(No Model.) 2 Sheets—Sheet 1.

H. J. ADAMS.

PORTABLE MACHINERY FOR PUMPING WATER.

No. 500,460. Patented June 27, 1893.

Fig. 1.

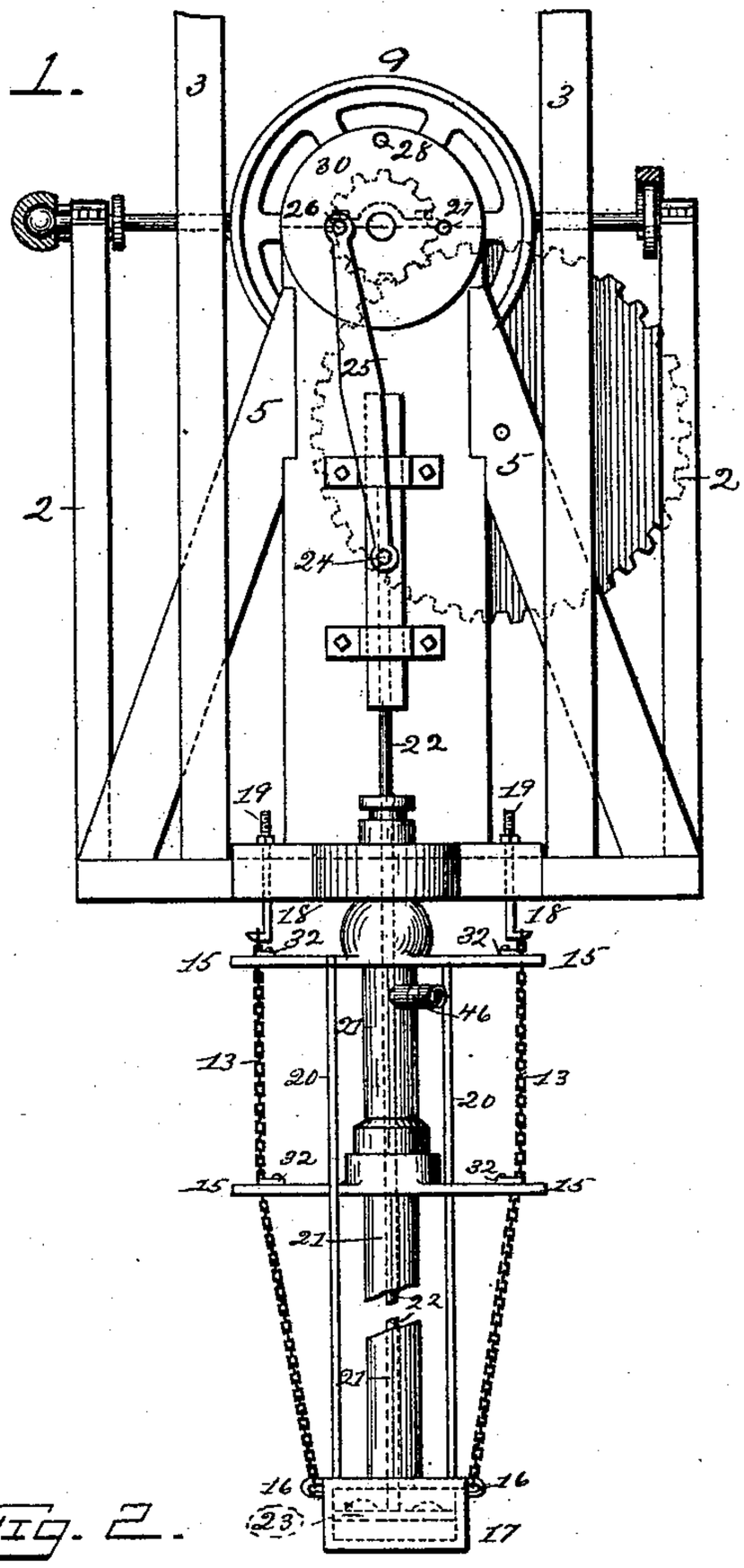
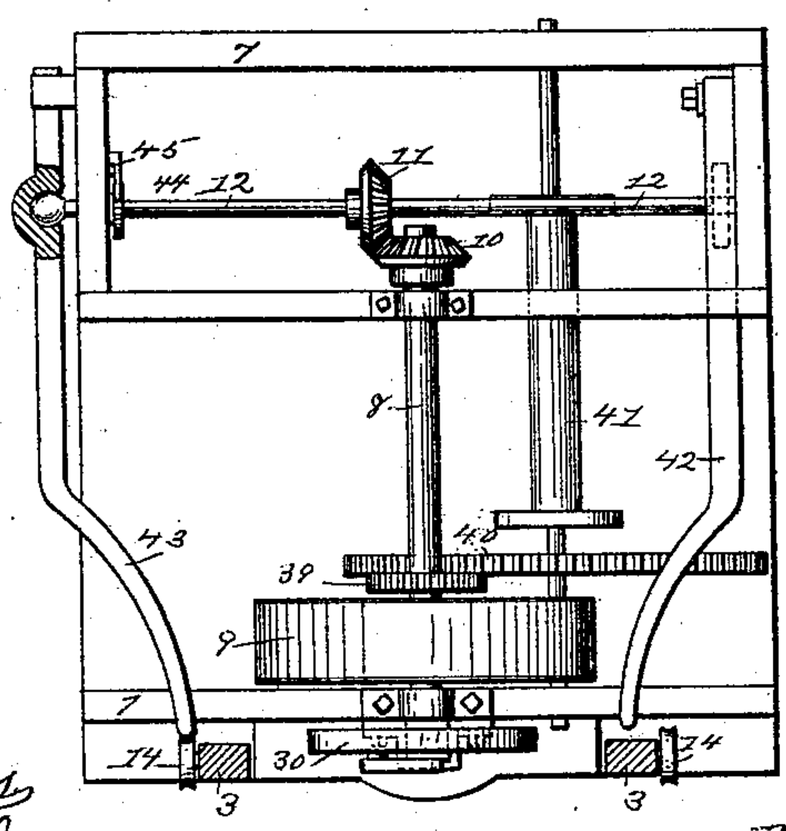


Fig. 2.



Attest:

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Walter E. Allen

Inventor:

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Attorney

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

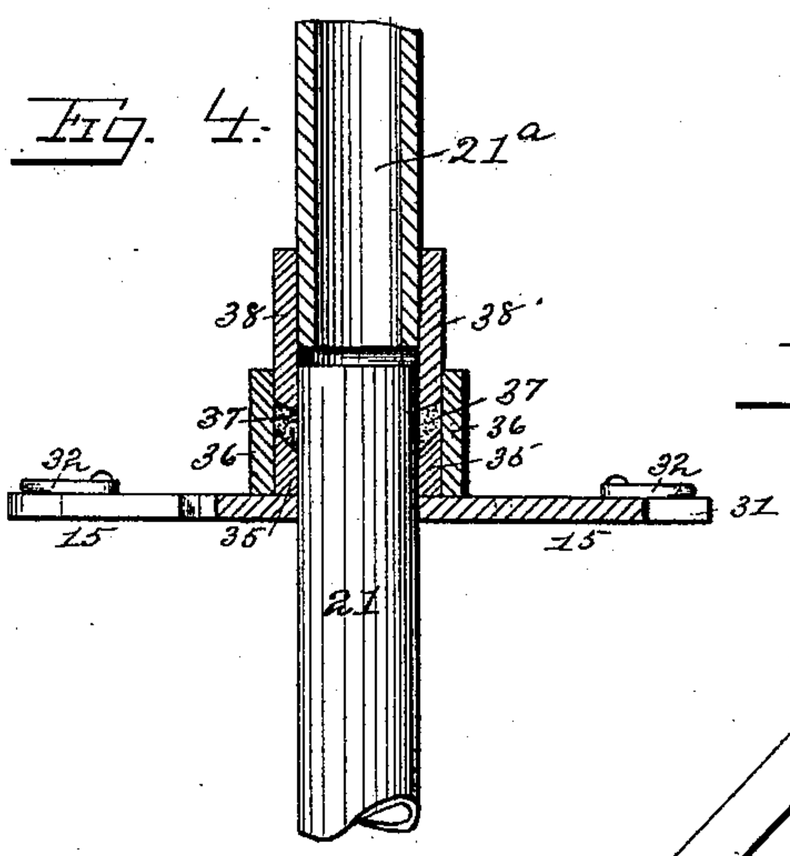


Fig. 3.

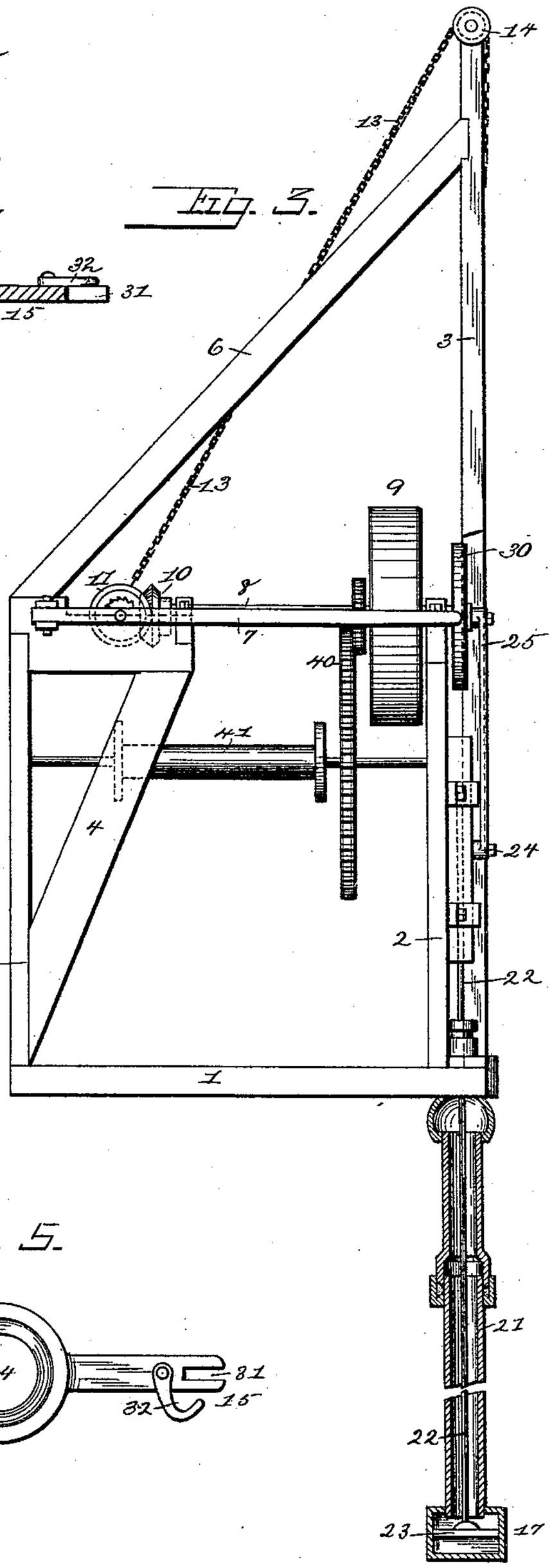
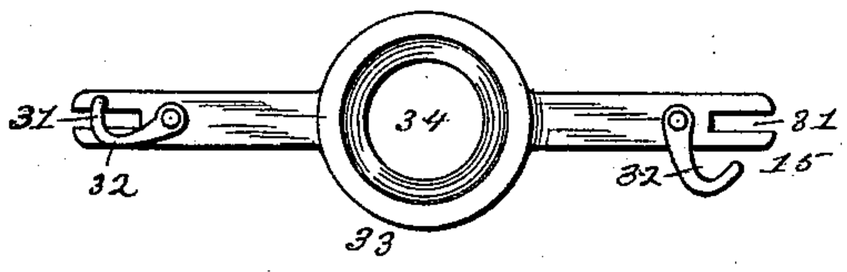


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY J. ADAMS, OF TOPEKA, KANSAS.

PORTABLE MACHINERY FOR PUMPING WATER.

SPECIFICATION forming part of Letters Patent No. 500,460, dated June 27, 1893.

Application filed May 26, 1892. Serial No. 434,514. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. ADAMS, a citizen of the United States, residing at Topeka, in the county of Shawnee, in the State of Kansas, have invented a new and useful Portable Power-Pump, of which the following is a specification.

My invention relates to improvements in portable power pumps having adjustable pump-stock or tubing with means for lowering the tubing into the well and raising it therefrom and suitable machinery for operating the pump; and the objects of my invention are, first, to provide a simple and efficient device, adapted to be run and operated by horse-power, engine or other like power, to operate the pump; second, to provide means for lowering the pump and pump-stock or tubing into the well and drawing or raising it therefrom; third, to provide a pump-stock or tubing adjustable to the various depths of different wells by removing or putting in additional sections; fourth, to provide a joint between the sections, that by the weight of the sections, is made water-tight; the whole being adapted to be carried upon the trucks of an ordinary farm wagon, or upon the trucks made for the purpose. I obtain these objects by means of the mechanism shown in the accompanying drawings, in which—

Figure 1 is an end elevation with the carrier pulleys and chains above the pump removed. Fig. 2 is a top view of the same. Fig. 3 is a side view showing the carrier chain passing over its pulley. Fig. 4 shows the manner of joining the sections of the adjustable tubing and forming water-tight joints. Fig. 5 shows my improved hanger for supporting and holding steady the tubing.

Similar figures refer to similar parts throughout the several views.

1 is the table or base supporting the frame 2 of which 7 is the upper or top framework.

3, 3 are the carrier posts having at their upper ends the pulleys 14 over which the carrier chains 13 pass.

6 is a brace extending from the carrier posts to the main frame.

8 is the main pumping shaft journaled on the frame 7, and further supported at its inner end by the brace 4 and at its outer end by the braces 5. It is provided at its inner end with the bevel pinion 10 which meshes with the bevel gear wheel 11 on the carrier shaft 12, and it is also provided with the pinion 39 meshing with the cog-wheel 40 on the shaft carrying the hose reel 41.

9 is a band wheel on the main shaft 8. At the outer extremity of the shaft is keyed the crank-wheel 30, the wrist pin of which is adjustable to different distances from its center as at 26, 27 and 28.

25 is the pitman secured by the pitman-bolt 24 to the piston rod 22 near its upper extremity.

18, 18, are hooks which pass through and are secured to the base timber 1 by the nuts 19.

15 is the hanger for supporting the pump tubing, being provided with the jaws 31 in which are held chains 13 by the hooks 32. The hanger 15 has an enlargement 33 near its center in which is formed a circular opening to admit the pump tube.

16, 16 are ears on the piston chamber 17 to which the chains 13 are attached.

21 is the pump-stock or tubing, 22 the piston rod and 23 the piston in the piston chamber 17.

In Fig. 4 is shown my improved water-tight joint in the pump tubing in which 21 is a section of tubing. 35 is a collar surrounding the tubing near its upper end. 36 is a sleeve surrounding the collar and extending beyond it. 37 is a packing of rubber or like elastic, impervious material, between the sleeve and the tube and resting on the collar which has a sharp outward bevel to receive it. 38 is a collar on the lower end of the next upper section which fits closely between the tube 21 and its sleeve 37 and rests on the rubber packing. When the tubing is suspended in the hangers the collar and sleeve rest on the hanger and the tube is supported thereby. The sleeve and collars may be shrunk on the tubes or may be threaded thereon as may be desired. 20 are rods passing down by the sides of the pump tubing to add stability thereto. 42 is a lever to throw the hose reel

gearing in and out of gear. 43 is a lever to control the gearing of the carrier shaft. 44, 45 are a ratchet and a pawl to retain the carrier shaft at any desired position. 46 is a pump spout, and 21ª is the lower end of an upper section of tubing. The band wheel 9 may be removed and replaced by a sprocket wheel and the machinery run by a sprocket chain instead of belting if desired.

In the operation of my improved portable power pump, the carrier chain carrying the piston chamber and lowest section of tubing is drawn up until the piston chamber will clear the surface of the ground, the chain being wound around the carrier shaft. It is thus transported on the trucks of an ordinary farm wagon or on trucks made for the purpose, to the well from which it is desired to pump. After reaching the well, by unwinding the carrier chain from the carrier shaft the piston chamber and its section of tubing are lowered into the well and sections of tubing and piston rod are added section by section as it is lowered until the desired depth is reached. When the desired depth is reached, which is not necessarily the bottom of the well, but only in sufficient water to fill the piston chamber, the top section carrying the pump spout is set on and adjusted, the hooks are caught in the links of the chain and the nuts turned on the threaded upper ends of the hooks and the sections are drawn together until the collar on each lower end is tightly pressed against the rubber packing between the sleeve and the tube of the upper end next below it, and the joints rendered air and water-tight. The piston rod is adjusted, the wrist-pin in the crank wheel fixed for the stroke desired, the hose reel and the carrier shaft thrown out of gear, power applied to either from a horse power on the same trucks with the pump frame, or other convenient power, and the pumping begins. If it is desired to carry water to any distance hose carried on the hose reel may be attached to the pump spout. If it is desired to remove to an-another well, the hooks are released, the carrier shaft thrown into gear, the tubing drawn up, and the sections removed as they come to the surface until only the lowest section and piston chamber remain which are drawn up to a safe position and the machine transported as before. When considerable pressure is used the rods 20 should be used but for ordinary work they are not needed.

Of the many advantages I claim for my improved portable power pump among the principal are: the facility with which it can be moved from one well to another; the facility with which the tubing can be let down into and removed from the well by reason of the sections being readily put together and taken apart; the facility with which the section joints are tightened and loosened; the degree of perfection attained in obtaining a water and air tight joint between the adjustable sections, for that when the collar 38 is pressed down against the packing by the tightening of the chains owing to the difference in the bevel of the contracting surface, the packing is pressed into a wedge-shaped form with the thinner edge toward the outer edge of the collar. The pressure of the water following down the inner side of the collar tends to press the wedge-shaped packing tighter into the angle formed by the lower edge of the collar and the bottom of the cup formed by the bevel of the collar below.

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

1. In a portable power pump, the combination with a pump composed of adjustable sections; of chains supporting the pump, hooks engaging the links of the chain, hangers having jaws to receive the chains and hooks to retain the chains in the jaws and provided with a central annular opening to receive the pump tubing, means for tightening the hooks supporting the pump, means for withdrawing the pump from the well, means for operating the pump and a frame to support the pump and its operating mechanism, substantially as shown and described and for the purposes specified.

2. In a portable power pump, the combination with a pump composed of adjustable sections, chains supporting the pump sections, upright posts provided with pulleys supporting the chains, a shaft carrying the chains and about which they are coiled, and hooks engaging links in the chains, of hose and a hose reel, a frame supporting the posts, the shaft and the hose reel and in which the hooks are secured, means for coiling the chains on the shaft, means for coiling the hose on the hose reel and means for operating the pump substantially as set forth.

3. In a portable power pump, a hanger having terminal jaws to receive the chains supporting the pump hooks or lugs to retain the chains in the jaws and a central annular opening to receive the pump tubing substantially as shown and described and for the purpose set forth.

4. In a portable pump having its pump-tubing in sections, an upper section of tubing adjustably coupled with a lower one of said sections, said coupling containing a packing, a hanger secured to said lower section and constructed to form part of said coupling, and means for supporting said hanger and tightly compressing the packing through the medium of the hanger to render the joint water-tight, substantially as set forth.

5. In a portable power pump having its pump tubing in adjustable sections, a section of tubing provided at its lower end with a beveled collar extending beyond the tubing and at its upper end with a beveled collar

near the end of the tubing, a hanger having a sleeve surrounding and extending beyond the collar means for supporting said hanger and an elastic impervious packing between the sleeve and the tubing substantially as shown and described and for the purposes specified.

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

HENRY J. ADAMS.

Witnesses:
H. J. WINGART,
J. M. MARTIN.