

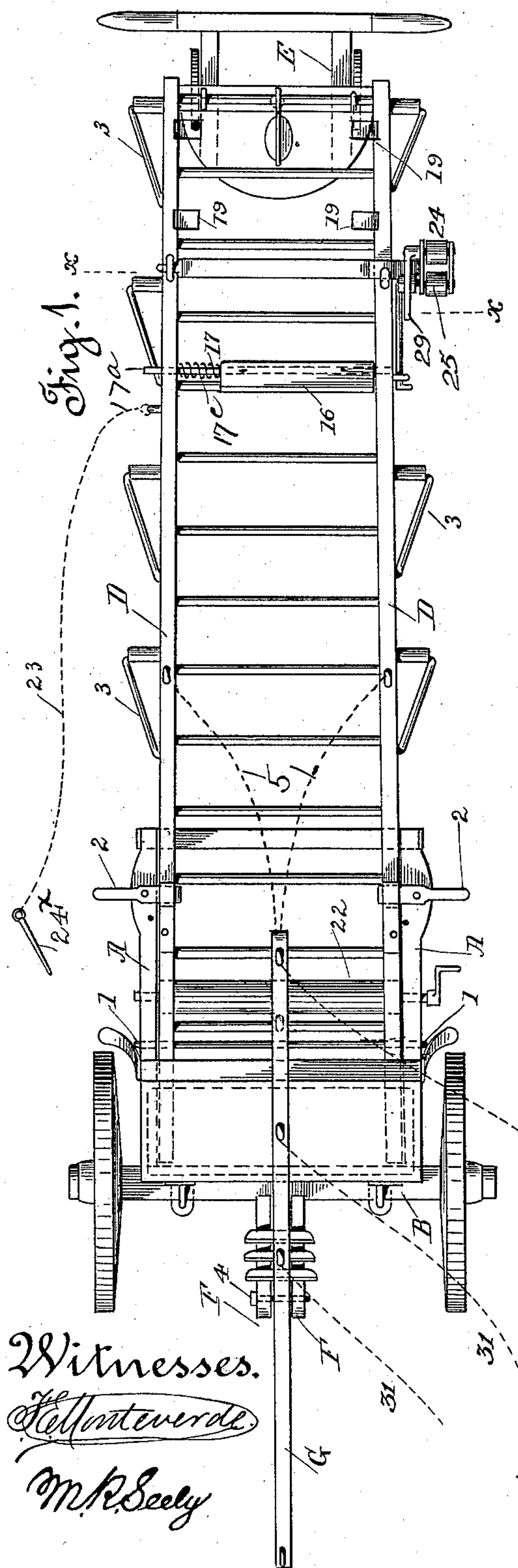
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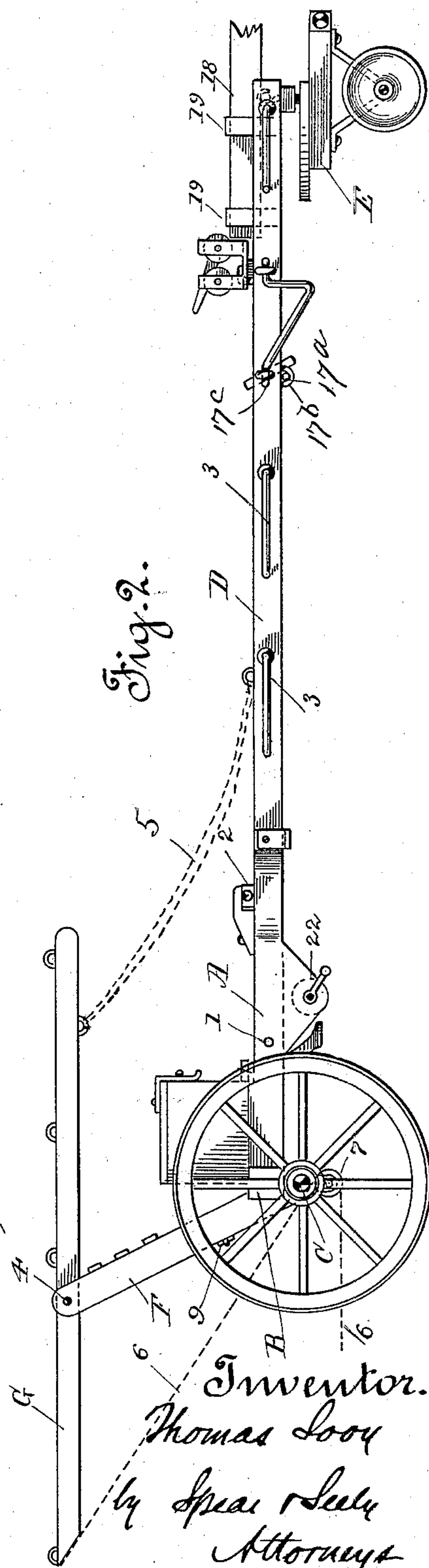
T. SOOY.  
PORTABLE LADDER.

No. 535,742.

Patented Mar. 12, 1895.



Witnesses.  
*Ellen Everde*  
*M. R. Seely*



Inventor.  
Thomas Looy  
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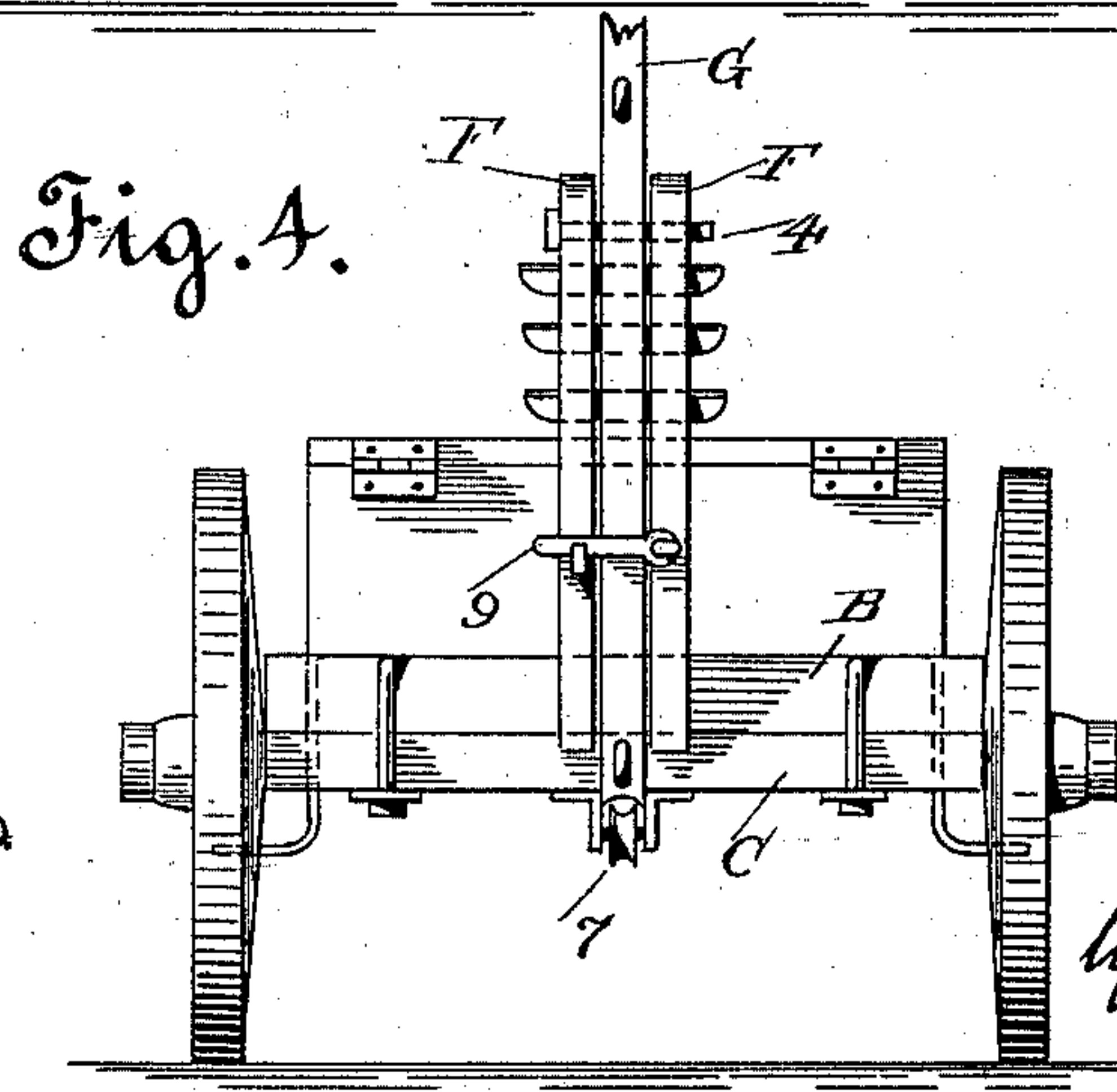
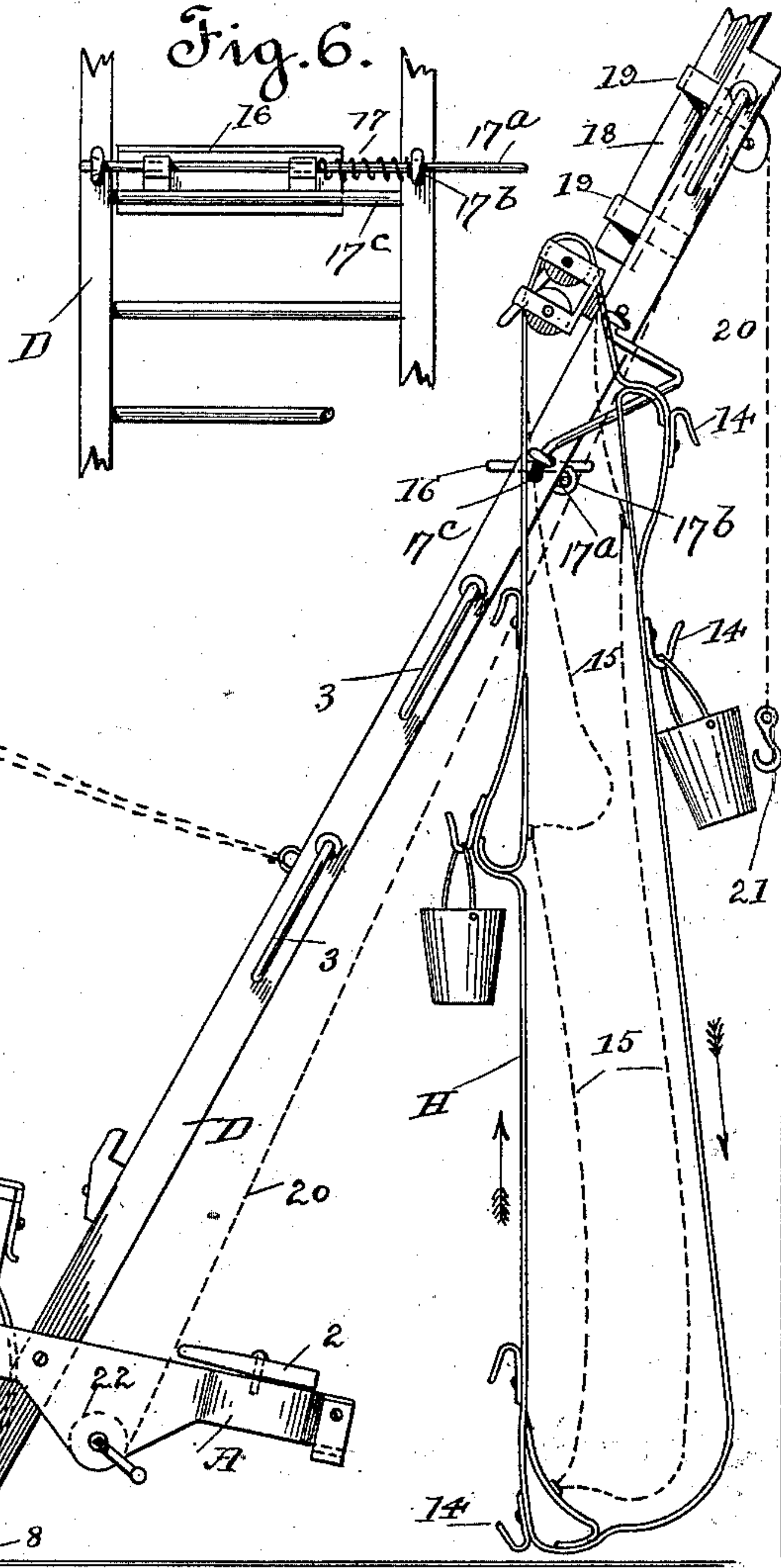
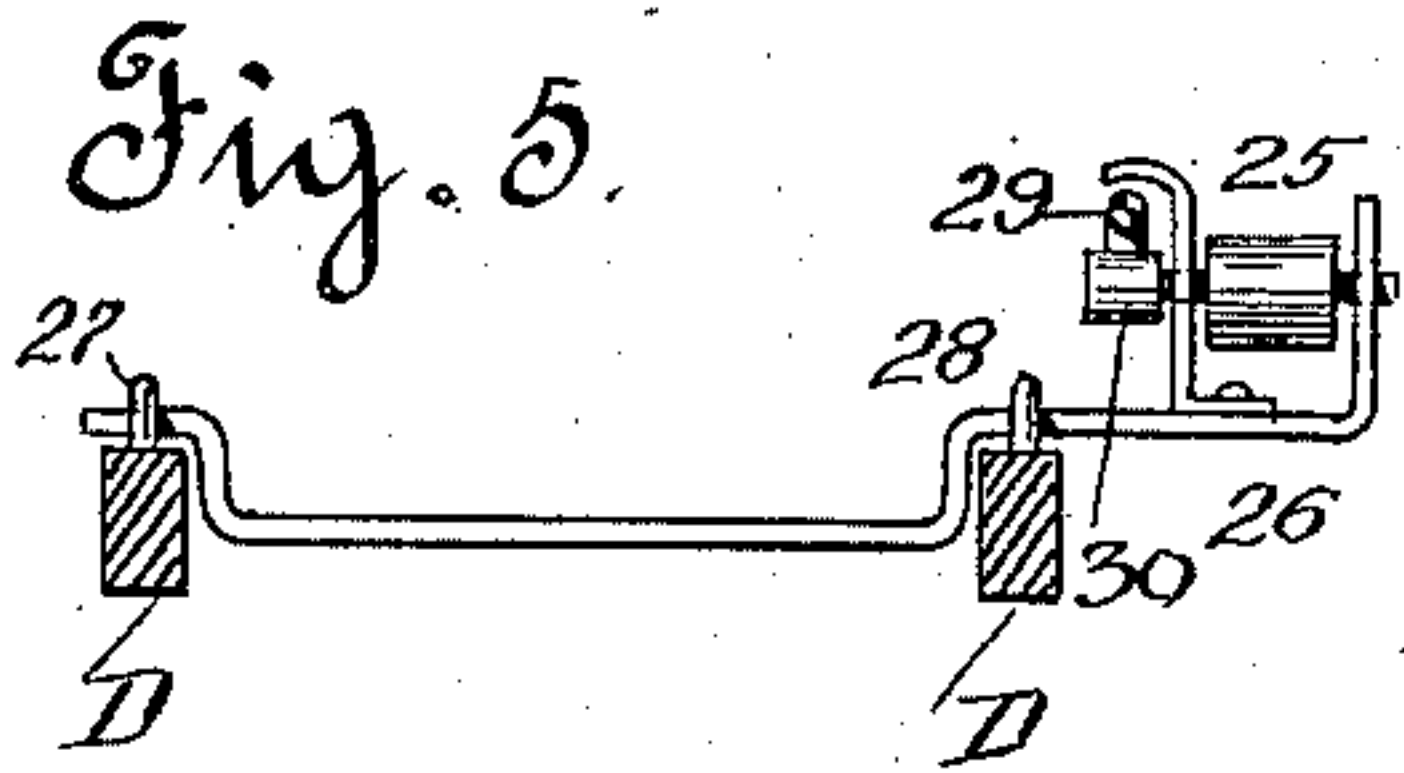
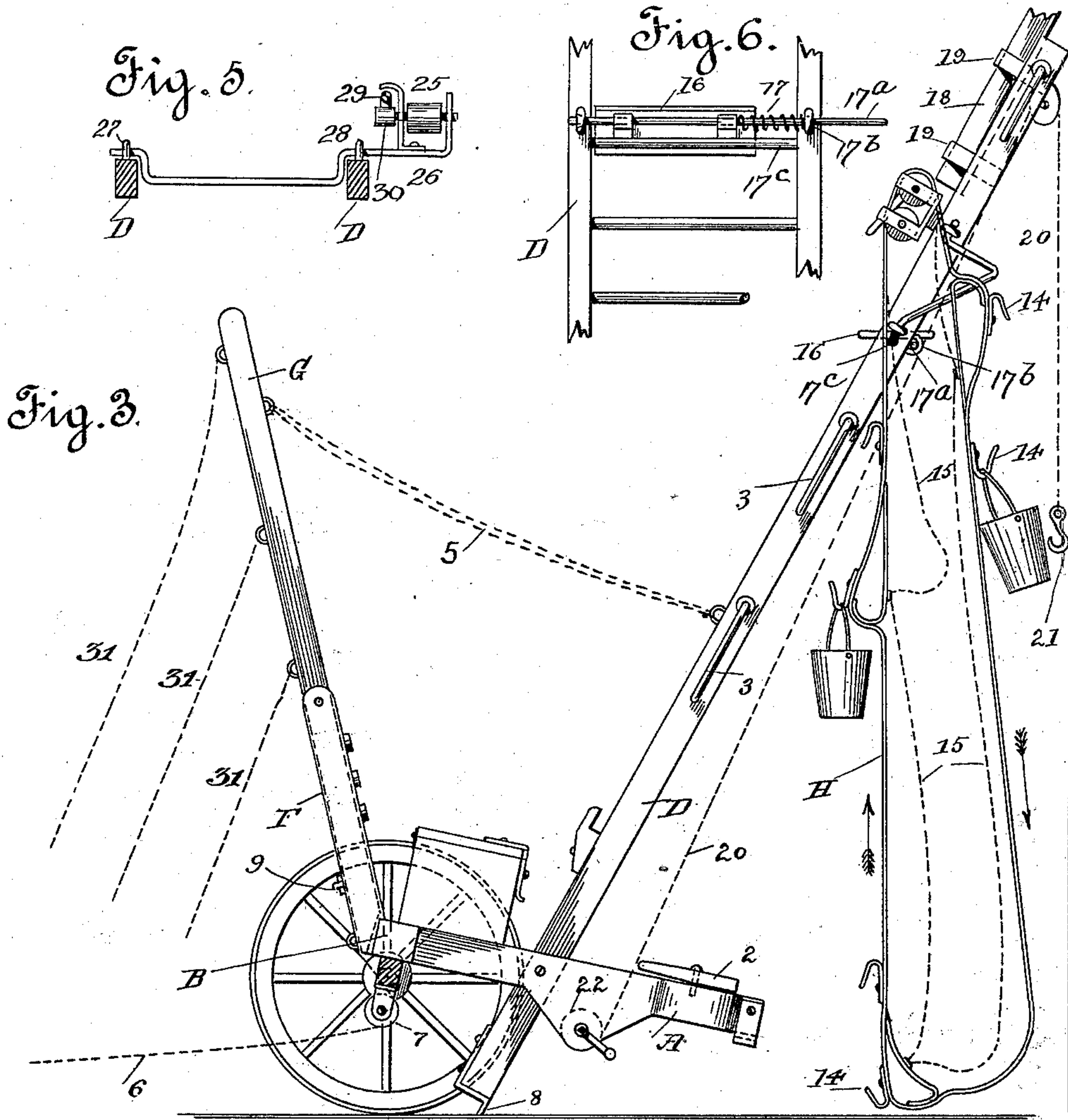
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PORTABLE LADDER.

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Witnesses.

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# UNITED STATES PATENT OFFICE.

THOMAS SOOY, OF GRIDLEY, CALIFORNIA.

## PORTABLE LADDER.

SPECIFICATION forming part of Letters Patent No. 535,742, dated March 12, 1895.

Application filed October 16, 1894. Serial No. 526,076. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS SOOY, a citizen of the United States, residing at Gridley, in the county of Butte and State of California, have invented certain new and useful Improvements in Portable Ladders; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to improvements in fire ladders adapted particularly for use in country and suburban districts where the ordinary facilities for extinguishing fires, as used in cities cannot be conveniently located.

One of the principal features of my improved ladder is its combination with an endless belt by means of which buckets of water may be carried up to a person or persons on the ladder, emptied by them, and carried down by the belt ready to be refilled if necessary.

In addition my invention comprises certain special features in the construction of the ladder by means of which it is required to take up very little room for ordinary storage, but which can be utilized in case of necessity for raising it against a house or other structure quickly and easily.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1, is a plan view. Fig. 2, is a side elevation of the ladder when housed or in position for hauling. Fig. 3, is a side elevation with the ladder raised. Fig. 4, is a rear elevation. Fig. 5, is a cross section taken near the upper end of the extension ladder. Fig. 6, is a detail view of the foot-hold or step.

A, represents the main supporting frame, which is of rectangular shape in plan view, and which is rigidly secured to the cross-beam B, in which is journaled the axle of the carrying wheel C. The frame projects forward from these wheels and the main ladder D, is pivoted to it as shown at 1. When in position for being housed or for being hauled (Fig. 1), the ladder is locked to the frame by means of latches 2. It is also provided with hand holds 3, on both sides, by means of which it can be hauled along. If preferred it may have a removable swiveled truck E, or a caster wheel to support the forward end while it is being hauled along.

Secured to the beam of the main wheel truck is a rearwardly projecting standard composed

of two beams F, F. Between these beams is pivoted, as shown at 4, a lever G, one end of which is connected by ropes 5, to the ladder. The other or rear end has a hauling rope 6, secured to it which passes around a pulley 7, on the main frame of the ladder. When the ladder is not in use, or is being hauled, the position of these parts is as shown in Fig. 2. When the ladder is to be raised the rope 6, is pulled and the rear end of lever G, hauled down. This raises the ladder (the latches 2 having first been released), to the position shown in Fig. 3, when its rear end, provided with spikes 8, bears on the ground, and its forward or upper end against the building. The lever G, when in line with the standard to which it is pivoted, is locked in place by a latch 9 (Fig. 4).

In connection with the ladder I employ an endless belt H, located at one side, and adapted to sustain buckets of water which are sent up and delivered to a person near the top of the ladder, or an extension thereof, and carried down on the opposite side, after having been emptied. This belt is preferably made in sections as shown, and is provided with hooks 14, upon which the bails of the buckets are hung. It is also provided with hauling ropes 15, secured to the sections, as shown in Fig. 3, whereby men on the ground can control the movement of the buckets as they are raised and lowered. The main operator or fireman standing upon the ladder receives these buckets in succession, detaches them, throws the water, and then sends them down by hooking them on to the rear part of the belt while standing upon the ladder. The hooks for the buckets are arranged in pairs, facing each other oppositely so as to receive and sustain the buckets whether coming up or going down.

As shown in Fig. 2, one or more of the hand holds can be pivoted, so as to be pulled down against the side of the ladder when the belt is being run, out of the way of the latter.

I have shown in Fig. 6, an independent step 16, attached to the ladder near its upper end and held in place by a spring 17. This affords a better foot-hold than the ordinary rungs of the ladder and although its use is not essential I prefer to employ it. The step is pivoted on the rod 17<sup>a</sup> held in eyes 17<sup>b</sup> on



the rear of the ladder and the front part of the step bears on the round 17°. The spring is provided to keep the step in one position on its supports and prevent the same from slipping laterally.

An extension ladder 18, may be secured in brackets 19, on the main ladder in case a greater length of ladder is required than is supplied by the main ladder. This ladder, is removable from its holding brackets and can be extended by means of a rope 20, having a hook 21. This hook is connected to one of the rungs of the extension ladder. The rope 20 is wound upon a windlass 22, on the main frame. The extension ladder may be provided with pulleys to receive the upper end of the belt, and preferably should be so provided.

An anchoring rope 23, is connected to the ladder having a spike 24, at its end, which, when driven into the ground will hold the ladder in position against the building, no matter what the strain upon the belt may be.

The upper end of the endless belt passes over pulleys 24, 25, journaled in a frame 26, removably secured to the ladder. This frame is secured to a rod one end of which is passed through a journal 27 (Figs. 1 and 5) while the other is caught under a clip 28, on the opposite bar of the ladder. These staples and clips can be provided at intervals along the ladder, so that the frame carrying the pulleys can be placed at the most convenient point. A brake 29, is attached to the journal of the pulley 24, which when caused to bear upon the roller 30 (on the journal of the pulley 25) will diminish the speed of the belt and enable the fireman on the ladder to regulate the movement of the buckets both upward and downward.

The ladder when in position can be manipulated by ropes 31, secured to the lever G, as shown in Fig. 3, where the lever is shown as locked to the main frame.

Having described my invention, what I claim is—

1. In combination with a portable truck, a ladder pivoted to said truck, a standard secured to said truck, a lever pivoted in said

standard, and a flexible connection between said lever and ladder, substantially as set forth.

2. In combination with a portable truck, a ladder pivoted to said truck, a rearwardly extending standard secured to said truck, a lever pivoted in said standard, a flexible connection between said lever and ladder, and a hauling rope secured to the rear end of the lever and passing over a pulley on the truck, substantially as set forth.

3. In combination with a portable truck and frame, a ladder pivoted in such frame, latches for locking the ladder in line with the frame, and connections for hoisting the ladder when the latches are released, substantially as set forth.

4. In a ladder, a step or foot-hold pivotally supported, and a spring for holding such step in place, substantially as set forth.

5. In combination with a ladder, a sheave at one side thereof, an endless belt running on such sheave, and a series of pairs of hooks carried on said belt, the hooks of each pair being turned in opposite directions, substantially as described.

6. In combination with a ladder, a sheave journaled at one side, an endless belt having a series of pairs of oppositely turned hooks for buckets, and an anchor upon the ladder on the opposite side from said belt for counterbalancing the weight of the buckets, substantially as described.

7. In combination with a ladder having a sheave or pulley, an endless belt and a hauling rope secured to said belt, substantially as set forth.

8. In combination with a ladder, a frame carrying a revoluble sheave for an endless belt, and bearings at intervals upon such ladder to receive the frame, substantially as set forth.

In testimony whereof I affix my signature, in presence of two witnesses, this 28th day of September, 1894.

THOMAS SOOY.

Witnesses:

JOHN COFFEE,  
M. R. SEELY.