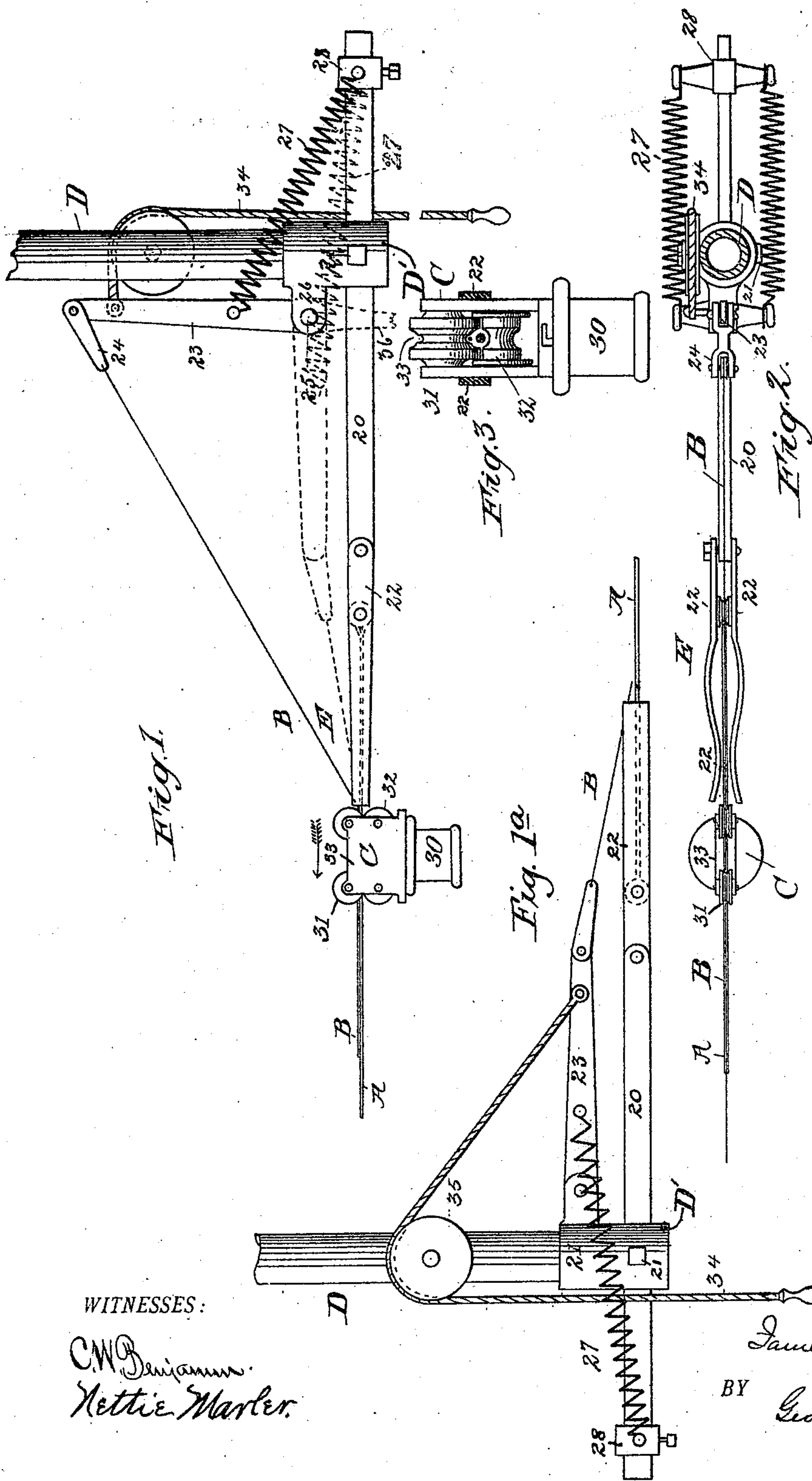


2 Sheets—Sheet 1.

No. 502,279.

Patented Aug. 1, 1893.



WITNESSES:

C.W. Benjamin.
Nettie Marler.

INVENTOR

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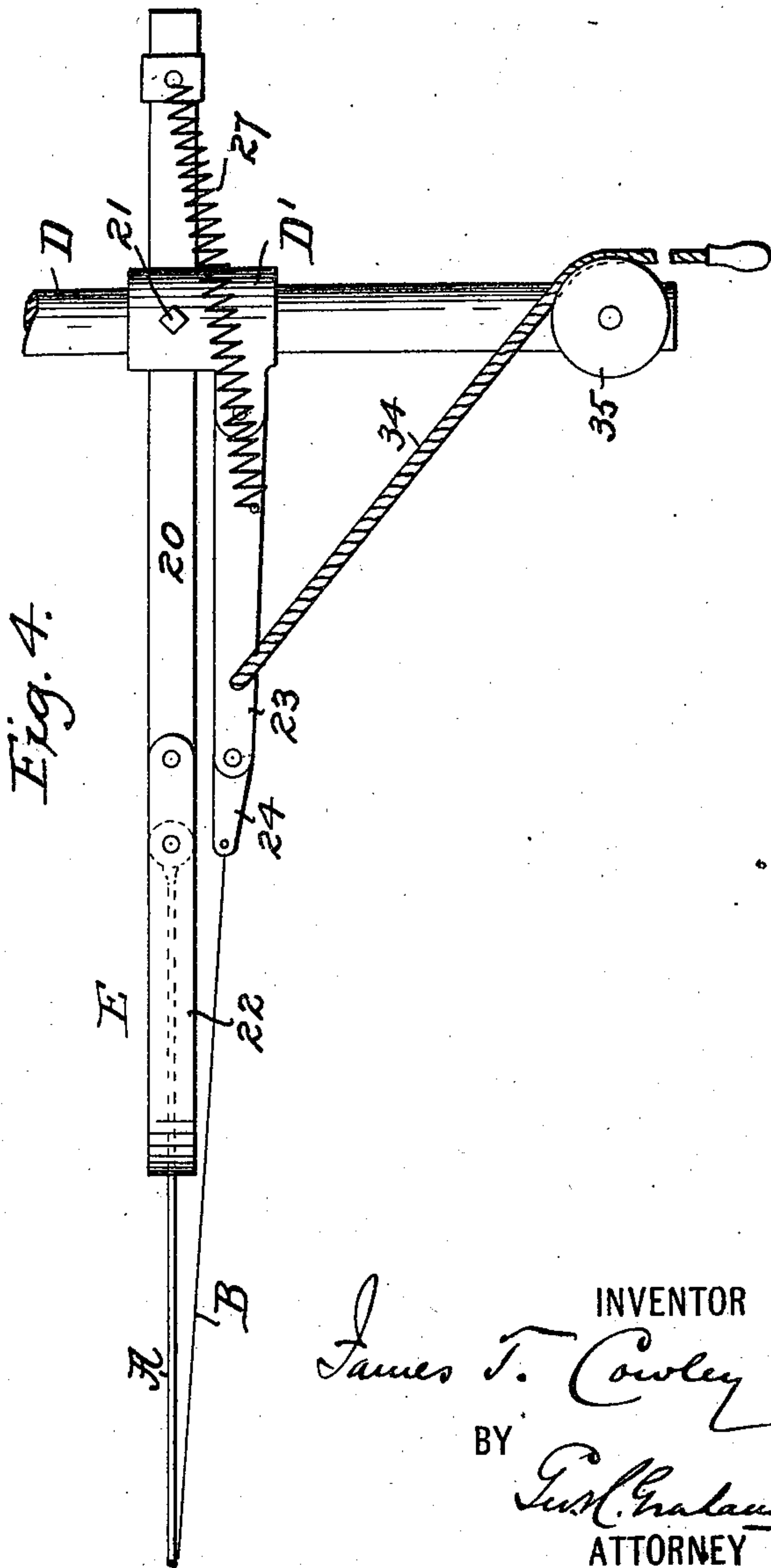
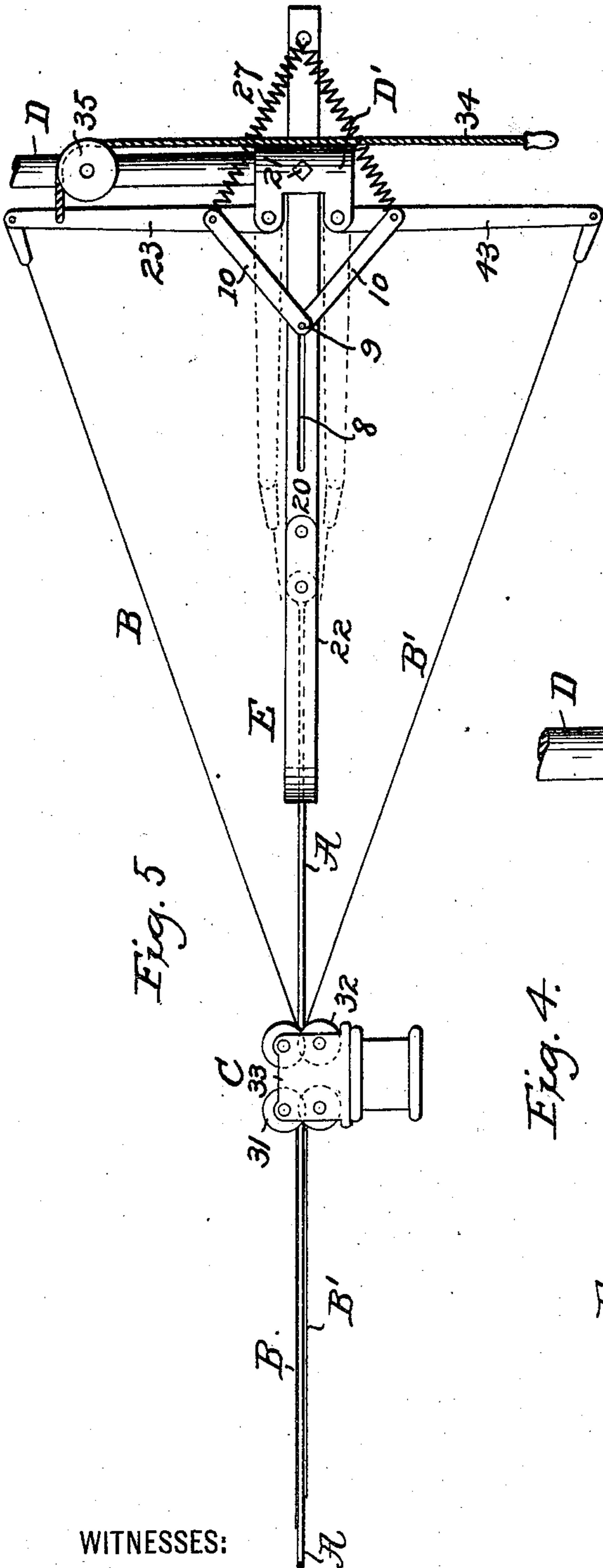
(No Model.)

2 Sheets—Sheet 2.

J. T. COWLEY.
STORE SERVICE APPARATUS.

No. 502,279.

Patented Aug. 1, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES T. COWLEY, OF LOWELL, ASSIGNOR TO THE LAMSON CONSOLIDATED
STORE SERVICE COMPANY, OF BOSTON, MASSACHUSETTS.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 502,279, dated August 1, 1893.

Application filed November 9, 1889. Serial No. 329,768. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. COWLEY, a citizen of the United States, and a resident of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

This invention relates to that class of store service apparatus wherein the carrier is supported upon what may be termed track wires, and is forced along the same from one station to another and back again by spreading the wires from each other or by spreading one from the other in rear of the carrier so as to produce a wedge-like action against its rear wheels or other suitable bearings carried thereby; and the present invention consists in the novel structure, arrangement and combinations of parts too fully hereinafter set forth to need preliminary description.

The accompanying drawings illustrate a practical embodiment of the invention, together with certain modified forms thereof.

In said drawings, Figures 1 and 1^a is a side elevation of a store service apparatus provided with the improvement. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation of the carrier and a portion of the means for holding it at a station or one end of the track. Figs. 4 and 5 are side elevations of modified forms of the apparatus.

The apparatus illustrated consists essentially of a practically stationary wire A, a second wire B, movable with respect to the first named wire, a carrier C, adapted to travel on said wires, and means for moving or spreading the movable wire from the other wire in rear of the carrier to propel it forward. As usual in such structures the wires are supported a suitable distance above the floor of a store or the like by means of standards or brackets D, those shown being represented as secured to the ceiling and depending therefrom. Each end of the wire A preferably terminates in a bar 20 that is adjustably secured to the standard or to its termination collar, or boss D' by a set screw 21. The wire A, instead of being directly attached to the bar 20, is pivotally attached to a pair of arms 22 forming a stop E for the carrier that, in

turn, is pivotally attached to the bar 20. This pivotal attachment is for a purpose to be hereinafter explained.

The movable wire B is attached at each end through a link 24 to the end of a lever 23 that is adapted to rock on a pivot 25 mounted in ears 26 projecting from the standard or its collar D'. Each lever 23 is borne upon by a spring or springs 27, one end attached to the lever and the opposite end to an adjustable block 28 secured to the bar 20, through which the tension of the springs may be regulated. The spring or springs 27 are arranged with respect to the pivot of the lever 23 so that in each position of the latter the tendency will be to hold it against accidental movement.

The arrangement of the levers 23 and the wire B stretched between them is such that when one lever occupies a position with that wire spread from the other, the other lever extends practically parallel with the wire A, so that the wire B extends taut from the last mentioned lever to the other lever at an angle with the wire A.

From the foregoing it will be understood that by moving the one lever from the position shown at the left hand end of Fig. 1 in the direction of the arrow the wire B will be pulled toward that end, thus rocking the lever at the opposite or right hand end from the position it occupies against the force of the springs 27 at that end to a position substantially parallel with the wire A. This movement of the levers and wire B results in reversing the direction of its angle with respect to the other wire, and in such movement, owing to the stress of the springs 27 at each end, the wire B will be held taut, but allowing a slight bend to occur where it contacts with the carrier in propelling the latter. This bend and the force exerted against the carrier is a yielding one, so that immediately the carrier has been propelled the wire resumes its normal condition.

It is immaterial whether the movable wire B and the means for moving it be mounted above or below the wire A. As shown in Fig. 1 wire B is arranged above, while in Fig. 4 it is below. The action upon the carrier in both arrangements will be the same, a wedge-like spreading action will be imparted at the rear

of the carrier which being concentrated upon the latter will be sufficient to quickly propel it from one station to another.

When the wire B is arranged below the stationary wire the latter is in reality the track and the carrier travels thereon, but when the wire B is arranged above the stationary wire it (the former) is in reality the track, the other wire serving as a steadying medium as well as coacting in both instances with the wire B in forming the wedge-like action upon the carrier.

The carrier C may be adapted to the carriage of packages or cash; as shown it is arranged for cash having a removable receptacle 30 of any of the usual forms. It is provided with two sets of wheels 31, 32, mounted in a suitable frame 33, one set 31 arranged to travel upon the wires and the other set 32 below them. The flanges of the adjacent wheels, an upper one and a lower one, are preferably arranged in close proximity with one another, as shown in Fig. 3, so that the carrier may not be derailed.

The arms 22 forming the bifurcated stop E are spring arms flared at the entrance end to properly guide the carrier between them. The arms frictionally engage with the sides of the carrier frame 33 and serve to properly stop the carrier, as well as to retard its return movement sufficient to cause a more effective action of the propelling means, which will first overcome the frictional engagement of the stop and then propel the carrier to the opposite end.

The pivotal connection of the stop E with the bar 20 and the attachment of the wire A to the stop, enables that wire, under the stress of the other wire forcing the wheels of the carrier against it, to bear angularly against one of the rear wheels of the carrier. It also permits the wire A to assume a different angle to that of the stop E with respect to the bar 20, so that when the frictional contact of the stop with the carrier is excessive the carrier will be more easily freed therefrom.

In Fig. 5 is shown an apparatus embodying all the essential features before described with the addition of the duplication of the movable wire B and the levers sustaining it. This third wire B' and its levers 43 are mounted precisely as its opposing wire B and its levers 23 are mounted, and needs no detailed description.

The levers 23 and 43 at each end of the track may be coupled so that they can be operated together and the wires B, B', simultaneously moved apart and spread from the stationary wire A. The coupling device may be of any suitable construction. That shown consists of a pair of links 10 forming a toggle, one link pivoted to each lever and secured together by a stud 9 that is held and guided in a slot 8 provided in the bar 20. By this means when one lever is moved the other will be moved with it. The action upon the carrier in this modified form of the invention will be practi-

cally the same as with the use of the single wire B, with the effect incident to a twofold wedge-like action.

The means for conveniently operating the levers 23, or 23 and 43, may be by a cord 34 passing from the lever over a guide pulley 35 secured to the standard, having a handle and extending down within reach of the attendant. In lieu of the cord a handle 36 may be attached directly to the lever as indicated by dotted lines Fig. 1. In lieu of the springs 27 it is obvious that weights might be employed and the same result effected. The springs, however, will be found to work more effectively, as while they insure an absolutely taut wire B, the springs will permit it to yield slightly in forcing the carrier along from end to end of the apparatus; and as the wire B is connected directly to the ends of the levers and the springs to the levers instead of being interposed in the wire, the length of the wire remains equal at all times, the levers yielding under the stress of the springs.

While I have used the term wire as descriptive of the parts A and B, it is to be observed that any other equivalent material may be used in lieu of wire, and that so far as the part A is concerned it might be a rigid rod of suitable material.

What is claimed is—

1. In a store service apparatus, the combination of a stationary wire, a second wire movable with respect thereto, a wheeled carrier between the wheels of which both wires extend, a pivoted lever to the end of which the second wire is connected, means by which the lever is moved to spread the second wire apart from the stationary wire in rear of the carrier, and a spring the tension of which holds said lever and wires in an open or closed position, substantially as described.

2. In a store service apparatus, the combination with a wheeled carrier, of a track and propelling means composed of a fixed and a movable wire, both passing between the wheels of the carrier, a lever at each end of and connected to said movable wire, means as separate cords and pulleys at each end for alternately raising the levers and spreading the movable wire apart from the stationary wire, and springs arranged so that their tension will hold each lever both in its raised and folded down position, substantially as described.

3. In a store service apparatus, the combination of a wheeled carrier, standards, horizontal bars carried by the standards, a wire stretched between the bars, levers, one pivotally mounted at each standard, a second wire connected with and stretched between the free ends of said levers and both of said wires extending between the wheels of the carrier, springs connected with the levers and to the horizontal bars, and means for moving the levers to cause the second wire to be spread from the other wire in rear of the carrier, substantially as described.

4. The combination of the track wires A, B, a pivoted lever to which the wire B is connected, a spring connected at one end to the lever and at the other end to an adjustable block, an operating cord for moving the lever, and a wheeled carrier between the wheels of which the wires extend, substantially as described.

5. The combination of the stationary wire, the movable wires B, B', a pivoted lever for each of the latter wires, a coupling device connecting the levers, means for moving the levers to spread the movable wires from the stationary one, and a wheeled carrier, substantially as described.

6. The combination of the stationary wire, a bar sustaining the end of said wire, two movable wires, a pivoted lever for each of said movable wires, a linked coupling between said levers guided by said bar, an operating cord for moving the levers to spread the movable wires from the stationary one, and a wheeled carrier, substantially as described.

Signed at Lowell, in the county of Middlesex and State of Massachusetts, this 3d day of October, A. D. 1889.

JAMES T. COWLEY.

Witnesses:

FRANK COBURN,
CLARENCE COREY.