

(No Model.)

P. ESHMAN.
MACHINE FOR INSERTING COUPLINGS IN HOSE.

No. 577,015.

Patented Feb. 16, 1897.

Fig. 1.

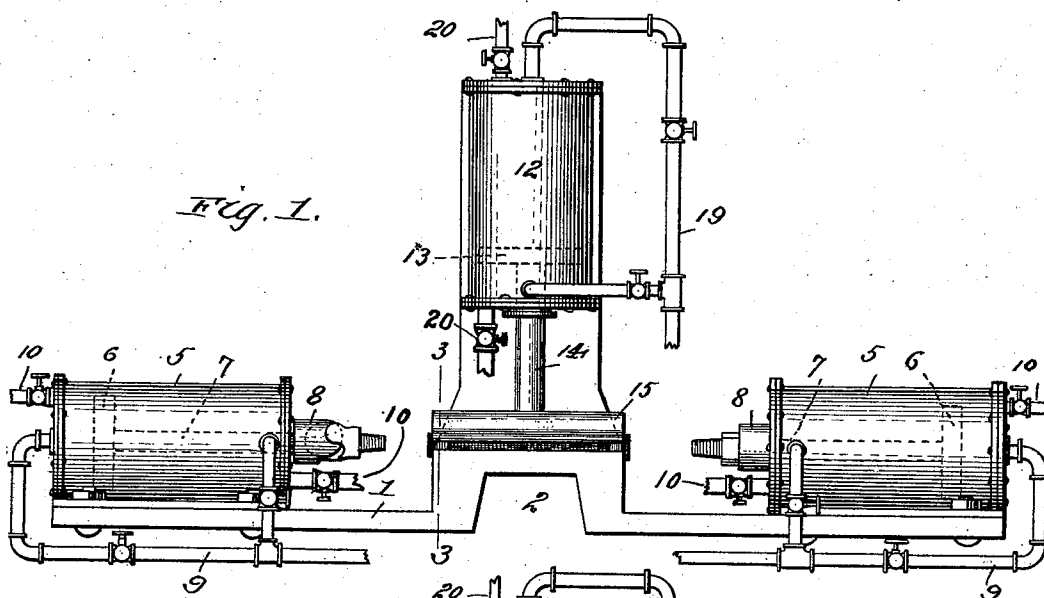


Fig. 2.

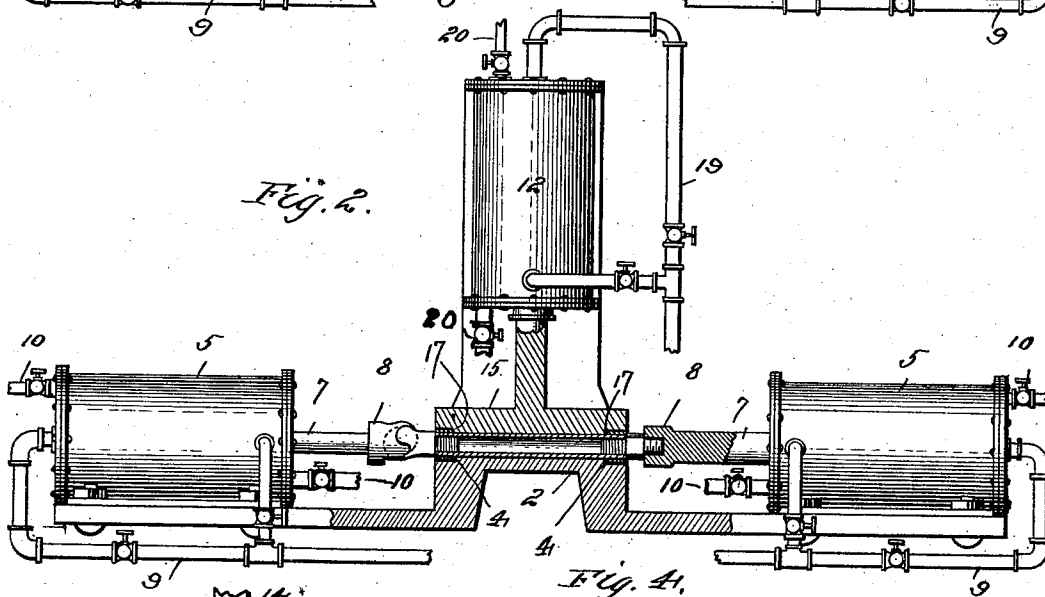


Fig. 4.

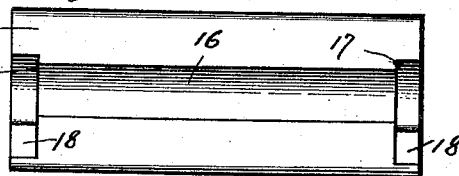


Fig. 3.

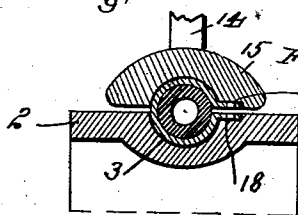
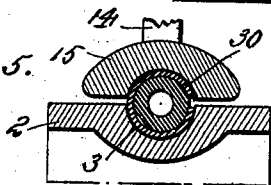


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

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MACHINE FOR INSERTING COUPLINGS IN HOSE.

SPECIFICATION forming part of Letters Patent No. 577,015, dated February 16, 1897.

Application filed October 8, 1896. Serial No. 608,289. (No model.)

To all whom it may concern:

Be it known that I, PETER ESHMAN, a citizen of the United States, residing at Huntington, in the county of Cabell and State of West Virginia, have invented certain new and useful Improvements in Machines for Inserting Couplings in Hose, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to an improved machine for inserting couplings in hose; and it has for some of its objects to provide a machine particularly adapted for simultaneously inserting couplings in both ends of the short
15 flexible train-pipe hose used to connect the pipes of the air-brakes between railway-cars and designed to carry a heavy pressure, and to secure around each end of the hose after the coupling is inserted the usual clamping-rings
20 to maintain the tight joint between the hose and couplings without removing the hose from the clamps.

The invention consists of novel combination and arrangement of parts hereinafter described, and particularly pointed out in the
25 claims appended.

In the drawings, Figure 1 is a side elevation of the improved machine. Fig. 2 is a similar view, partly in section. Fig. 3 is a
30 sectional view on line 3-3 of Fig. 1. Fig. 4 is a bottom view of the clamping-jaw, and Fig. 5 is a detail of a modification.

Referring to the various parts by numerals, 1 designates the main frame or support of the
35 machine, which at its middle is raised to form a platform 2, in the upper surface of which is formed the longitudinal semicylindrical groove 3. This platform forms the rigid jaw of a clamp and is equal in length to the length
40 of hose in which it is desired to insert couplings, and the groove extends along its entire length. At each of its ends this groove is enlarged, as shown, such enlargements forming the shoulders 4.

45 Supported upon the main frame a suitable distance from the ends of the platform or rigid jaw 2 are two power-cylinders 5 5, whose centers are axially in line with the center of the groove 3, one of said cylinders being at
50 each end of the said platform. Mounted in

ter of each piston extends a rod 7 through the inner end of its cylinder inwardly toward platform 2, the ends of said rods without the cylinders being provided with suitable coupling-
55 holding devices 8.

Connected to the cylinders 5 5 are suitable valved pipes 9, by means of which a suitable fluid under pressure may be admitted to them
60 upon either side of the pistons therein, suitable valved outlet-pipes 10 being provided to permit the escape of the exhaust-steam or other pressure fluid.

On a suitable support directly above the platform 2 is mounted a power-cylinder 12, whose center is directly above the center of the groove 3. In this cylinder is mounted a piston 13, and from the center of the lower side of said piston a rod 14 extends downwardly through the lower end of the cylinder, the lower end of said rod carrying a
70 clamping-jaw or head 15. This clamping-jaw is equal in length to the rigid jaw 2, and a longitudinal groove 16 is formed in its inner side corresponding in size to the groove 3 in platform 2. The ends of this groove are enlarged to correspond with the enlargements
75 of the ends of the groove 3, said enlargement of the groove 16 forming the shoulders 17, as shown. The forward side of the enlarged portions of the grooves of the clamping-jaw and of the rigid jaw are cut out, as at 18, for the purpose hereinafter described.

Connected to the upper and lower ends of the cylinder 12 are suitable valved pipes 19, through which fluid-pressure may be admitted
85 to either side of the piston 13, suitable valved outlet-pipes 20 being provided for the exhaust of the pressure fluid.

The operation of the machine is as follows: The hose is cut the length of the platform 2, and around each of its ends a clamping-ring is placed. It is now placed in the groove 3 of the platform, the clamping-rings resting in the enlarged end portions of said groove, the usual perforated ends of said rings lying in the cut-out portions 18 of the enlargements.
90 Fluid-pressure is now admitted to the cylinder 12 and clamping-jaw 15 is brought down upon the hose-section, the clamping-rings fitting in the enlarged portion of the groove 16. Sufficient pressure is admitted into cylinder
100

12 to hold the clamping-rings securely in the enlarged portions of the grooves and around the hose, the main portion of the clamp holding the hose with sufficient pressure to prevent its buckling during the operation of inserting the couplings. The couplings being now placed in the coupling-carrying devices on the ends of rods 7, pressure is admitted into cylinders 5 5, and their pistons and piston-rods thereby driven forward toward platform 2. The couplings enter the ends of the hose and are forced in against the pressure of the clamping-jaw. After the couplings have been forced into both ends of the hose additional pressure is admitted into cylinder 12 to force the clamping-rings tightly around the hose to maintain the tight joint between the coupling and hose. The clamp is now released and the hose removed. The usual small retaining-screws are now placed through the perforated ends of the clamping-rings to secure them in place. If it is not desired to secure the clamping-rings on the hose, as described, small split rings 30 may be placed around its ends and the clamping-jaw be forced down on said rings. These rings will protect the hose in the same manner as the clamping-rings, and said clamping-rings may be placed around the hose in any suitable manner after the couplings have been inserted. The split rings 30 are removed from the ends of the hose when it is removed from the clamp, and may be placed around the next hose in which the couplings are to be passed. These rings form a yielding protecting device for the ends of the hose in the same manner as the clamping-rings, but are not permanently fastened to the hose.

From the foregoing it will be seen that the hose is thoroughly protected throughout its entire length during the entire operation. By placing the rings around the ends of the hose and clamping them around the same and then inserting the couplings against that pressure an exceedingly tight joint may be made, as the hose is expanded just sufficiently to permit the coupling to be forced into it.

It is obvious that the ends of the hose are prevented from bending or buckling during the operation. During the operation of forcing in the couplings the clamping-rings are prevented from moving inward by the shoulders at the ends of the grooves in the movable clamping-jaw and in the rigid jaw.

It is also obvious that by placing the rings around the hose and then clamping them, as described, so that the final clamping of them can be done while they are in the machine, a

great saving of time is effected, and the tight joint secured may be maintained, as the hose is not permitted to expand, as would be the case if it were necessary to remove it to another machine to secure the rings.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for inserting couplings in hose, the combination of a clamp adapted to receive a section of a hose, said clamp consisting of a movable jaw and a rigid jaw, said jaws being recessed at one of their ends to receive a clamping-ring as described, means for applying pressure to the movable clamping-jaw whereby the hose-section and the clamping-ring may be securely held in place, means for forcing a coupling into said hose at the point encircled by the clamping-ring and against the pressure of the clamping-jaw, and means for increasing the pressure on the clamping-jaw after the coupling has been forced into the hose, whereby the clamping-ring may be secured around the hose without removing the hose from the clamp, substantially as described.

2. In a machine for inserting couplings in hose, the combination of a clamp adapted to receive a section of a hose, said clamp consisting of a movable jaw and a rigid jaw, said jaws being each formed with longitudinal semicylindrical grooves, a yielding device for encircling the end of the hose at the point where the coupling enters, whereby the clamp is prevented from crushing the hose, means for applying pressure to the movable clamping-jaw, means for forcing a coupling into the hose at the point encircled by the protecting device, substantially as described.

3. The combination of a grooved rigid jaw, a grooved clamping-jaw, cylinder 12, a piston therein, rod 14 connecting said piston to the movable clamping-jaw, valved pipes 19 connected to said cylinder for admitting pressure thereto, cylinders 5, 5 at each end of the clamp, pistons therein, rods connected to said pistons and extending toward the clamp, coupling-carrying devices secured to the ends of the said rods, valved pipes 9, connected to said cylinders and adapted to admit pressure thereto for moving the pistons therein, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PETER ESHMAN.

Witnesses:

S. E. MCCOY,

J. F. BLACKBURN.