

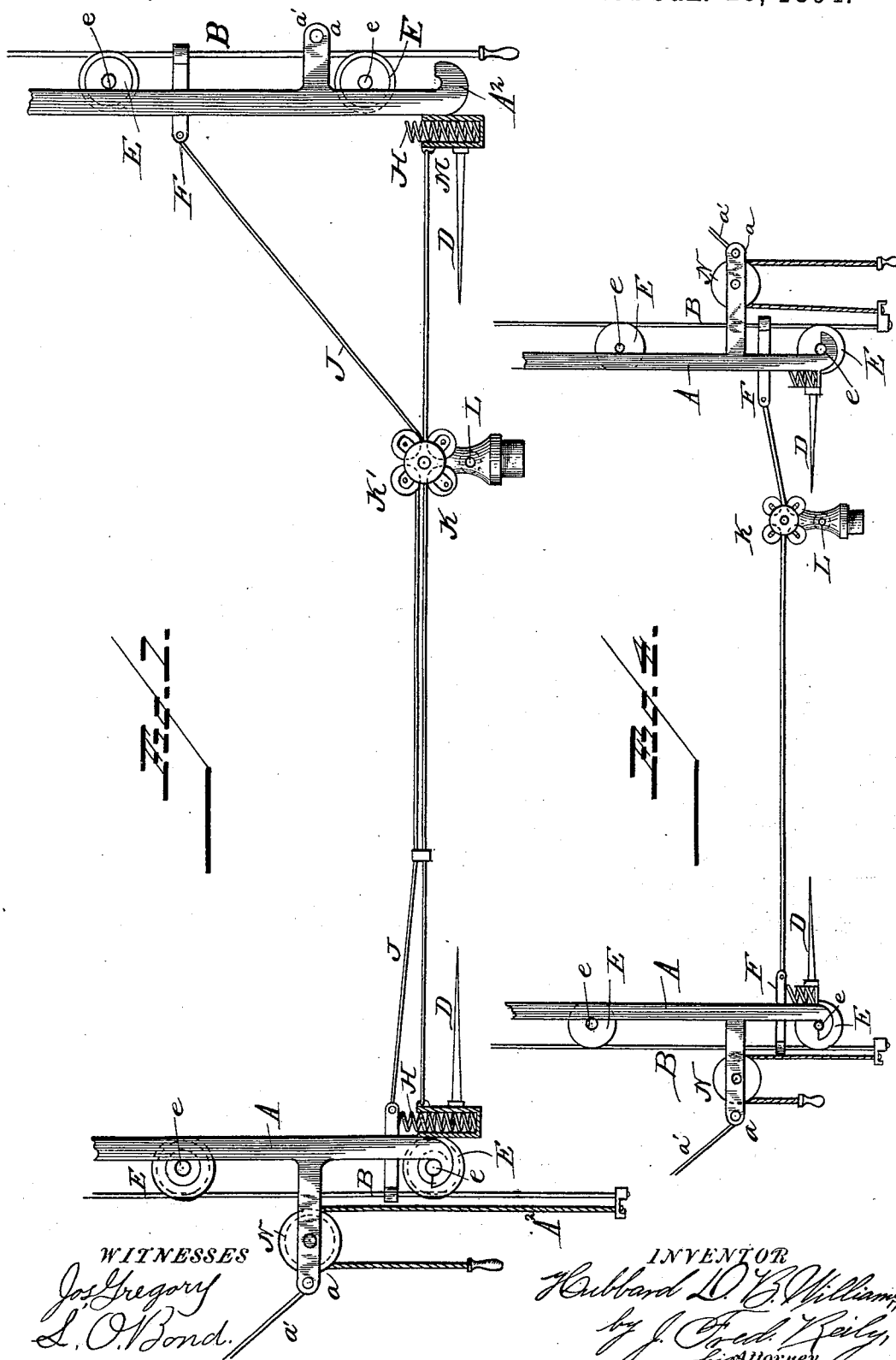
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3 Sheets—Sheet 1.

H. D. B. WILLIAMS.
STORE SERVICE APPARATUS.

No. 513,166.

Patented Jan. 23, 1894.



WITNESSES
Jos. Gregory
L. O. Bond.

INVENTOR
Hubbard D. B. Williams
by J. Fred Reilly,
his Attorney.

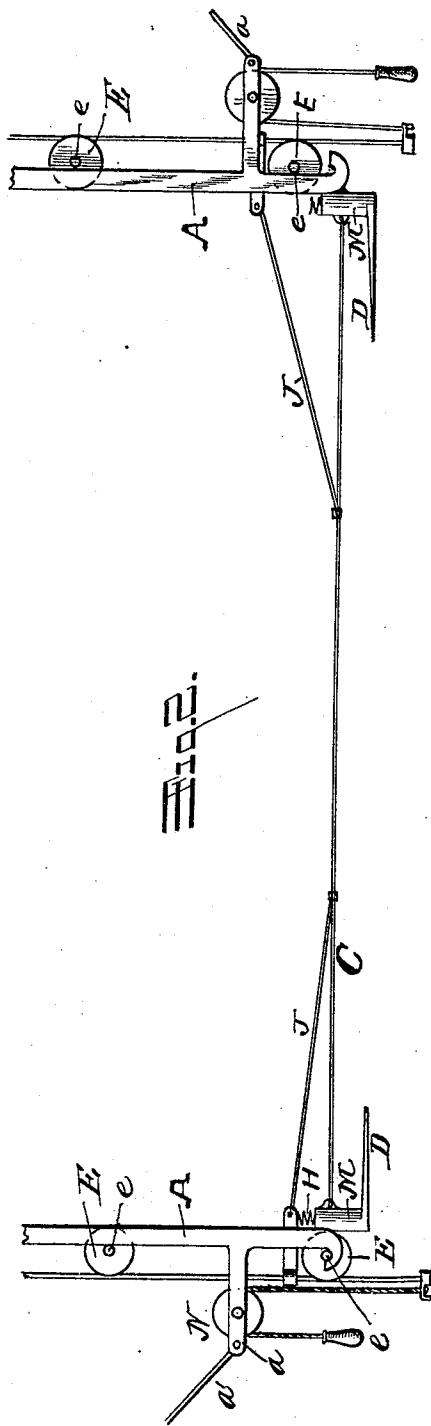
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No. 513,166.

Patented Jan. 23, 1894.



WITNESSES
F. L. O'Rand.
Joel Gregory

INVENTOR.
Hubbard D. B. Williams.
by J. Fred Leidy
his Attorney

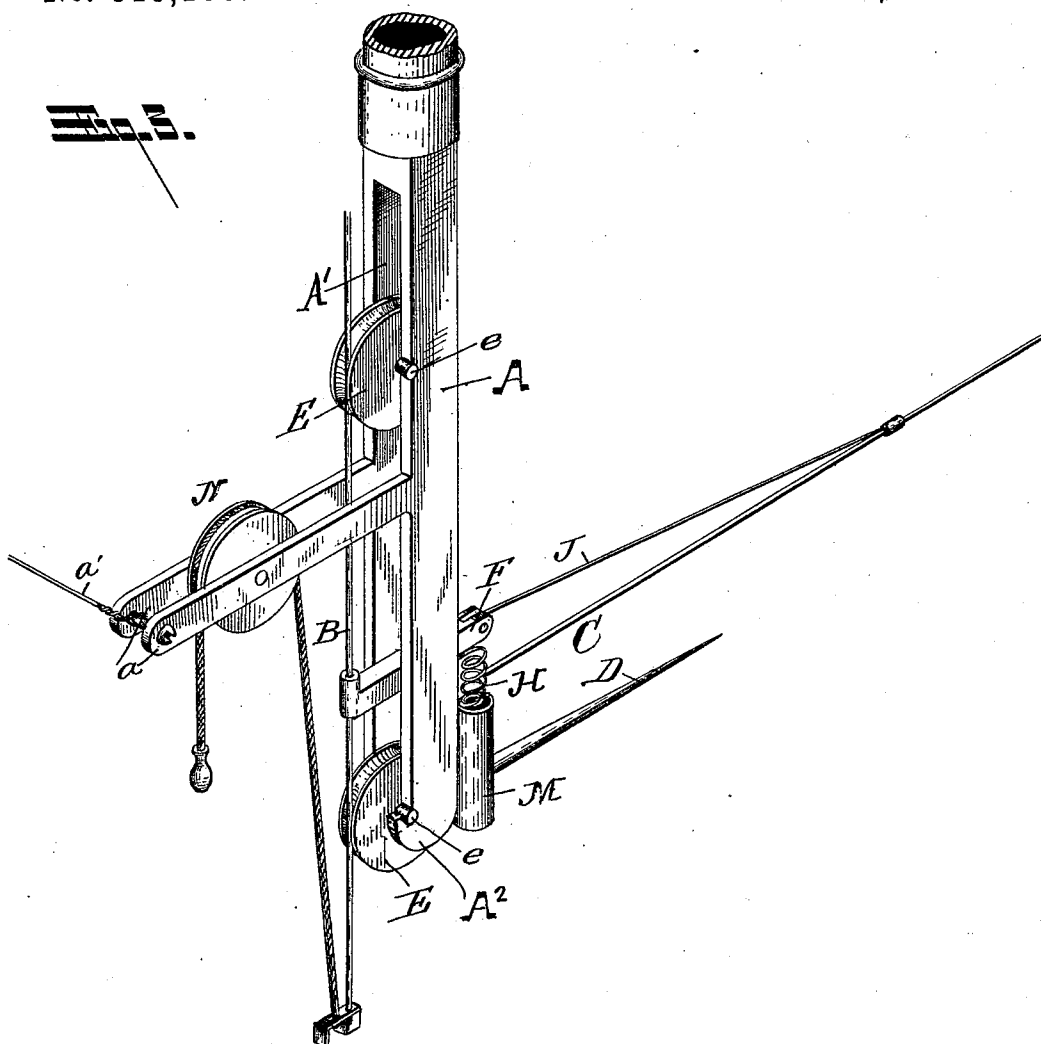
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WITNESSES
H. L. Curand
J. Gregory

INVENTOR,
Hubbard D. B. Williams.
by J. Fred Reilly,
his Attorney.

UNITED STATES PATENT OFFICE.

HUBBARD D. B. WILLIAMS, OF MANSFIELD, OHIO.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 513,166, dated January 23, 1894.

Application filed April 1, 1893. Serial No. 468,668. (No model.)

To all whom it may concern:

Be it known that I, HUBBARD D. B. WILLIAMS, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Store-Service Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists in certain new and valuable improvements in store service apparatus, which add greatly to the simplicity of construction and effectiveness in operation of the same: and the invention will be hereinafter fully described and claimed.

Referring to the accompanying drawings: Figure 1 is a side elevation, partly in section, illustrating my invention. Fig. 2 is a side elevation showing the apparatus arranged with a single main or track wire, which may be employed at will instead of the double track wire, as hereinafter described. Fig. 3 is a detail view, on an enlarged scale, hereinafter referred to. Fig. 4 is a side elevation showing a slight modification.

The same letters of reference indicate corresponding parts in the several figures.

Referring to the several parts by their letters of reference, A, A, indicate the vertical hangers at the ends of the main or track wire, which are formed each with a vertical slot, A', running nearly the entire length of the hanger: the usual guys or braces, a', being connected to short arms, a, which project outward from the hangers.

E, E, indicate grooved rollers, two of which are arranged on the outer side of each hanger with their disks extending in the slots A' while they roll upon short axles or integral spindles, e, which bear against the outer side of the hangers.

B, B, indicate the vertical steel propelling rods, which lie in the grooves of the rollers, E, E, having central arms, F, which project in through the vertical slots A' of hangers A, and to the inner ends of which the outer ends

of the motor wire, J, are secured. It will be seen that the tension of the motor wire will hold the vertical steel rods B in position in the grooves of the rollers, and prevent their slipping out of said grooves. The lower ends of the hangers are curved outward to form a bearing, at A², for the lower grooved rollers, when they run down, and to prevent them from dropping from the hangers. The ends of the main or track wire, C, are connected to the lower ends of the hangers; and the wire J is fastened to the main wire by clips at a suitable distance from each end of the main wire, to allow its ends to be raised at an angle when the rods B are slid up for propelling the carriage.

The carriage, K, is provided with the grooved track wheels, K', on the upper and lower sides of the wires, as shown; and below these track-wheels a friction roller, L, is pivoted in the carriage frame as shown.

At the lower end of each hanger, on its inner side, is arranged a vertical tubular bearing, M, in which is secured the lower part of a coiled spring, H, the upper part of which projects up above the bearing; the object of which will be hereinafter described. The retainers, D, D, project horizontally from the lower ends of these casings, as shown, and are preferably covered with leather or rubber to prevent noise.

The operation of the apparatus is as follows:—The car K standing at the ends of the wires, which are then nearly parallel, the steel rod B at that end is slid up, either by applying the hand to a handle at its lower end, the construction shown in the right-hand part of Fig. 1, or a cord can run from the lower end of the rod over a grooved pulley, N, and by pulling down on the handle at the free outer end of this cord the rod will be slid up, this construction being shown at the left-hand of Fig. 1. When rod B is slid upward, its arm F raises the outer end of the motor wire at a considerable angle, and the motor wire propels the car out along the track wire, as will be readily understood. It will be seen that in this upward movement of the propelling-rod B, the steel rod, lying in the grooves of the rollers E, E, will revolve the said rollers as it is slid up, thus reducing the friction

between it and its bearings to the minimum, while at the same time the said rollers will roll up the standard A on their central spindles, thus reducing to a minimum the friction
 5 between said rollers and their bearings. This anti-friction power is the main and most important feature of my invention. It will be seen that as the rod B travels upon the grooved
 10 outer surface of the rollers, while they roll upon their small central spindles, the rod will travel about six times as fast or as far as the rollers themselves. As soon as the hand is
 15 released from the rod, it slides down by its own weight, with the same minimum or absence of friction; and as it resumes its first position the inner part of its arm F rests upon
 20 the top of the coiled spring H. Now as the car reaches the other end of the line, where that rod B is resting in this lowered position, this spring at that end of the line will serve
 25 as a gradual brake, giving downward, or being compressed, as the car nears the station and its track-wheels depress the upper or
 30 motor wire, thus bringing the car to a gradual stop. As the car rolls up to the standard, the retainer D passes under the lower track-wheels K' of the car and immediately above the roller L, the retainer being pressed with
 35 sufficient force between the pressure roller L and the lower grooved track-wheels K' to hold the car securely in position at that point, until the rod B is slid up to propel the car to the other station.

Instead of having the motor wire run the
 35 full length of the track wire, as in Fig. 1, two short wires may be employed, with their inner ends secured by clips or otherwise to the track wire, as shown in Fig. 2, which will operate in precisely the same manner.

40 In Fig. 4 the ends of the single wire are shown attached directly to the inner ends of arms F, F. The operation will be obvious from the drawings, and will be practically the same as in the other figures.

45 Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. In a store service apparatus, the combination of hangers, a track wire secured there-
 50 to at its ends, motor wires connected with the track wire at suitable distances from the ends of the same, grooved rollers arranged on the outer side of the hangers, and the vertical
 55 propelling rods fitting in the grooves of said pulleys and connected with the outer ends of the motor wire; substantially as set forth.

2. In a store service apparatus, the combination of vertically slotted hangers, having
 60 suitable stops on their outer sides, a track wire secured at its ends to said hangers, motor wires connected with the track wire at suitable distances from the ends of the same, the grooved rollers having their spindles resting
 65 movably against the outer side of said slotted hangers, the vertically movable propelling rods fitting in the grooves of said rollers and connected with the outer ends of said motor wire; substantially as set forth.

3. In a store service apparatus, the combination of hangers, having grooved pulleys on
 70 their outer sides, a track wire connected to said hangers, motor wires connected with the track wire at suitable distances from the ends of the same, vertically movable rods fitting in the grooves of said rollers and having arms
 75 extending at their inner ends on the inner side of the hangers and there connected with the outer ends of the motor wire, tubular casings arranged vertically on the inner side of the hangers below the rod-arms, and coiled springs
 80 mounted in said casings with their upper ends rising above the same; substantially as set forth.

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

HUBBARD D. B. WILLIAMS.

Witnesses:

A. G. THORNTON,

I. R. FERMAN.