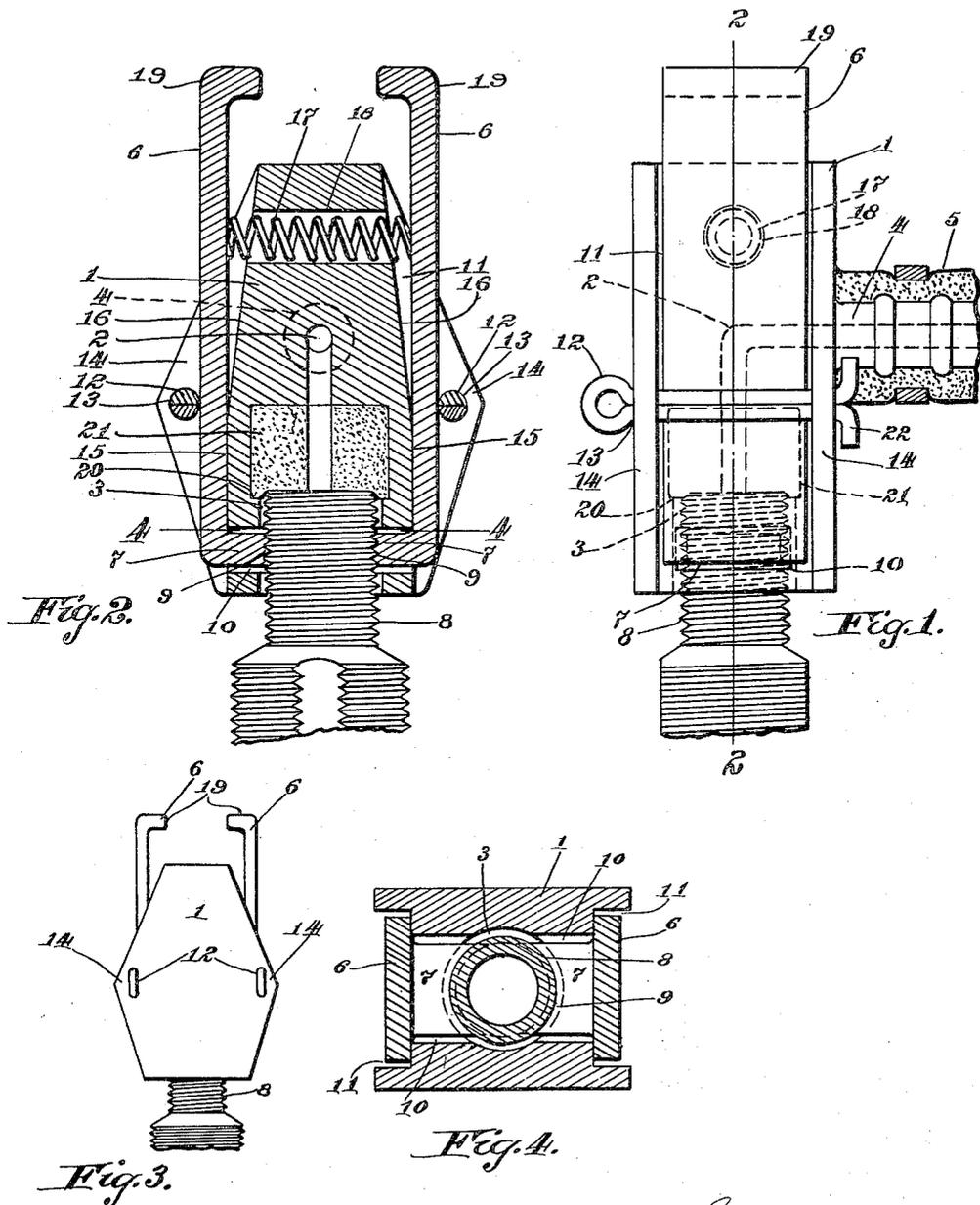


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W. M. INGRAM
AIR PUMP CONNECTION
Filed Dec. 11, 1920



WITNESSES.
 Foster H. Hault
 Anna Bernstein

Walter M. Ingram
 By Edwin Hamel
 Attorney

Attorney

UNITED STATES PATENT OFFICE.

WALTER M. INGRAM, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE RELIANCE PUMP AND MACHINE COMPANY, OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND.

AIR-PUMP CONNECTION.

Application filed December 11, 1920. Serial No. 430,035.

To all whom it may concern:

Be it known that I, WALTER M. INGRAM, a citizen of the United States of America, residing in the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Air-Pump Connections, of which the following is a specification.

The ordinary swivel screw connection for joining the air pump hose to tire valves is found objectionable on account of leakage at the swivel, difficulty of engaging the thread except under the most favorable circumstances, loss of time incident to making such connection and injury to the thread on the valve which results when the thread is engaged without being properly meshed; also the screw connection is awkward and inconvenient because it is ordinarily placed with the axis of the screw in alignment with the hose making it necessary to bend the hose which must lead from the side in order to bring it in alignment with the valve tube.

The present invention provides a tire pump connection which is simple in construction, capable of being produced at small cost and which avoids these various difficulties and at the same time provides a quick, close and practically leak-proof engagement of the hose with the valve tube.

More particularly the device consists of a block or casting having a passage to one end of which the pump hose is permanently connected and the other end of which is chambered and packed to receive the valve tube. Mounted on the block is a two armed spring pinch clamp, the jaws of which are notched as to their meeting surfaces to engage the thread on the valve tube which they engage at each side of the aforesaid chamber which receives the end of the valve tube.

In the accompanying drawing, I have illustrated a tire pump clamp or connection embodying my invention in the preferred form.

In the drawing

Figure 1 is a side elevation of the clamp showing a portion of the tire valve tube and showing the fragment of hose in section.

Figure 2 is a section through the device, the same being taken at right angles to Figure 1 on the line 2—2 shown in Figure 1.

Figure 3 is an elevation on a reduced scale looking at the device from the left, in Figure 1.

Figure 4 is a section on the line 4—4 of Figure 2.

Referring to the drawing by numerals:

The device as shown consists of a nozzle block, 1, bored or otherwise apertured to form an air passage, 2, terminating at one end in a chamber, 3, adapted to receive the end of the valve tube and at the other end a nipple, 4, to which the hose, 5, is adapted. The device also includes swinging gripper arms, 6—6, having at their ends fingers, 7—7, which are notched at 9 to engage the thread, 8, on the valve tube and which in advance position enter the openings, 10, at the sides of the chamber, 3. These arms, 6—6, are in the form of the invention shown seated in slots, 11, on the opposite sides of the block, 1, and are held in position each by a pin, 12, passing through registering openings, 13, in the lips, 14, on the opposite sides of each slot. In the form of the invention shown the gripper arms, 6—6 are mounted to rock on angular surfaces, 15, 16, in the bottoms of the grooves, 11, which dispenses with the necessity for pivot pins, and consequently adds to the life of the structure, which is in fact unlimited. The grippers are held in advanced or gripping position by a spring, 17, mounted in an aperture, 18, in the block and are released by pinching with the thumb and fingers at the upper ends at 19, bringing the upper ends together and causing the lower ends to recede, disengaging the valve tube.

By reference to the drawing; Figure 1— it will be noticed that the passage, 2, makes a right angle turn so that the nipple, 4, is at right angles to the valve tube in engaging position; also, the chamber, 3, which receives the valve tube has an enlarged cavity which as shown is shouldered within at 20 to hold a suitable soft packing, 21, adapted to provide a resilient engagement in the end of the tube and prevent leakage when the parts are in operative position.

It will be apparent that having the casting or block, 1, suitably bored; to assemble the apparatus, it is only necessary to seat the packing, 21, by forcing it in through the chamber, 3, then placing the spring, 17, in the opening, 18, to slightly compress it between the gripper arms, 6—6 which are seated in the grooves, 11, making it possible to insert the pins, 12, when the ends of the pins, 22, are turned and spread, as

shown, the apparatus is complete and ready to connect to the hose.

The manner of engaging and disengaging it is apparent. Pressing the ends of the gripper arms, 6—6, with the thumb and finger causes the lower ends to separate when the chamber, 3, may be passed over the end of the valve tube, pressing the packing, 21, against the edge of the tube. The release of the grippers, 6—6 in this position causes their notched ends to engage the threads of the tube, making a tight and secure connection which can only be released by again pressing the upper ends of the gripper arms, 6, together. This is conveniently done by the same gripping engagement of the hand which withdraws the hose from the valve tube. It will be apparent that with this appliance no swivel is necessary, nor is there any screw engagement of the parts and that the connection and release is easy and quick and without any chance of injury to the thread.

I have thus described specifically and in detail a single device embodying my invention in its preferred form, in order that the nature and operation of same may be clearly understood; however, the specific terms herein are used descriptively rather than in a limiting sense, the scope of the invention being defined in the claims.

What I claim and desire to secure by Letters Patent is:

1. A tire pump hose connection consisting of a block having an air passage, means for connecting the pump hose at one end and a chamber to receive the valve tube at the other end of the passage, the block having angular surfaces at the side, gripper arms

mounted to rock on said surfaces and having fingers at their ends at each side of said chamber, and a spring tending to hold the grippers in gripping position with their fingers in engagement with the valve tube.

2. A tire pump hose connection consisting of a block having an air passage, means for connecting the pump hose at one end and a chamber to receive the valve tube at the other end of the passage, the block having cam surfaces at each side, gripper arms mounted to rock on said surfaces and having fingers at their ends at each side of said chamber, a spring tending to hold the grippers in gripping position with their fingers in engagement with the valve tube, the block also including ears at each side of the angular surfaces and pins passing through said ears, adapted to hold each gripper in assembled position.

3. A tire pump connection consisting of a block having an air passage, means for connecting a hose at one end of the passage, a chamber to receive the valve tube at the other end of the passage, a groove in each side of the block, spring pressed swinging gripper arms at each side of the block in said grooves, each arm having a gripping surface, providing gripping means at each side of the chamber, the chamber having an aperture at each side to admit the gripping means.

Signed by me at Baltimore, Maryland, this 8th day of December, 1920.

WALTER M. INGRAM.

Witnesses:

PORTER H. FLAUTT,
ANNA BERNSTEIN.