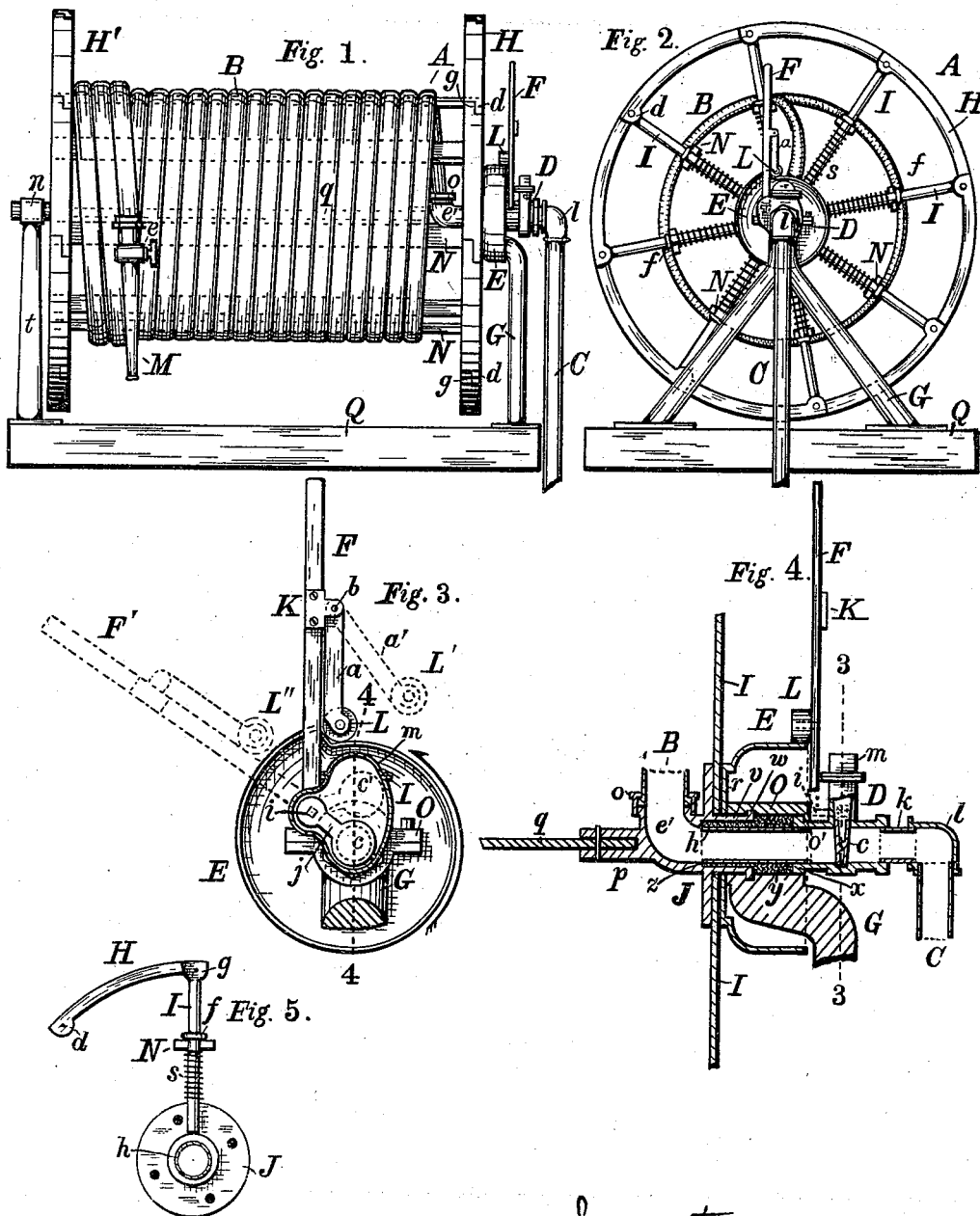


(No Model.)

W. A. KIRBY.
HOSE REEL.

No. 492,024.

Patented Feb. 21, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

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HOSE-REEL.

SPECIFICATION forming part of Letters Patent No. 492,024, dated February 21, 1893.

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To all whom it may concern:

Be it known that I, WILLIAM A. KIRBY, a citizen of the United States, residing at Auburn, in the county of Cayuga, in the State of New York, have invented certain Improvements in Hose-Reels, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to certain improvements in hose-reels whereby their construction is simplified and their operation rendered more effective.

My improvements are fully described and illustrated in the following specification and the accompanying drawings,—the novel features thereof being specified in the claims annexed to the said specification.

In the accompanying drawings representing a hose-reel embodying my improvements,—Figure 1 is a side elevation. Fig. 2 is an end view. Fig. 3 is a section through the valve on the line 3—3, Fig. 4, showing some of the parts to the left hand of said line in elevation. Fig. 4 is a longitudinal vertical section on the line 4—4, Fig. 3,—showing the valve lever and roller in elevation. Fig. 5 represents the hub of the reel and one of the reel-segments detached.

In the accompanying drawings, A represents the reel, B, the hose wound thereon, and C the water supply-pipe. When the hose is unwound from the reel, the reel revolves and opens a valve by which water is admitted from the supply-pipe to the hose, so that the water may be thrown onto the fire instantly. The first revolution of the reel opens the valve, so that the hose is filled with water by the time nozzle M on the end of the hose has been carried a few feet from the reel. The valve is operated by a spiral cam which revolves with the reel, being permanently attached thereto, so that there is nothing to be done in case of an alarm of fire, except to draw the hose from the reel and open the cock *e* in the nozzle M. The construction is such that the valve may be closed by hand and the motion of the reel in rewinding the hose thereon does not affect the valve.

Q represents a suitable base or bed-plate, on which the reel A is supported by the standards G *t*, in such manner that it may revolve freely.

The reel may be constructed in any ordi-

nary or suitable manner, being provided with the spiders H H', and the slats N N, about which the hose B is wound. I prefer however to make the spiders of the cast segments represented in Fig. 5,—each segment comprising one or two spokes and a portion of the rim, and to arrange the slats N so that they may yield inward slightly on springs *a*, in order to permit the expansion of the hose when the water is admitted into it. The inner ends of the spokes I are clamped between the head J and the flange of the cam E, (see Fig. 4) suitable radial recesses being formed in the head or the flange, which are secured together by bolts. The outer end of the spokes and the ends of the curved segments are halved onto each other, as represented at *d g*, and secured by bolts or rivets. An enlargement, *f*, on the spokes I, prevents the slats from being forced too far outward by the springs *s*. The ends of the slats are slotted to fit the spokes, so that the slats can move lengthwise of the spokes.

The valve D is attached to the supply-pipe C by the elbow *l* and nipple *k*, Fig. 4, or other suitable connection. The valve is preferably of the straightway type, being arranged to be opened and closed by the lever F. The disks *c* are arranged to close against inclined seats in the valve-shell,—the position when closed being indicated by the full lines in Fig. 3, and when opened, by the dotted lines *c'*. *m* is a flanged cap through which access is had to the disks and seats. The valve stem *i* passes through a suitable stuffing box and is attached to the lower end of the lever F. The disks are provided with projecting arms, *j*, Fig. 3, so that as the lever swings from F to F', the disks are shifted from *c* to *c'*, and the valve opened. An arm *a*, pivoted to the lever F, by means of the pin *b* and extension piece K, carries at its lower end the roller L, which bears against the outer surface of the spiral cam E. The arm *a* rests against the lever F, so that, as the cam revolves in the direction represented by the arrow in Figs. 2 and 3, the lever is shifted from F to F', thereby opening the valve and admitting water to the hose on the reel. The axis of the valve and its operating lever, as shown in Fig. 3, is eccentric to the axis of the cam and reel and its position is such that when the valve is closed the roller L will bear against that por-

tion of the cam nearest the cam center, but when the valve is open and the lever at the extreme of its valve opening movement, the roller will be farthest from the cam center. The end of the lever serves as a handle for opening or closing the valve, and, when the cam is revolved backward, the arm *a* and roller *L* swing outward to the position indicated at *a' L'*. By this construction the roller is prevented from interfering with the reverse motion of the cam. It will also be understood that the first revolution of the reel and cam, opens the valve fully by swinging the lever and roller to *F' L'*, and that, after these parts have arrived at this position, the cam can revolve as the hose is unwound further, without affecting the valve.

The pipe *h*, Fig. 4, is screwed into the inner end of the valve shell, and the head revolves on it, being supported by the standard *G* and cap *O*. The head is provided with a circular flange, *v*, Fig. 4, which surrounds the pipe *h*, and has at its outer end a flange *w*, which turns in a groove in the cap *O* and in the standard *G*. The interior surfaces of the cap and standard are made hexagonal, to fit the inner end, *x*, Fig. 4, of the valve *D*, and inside the end of the valve a circular recess is formed, which is filled with any suitable packing, *y*, preferably a packing containing plumbago,—which packing extends the full length of the pipe *h*, as indicated at *y*, Fig. 4,—the inner surface of the circular part *v* being formed of a Babbitt-metal sleeve, if desired. The inner side of the head is provided with the bend or elbow, *e'*, to which the hose 3 is attached by the screw-connection *o*.

p is a boss on the elbow *e'*, which receives the shaft *q*, which extends to the opposite spider *H'*, and serves to hold the reel together. The cap *O* is provided with flanges and bolts by which it is secured to the standard, and the packing compressed so as to make the joint tight. By this construction, the metallic surfaces which revolve are kept out of contact with each other, so that they are prevented from sticking together from rust.

The cap *O* is preferably provided with a projection or flange *o'*, Fig. 4, which engages over the hexagonal end of the valve shell and assists in holding the parts together. The cap and standard prevent the valve from turning on the nipple *k*.

I claim—

1. The combination with a revolving hose reel, of the valve *D* the valve operating arm, and the spiral cam *E* connected to the reel to revolve with it and having its inclined or spiral face arranged to engage the valve operating arm, substantially as described.

2. The combination with the revolving hose reel of the supply pipe and its valve, the spiral cam connected to the reel to revolve with and the lever connected to said valve and having a projection acted on by the inclined spiral face of the cam for opening the valve, substantially as described.

3. The combination with the revolving hose reel and its supply pipe and valve, of the spiral cam connected to the reel to revolve with it, the lever connected to said valve, and an arm pivoted to said lever and carrying a roller acted upon by said cam for operating the valve, substantially as described.

4. The combination with the revolving hose reel, of the spiral cam rotating with said reel, the supply pipe, the straight-way valve pivoted eccentrically to said pipe, and a lever connected to said valve and having a movable portion arranged to be acted upon by said cam for opening the valve, substantially as described.

5. The combination with the mechanism of a hose-reel, of a revolving spiral cam, a valve having a movable portion, a lever arranged to be moved by the cam and pivoted eccentrically to the axis of the cam on the axis of the movable portion of the valve, substantially as described.

6. The combination with the mechanism of a hose-reel, of an axially arranged water-supply pipe, a spiral cam arranged to revolve about the pipe, a valve and an operating lever pivoted eccentrically to the axis of the cam and adapted to open the valve when the cam revolves, substantially as described.

7. The combination with a hose reel, of the axially arranged supply pipe, the straight-way valve having its movable part pivoted eccentrically to said pipe, the lever arm connected to said movable part, and the cam on the reel for operating said arm and valve, substantially as described.

8. The combination with a hose-reel, of the head *J*, having circular flange *v*, provided with rib *w*, the pipe *h*, valve *D*, standard *G* and cap *O*, provided with a groove for the rib, substantially as described.

9. The combination with the mechanism of a hose-reel, of an axially arranged fixed supply pipe, a valve, a spiral cam arranged to revolve about the axis of the pipe, a valve-operating lever arranged to be moved by the cam, pivoted eccentrically to the axis of the cam, and provided with a movable projection or roller bearing on the cam but adapted to yield away therefrom during the reverse motion thereof, substantially as described.

10. The combination, with the mechanism of a hose-reel, of the reel-spider *H*, consisting of a suitable flanged hub and a series of sections, each comprising a spoke and a segment of the rim, substantially as described.

11. The combination, in a hose-reel, of the notched slats *N N'*, and the spiders *H H'*, each consisting of a series of spider-sections comprising a segment of the rim and a spoke, provided with projection *f* and spring *s*, substantially as described.

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Witnesses:

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