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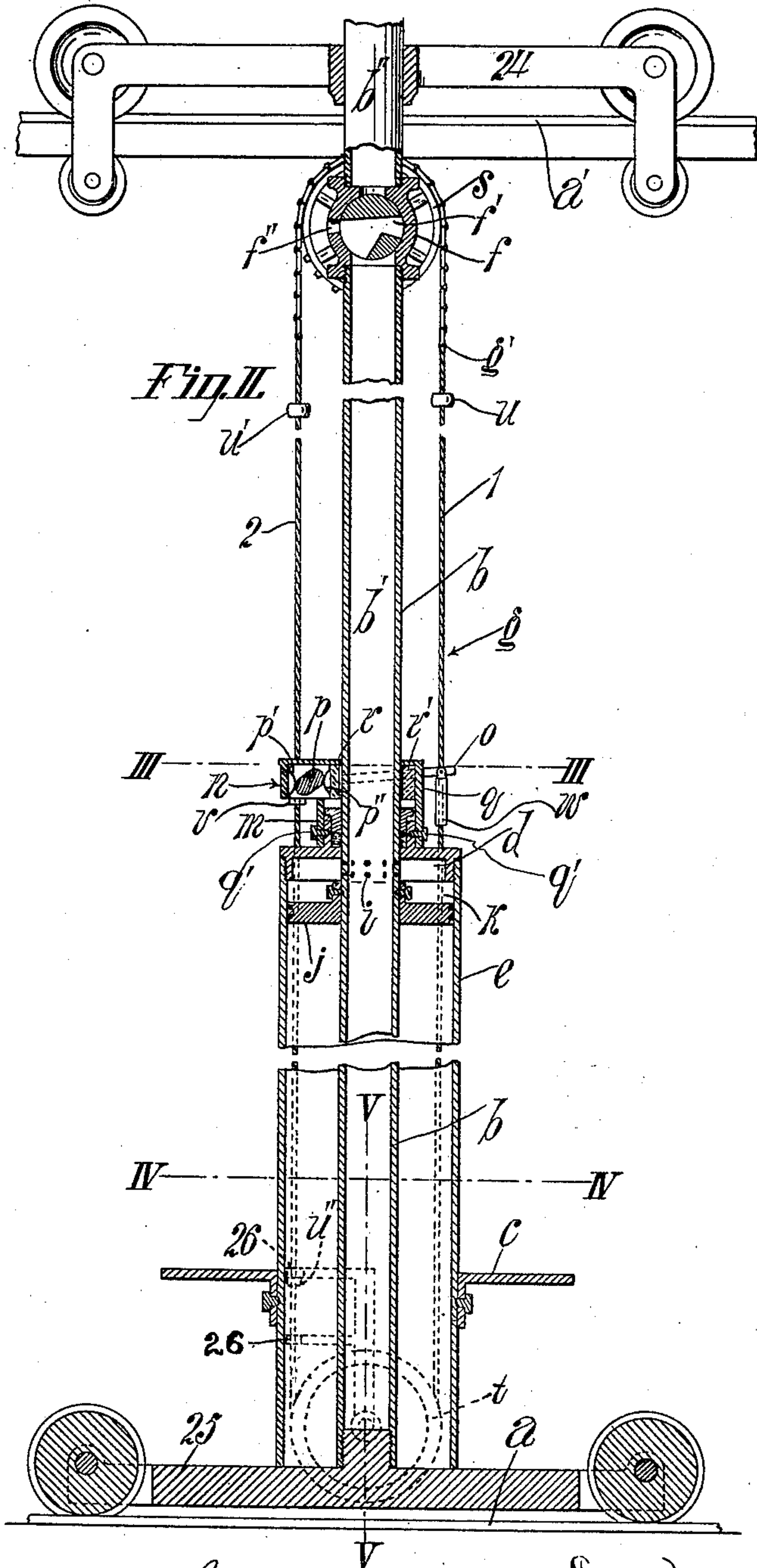
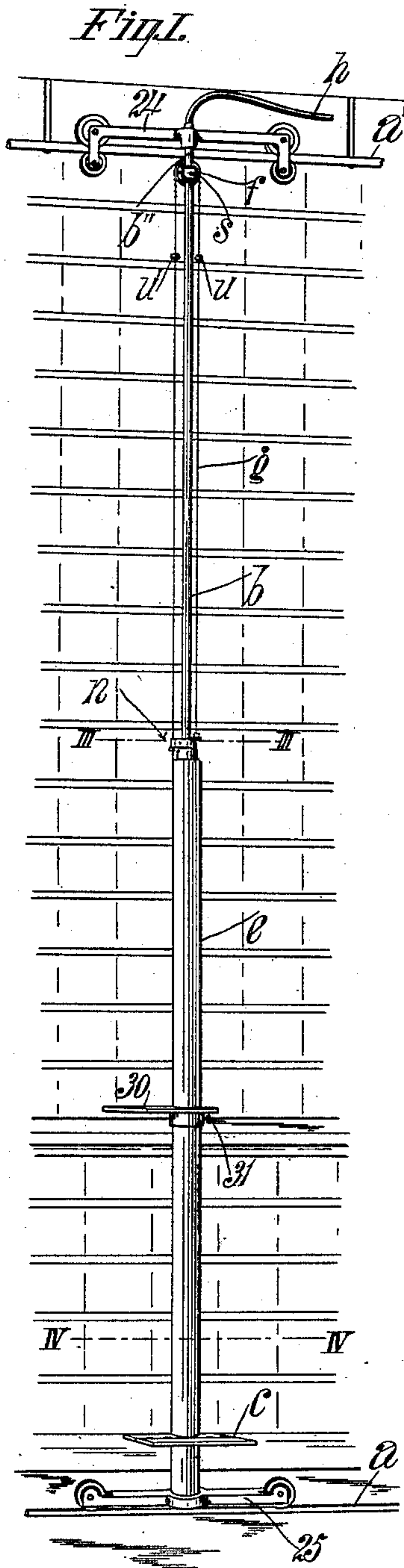
Patented Nov. 18, 1902.

C. A. BOUCK.
SALESMAN'S LIFT.

(Application filed Aug. 3, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
J. J. Kingman.
J. Townsend.

Charles A. Bouck *Inventor*
By *TOWNSEND Bros*
his attys

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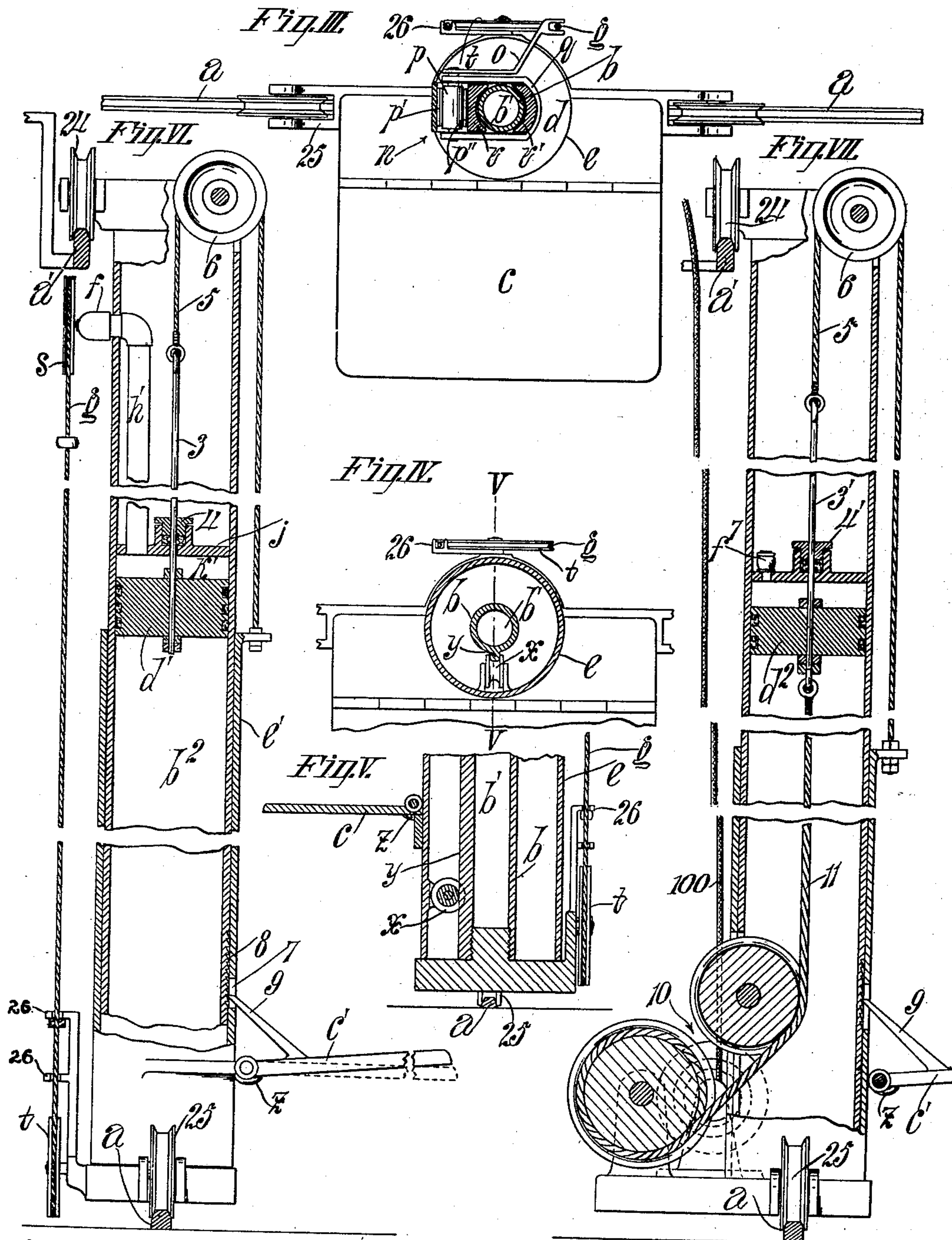
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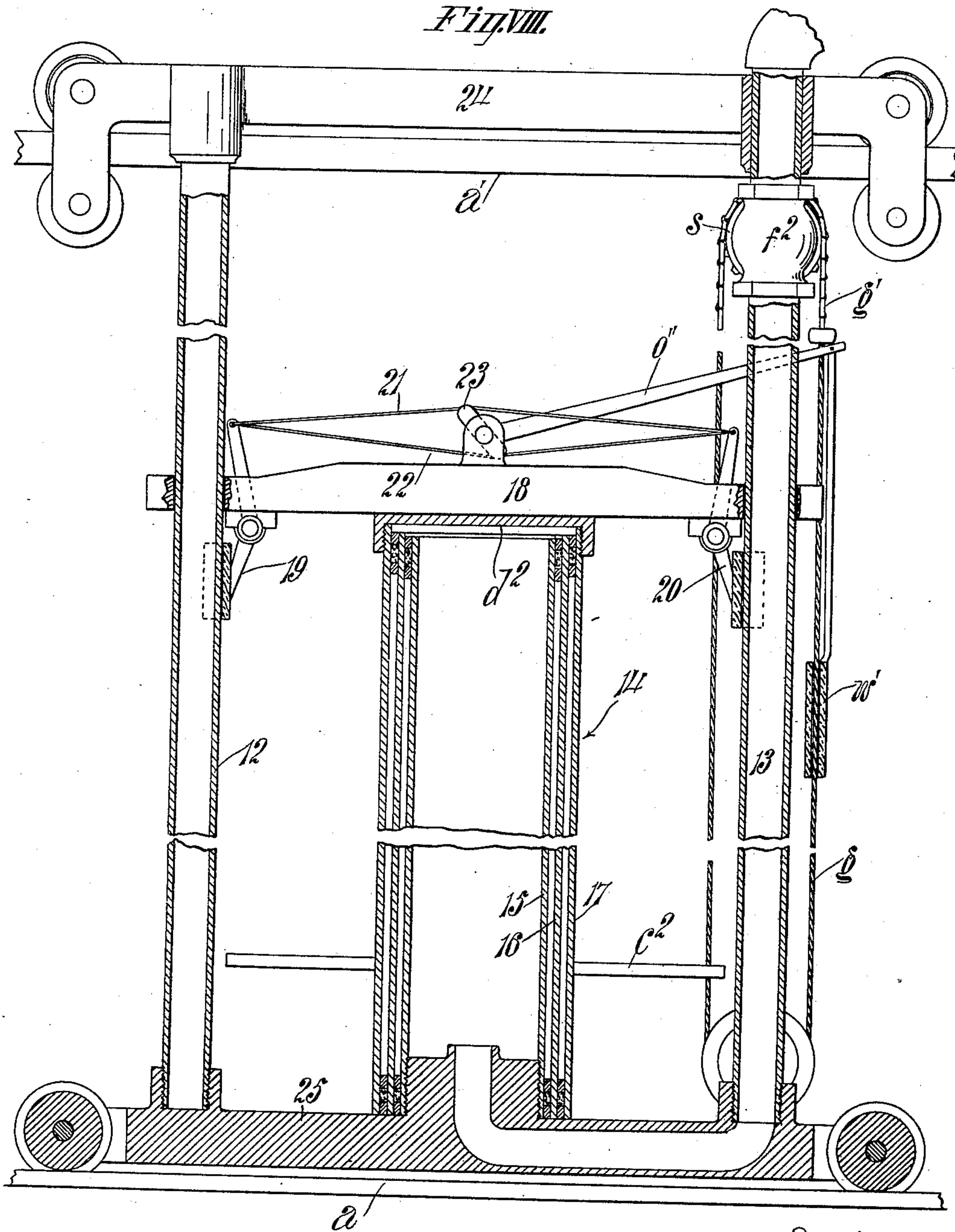
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3 Sheets—Sheet 3.



Witnesses

Devising Invention.
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UNITED STATES PATENT OFFICE.

CHARLES A. BOUCK, OF LOS ANGELES, CALIFORNIA.

SALESMAN'S LIFT.

SPECIFICATION forming part of Letters Patent No. 713,843, dated November 18, 1902.

Application filed August 3, 1900. Serial No. 25,835. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BOUCK, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Salesman's Lift, of which the following is a specification.

My invention is designed for use in stores and in other places where articles are stored at different heights on shelves or other receptacles. For lighting purposes it is desirable that store-rooms in cities and towns be of considerable height, so that sufficient light from the front windows can penetrate to the end of the room. This necessary construction gives a very high wall-space adapted for shelves for the storage and display of goods, which can be stored on the shelves; but it has in many instances been found impracticable to utilize a large portion of this wall-space for the storing of goods which are required to be handled by the salesman, for the reason that the time and labor expended in taking the goods from and restoring them to the higher shelves overbalance any economy arising from the use of the upper portion of such walls. Consequently there is often a great waste of store-room which otherwise could be used. Where the upper part of the wall has been used for storing goods, much inconvenience and loss of time are involved in handling the goods. This is especially true in shoe-stores, for the reason that the salesman often finds it necessary to produce many pairs of shoes for the inspection of the prospective customer without, or at least before, making a sale.

An object of my invention is to provide means for the practical and economical utilization of the upper space of store-room walls for the storing of goods to be sold and to make it possible to utilize all of the wall-space of the salesroom as shelf-room, if desired.

A special object is to utilize the upper wall-space of shoe-stores.

I accomplish these desirable objects by providing a portable lift arranged to be readily moved alongside the wall or shelving and provided with an upright and with step or platform mounted to move up and down along said upright, means connected with said upright for raising and lowering the step or platform, a motor connected with the upright

to move therewith, and a flexible power-conductor for conducting power from an external power source to the motor to drive the same, and mechanical means for turning on and cutting off the power. The upright support may be hung from an overhead rail and a guide be provided for the lower end, or it may be wholly supported from below, or may be supported at both the top and the bottom. Preferably, I provide alongside the shelving a track comprising a bottom rail and an overhead rail parallel with each other, and I mount the upright to run between said rails. I also preferably provide suitable trolleys or carriages or other antifriction devices for connecting the upright with the tracks for carrying the upright along said track in front of the shelving. One or more of the track-supported uprights, each provided with its platform and mechanism for lifting the same, will be arranged to run along said track, so that when the salesman desires he can without loss of time bring the machine to the required place and step upon the step or platform and by setting the machine into operation cause the step or platform, with himself upon it, to be lifted to the desired height, thus to allow him to take from the shelving or other elevated receptacle the article required by the customer, after which he will lower himself to the floor.

In carrying out my invention the portable machine is made as light as possible, due regard being had to the strength and to the height of lift required. I contemplate using any suitable means for raising the step or platform and design to allow the same to descend by gravity under the regulation of a suitable brake to be applied and released by the user or by regulating the escape of air at a three-way valve or other valve provided for the purpose.

The platform may be raised by means of an electric motor or by an appliance operated by a fluid under pressure, as may be found most convenient or desirable. It is unnecessary to illustrate or describe all of the numerous forms in which my invention may be carried out, and I have therefore made no attempt herein to do so.

The accompanying drawings illustrate my invention as applied for use with compressed air and also with an electric motor.

Figure I is a perspective view of my invention in use with compressed air as motive power. Fig. II is a fragmental detail of the same, partly in axial section, on a larger scale. 5 Fig. III is a plan section on line III III, Figs. I and II. Fig. IV is a cross-section on line IV IV, Figs. II and III. Fig. V is a fragmental sectional elevation on line V V, Figs. II and IV, looking to the left. Fig. VI is a 10 sectional detail of a modified form. Fig. VII is a sectional detail of one mode of applying the device to be operated by an electric motor. Fig. VIII is an axial sectional detail of a modified form in which a telescoping 15 tube is provided for raising and lowering the step or platform. This form is designed for use of compressed air for lifts of considerable height. It will be understood from this view that telescoping tubes can be applied 20 to the form shown in Figs. I and II.

Referring to Figs. I, II, III, IV, and V, a a' indicate the bottom and top rails, respectively, of the track. b indicates a tubular upright to run along said track. c indicates a sup- 25 port constructed to move up and down the laterally-moving frame of which the upright b forms a part. Said support is in the form of a step or platform mounted on said upright to move up and down along the same. d in- 30 dicates a movable element, as a head, which is connected with said upright to move along therewith and is also connected with said platform by suitable means—viz., the case e , which is in the form of a cylinder of a suitable size 35 to be taken hold of by the salesman when he steps upon the step or platform to be carried up by the lift. Suitable means are provided for applying a suitable fluid medium, preferably air, to the head d to lift the same. Such 40 means may be of any desired character; but for convenience in the form illustrated in Figs. I, II, III, IV, and V they comprise the passage b' of the tubular support b , a valve f , operated by a belt g to admit air to the passage b' 45 from a flexible pipe h , which leads from an air-compressor. (Not shown.) i indicates ports for admitting compressed air below the head d . j indicates a stationary head fixed on the upright member b of the frame inside the tubular 50 member e to form a chamber k inside of the cylinder formed by the tube e . The ports i open into the cylinder-chamber between the platform-carrying head d and the stationary head j , so that when the valve f is opened to 55 supply compressed air the air entering the chamber through ports i from the pipe-passage b' will carry the head d up, thus lifting the step or platform. m indicates a stuffing-box to prevent the escape of the air around 60 the tubular upright b . n in a general way indicates a brake carried by the head d and controlled by a lever o , which operates an eccentric p , which is carried by a clip q , which is fastened to the head d by bolts q' and ex- 65 tends around the tubular upright b . The brake n is connected with the head by means of the case of the stuffing-box m . r r' indi-

cate brake-shoes for said brake carried by the head d of the tubular member or case e . Said shoes are to be acted on by the cam p , which 70 is operated by the lever o . When the lever is operated to throw the shoes r r' to clamp the tubular support b , the cam p forces the brake-shoes r r' against the support b , thus 75 firmly clamping the tube b to sustain the member e and the step or platform c . The valve f is preferably a three-way valve, having a supply-way f' to supply air to the chamber k , and a relief-way f'' to release the air from said 80 chamber. s indicates a valve-wheel which is provided with sprockets, and t indicates a belt-wheel. The belt g is trained around the two 85 wheels s t , and a portion of the belt g is composed of a sprocket-chain g' to turn the sprocket-wheel s . The members or limbs 1 2 of the belt extend parallel with the upright b and in proximity to the brake-lever o , which 90 operates the brake-cam p , which presses upon curved springs p' p'' , which operate the brake-shoes r r' and allow the brake-lever o and the cam p to be thrown above and below the center. u indicates a stop on one side or limb of 95 the belt to be engaged by the brake-lever o at the close of the upward movement of the cylinder or tube e , which carries the step c . u' is a stop on the limb 2 of the belt to be engaged by a stop v , carried by a clip q , moving with 100 the head d , to engage said stop u' at the close of the upward movement of the head, thus to turn the valve f to cut off the air from the supply-pipe h , which opens into the upper 105 portion b'' of the tubular upright b . w indicates a compressible handle pivoted to the brake-lever o and surrounding the limb 1 of the valve-operating belt g . This handle is in position to be grasped by the operator while 110 standing on the step or platform c .

By referring to Fig. II it will be seen that when the machine is at rest with the step or platform c in position to be stepped upon by 115 the user the valve f will be set with the vent-passage f'' open. The person desiring to use the lift will step on the platform c and will grasp the handle w with sufficient force to compress the handle to clamp the member 1 115 of the belt g , so that by an upward movement of the handle he will release the brake and will also shift the valve f to open the supply-passage f' to admit air from the upper 120 portion b'' of the tubular upright to the part b' of the upright, and thence to the chamber k , thus to lift the head d and the cylinder e and lift the person standing on the step c . When the user has reached the desired height, 125 he will pull down on the handle w , at the same time grasping the handle with sufficient force to clamp the member 1 of the belt and draw it down to close the supply-passage f' without opening the vent-passage f'' . The 130 same movement applies the brake p to set the brake, thus holding the head d at the desired height until the person desires to descend or arise, as the case may be. In order to descend, the brake-lever o will be pulled

down to throw the cam past the springs $p' p''$, and thus the brake will be released, and the belt g will then be shifted to open the vent f'' . The air will be allowed to escape slowly, so as to regulate the speed of descent. x indicates a guiding and supporting wheel at the bottom of the cylinder to run on a rail y , fastened to the upright b , to prevent the cylinder e from turning on the upright b . The wheel x is arranged on the same side of the upright b as the step c , so that the weight of the person upon the step will be supported by the wheel x and will not cramp the parts so as to prevent the cylinder e from ascending freely. z indicates a spring for throwing the step up when not in use.

In the form shown in Fig. VI the compressed air is applied from the flexible tube h through a tube h' , which opens into the chamber k' above the movable element, as the weighted head d' , which is inside a tube or cylinder b^2 , and which head operates a piston-rod 3, which plays through a stuffing-box 4 in the head j , through which the piston-rod 3 passes. 5 indicates a cable connected with the piston-rod to be operated thereby and passing over a pulley 6 and thence down to the step-supporting cylinder e' , to which the step c' is fastened. The step or support e' may be of any suitable form, and in the drawings it is shown slotted at 7, and the stationary support b^2 is provided with notches 8, with which a pawl 9, fastened to the step c' , engages. The spring z is arranged to throw the step up and bring the pawl into engagement with the notches 8 whenever the person steps off the platform c' , so that when the step c' has been lowered and the person steps off the pawl 9 will prevent the step from being drawn up by the descent of the piston-head d' , which in this figure is shown weighted for the purpose of counterbalancing the person using the lift. In Fig. VII the parts are substantially the same as those shown in Fig. 6, excepting that the parts are operated by an electric motor 10 and a cable 11, which is fastened to the under side of the movable element or piston or head d^2 to pull said piston down. 3' indicates the piston-rod. 4' indicates the stuffing-box for said rod. f^7 indicates a valve to admit and release the air at various speeds.

In the form shown in Fig. VIII two uprights 12 13 are provided, and a telescoping tube 14, having a plurality of members 15 16 17, is arranged to move the cross-head 18, which is guided by the uprights 12 13. 19 20 indicate two brakes carried by the cross-head 18. 21 22 indicate two brake-rods connected with the levers of the brakes 19 20 to draw them together. 23 indicates a cam operated by a lever o'' , which is actuated by a handle w' , which is constructed substantially the same as the handle w , above described. The cam 23 slides between the rods 21 22 to bend them and to relieve them, as required. When the cam is turned to bend the rods, the distance between the opposite ends of the rods is short-

ened, thus drawing upon the brake-levers to apply the brake. At the reverse movement the brake-rods are relieved, allowing the brakes to be released. The air is admitted into the telescoping tube through the tubular support 13, being controlled by a valve f^2 , which is substantially the same as valve f , above described, and is operated by a belt $g g'$. When the air is admitted, the head d^3 will be forced upward, thus lifting the cross-head 18 and the tube 17, to which the step c^2 is fastened. In the several forms, 24 indicates the upper carriage or trolley, and 25 the lower carriage or trolley. 26, in Figs. II and VI, indicates the upper and lower limiting-stops fixed to the lower carriage 25 for a cable-stop u'' , which restricts the movement of the valve-operating cable g within the required limits. 30 indicates a shelf fastened to the tubular member e by a clamp 31, so as to be adjusted to a suitable height for holding cartons or other articles to be carried up and down.

In Fig. VII 100 designates a flexible electric conductor to supply electric power from an external source to drive the motor 10. The uprights and the carriages or trolleys in the several views constitute the frames, respectively, of the several forms of lift shown, and it is understood that other forms of frames may be employed without departing from the spirit of this invention.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A portable lift arranged to be moved alongside a wall or shelving and provided with an upright and with a step or platform mounted to move up and down along said upright; a motor connected with said upright to move therewith, and operatively connected with the step or platform for raising and lowering the same; and a flexible power-conductor connected with said motor to supply power thereto from an external source.

2. A portable lift adapted to be moved alongside a wall or shelving and provided with an upright and with a step or platform mounted to move up and down along said upright; a head connected with the upright to move along therewith and operatively connected with said step or platform to lift the same; a flexible tube connected with a source of fluid under pressure and arranged for applying such fluid under pressure to raise said head; and means for regulating the descent of the step or platform.

3. A lift comprising a bottom rail; an overhead rail parallel therewith; an upright connected with said rails to run between said rails; a step or platform mounted to move up and down on said upright; a motor carried by said upright and operatively connected with said step or platform for raising and lowering the same; and a flexible conductor connected with said motor to apply power thereto from an outside source.

4. A lift comprising a bottom rail; an over-

head rail parallel therewith; an upright connected with said rails to run along between said rails; a head connected with the upright to move along therewith; a support to move
 5 up and down on said upright; means operatively connecting the head with said support comprising a cylinder inclosing the head; and a flexible tube leading to the cylinder for supplying a fluid medium from an
 10 external source of power to raise and lower the head.

5. In a lift, the combination with a base-rail and an overhead rail parallel therewith; of a tubular upright connected with said rails
 15 to run between said rails; a head fastened to said tubular upright; means for supplying compressed air to the tube to operate the head; a platform mounted to move up and down on said tube; and means operatively connecting
 20 the head with the platform to raise the platform.

6. A lift comprising a frame, a part of which is a tube; a track for said frame; a head carried by said tube; means for supplying compressed air to the tube to operate the head; a
 25 step or platform mounted on the tube; and means connected with the platform to clamp the frame.

7. The combination of a track; an upright
 30 to run along said track; a step or platform mounted upon said upright to move up and down along the same; a head connected with said platform to lift the same; means for applying a fluid medium to said head to lift the
 35 same; and a brake connected with said head and arranged to engage the upright to adjustably fix the head with relation to said upright.

8. The combination of a track; an upright
 40 to run along said track; a step or platform mounted on said upright to move up and down along the same; a head connected with said platform to lift the same; means comprising a valve for applying a fluid medium to said
 45 head to operate the same; a brake connected with said head and arranged to engage the upright to adjustably fix the head with relation to said upright; and operative means for simultaneously operating the said valve and
 50 said brake, said means being arranged to close the valve when the brake is applied.

9. The combination of a track; an upright to run along said track; a step or platform mounted on said upright to move up and down
 55 along the same; a head connected with said step or platform to lift the same; means comprising a valve for applying a fluid medium to said head to operate the same; a brake connected with said head and arranged to engage
 60 the upright to adjustably fix the head with relation to said upright; a lever for said brake; a belt extending parallel with said upright and in proximity to said lever and arranged to operate the valve; a stop on one side of said
 65 belt for shifting the belt to open and close the valve; a stop on the other side of said belt to be engaged by the brake-lever; to throw

the brake-lever to apply the brake at the top limit of its movement; a belt-shifting lug connected with the head to operate the first-
 70 named belt-shifting stop to throw the belt to cut off the air at the close of the upward movement of the head; and stops to limit the movement of the belt.

10. In a lift, the combination, with a laterally-movable frame provided with elevating mechanism, of a vertically-movable support, means for controlling the actions of the mechanism and means for holding the support in its vertical positions independently of the action
 80 of said mechanism.

11. In a lift, the combination, with a laterally-movable frame provided with elevating mechanism, of a vertically-movable support, means for controlling the action of the mechanism and means operating simultaneously therewith locking the support against vertical movement independently of the action of
 85 said mechanism.

12. In a lift, the combination, with a laterally-movable frame and fluid-actuated operating mechanism carried thereby, of a vertically-movable support, means for supplying power to the mechanism from an external source, and means for holding the support in
 95 its vertical positions independently of the action of said mechanism.

13. In a lift, the combination with a laterally-movable frame provided with a vertically-movable support, pneumatic elevating mechanism, and means for simultaneously controlling said mechanism and locking the support against vertical movement.
 100

14. In a lift, the combination, with a laterally-movable frame and a cylinder carried
 105 thereby, of a vertically-movable support, a head for moving the support, and means for controlling the action of the head and holding the support in its vertical positions.

15. In a lift, the combination, with a laterally-movable frame, of a cylinder thereon, a support mounted to move vertically of the frame, a fluid-actuated head, a valve for controlling the action of the head, a brake for locking the support against vertical movement, and a shifting cable for simultaneously
 115 operating the valve and the brake.

16. In a lift, the combination, with a laterally-movable frame, of a cylinder mounted to move vertically thereon, a support carried by
 120 the cylinder, a head fixed to the frame within the cylinder, a valve for introducing a fluid between such head and the head of the cylinder, a brake for holding the cylinder against vertical movement, and means for simultaneously operating the brake and the valve.
 125

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 7th day of July, 1900.

CHARLES A. BOUCK.

Witnesses:

JAMES R. TOWNSEND,
 CORA D. BOUCK.