferably opposite the seam, which groove serves to allow the water in the tube to escape from between the buckets, and thus during cold weather prevents the water from freezing in the tube. A similar groove is formed in the casting C and in the funnel to register with the groove in the tube. The coupling-sections are provided with grooves G H to register, respectively, with the seam and groove of the tube and serve to prevent the coupling-sections from turning on the tube, and thereby insure the registering of the several sections of the groove and seam when the couplings are locked in position. Male and female coupling-sections D' D are secured, respectively, to opposite ends of the several sections of the tube and are prevented from becoming detached by turning a flange I upon each end of the tube-sections outside the coupling-sections. When the coupling-sections are locked in position, the flanges on the ends of the tube-sections abut against each other or against the face of the reservoir section or funnel, and thereby present a smooth and continuous interior surface to the action of the buckets. The respective male coupling-sections are provided with ears J, which enter recesses K in the abutting female sections and slide along the inclined ways L, forcing the abutting ends of the tube-sections tightly together and locking them in that position. In order to prevent the coupling-sections becoming disengaged and to insure the registry of the grooves F, I provide ears M M' on the respective coupling-sections, which are adapted to abut when the coupling-sections are locked together, but may stand a short distance apart to allow for drawing together more rigidly by bolt and nut in said ears. A bolt N is passed through the eyes of these abutting ears and secured in position by means of a nut O, thus effectually securing the parts against displacement and insuring the registration of the grooves of the successive tube-sections. The flaring funnel P is provided with coupling-ears J and locked into the coupling at the lower end of the tube-section in the manner above described. The coupling-sections are preferably formed with hexagonal wrench-

seats on their exterior, so that they may be turned with a wrench to lock or unlock the couplings, if necessary.

In the modification of Fig. 8 I have shown heavy metal tubing R in the place of tubing formed of sheet metal, in which case the coupling-sections are screwed upon the respective ends of the tube-sections and the coupling members are provided with smooth abutting faces, the coupling-sections being locked together by means of the ears M, as heretofore described. This form of union is especially adapted for steam-fitting.

In the modification of Fig. 9 I have shown the reservoir-section provided with a screw-threaded socket, into which the coupling member of the tube-section screws to form the joint. This form of construction dispenses with soldering and requires less space in shipping and prevents injury to the parts in handling. The parts are interchangeable and can be connected or disconnected by any one, as desired, without special tools. It is more economical, as it permits various lengths of pipe to be joined. For this reason only a small supply of pipe needs to be carried in stock. The several parts are separately constructed, and no machine-work is required after casting and galvanizing, thus rendering it the simplest and most inexpensive as well as durable coupling known to me.

My invention is capable of some modification without material departure from the scope of my invention, and I do not, therefore, wish to be understood as limiting myself to the precise form and arrangement of the various parts.

Having described my invention, what I claim is—

1. In a chain-pump, a reservoir formed of a cast-metal bottom section provided with a rib upon the upper and lower side of the outer edge thereof, sheet-metal side walls, and folds

upon the lower edges thereof adapted to take over and engage said ribs, substantially as set forth.

2. A chain-pump provided with sections of tubing, coupling-sections taking over the abutting ends of said tubing, means for drawing and holding said coupling-sections together against endwise movement, said means comprising ears and inclined ways, and ears on the exterior of the male and female coupling-sections adapted to be secured to each other by suitable fastening devices whereby the coupling-sections are drawn and locked in alinement in the adjusted position and said fastening devices.

3. In a chain-pump, a tube-coupling consisting of a male coupling-section provided with a series of locking-ears, a female coupling-section provided with recesses for the passage of the locking-ears of the male section and with inclined ways along which the ears of the male section slide and ears on the exterior of the coupling-sections adapted to abut and means for positively drawing and holding the ears together to prevent the disengagement of the coupling-sections, substantially as specified.

4. In a chain-pump a reservoir having a coupling-section formed integral therewith, a tube having coupling-sections at opposite ends; a funnel having a coupling-section formed integral therewith, said interengaged coupling-sections being held against displacement endwise by means of ears engaging inclined ways, and being held and locked in alinement in the adjusted position by means of abutting ears and bolts passing through the same.

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