W. E. STEED.

AUTOMATIC HOSE REEL.

APPLICATION FILED SEPT. 12, 1917.

1,280,574.

Patented Oct. 1, 1918.

3 SHEETS—SHEET 1.

Fig. 1.

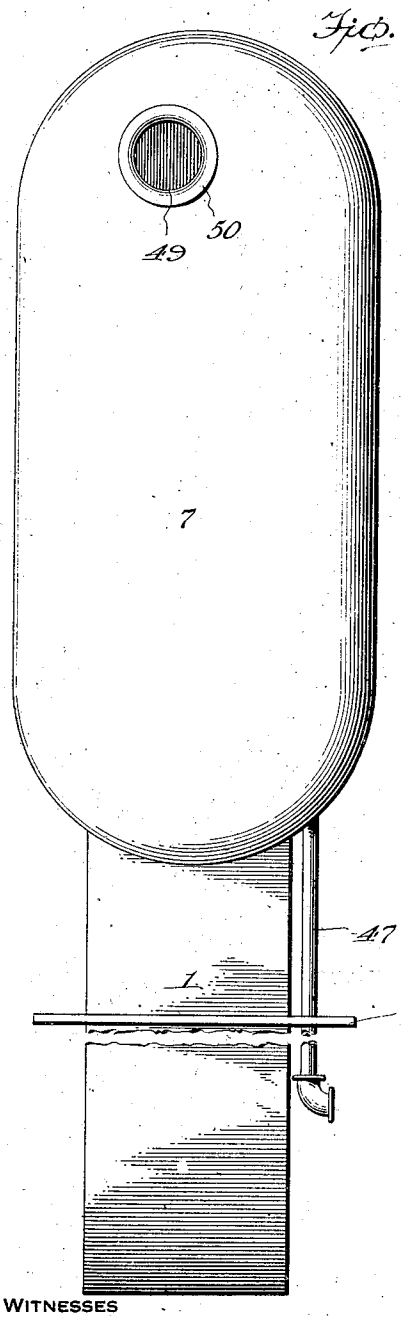
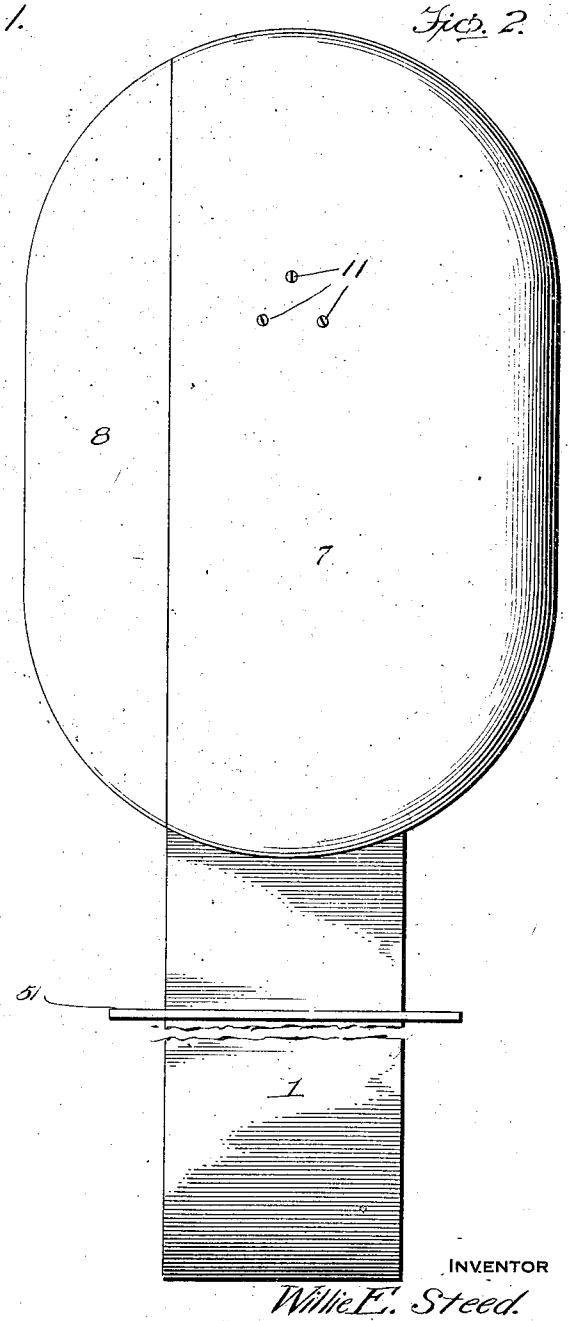


Fig. 2.



WITNESSES

Paul M. Hunt.

P. M. Smith

INVENTOR

Willie E. Steed.

BY Victor J. Evans

ATTORNEY

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3 SHEETS—SHEET 2.

Fig. 8.

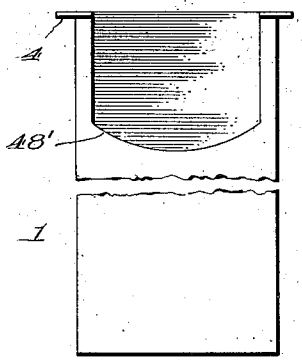


Fig. 3.

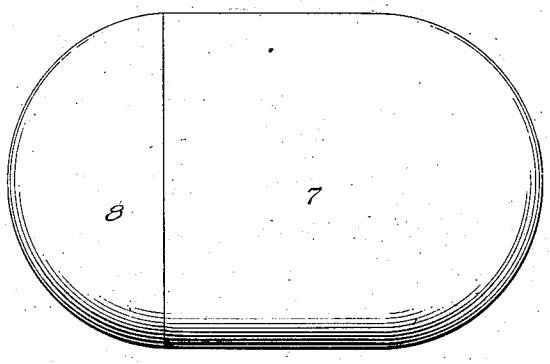


Fig. 7.

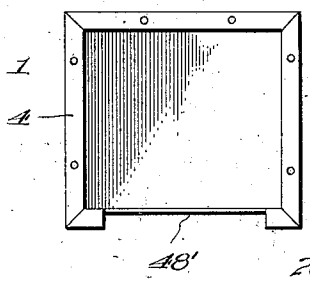


Fig. 6.

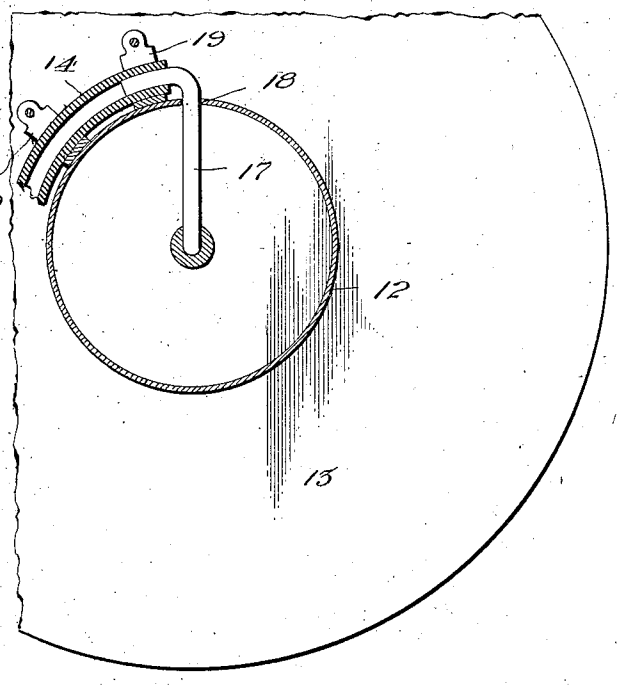
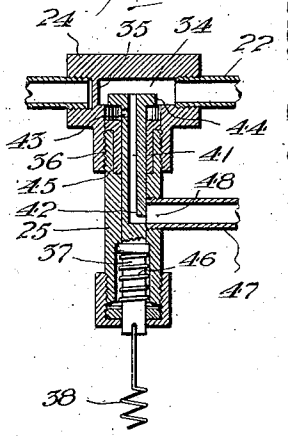


Fig. 5.



WITNESSES

Paul M. Hunt

R. M. Smith

INVENTOR

Willie E. Steed.

BY Victor J. Evans

ATTORNEY

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3 SHEETS—SHEET 3.

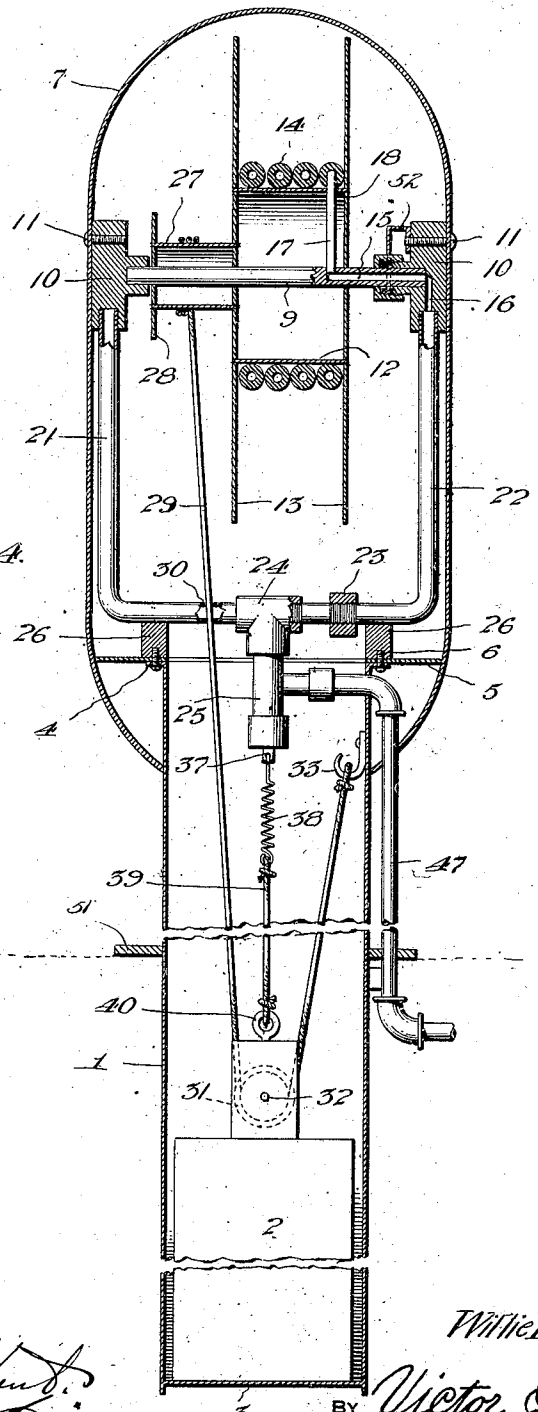


Fig. 4.

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Paul M. Hunt.

P. M. Smith

INVENTOR

Willie E. Steed

BY Victor J. Evans

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIE E. STEED, OF TREMONTON, UTAH.

AUTOMATIC HOSE-REEL.

1,280,574. Specification of Letters Patent. Patented Oct. 1, 1918.

Application filed September 12, 1917. Serial No. 191,032.

To all whom it may concern:

Be it known that I, WILLIE E. STEED, a citizen of the United States, residing at Tremonton, in the county of Boxelder and State of Utah, have invented new and useful Improvements in Automatic Hose-Reels, of which the following is a specification.

This invention relates to automatic hose reels and the object thereof is to produce a reel especially designed to contain an air hose for supplying air under pressure to pneumatic tires for the purpose of inflating the latter.

The improved reel is especially designed for use in garages and for use at the curbs of side walks, enabling compressed air to be dispensed conveniently to automobiles. The reel acts to automatically rewind the hose after it is released by the operator and also operates to automatically cut off the air supply when the hose is released and allowed to be rewound upon the reel. The mechanism also acts to automatically open the air valve as the hose is unwound from the reel.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, herein fully described, illustrated and claimed.

In the accompanying drawings:—

Figure 1 is a front elevation of the automatic hose reel.

Fig. 2 is a side elevation of the same.

Fig. 3 is a plan view thereof.

Fig. 4 is a vertical section taken centrally of the main shaft of the reel.

Fig. 5 is an enlarged fragmentary sectional view of the valve.

Fig. 6 is a fragmentary sectional view showing the air connection between the shaft and the hose.

Fig. 7 is a top plan view of the weight box.

Fig. 8 is a fragmentary rear elevation of the upper portion thereof.

In carrying out the present invention, I employ a vertical weight box or hollow column 1 of any suitable height necessary to provide for the length of travel of a weight 2 mounted for up and down movement therein and serving as the means for rewinding the hose on the drum of the reel as will hereinafter appear. The box or column 1 has a closed bottom 3 to exclude moisture and the upper end of said box is open and formed with a surrounding flange 4 to which is secured a frame plate 5, said parts being secured together by fastening means 6. The plate 5 is open at the center for a purpose which will hereinafter appear.

Supported upon the upper portion of the box 1 is a casing 7 preferably of sheet metal and of oblong formation. The casing 7 comprises a movable section 8 constituting a door to give access to the interior of the casing, said door 8 being preferably hinged to the main body of the casing 7. Extending transversely across and within the casing 7 is the main shaft 9 of the reel. The opposite ends of the shaft 9 are journaled in bearings 10 secured to the inside of the casing 7 by fastening means 11. The hose reel or drum comprises a tubular cylindrical body 12 and heads or flanges 13 fixedly secured thereto and in spaced relation to each other. The heads or flanges 13 are securely fastened to the shaft 9 and the hose 14 is wound around said drum between the flanges thereof. The shaft 9 is formed with a longitudinal bore 15 in one end portion thereof and the adjacent bearing 10 is formed with an air passage 16 in communication with the open end of the bore 15. Communicating with the other end of the bore 15 is a pipe or conduit 17 which extends through a hole 18 in the body 12 of the drum where it has attached thereto by means of a clamp like fitting 19, one extremity of the hose 14 as shown in Fig. 6. Another clamp 20 fastened to the adjacent head 13 of the reel, embraces the hose 14 so as to securely support said hose in relation to the head 13. The clamp or clip 19 may also be fastened to the head 13 as indicated in Fig. 6.

21 designates a tubular support for one of the bearings 10. Another tubular support 22 is provided for the other bearing 10 and communicates with the bore 16 above referred to. The tubular support 22 is made in sections, and the sections thereof threaded at their adjacent ends and connected by a union 23. The lower ends of the tubular supports 21 and 22 are connected to a T-fitting 24 and depending from said fitting 24 is an air valve casing 25 hereinafter more particularly described. The lower portions of the tubular supports 21 and 22 are extended toward each other where they connect with the fitting 24 and are supported by blocks or rests 26 which are secured to

the frame plate 5 by the fastening means 6 hereinabove referred to. The casing 7 surrounds and lies in contact with the frame plate 5 which thereby serves to hold the casing 7 in fixed relation to the weight box 1.

Located at one side of one of the heads 13 of the hose reel is a smaller drum comprising a tubular body 27 and a head or flange 28 arranged in spaced relation with the adjacent head 13 of the hose reel. Secured to and wound upon the smaller drum 27 is a flexible connection 29 such as a rope or cable which extends downwardly through a slot 30 in the tubular support 21 and under a pulley 31 journaled on a pin or shaft 32 carried by the upper end of the weight 2. The rope then extends upwardly from the pulley 31 and is secured to a hook 33 or the equivalent thereof secured to the inside of the box 1.

The fitting 24 comprises an air chamber 34 which is cut off from the tubular support 21 by means of a partition 35, the air chamber 34 being always in communication with the tubular support 22. The valve casing 25 has a threaded connection at 36 with the fitting 24 and contains an air valve or cut off 37 which is slidable vertically in the casing 25 and has attached to the lower extremity thereof a coiled spring 38 to the lower extremity of which is connected a cord or rope 39 attached at its lower end to the weight 2 by means of an eye 40 or the equivalent thereof. The valve 37 has a longitudinal bore 41 intersected by an air inlet port 42 and also intersected by an air outlet port 43. The valve 37 is provided with an enlarged shoulder or head 44 at the upper extremity thereof adapted to rest upon the upper end of a bushing 45 inserted in a counter-bore of the valve casing 25 as shown in Fig. 5. A spring 46 surrounding the valve 37 serves to hold the same normally open so that the air passing through the valve may enter the chamber 34 and flow through the connections described to the hose 14. When the weight 2 reaches the bottom of the box 1, it pulls downwardly on the cord or rope 39 and the spring 38 acts to close the valve 37. At this time, the hose 14 has been fully rewound upon the reel. As the hose is unwound from the reel, the valve closing connections are relaxed, and the valve is automatically opened by the spring 46. 47 designates a compressed air supply pipe leading from a source of compressed air to the valve casing 25 and communicating with a lateral port 48 in said casing in line with the air inlet port 42 of the valve when in its open position.

The box is preferably rectangular or square in cross section as shown in Fig. 7, the weight being of corresponding shape. At its upper end, the box 1 is formed preferably in the rear wall thereof with a hand hole 48' to enable the valve casing to be removed and replaced when repair or adjustment is necessary. In the front wall of the casing 7 there is formed a hole 49 through which the hose 14 is inserted and through which it is slidable as it is drawn from the reel or rewound thereon. The opening 49 is preferably rounded or rolled as indicated at 50 to prevent chafing the hose. The hose is provided at its delivery end with any suitable valved nozzle to adapt the same to be attached to the valve tubes of pneumatic tires.

From the foregoing description taken in connection with the accompanying drawings it will now be understood that in order to operate the automatic reel, the operator grasps the end of the hose projecting from the casing 7, thereby unwinding the hose from the reel and raising the weight 2, the rope or cable 29 of which is wound upon the reel or drum 27. Simultaneously with this operation, the cord 39 and the spring 38 are relaxed and the valve 37 is allowed to move to its open position. This allows the air under pressure, entering the pipe 47 to flow through the valve and through the connection 22, passages 16 and 15 to the pipe or conduit 17 and thence to the hose 14. When the operator releases the hose, it is automatically rewound upon the reel by the operation of the weight 2 and as the latter reaches the bottom of the box, the air valve 37 is automatically closed thus preventing leakage of air when the apparatus is not in use.

51 designates a supporting collar or flange which surrounds the tube 1 and prevents the latter from moving downwardly in relation to the support upon which it is mounted. 52 designates a lock nut or clamp which is secured in place by the screw 11 and which embraces the stuffing box or gland through which the shaft 9 passes, preventing said stuffing box from turning and working loose.

While the reel has been described as useful for the purpose of furnishing compressed air at the curb, it will be apparent that the reel may be used for dispensing water or any other fluid or liquid.

I claim:—

1. In an automatic hose reel, the combination of an upright box, a weight movable up and down therein, a casing surmounting said box, a reel journaled therein, a hose wound upon said reel, a weight supporting cable attached to said reel and adapted to be wound thereon for lifting said weight as the hose is unwound from the reel, said reel embodying a rotary shaft having an air passage extending longitudinally thereof, bearings for said shaft one of which is formed with an air passage, a compressed air supply pipe communicating with the last named passage, a conduit connecting said passage with the receiving end of the hose,

a valve controlling said supply pipe, said valve being held normally open by yieldable means, and means controlled by said weight for automatically closing said valve when the hose is wound upon the reel.

2. In an automatic hose reel, the combination of an upright box, a weight movable up and down therein, a casing surmounting said box, a reel journaled therein, a hose wound upon said reel, a weight supporting cable attached to said reel and adapted to be wound thereon for lifting said weight as the hose is unwound from the reel, said reel embodying a rotary shaft having an air passage extending longitudinally thereof, bearings for said shaft one of which is formed with an air passage, a compressed air supply pipe communicating with the last named passage, a conduit connecting said passage with the receiving end of the hose, a valve controlling said supply pipe, said valve being held normally open by yieldable means, means controlled by said weight for automatically closing said valve when the hose is wound upon the reel, and means for automatically opening said valve as the hose is unwound from the reel.

3. In an automatic hose reel, the combination of an upright box, a weight movable up and down therein, a casing surmounting said box, a reel journaled therein, a hose wound upon said reel, a weight supporting cable attached to said reel and adapted to be wound thereon for lifting said weight as the hose is unwound from the reel, said reel embodying a rotary shaft having an air passage extending longitudinally thereof, bearings for said shaft one of which is formed with an air passage, a compressed air supply pipe communicating with the last named passage, a conduit connecting said passage with the receiving end of the hose, a valve controlling said supply pipe, and a frame plate fastened to and projecting outwardly from the upper extremity of said box and serving to position the casing in relation to said box.

In testimony whereof I affix my signature.

WILLIE E. STEED.