

No. 612,606.

Patented Oct. 18, 1898.

G. H. FORSYTH.  
CURTAIN FIXTURE.

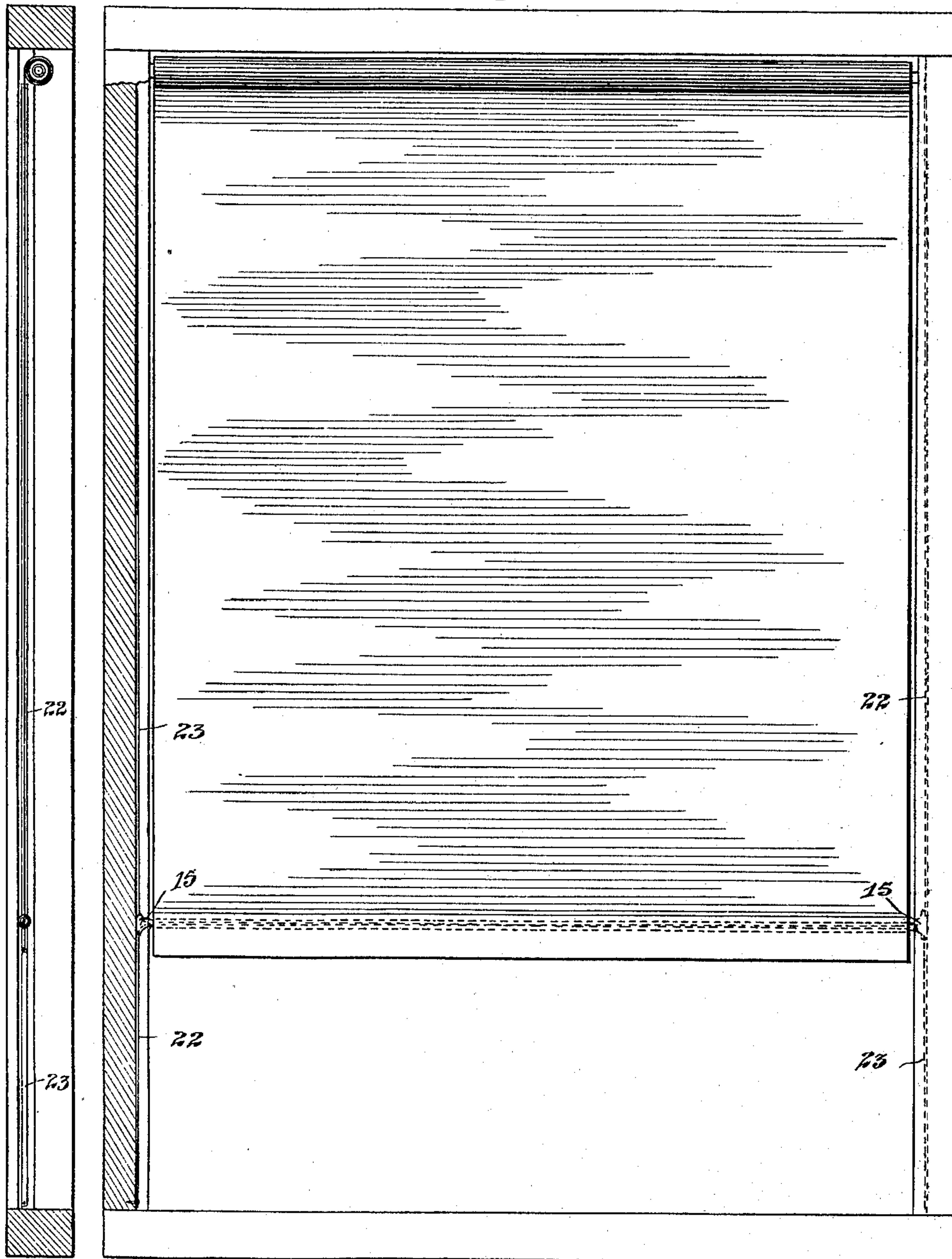
(Application filed June 13, 1898.)

(No Model.)

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*Fig. 2.*

*Fig. 1.*



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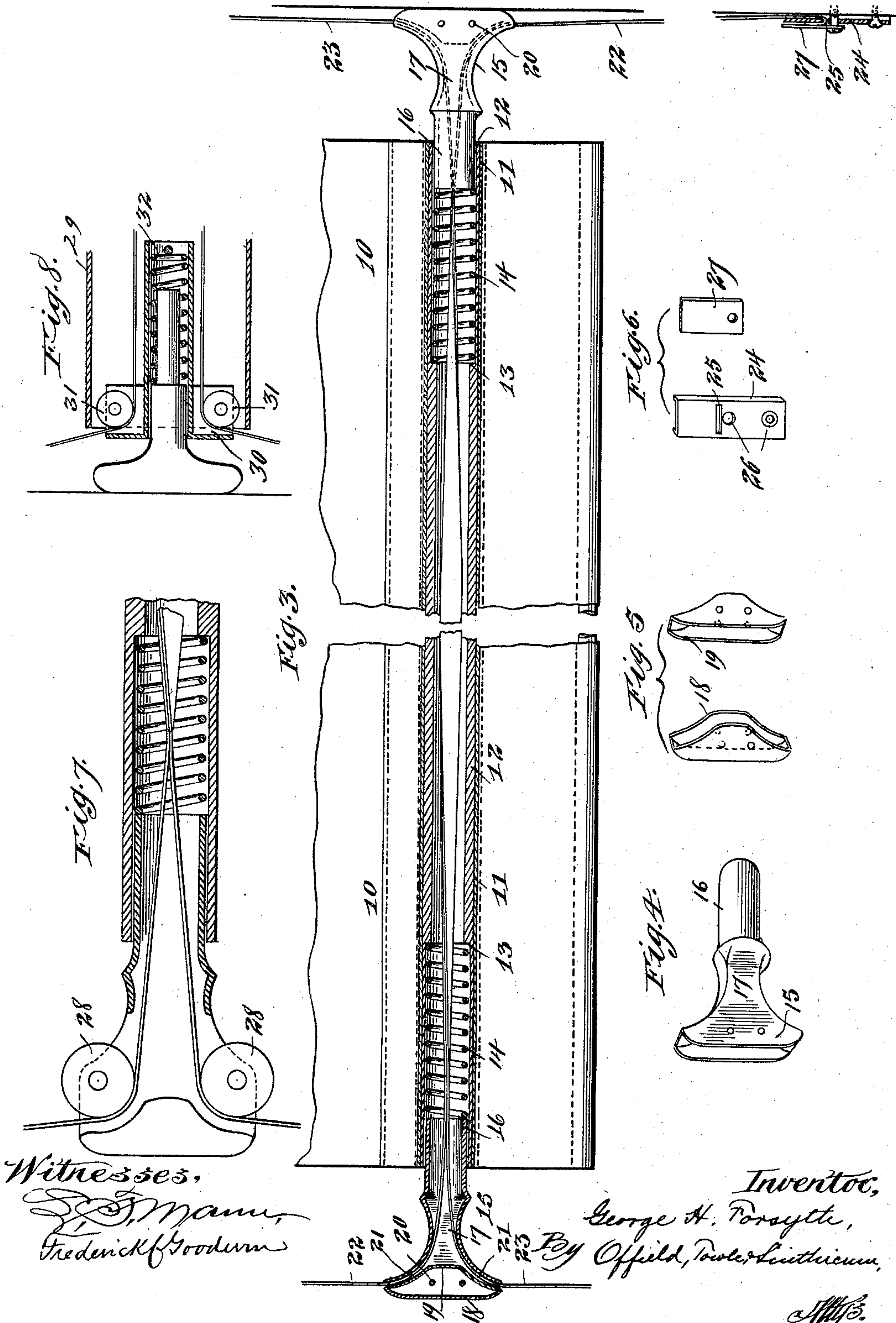
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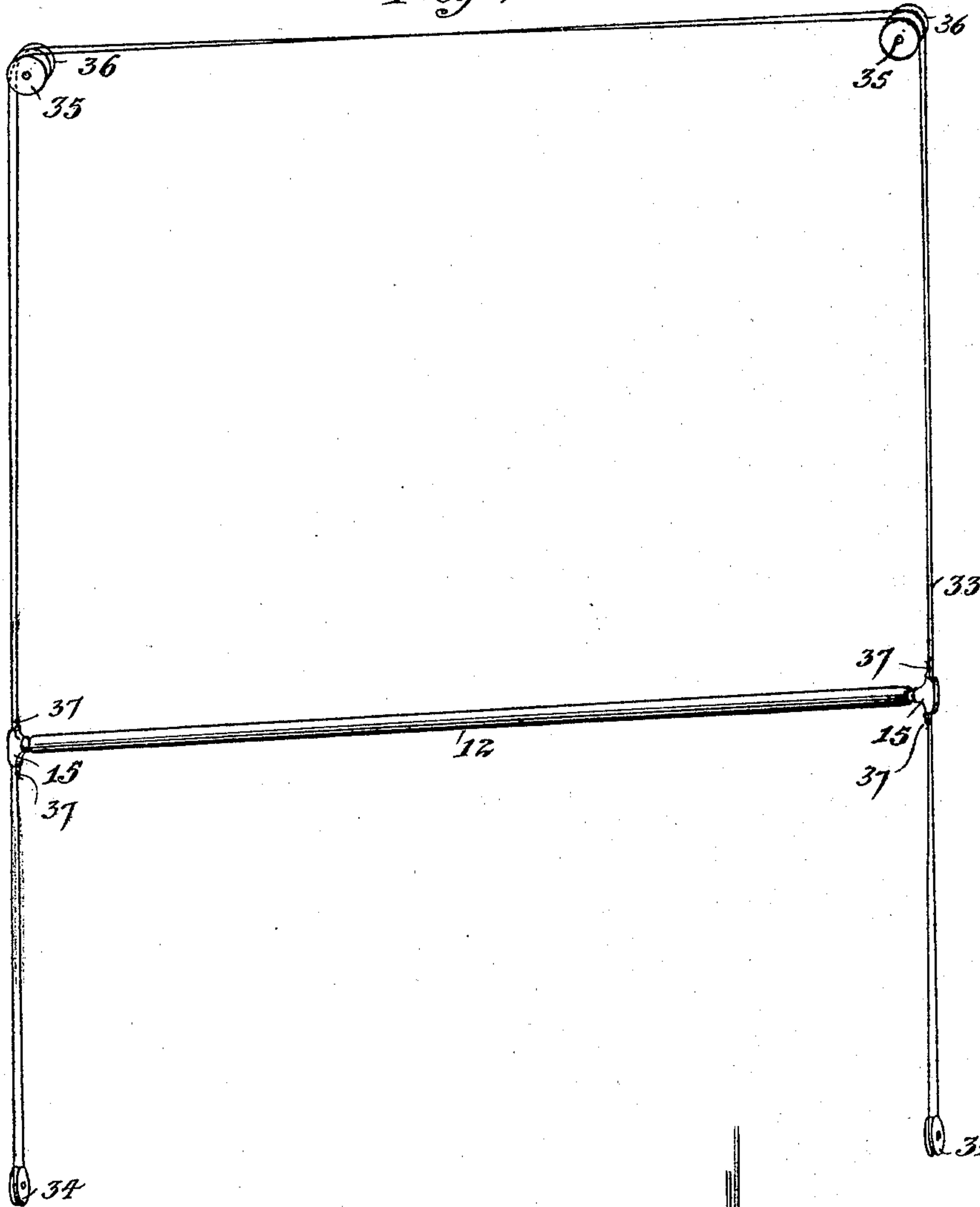
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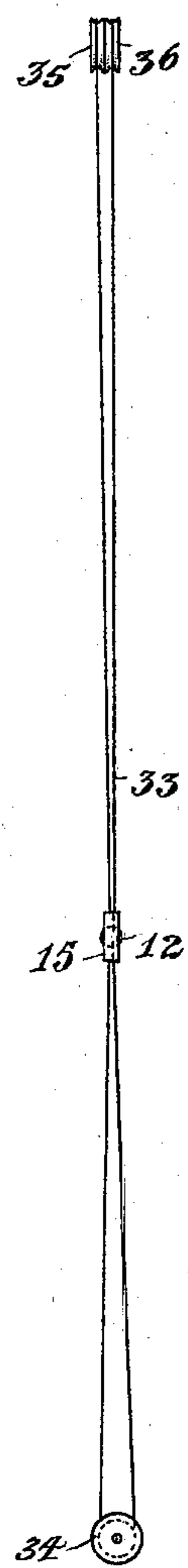
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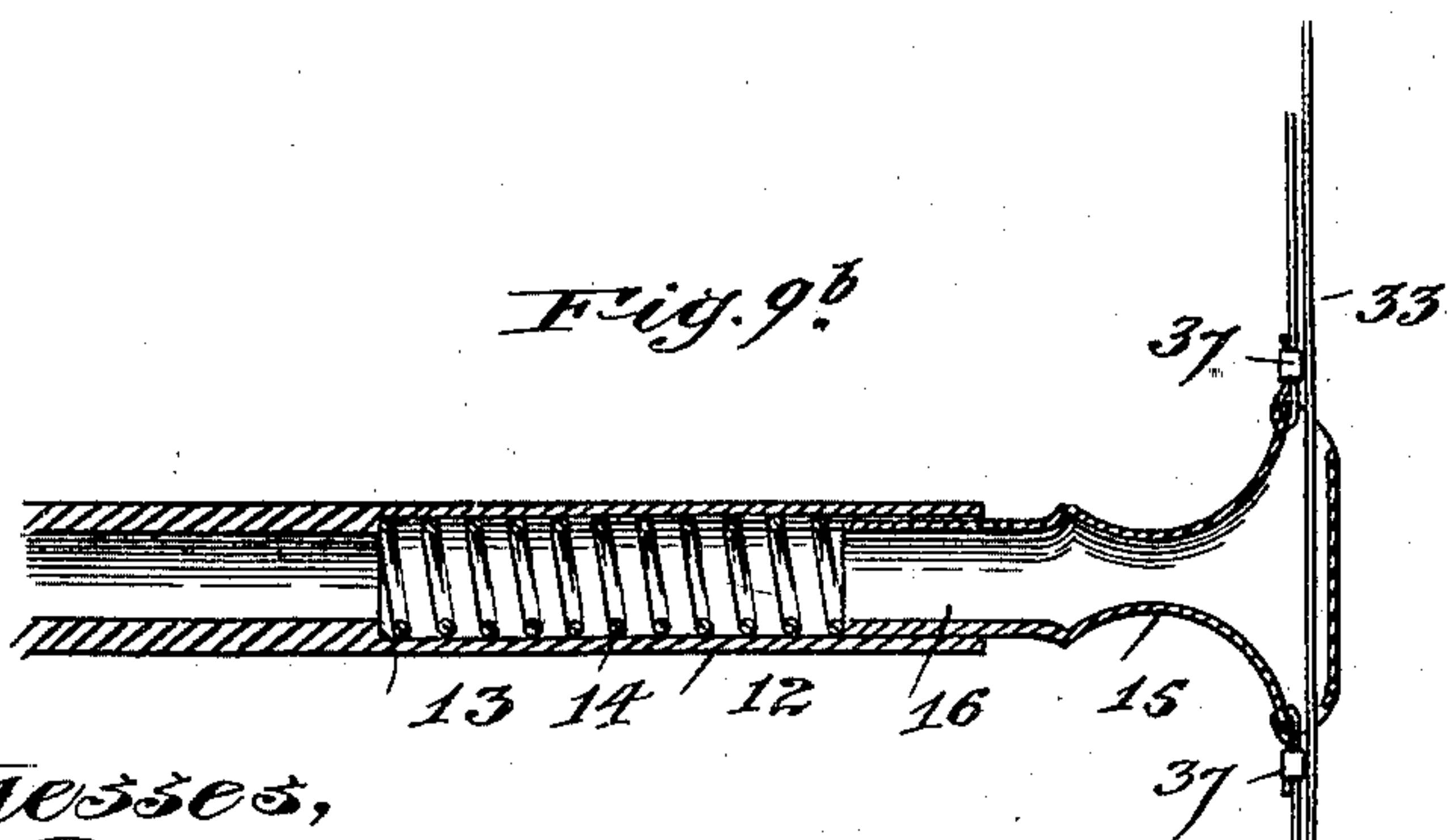
*Fig. 9.*



*Fig. 9<sup>a</sup>.*



*Fig. 9<sup>b</sup>.*



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# UNITED STATES PATENT OFFICE.

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## CURTAIN-FIXTURE.

SPECIFICATION forming part of Letters Patent No. 612,606, dated October 18, 1898.

Application filed June 13, 1898. Serial No. 683,291. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. FORSYTH, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Curtain-Fixtures, of which the following is a specification.

This invention relates to an improvement in that class of curtain-fixtures which are intended to hold the lower edge of a shade or  
10 curtain against lateral movement and sustain it at any desired elevation against the pull of the spring of the shade-roller upon which the curtain is mounted. Various devices have been proposed for this purpose, but the only  
15 ones which have gone into extensive use are, first, those employing spring-actuated rods sliding in a tube or pocket in the lower edge of the shade or curtain and having friction tips or heads contacting with the bottoms of  
20 the grooves in the sides of the window-frame with pendants or handles carried by the sliding rods, by means of which the friction-tips are withdrawn from contact with the bottoms of the grooves in adjusting the curtain, and,  
25 second, those in which cords are secured to diagonally opposite corners of the window-frame, said cords passing through a tube or sheath in the lower end of the shade or curtain, the curtain being frictionally held against the  
30 pull of the shade-roller by the contact of the cords with the ends of the tube or of the guides carried thereby.

The fixture first above mentioned is generally used in the better class of passenger-  
35 cars—such as sleeping-cars, parlor-cars, and special cars and passenger-coaches—and on closed street-cars, while the latter class of fixtures is most generally employed on open street-cars, being specially adapted to that  
40 class of cars, because they require no skill in manipulation, cannot readily be gotten out of order by careless handling, and may be operated from both sides with equal facility.

The cord-fixture, while well adapted in some  
45 respects for use upon open cars, has many objectionable features, the chief of which is lack of durability, and this lack is inherent in the structure as heretofore employed, because dependence is placed upon the friction of the  
50 cords with the ends of the tube or with the guides carried thereby to sustain the curtain

against the pull of the spring-roller, and in order to secure the requisite friction to maintain the curtain in position the cords must be stretched taut, which not only makes the  
55 fixture hard to operate, but also results in the breaking of the cord or the strands thereof, and thus at once impairs and soon wholly destroys the efficiency of the fixture.

It is the object of my invention to provide  
60 a durable curtain-fixture which cannot be displaced, which will at all times hold the shade or curtain at any desired elevation and with its lower margin in a horizontal plane, and which can be operated from either side  
65 easily and without binding. To these ends I employ as a means for holding the lower edge of the curtain substantially parallel and preventing the fixtures from coming out of the grooves flexible guides, which may be  
70 cords, chains, or tapes, preferably metal tapes, and these flexible guides may be secured at diagonally opposite corners of the window-frame and pass through a tube or sheath in the lower edge of the shade or cur-  
75 tain, but preferably without any friction or with the least possible friction upon the ends of the tube or sheath or the guides carried thereby. As a means for holding the shade against the pull of the spring-roller I employ  
80 spring-actuated friction-shoes, also preferably mounted in the tube, sheath, or pocket in the lower edge of the shade or curtain and normally held in contact with the bottoms of the grooves by means of outwardly-forcing  
85 springs. Preferably and in order to secure compactness the flexible guides pass through suitable apertures in the friction-shoes, the latter being slidably mounted in the ends of the tube and their actuating-springs arranged  
90 within the tube and surrounding the tapes.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a window-frame having a curtain provided with my  
95 improved curtain-fixture mounted therein. Fig. 2 is a sectional elevation through the curtain, its tube, and shade-roller, showing one side of the frame in side elevation. Fig. 3 is a broken sectional elevation through the  
100 pocket or tube of the shade, showing the tapes, friction-shoes, and springs. Fig. 4 is



a perspective view of the preferred form of friction-shoe head. Fig. 5 is a view of a two-part friction tip or shoe, and Fig. 6 a view of a two-part fastening for the end of the tape. Figs. 7 and 8 show modifications. Fig. 9 is a perspective view showing my invention applied in connection with an endless running-cord fixture. Fig. 9<sup>a</sup> is an elevation showing the upper pulleys in edge view, and Fig. 9<sup>b</sup> is a broken sectional elevation through the pocket or tube of the shade and its friction head or shoe and showing one strand of the cord connected thereto and the other passing therethrough.

In the drawings let 10 represent the curtain, having the usual pocket 11, in which may be mounted a tube or sheath 12, which preferably has its inner wall offset or shouldered, as at 13, to form an abutment for the springs 14.

15 represents the movable heads, whose shanks 16 may enter the ends of the tubes and be seated against the springs 14. The preferred form of the head is shown in Fig. 4, in which the shank 16 is cylindrical and tubular and the neck portion 17 is flattened, such neck portion being flared at its outer end to receive the two-part tip or shoe shown in Fig. 5. The parts of the shoe marked 18 19 may be struck up or formed from sheet metal and are of such shape that the part 19 can be slipped into the part 18, its open side first, and when the two parts are thus united they may be secured together and to the flared mouth of the head by means of rivets 20. When the parts are thus secured in position, openings or channels for the free passage of the tape are provided, as shown at 21, and while these apertures are of such size in cross-section as not to produce any friction upon the tape, but, on the contrary, permit it to pass or run freely through them, yet they are preferably of such form as to prevent the latter from turning therein, forming, as they are intended to do, mere guide-passages.

I preferably employ as guides the flexible metal tapes, (marked 22 23,) and these are secured, as shown in Fig. 1, at diagonally opposite corners of the window-frame and are passed through the guide-apertures of the heads and are spirally twisted within the tube 12, so that they run flatwise upon each other. As a means for securing the ends of the tapes to the frame I preferably employ the two-part holder shown in Fig. 6, in which 24 represents a shallow metal box with an open upper end and a slot 25 in its face and provided with screw-apertures 26. 27 represents a clamping-block for holding the end of the tape. The end of the tape, as shown at the right hand of Fig. 3, is passed down into the hollow of the body 24 and through the slot 25 thereof, and after being adjusted to the proper length the clamping-block 27 is secured over the doubled end of the tape by one of the fastening-screws. By this simple means the tape can always be adjusted as to length and a

sufficient amount of the end doubled over to hold it firmly in place, the remainder being cut off.

I have shown stationary cords passing through the tube carried by the shade and crossing therein, which serve as guides; but, obviously, instead of using stationary cords endless cords may be used, and instead of passing through the tube the cords may be secured to the ends thereof or to the usual shade-stick. Such a construction is shown in Figs. 9, 9<sup>a</sup>, and 9<sup>b</sup>, wherein the movable heads 15 are connected to two of the strands of the cord 33, said cord being doubled upon itself and passing over pulleys 34, journaled at the lower corners of the window-frame, and over the double pulleys 35 36 at the upper corners of the window-frame. These pulleys constitute guides over which the strands of the cords are turned or deflected, and instead of the double pulleys 35 36 a single pulley with two grooves may be used. The cord may be endless, with two of its strands secured in any convenient way to the heads 15, respectively; but for convenience of attachment I sever one strand on each side and attach the severed ends by passing them through perforations in the heads and using suitable clips to secure such ends. The unattached strands pass through apertures of the heads, thus leaving the shoe free to contact with the bottom of the groove. In this construction the lower margin of the shade is kept in a horizontal plane by its attachment to the running-strands of the cord. Thus, as in the construction previously described, the cord serves to maintain the lower edge of the shade in parallelism or in a horizontal plane and the friction heads or shoes serve to restrain the curtain from being rolled up under the pull of its spring.

The mechanical structure is susceptible of considerable variation without departing from the spirit of my invention.

I have illustrated in Figs. 7 and 8 two modified forms in which my invention may be embodied. As shown in Fig. 7, the back of the head 15 is cut away and the antifriction-rollers 28 are journaled therein to prevent friction on the tape. In Fig. 8 instead of the round tube I have shown a square tube 29 and have mounted in the end thereof a metallic frame 30, carrying antifriction-rollers 31 and a tubular socket or spring-barrel 32, in which the friction tip or head is mounted. In this construction the tapes issue between the rollers 31 and the ends of the frame 30, which prevents their twisting, while friction is avoided by the introduction of the rollers.

In the several constructions it will be observed that the arrangement and combination of the parts is such that the holding of the shade or curtain against the pull of the spring of the shade-roller is accomplished by the spring-actuated friction-tips and that the tapes are used simply to guide the fixture and preserve its parallelism. For this purpose



these flexible guides should not be stretched so taut as to exert friction upon the surfaces between or over which they pass, it being sufficient that the flexible guides shall be only  
 5 so taut as to prevent the end of the curtain from being lifted enough to carry the friction-tip out of the groove, and it is in this sense that the tapes or flexible strands are referred to herein as constituting guides.  
 10 These flexible strands or guides also prevent uneven or oblique positions of the lower margin of the curtain, which would otherwise result from an attempt to raise or lower the curtain by taking hold of its lower margin  
 15 near one end.

The principle of the operation of my fixture may be stated as follows: The flexible strands serve the purpose of preventing the margin of the curtain being placed in oblique or abnormal positions to such an extent as to permit the friction-tip to leave the groove, and the extent to which they subserve this purpose is dependent upon the length of the flexible guide between its points of attachment,  
 25 or, in other words, if it be stretched sufficiently taut to prevent a variation of the ends of the curtain from the horizontal plane it may yet run without any friction or appreciable friction upon the ends of the tube or the  
 30 parts over which it passes. The holding of the curtain at the desired points is due solely to the friction-tips, and when the fixture is properly applied the parts will be so adjusted that the spring of the shade-roller will roll up  
 35 the curtain if the friction-tips be held out of action.

My invention obviates the objectionable features heretofore present in these curtain-fixtures, wherein reliance was had upon the  
 40 friction of the cords or guides to hold the curtain against the pull of the spring of the shade-roller. The friction necessary to this end invariably results in the early destruction of the flexible cord or guide, while in my  
 45 improved fixture this friction is reduced to a minimum and preferably entirely overcome, and the cords being relieved of strain and rubbing contact with the parts over which

they pass will last as long as the other parts of the fixture.

I claim—

1. The combination with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with  
 55 the roller, and holding means carried by the shade and adapted to contact with the window-frame, whereby to hold the shade at any desired elevation independently of the flexible guides, substantially as described. 60

2. A curtain-fixture comprising in combination with a shade or curtain and its spring-actuated roller, flexible guides connected with the lower edge of the shade or curtain, whereby to maintain it in substantial parallelism with  
 65 the roller, and spring-actuated friction shoes or tips carried by the curtain and adapted to contact with the window-frame, whereby to hold the shade at any desired elevation against the pull of the shade-roller spring,  
 70 substantially as described.

3. A curtain-fixture comprising in combination with a curtain and its spring-actuated roller and tube or pocket, of flexible guides extending through said tube or pocket and  
 75 toward diagonally opposite corners of the window, and spring-actuated friction-shoes also carried by the curtain and adapted to impinge the window-frame, substantially as described. 80

4. A curtain-fixture comprising in combination a spring-actuated curtain provided with a tube or pocket in its lower margin, flexible guides passing through said tube or pocket and extending from the ends thereof  
 85 in opposite directions and friction-shoes slidably mounted within the ends of the tube, and springs adapted to thrust said shoes outwardly and into contact with the window-frame, said shoes having apertures through  
 90 which the flexible guides issue, substantially as described.

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