

(No Model.)

H. C. COLLINS.

DEVICE FOR SUPPORTING AND GIVING VIBRATING MOTION TO HOSE PIPES.

No. 395,611.

Patented Jan. 1, 1889.

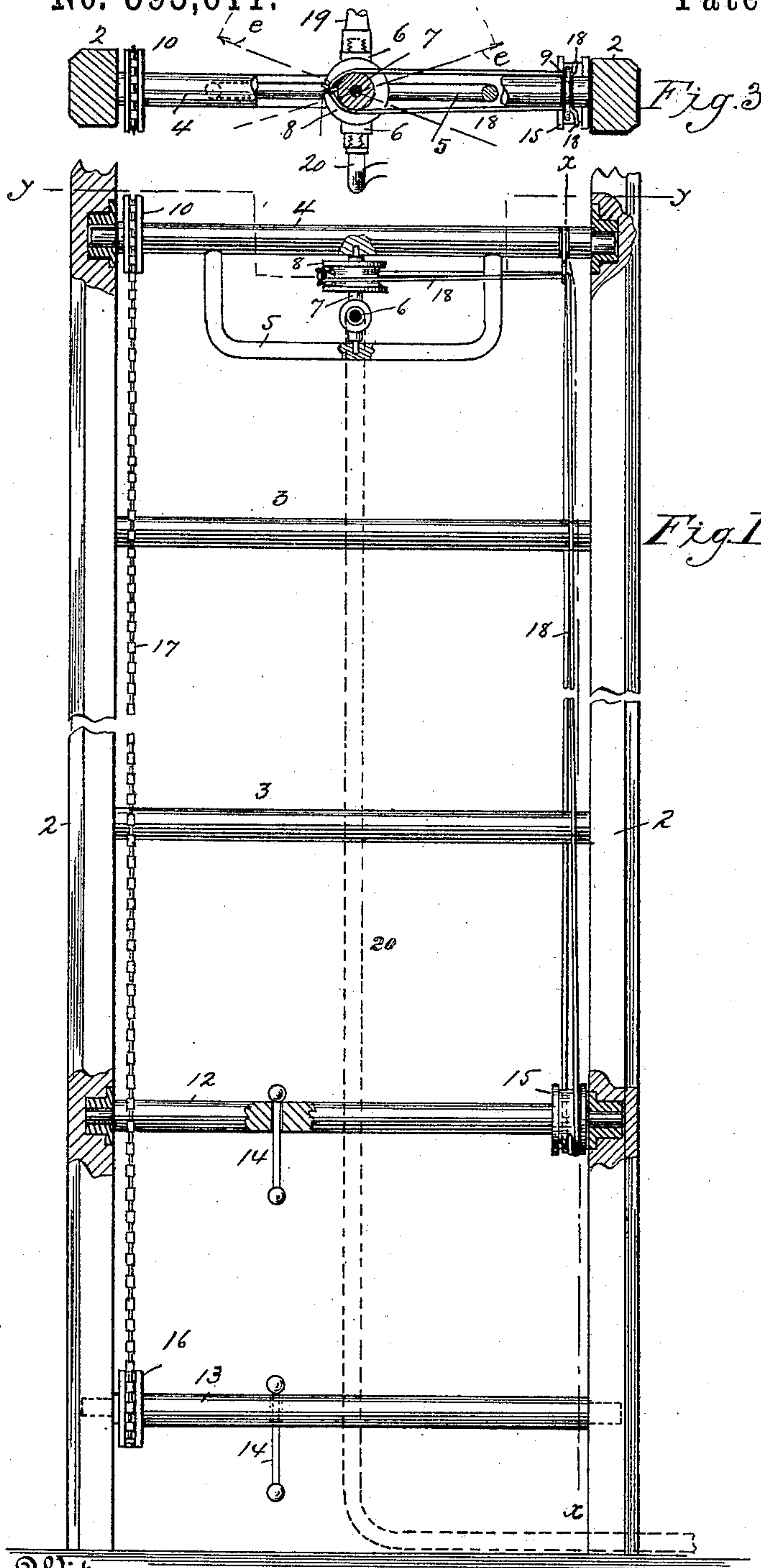


Fig. 1.

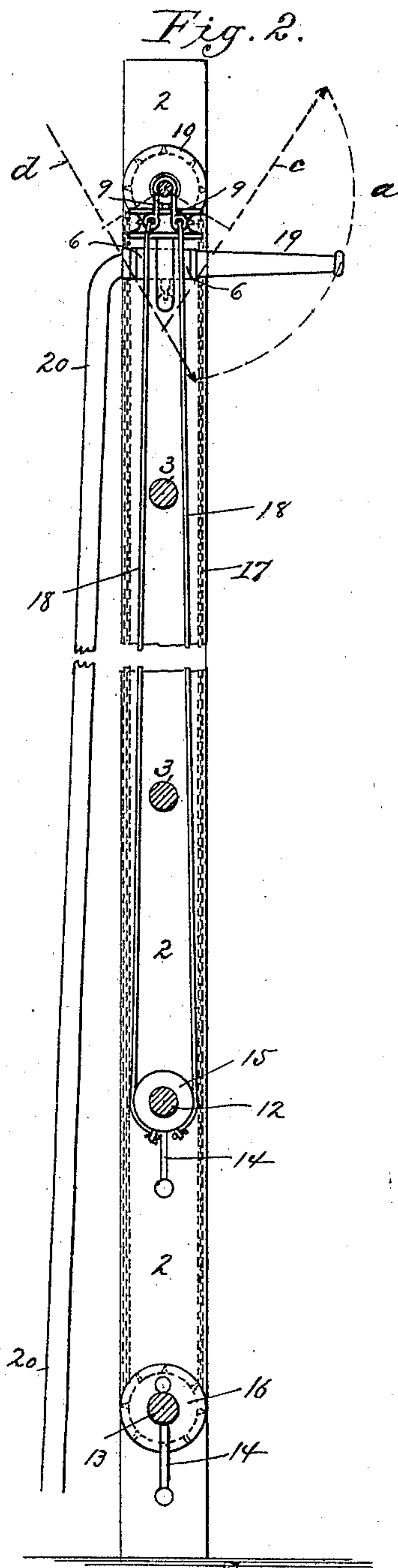


Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

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DEVICE FOR SUPPORTING AND GIVING VIBRATING MOTION TO HOSE-PIPES.

SPECIFICATION forming part of Letters Patent No. 395,611, dated January 1, 1889.

Application filed April 23, 1888. Serial No. 271,533. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. COLLINS, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Devices for Supporting and Giving Vibratory Motions to Hose-Pipes, of which the following is a specification.

10 This invention relates to hose-pipe supporting and operating devices, the object being to provide improved means for supporting a hose-pipe and the end of a hose connected thereto in an elevated position by the side of
15 a building to be used in the case of a fire in the latter, and whereby said hose-pipe is held in a position substantially opposite the high windows of said building, and may, by the devices hereinafter described, have its delivery end elevated or depressed or moved laterally by devices which are operated from the ground, whereby the current of water is directed by the operator to such point as may be demanded by the position of the fire; and
20 the invention consists in the peculiar construction and arrangement of the hose-pipe supporting and operating devices, all as hereinafter fully described, and pointed out in the claims.

30 In the drawings forming part of this specification, Figure 1 is a front elevation, partly in section, of hose-pipe supporting and operating devices constructed according to my invention, the upper ends of the supporting-frame being shown broken off. Fig. 2 is an
35 edge view of said device, one of the side rails of the frame being removed to more clearly show the details of the construction. Fig. 3 is a plan view, partly in section, looking
40 downward onto the upper end of the frame and the devices thereto attached, the upper shaft of the frame in this figure having its center portion broken away.

In the drawings, 2 2 indicate the side rails
45 or posts of a frame united by cross-bars or rungs 3, the latter being rigidly attached to said side rails. The said frame is illustrated in the drawings in the general form of a ladder, that being the preferable one, but not
50 necessarily so, since the frame construction referred to is one which shall be of sufficient height to support a hose-pipe and the end of

a hose at sufficient elevation to bring the hose-pipe into proximity to the higher part of buildings, and its side rails shall be so united
55 as to provide ample supports for certain rock-shafts, which are a part of the operating devices, as below described. When, however, the device is constructed in ladder form, as shown, it serves the double purpose of providing a support for said hose-pipe and
60 operating devices and for providing means whereby, if desired, firemen may ascend to the said higher parts of a building thereon.

Near the upper end of the frame consisting
65 of said side rails and uniting-bars is hung a horizontal rock-shaft, 4, in suitable bearings in said side rails, as shown in Fig. 1, said rock-shaft being preferably of metal, either tubular or solid, and having secured thereto
70 a metallic yoke, 5. An auxiliary shaft, 7, standing at right angles to shaft 4, and having suitable bearings in said shaft 4 and in the yoke carried thereby, is adapted to have a rocking motion in substantially a vertical
75 plane. A tube, 6, having each end screw-threaded, as shown, is rigidly secured to said shaft 7, and on the latter-named shaft is fixed a pulley, 8. At one end of said rock-shaft 4
80 two metallic guide-hooks, 9, are hung on said shaft 4, and near its opposite end is fixed thereon a pulley or sprocket-wheel.

Near the lower end of said frame are hung in suitable bearings, one above the other, two
85 other rock-shafts, 12 and 13, each of which is provided with a turning-bar, 14, whereby a suitable rocking motion is applied thereto. Said shaft 12 has fixed thereon near one end a pulley, 15, and on said shaft 13 is fixed a pulley or sprocket-wheel, 16. Connection is
90 made between said rock-shaft 13 and the upper rock-shaft, 4, preferably, by a drive-chain, 17, passing over the said pulleys or wheels thereon, and connection is made between the shaft 7, to which the tube 6 is attached, by a
95 suitable cord or rope, 18, metallic or otherwise, which has its ends secured to the pulleys 8 and 15, said cord or rope 18 passing through said guide-hooks 9, whereby its direction is changed from a vertical to a horizontal one, and vice versa, in passing from
100 the rock-shaft near the lower end of the frame to the pulley 8, hung between said rock-shaft 4 and the yoke 5. One end of said tube 6 is

adapted to have the hose-nozzle, 19, screwed thereto and to have a hose, 20, connected to its opposite end by a suitable coupling.

Fig. 3 is taken about on line *y y*, Fig. 1, and Fig. 2 about on line *x x*, same figure.

The operation of the above-described hose-pipe supporting and operating devices is as follows: When the devices are not in use at a fire, it is preferable that the hose-pipe 19 be not attached thereto, in order that it may not be injured or the parts to which it is connected be deranged while handling the machine to transport it to the place where it is to be used, and therefore prior to elevating the machine by the side of a building said hose-pipe is screwed onto one end of said pipe 6 in the position shown in Fig. 2, and to the opposite end of pipe 6 one end of a hose, 20, is connected, the latter having any suitable connection with a hydrant or steam fire-engine, and the machine having been suitably placed and supported by the side of a building an operator takes his place at the foot of the machine, and, seizing the operating-bars 14, he turns the rock-shafts 12 and 13 to impart a rocking motion to the upper shaft, 4, and to the shaft 7 attached thereto, and by said rocking motion of the shaft 13 the end of the hose-pipe 19 is caused to swing substantially within a circle vertically, (indicated by the dotted line *a*, Fig. 2,) taking the position alternately, as the case may be, pointing upward or downward in the directions indicated by the lines *c d* in said figure, and by said rocking motion of the shaft 12 the shaft 7 is caused to rock and thereby to swing the end of the hose-pipe 19 laterally to substantially the positions indicated by the lines *e e*, Fig. 3, and intermediately thereof. By means of the above-described devices, whereby the hose-pipe 19 is capable of being manipulated so that it can be brought to point upward and downward and toward either side of the machine, every required facility is afforded to enable a single operator to fully control the direction of the stream of water and cause the latter to be applied where most needed, thus serving to more quickly extinguish the fire and effecting an essential economy in the use of water at a fire and in the labor required as ordinarily practiced for holding and directing a hose-pipe, two or more men generally being required for that service.

Since it requires but a slight rocking motion of the shaft 12 to swing the hose-pipe 19 to the extreme lateral direction indicated by the lines *e* in Fig. 3, the ends of the cord 18, connecting the pulley 15 on said rock-shaft with the pulley 8 on shaft 7, are secured to said pulleys, as shown, as thereby a more positive motion of the parts is obtained than would be if said cord simply passed around said pulleys, and the same arrangement of cords and pulleys may be applied to the pulleys 16 and 10, respectively, on the rock-shafts 13 and 4, in place of the drive-chain and sprocket-wheels there shown, if desired; or

other suitable means may be employed for producing coinciding rocking motions in the shafts 13 and 4 and 12 and 7, whereby the end of the hose-pipe 19 shall be infallibly directed as desired by the operator and have the requisite vertical and laterally-vibratory motions imparted thereto, and the hose-pipe supported by the shafts 4 and 7 may be manipulated by a man standing on the bar 3 without employing the cord or chain 17 and 18.

It is obvious that the operative effect of the within-described devices would be the same were the hose-pipe 19 directly connected to the shaft 7 and adapted to have the hose 20 coupled directly thereto instead of interposing the tube 6 between the hose-coupling and the hose-pipe; but the machine can be more safely handled when constructed as described and shown; and, furthermore, it will be clearly understood from the above description that the device provides for imparting the above-mentioned horizontally-vibratory motion to the hose-pipe entirely independent of the devices which are employed to impart the said vertically-vibratory motion thereto, and vice versa.

If desired, the lower rock-shafts, 12 and 13, may be omitted and the shafts 4 and 7 be operated by simply pulling on the cord 18 and chain or cord 17.

What I claim as my invention is—

1. Devices for supporting and imparting vertical and horizontal vibratory motions to a hose-pipe, consisting of a horizontal rock-shaft, 4, having an auxiliary shaft, 7, supported thereon at right angles to the axis of said rock-shaft, a hose-pipe attached to said auxiliary shaft, a movable frame, substantially as described, in which said horizontal shaft is supported, and two other rock-shafts, 12 and 13, supported in said frame having cord-connections, substantially as described, respectively with said auxiliary shaft and said shaft 4, whereby the hose-pipe-supporting shafts 4 and 7 have rocking motions in horizontal and vertical planes imparted thereto, combined and operating substantially as set forth.

2. The horizontal rock-shaft 4, provided with a pulley, 10, and having an auxiliary shaft, 7, supported thereon at right angles to the axis of said rock-shaft, a hose-pipe attached to said auxiliary shaft, a frame, substantially as described, in which said horizontal shaft is supported, and a pending cord or chain connected with said pulley, combined and operating substantially as described.

3. The horizontal shaft 4, having an auxiliary shaft, 7, having a pulley, 8, thereon, supported on said shaft 4 at right angles thereto, a hose-pipe attached to said auxiliary shaft, a frame, substantially as described, in which said horizontal shaft is supported, and a cord connected with said pulley 8, combined and operating substantially as set forth.

4. In combination, the rock-shaft 4, having a pulley, 10, thereon, the shaft 7, supported

on said rock-shaft and having a pulley, 8, thereon, the tube 6, rigidly attached to said shaft 7 and having its ends screw-threaded, a frame, substantially as described, in which
5 said rock-shaft is supported, and the two rock-shafts 12 and 13, having bearings in said frame and cord-and-pulley connections, substantially as described, with said shafts 4 and 7, substantially as set forth.
10 5. In combination, the rock-shaft 4, having a pulley, 10, thereon, the shaft 7, supported on said rock-shaft and having a pulley, 8, thereon, the tube 6, rigidly attached to said shaft 7 and having its ends screw-threaded, a
15 hose-pipe and a hose connected to the opposite ends of said tube, a frame, substantially as described, in which said rock-shaft is sup-

ported, and the two rock-shafts 12 and 13, having bearings in said frame and cord-and-pulley connections, substantially as described, 20 with said shafts 4 and 7, substantially as set forth.

6. The horizontal rock-shaft 4, the auxiliary shaft 7, supported on said horizontal shaft at right angles thereto, a hose-pipe attached to 25 said auxiliary shaft, and a frame, substantially as described, in which said horizontal shaft is supported, combined and operating substantially as set forth.

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Witnesses:

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