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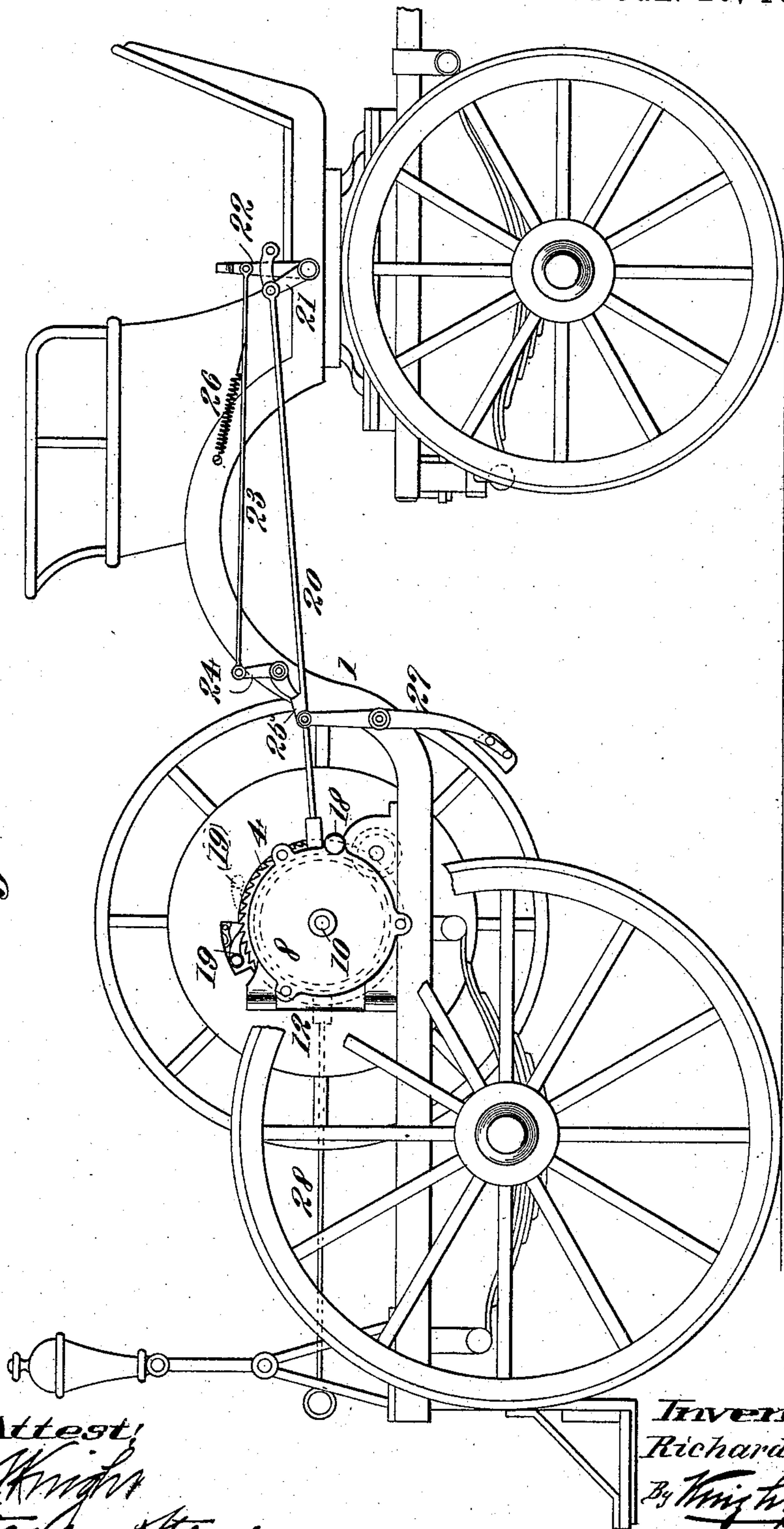
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R. VOELKER.  
HOSE REEL.

No. 576,009.

Patented Jan. 26, 1897.

*Fig. 1.*



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(No Model.)

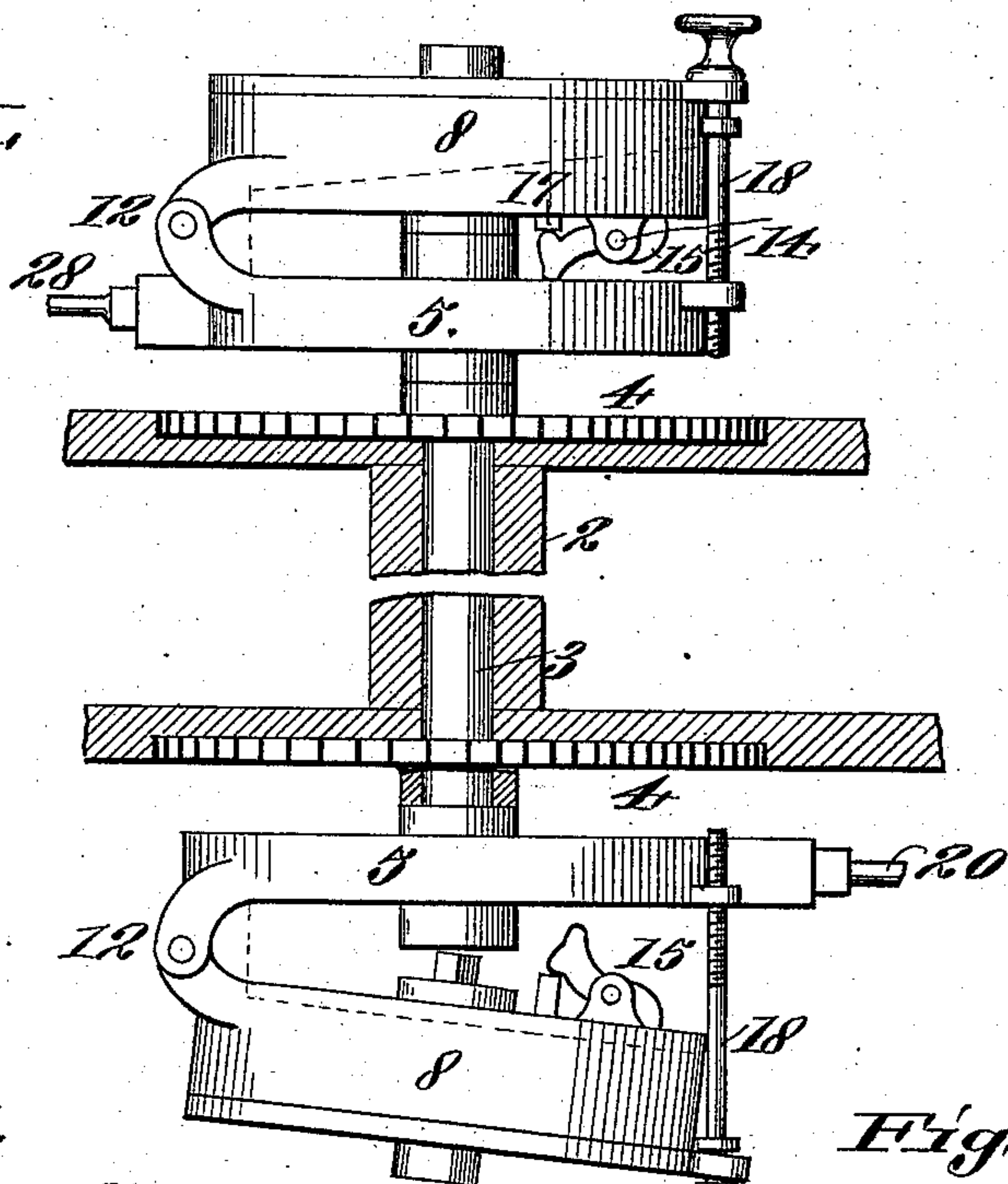
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R. VOELKER.  
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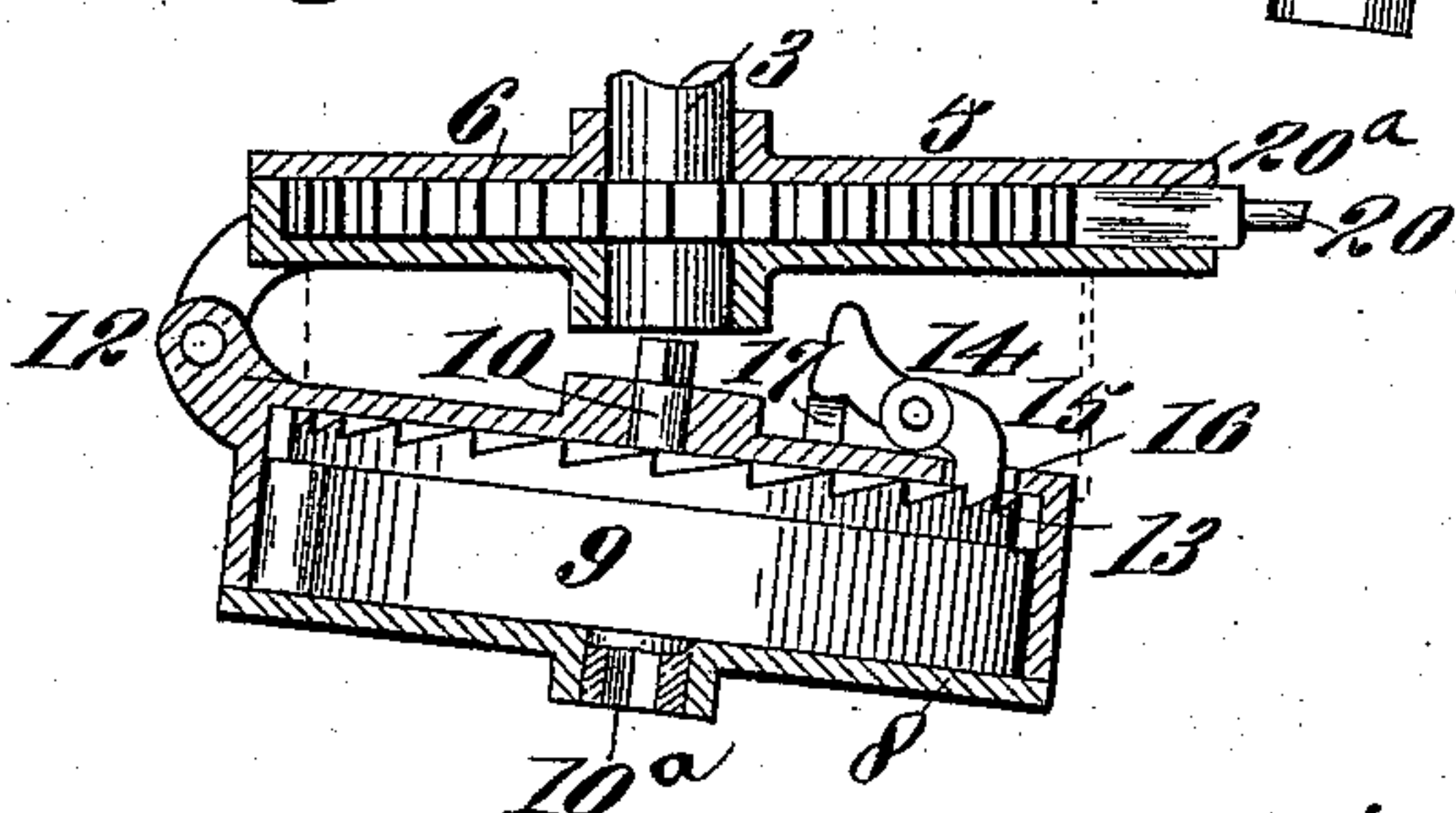
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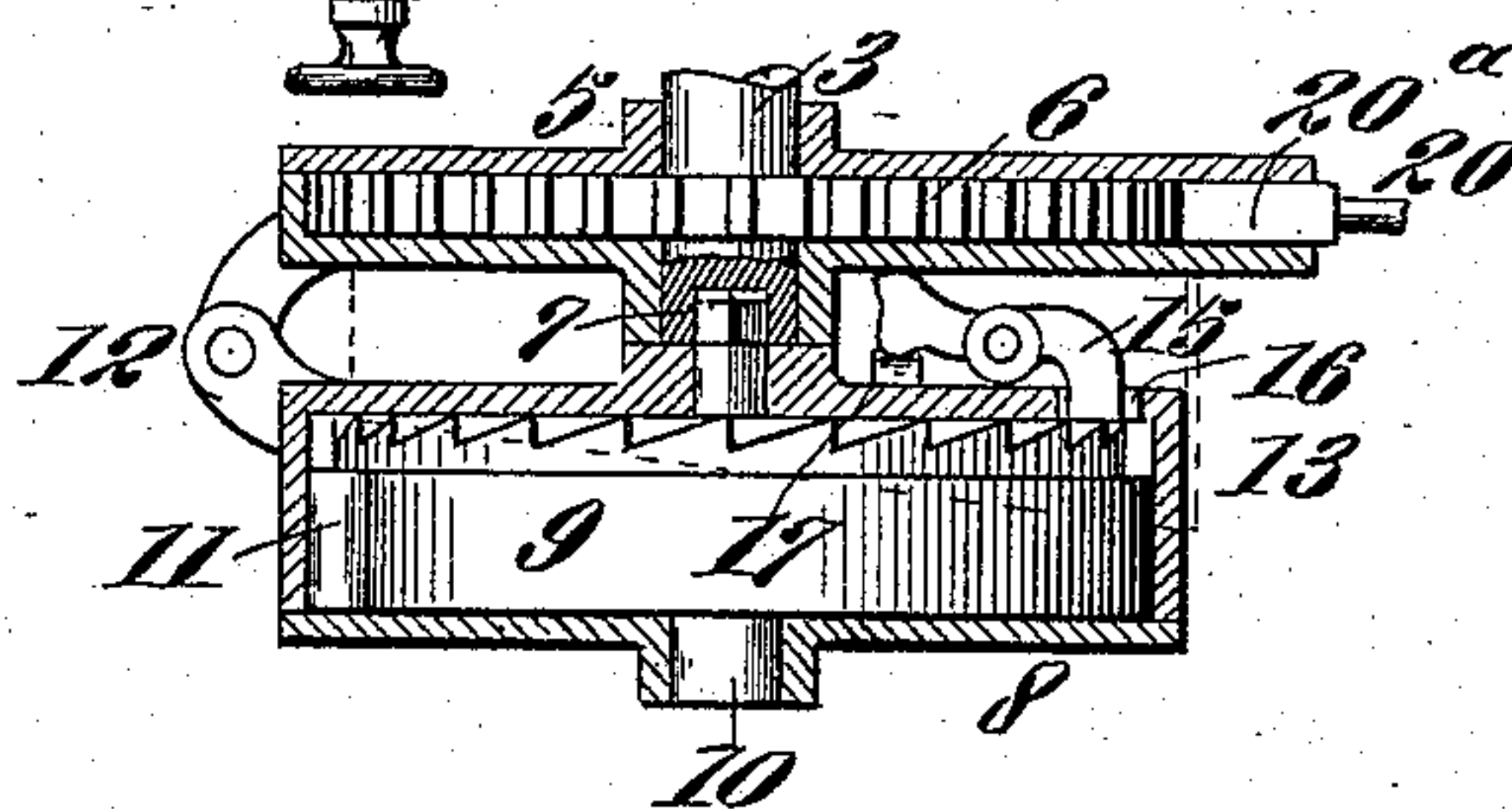
*Fig. II.*



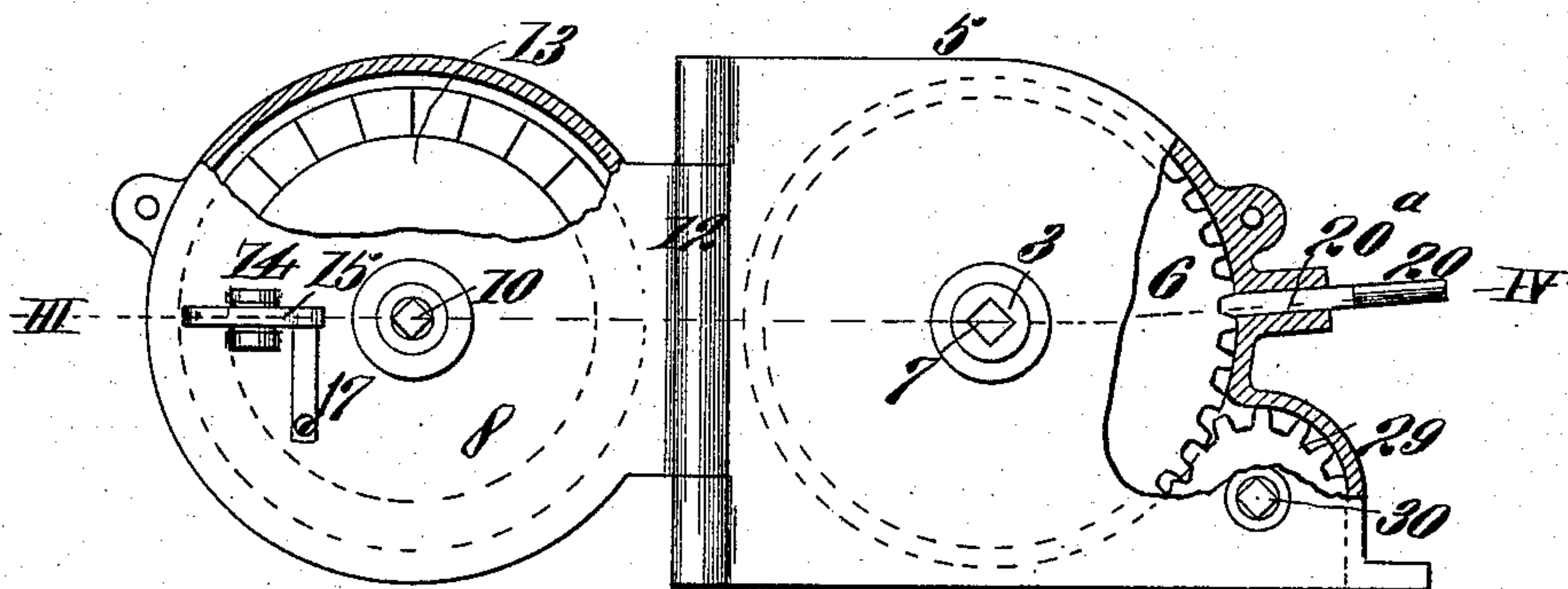
*Fig. III.*



*Fig. IV.*



*Fig. V.*



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# UNITED STATES PATENT OFFICE.

RICHARD VOELKER, OF ST. LOUIS, MISSOURI.

## HOSE-REEL.

SPECIFICATION forming part of Letters Patent No. 576,009, dated January 26, 1897.

Application filed August 22, 1896. Serial No. 603,583. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD VOELKER, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have

invented a certain new and useful Improvement in Hose-Reels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a reel for fire-hose of such construction as to permit of automatic mechanical unreeling or reeling of the hose, thus avoiding the necessity of manual labor in the action of discharging the hose or in the act of winding it back onto the reel.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

The practice at present in unreeling fire-hose from the hose-wagon is that an attendant holds the outer free end of the hose around a pole, tree, or other convenient object against which he can obtain a purchase, while the driver causes the wagon to be drawn forward until the hose has been removed. This plan is irksome to the attendant and is a slow method of removing the hose, an act that should be accomplished with all possible haste. By the employment of an automatically-operating reel, as proposed by my invention herein set forth, the hose is mechanically thrown from the reel while the wagon proceeds on its run after reaching a source of water-supply from which water is to be drawn for the purpose of conveying it through the hose to the fire.

Referring to the drawings, Figure I is a side elevation of a hose-wagon equipped with one of my automatically-operating reels. Fig. II is a top view of the reeling and unreeling mechanisms and showing the reel-spool in cross-section. Fig. III illustrates a horizontal section taken on the line III IV, Fig. V, the spring-containing case being shown disengaged from the reel-shaft. Fig. IV illustrates a horizontal section taken on line III IV, Fig. V, the spring-containing case being shown in engagement with the reel-shaft. Fig. V is a view of the reel-operating mechanism with the spring-containing case swung away from the reel-shaft to show the opposing faces of the parts.

In the drawings, 1 designates a hose-wagon of common form.

2 designates a reel-spool loosely mounted upon a shaft 3. At each side of the reel-spool a ratchet-wheel 4 is carried, rigidly mounted upon the shaft 3.

5 represents housings supported upon the hose-wagon at each side of the reel-spool. These housings inclose toothed wheels 6, that are rigidly mounted upon the shaft 3, said shaft extending beyond the toothed wheels 6 to the housings and being provided with non-circular sockets 7.

The purpose of the duplicate devices which I have described and will proceed to describe, located upon each side of the reel-spool, will hereinafter appear.

8 designates spring-inclosing cases in which the springs 9 are contained, said springs having one end secured to arbors 10 and their opposite ends secured at 11 to the cases 8. The cases 8 are hinged at 12 to the housings 5, and the inner ends of the arbors 10 are of non-circular form to agree with the sockets 7 at the ends of the shaft 3, into or out of engagement with which sockets the arbors 10 are designed to be thrown by the cases 8 being swung upon their hinges. Rigidly mounted upon the arbors 10 are ratchet-wheels 13, the teeth of which are arranged upon the sides of the wheels, and pivoted to the cases 8 at 14 are dogs 15, the points of which enter the cases through openings 16 to engage with the teeth of the ratchet-wheels 13, the dogs being held when in engagement with the teeth by means of springs 17, carried on the cases and located under the heels of the dogs. The arbors 10 are provided with key-receiving sockets 10<sup>a</sup>.

18 designates a retaining-screw by which the cases 8 are held in the desired position with relation to the housing 5.

19 designates spring-actuated pawls the points of which engage the teeth of the ratchet-wheels 4 to prevent retrograde movement of such ratchet-wheels. There is one of these pawls for each ratchet-wheel at the opposite sides of the reel-spool, and they are faced in opposite directions to engage the oppositely-arranged ratchet-teeth.

The device at one side of the reel is intended to perform the act of unreeling the hose from the reel-spool, while the duplicate



device at the other side of the reel-spool is intended to perform the service of winding the hose onto the reel-spool, and so far as described these devices are counterparts, except  
5 that the mechanism of one is the reverse of the other.

To proceed with the description of the device that unreels or discharges the hose, 20 designates a rod the point 20<sup>a</sup> of which enters  
10 the housing 5 and engages with the teeth of the wheel 6. This rod 20 extends forward to the vicinity of the driver's seat of the hose-wagon, where it is connected to an arm 21 of a treadle 22.

23 designates a trip-rod pivoted to the treadle 22 at its forward end and at its rear end pivoted to a trigger 24. The point of the trigger 24 engages with a projection 25 on  
15 the rod 20.

26 designates a spring one end of which is attached to the hose-wagon and the other to the trip-rod 23, the purpose of such spring being that of retaining the trigger 24 normally in contact with the projection 25 on the  
25 rod 20, and at the same time it holds the point 20<sup>a</sup> of said rod in engagement with the toothed wheel 6.

27 designates a reel-brake pivoted to the hose-wagon and having pivotal connection  
30 with the rod 20.

Referring to the operation in the act of unreeling the hose, the spring 9 having been wound by the introduction of a suitable key into the socket 10<sup>a</sup> of the arbor 10 and the case  
35 8 being in the position shown in Fig. IV, in which position the non-circular end of the arbor 10 is entered into the socket 7 of the reel-shaft 3, and, in this position, the dog 15 is thrown out of engagement with the teeth of  
40 the ratchet-wheel 13 by reason of its heel being brought into contact with the housing 5. With the case in this position the screw 18 is tightened, holding the case firmly in place. The tension of the spring is now upon  
45 the shaft 3, but as such shaft is held from movement by reason of the teeth of the wheel 6 being engaged by the point of the rod 20 the reel-spool 2 is held from movement until  
50 such time as the point of the rod 20 is disengaged from said teeth. When it is desired to discharge the hose, the driver, placing his foot upon the treadle 22, moves the treadle, by which act the trip-rod 23 trips the trigger  
55 24 from engagement with the projection 25 on the rod 20, and the driver continuing to press upon the treadle the point 20<sup>a</sup> of the rod 20 is drawn out of contact with the teeth of the wheel 6 and the reel-spool is free to revolve under the action of the spring 9.  
60 After the driver has released the reel-shaft in the manner described he continues to drive forward with the hose-wagon, and as he does so the hose is thrown off of the reel-spool by the unwinding of the spring. Should the  
65 speed of rotation of the spool become too great, or should the driver desire to arrest the discharge of the hose from the reel, it is only

necessary to press the treadle 23 further forward, when the brake 27 will be thrown into contact with the reel-spool and its speed may  
70 be diminished or the reel may be completely brought to rest.

The mechanism at the opposite side of the reel, that is, the mechanism that is employed to wind the hose on the reel, is thrown out of  
75 engagement during the time that the discharging mechanism is in engagement, so that there is no conflict between the mechanisms. It will be understood also that when the winding mechanism is in engagement the  
80 discharging mechanism is out of engagement. As has been stated, the parts of the mechanism in the winding device are arranged the reverse of those in the discharging device. Therefore their action is the reverse. When  
85 the hose is to be reeled onto the spool, the discharging mechanism is disconnected from the shaft 3, and the winding mechanism being wound is brought into engagement with the shaft 3, its arbor 10 entering the socket 7 at  
90 that end of the shaft. At this time the toothed wheel 6 of the winding device would be engaged by the point of a rod 28, that leads to the rear end of the hose-wagon. With the  
95 point of the rod 28 in engagement with the toothed wheel 6 of the winding device the tension of the spring 9 may be thrown upon the shaft 3, and when it is desired to reel the hose the point of the rod 28 is withdrawn  
100 from the toothed wheel 6, and the spring 9, unwinding, produces rotation of the wheel to wind the hose thereon, it being only necessary that the attendant guide the hose onto the reel-spool.

It may be sometimes desirable, such as in  
105 the event of its being necessary to remove a section of hose in the engine-house, to unreel the hose without employing the automatic mechanism. For this reason the dogs 15 are arranged in such manner that on the move-  
110 ment of the case 8 away from the housing 5 the teeth of the dogs will engage with the ratchet-wheels 13 and retain the springs 9 in wound condition.

29 designates a pinion provided with a key-  
115 receiving shaft 30. The teeth of this pinion are arranged to mesh with the teeth of the wheel 6. The purpose of the pinion 29 is that of winding the reel manually if at any time it should be desired to so wind it; for instance,  
120 in the event of rewinding the hose onto the reel while the hose-wagon is in the engine-house.

I claim as my invention—

1. In a hose-reel, the combination of the reel-spool, a reel-shaft, a spring-containing  
125 case arranged to be moved to or from a side of said reel, a spring within said case, an arbor to which said spring is connected, said arbor being arranged for engagement with said reel-shaft, and means arranged to lock said reel-  
130 shaft from rotation, substantially as and for the purpose set forth.

2. In a hose-reel, the combination of a reel-spool, a reel-shaft, a toothed wheel carried by



said shaft, a locking-rod arranged to engage said toothed wheel, a spring-containing case arranged to be moved to or from a side of said reel, a spring within said case, and an arbor to which said spring is connected, said arbor being arranged for engagement with said reel-shaft, substantially as and for the purpose set forth.

3. In a hose-reel, the combination of a reel-spool, a reel-shaft, a toothed wheel carried by said shaft, a ratchet-wheel carried by said reel-shaft, a pawl carried by said reel-spool and arranged to engage the teeth of said ratchet-wheel, means for engaging and locking said toothed wheel, a spring-containing case, a spring within said case, and means whereby said spring may be thrown into connection with said reel-shaft, substantially as and for the purpose set forth.

4. In a hose-reel, the combination of a reel-spool, a reel-shaft, a spring-containing case, a spring within said case, an arbor to which said spring is attached, said case being adapted to be moved to throw said arbor into and out of engagement with said reel-shaft, and means for holding said case in either position, substantially as and for the purpose set forth.

5. In a hose-reel, the combination of a reel-spool, a reel-shaft provided with a socket in one of its ends, a spring-containing case provided with a hinge-support to said shaft, a spring in said case, an arbor to which one end of said spring is attached, a ratchet-wheel

having its teeth upon its side on said arbor, and a spring-actuated dog pivoted to said case having a point arranged to engage the teeth of said ratchet-wheel and a heel adapted to be struck to trip said dog when said arbor is thrown into engagement with said reel-shaft, substantially as and for the purpose set forth.

6. In a hose-reel, the combination of a reel-spool, a reel-shaft, a spring arranged to impart movement to said spool a toothed wheel carried by said reel-shaft, a locking-rod arranged to engage said toothed wheel, a treadle for operating said locking-rod, a trigger arranged to engage with said rod, and a trip-rod arranged to release said trigger from engagement with said rod, substantially as and for the purpose set forth.

7. In a hose-reel, the combination of a reel-spool, a reel-shaft, a spring arranged to impart movement to said spool, a toothed wheel carried by said reel-shaft, a locking-rod arranged to engage said toothed wheel, a treadle for operating said locking-rod, a trigger arranged to engage with said rod, a trip-rod arranged to release said trigger from engagement with said rod, and a brake provided with connection with said locking-rod, substantially as and for the purpose set forth.

RICHARD VOELKER.

In presence of—

E. S. KNIGHT,  
STANLEY STONER.