

No. 755,499.

PATENTED MAR. 22, 1904.

G. LANE.
STORE SERVICE LADDER.
APPLICATION FILED JAN. 18, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

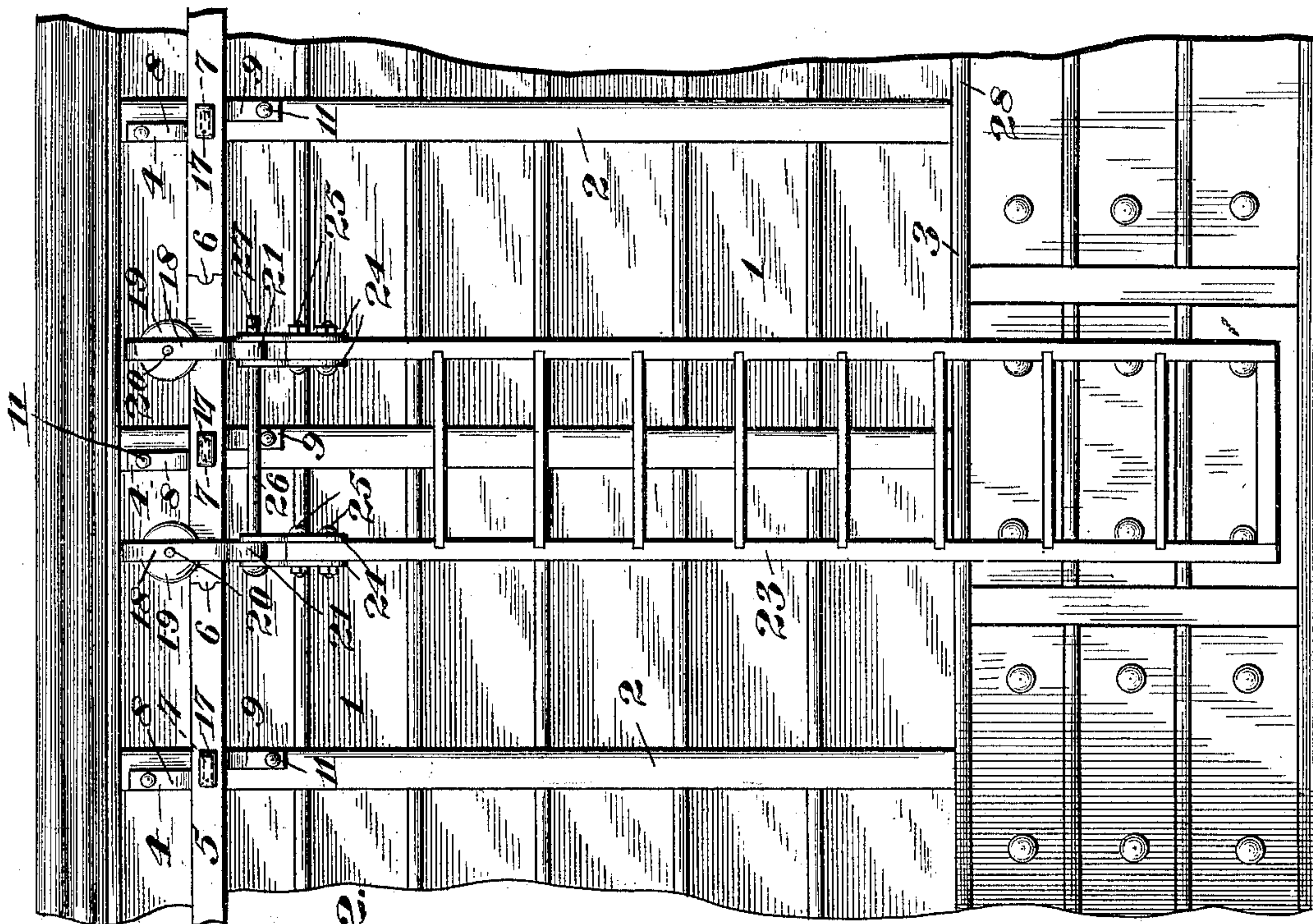


Fig. 2.

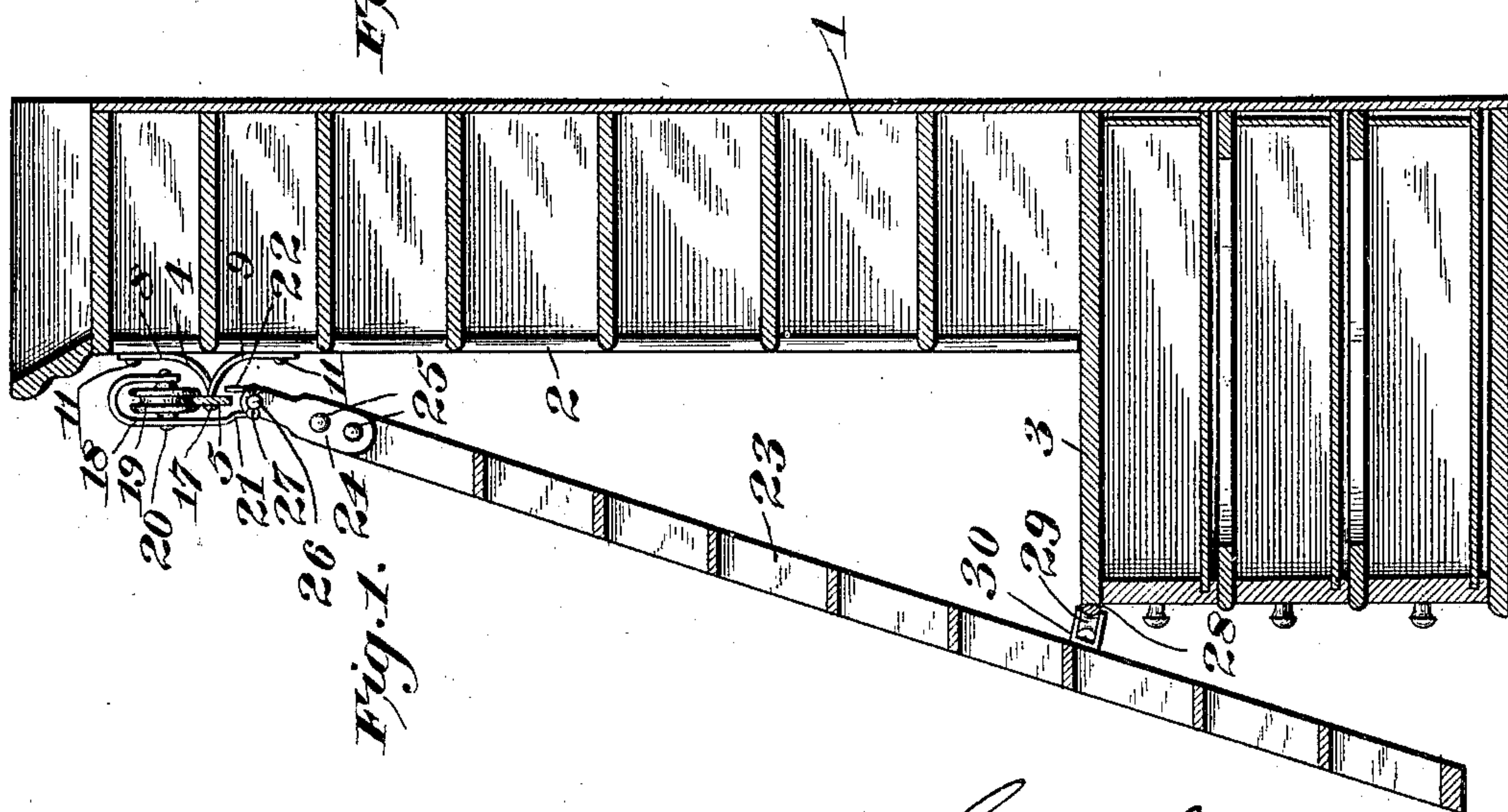


Fig. 1.

Witnesses

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Frank O'Connor

George Lane, Inventor
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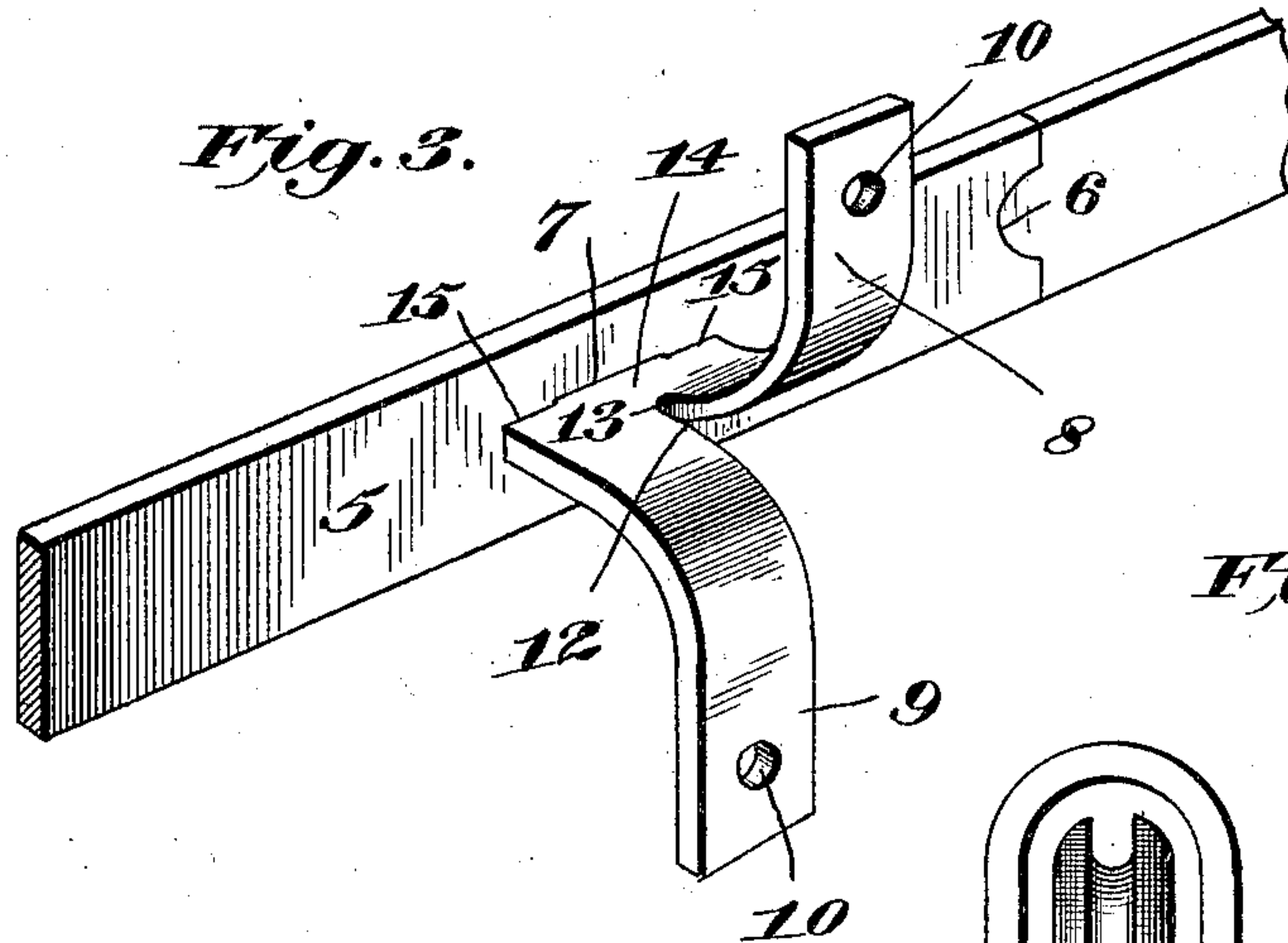


Fig. 5.

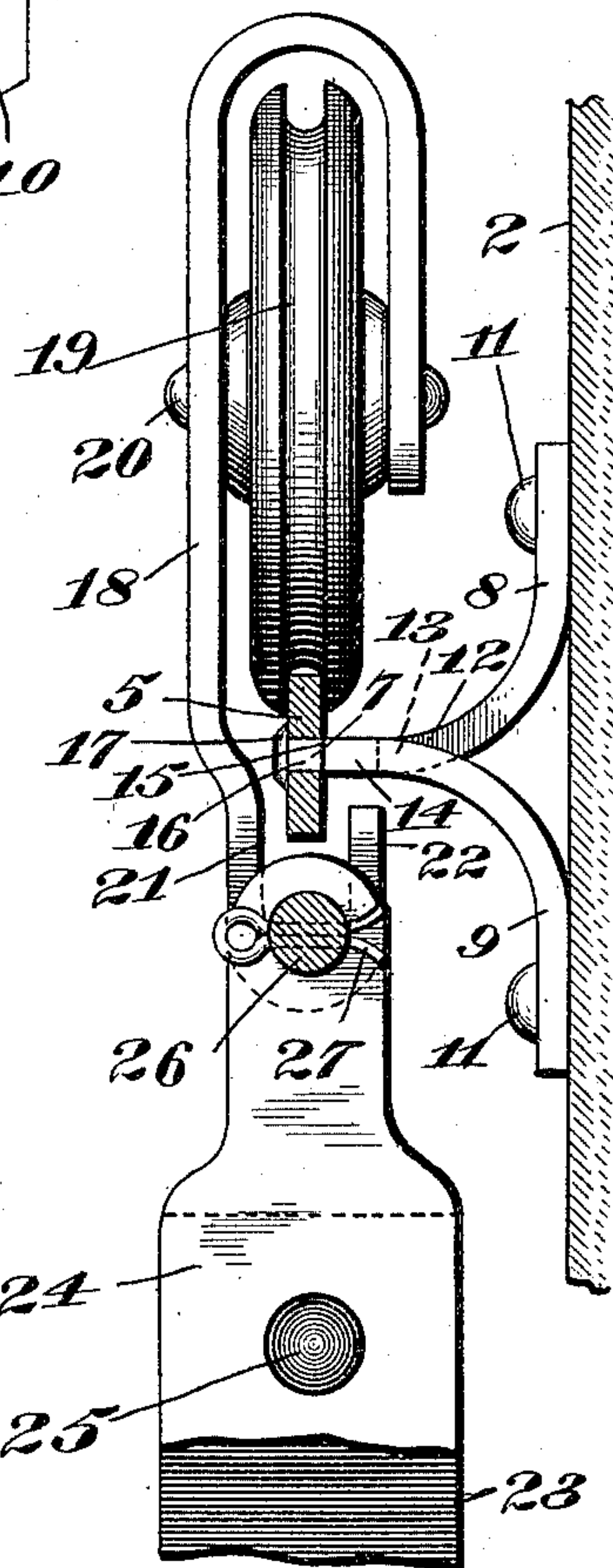
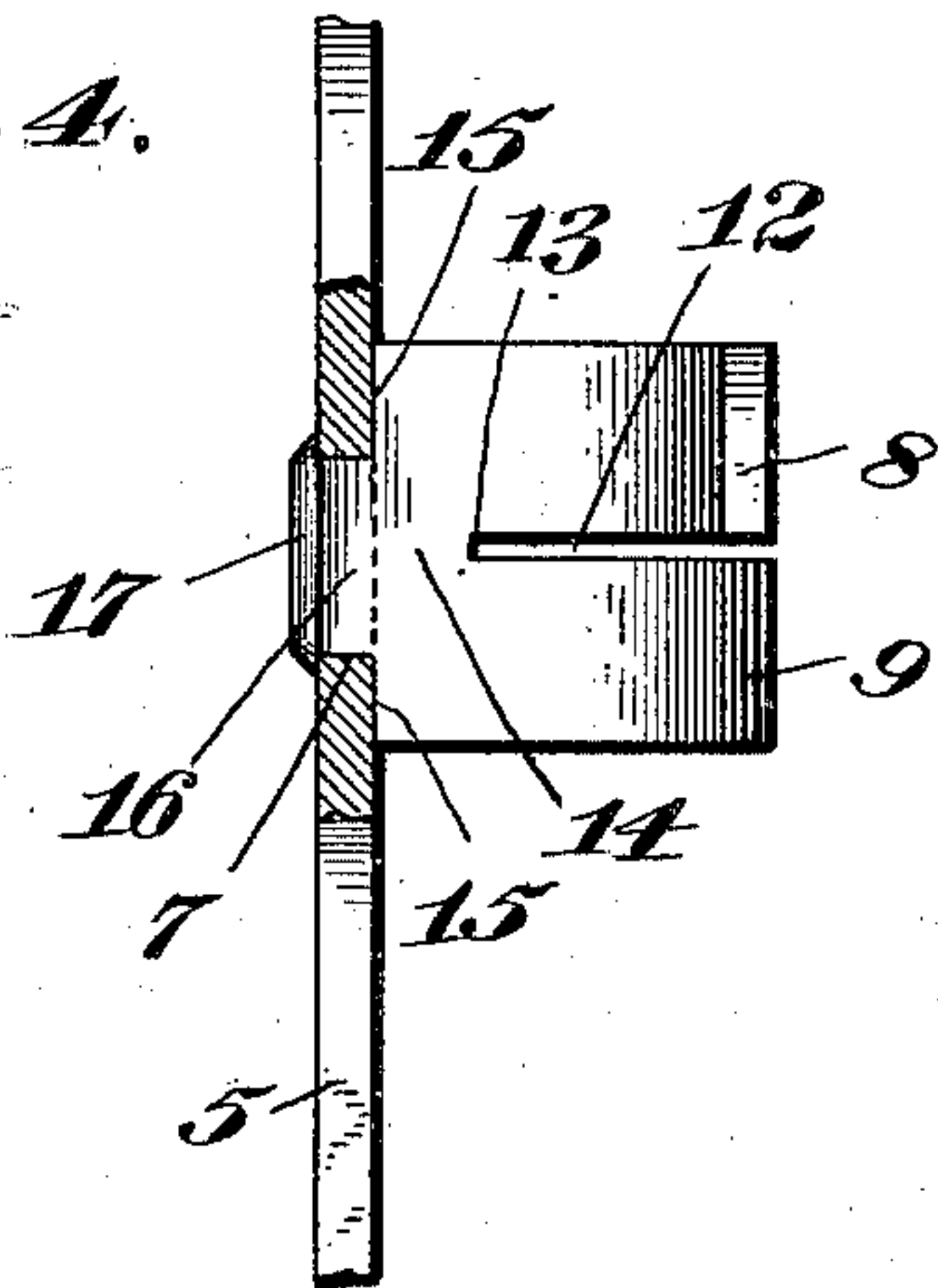


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE LANE, OF POUGHKEEPSIE, NEW YORK.

STORE-SERVICE LADDER.

SPECIFICATION forming part of Letters Patent No. 755,499, dated March 22, 1904.

Application filed January 18, 1904. Serial No. 189,475. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LANE, a citizen of the United States, residing at Poughkeepsie, county of Dutchess, State of New York, have
 5 invented certain new and useful Improvements in Store-Service Ladders, of which the following is a specification.

This invention relates to store-service ladders.

10 The supporting means for store-service ladders as heretofore generally constructed have been comparatively large and occupy too much space, beside being unattractive in appearance, and most store-service ladders are
 15 necessarily supported at their bottom on a trackway on the floor, because of the inherent weakness of the suspending trackway and hanger at the top of the ladder. Owing to the construction of the hanger and sheave or
 20 wheel, as well as the form of bracket construction heretofore used, the track has had to be made of relatively great width, which makes the construction more expensive, bulky, and causes greater torsional strains to
 25 be put on the track on account of the inclined position of the ladder.

The present invention is designed to overcome the before-mentioned drawbacks incident to store-service-ladder suspending constructions heretofore used and to provide an
 30 improved construction wherein the trackway will be of relatively small width, the brackets supporting the trackway will be of novel form to give them great strength, and the
 35 pivotal connection of the ladder with the hanger-strap from the wheel or sheave brought nearer the point of journaling the said wheel, whereby torsional strains on the trackway are minimized and other strains and stresses on
 40 the brackets and other parts decreased and more perfectly balanced, so that the construction will be simple, less expensive to make, neater in appearance, and provision made to prevent displacement of the wheels from the
 45 track on account of any outward movement of the ladder.

The invention embraces certain novel features and combinations of elements set forth fully hereinafter and recited in the claims
 50 hereto appended.

In the accompanying drawings, Figure 1 is a vertical section of a store-service ladder equipped with my improvements and applied to ordinary shelving; Fig. 2, a front elevation; Fig. 3, a rear perspective detail showing the
 55 manner of attachment of a bracket to the trackway; Fig. 4, a detail plan with the trackway broken away to show the manner in which the tenon member is passed through the trackway and the head flattened down on
 60 the trackway; and Fig. 5, a detail view of a bracket, the trackway, the hanger, and the upper end of the ladder.

The invention is adaptable for use in connection with ordinary store-shelving 1, having suitable vertical stiles 2 and a counter 3, the brackets 4, which support the trackway
 65 5, being secured to the stiles 2 at the upper portions thereof.

The trackway is of flat stock formed in sections, with their ends connected by the joints 6, and at the proper points of their lengths these sections are provided with elongated slots 7, extending along the longitudinal median line of said trackway-sections.
 75

The brackets are most clearly shown in Figs. 3, 4, and 5, each bracket being formed of a single piece of metal which has upwardly and downwardly extending curved legs 8 and 9, provided with holes 10 for the reception of
 80 fastenings 11, securing the bracket to the stile 2, the legs 8 and 9 being formed by slitting the bracket at 12 and bending the portions of the metal in opposite directions, said slit terminating at a point 13, leaving a solid body
 85 portion 14 to the bracket, which has straight shoulders 15 and a flat elongated tenon or neck 16 of the same shape and a trifle smaller in size than the slot 7 and passed therethrough and provided with a head 17, formed by riv-
 90 eting or upsetting the end of the neck or tenon 16 against the outer face of the trackway. With this manner of connecting the bracket to the trackway it is impossible for the bracket to turn in any manner on account of the elongated slot and tenon, while the most intimate union is had on account of the provision of the shoulders 15, abutting the inner face of the trackway, and the upsetting of the tenon 16 to form a head 17. The construction is cheap,
 95 100

light, and very strong, and it will be observed that it makes possible the employment of a trackway of very small width, while giving a proper clear space on the trackway above and below the bracket.

The hanger or strap is shown at 18, in the upper overhanging portion of which is journaled a grooved wheel or sheave 19 on the bolt 20, said sheave being of proper form to run on the trackway without displacement therefrom. The lower end of the strap or hanger is bent into a depending U-shaped portion 21, having the finger 22, and the opening in this part of the hanger is of comparatively small width to receive the lower portion of the trackway and by the overlapping of the finger or lip 22 to prevent lateral displacement of the sheave or wheel from the trackway on account of the inclination of the ladder or when the ladder is swung outwardly from the shelving for any purpose.

While the trackway is of comparatively small width on account of the improved construction, yet the lower portion of the trackway is sufficiently wide below the bracket to allow for sufficient overlapping of the lip or finger 22 to insure retention of the wheel on the trackway, as before pointed out. It will be understood that all of the brackets supporting the trackway are located in substantial alinement to provide clear upper and lower spaces on the trackway. In the present instance I have shown two hangers and sheaves for the ladder in order to insure against any twisting of the ladder; but it is clear that only one hanger and wheel could be used for the ladder.

The ladder is shown at 23 and is preferably of the suspended type to obviate the use of wheels on the lower end of the ladder and the trackway on the floor, my improvements in the bracket, trackway, and hanging means permitting dispensing with such support for the bottom of the ladder on account of the arrangement of these parts and their great strength. On each side of each stile of the ladder there are provided suspension straps or plates 24, secured to the stile by bolts 25, and through the upper portions of these sus-

pension-straps 24 extends a bolt 26, held by a cotter 27. The U-shaped parts 21 hook into engagement with the bolt 26 between the respective plates 24, thus forming a strong and easily-detachable connection.

It is desirable in order to insure smooth running of the ladder to provide a track 28 at the outer edge of the counter 3 and one or more grooved sheaves 29, pivoted in brackets 30, secured to the back of the ladder.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a trackway having a slot disposed substantially along the longitudinal median line thereof, of a supporting-bracket made in a single or integral piece comprising an upwardly-extending leg, a downwardly-extending leg, and a body having shoulders bearing against the rear of the trackway substantially along the longitudinal median line thereof, whereby the lower rear part of the trackway is left clear, and a tenon of reduced size on the bracket which is passed through the opening in the trackway and provided with a retaining-head bearing on the trackway.

2. The combination with a trackway having an elongated slot disposed substantially along the longitudinal median line thereof, of a supporting-bracket made in a single or integral piece comprising an upwardly-extending leg and a downwardly-extending leg which are separated by a bifurcation, a body at which the bifurcation terminates having shoulders bearing against the rear of the trackway beyond the opposite ends of the elongated slot therein, and a flattened or elongated tenon member narrower than the body aforesaid fitting said slot and provided with an upset or riveted head on the trackway, whereby the lower part of the trackway is left clear.

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

GEORGE LANE.

Witnesses:

A. VAN NOSTRAND,
SILAS LANE.