

No. 765,610.

PATENTED JULY 19, 1904.

E. BOLLHOEFER.
DISPLAY RACK HOLDER.
APPLICATION FILED JUNE 1, 1903.

NO MODEL.

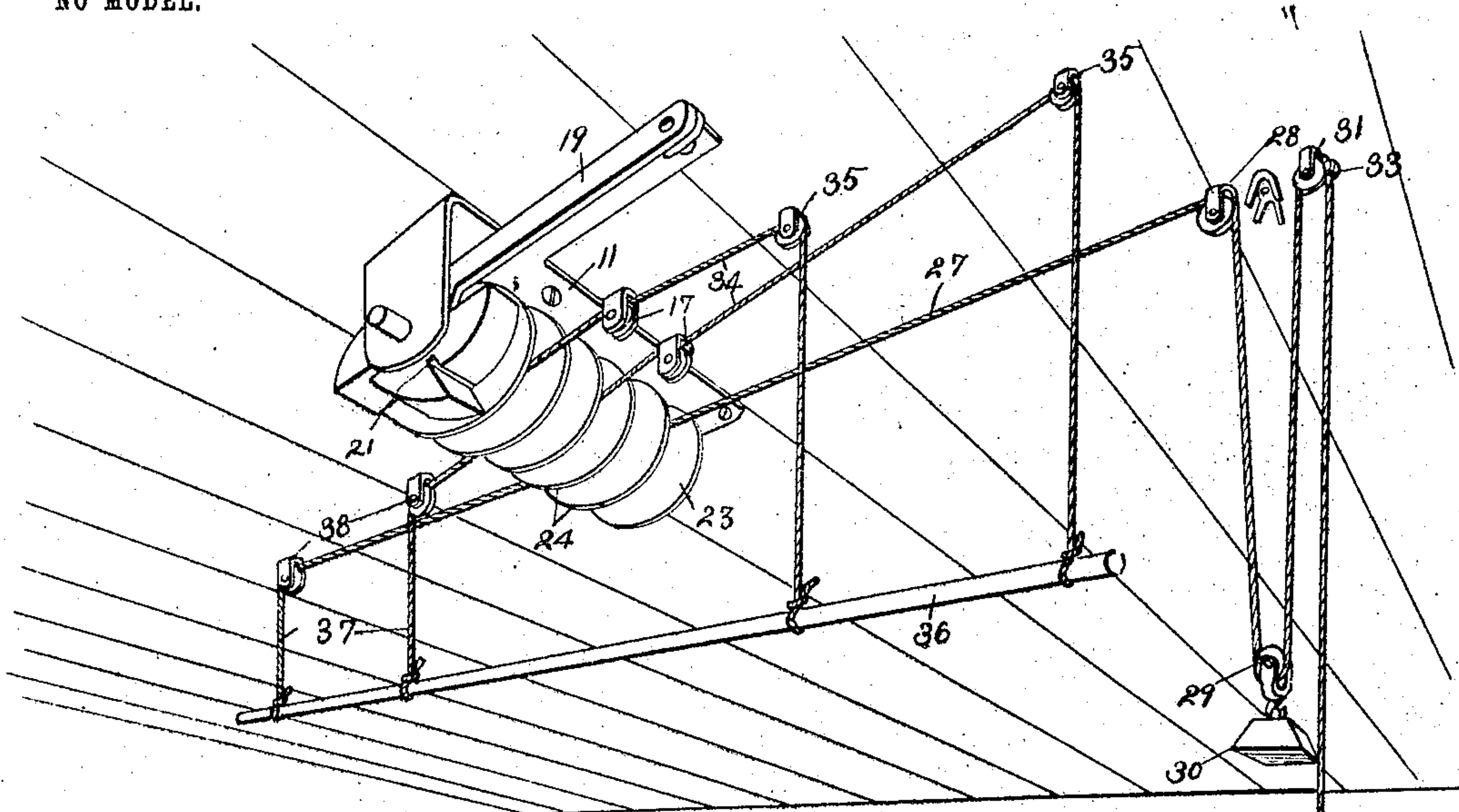


Fig. 1.

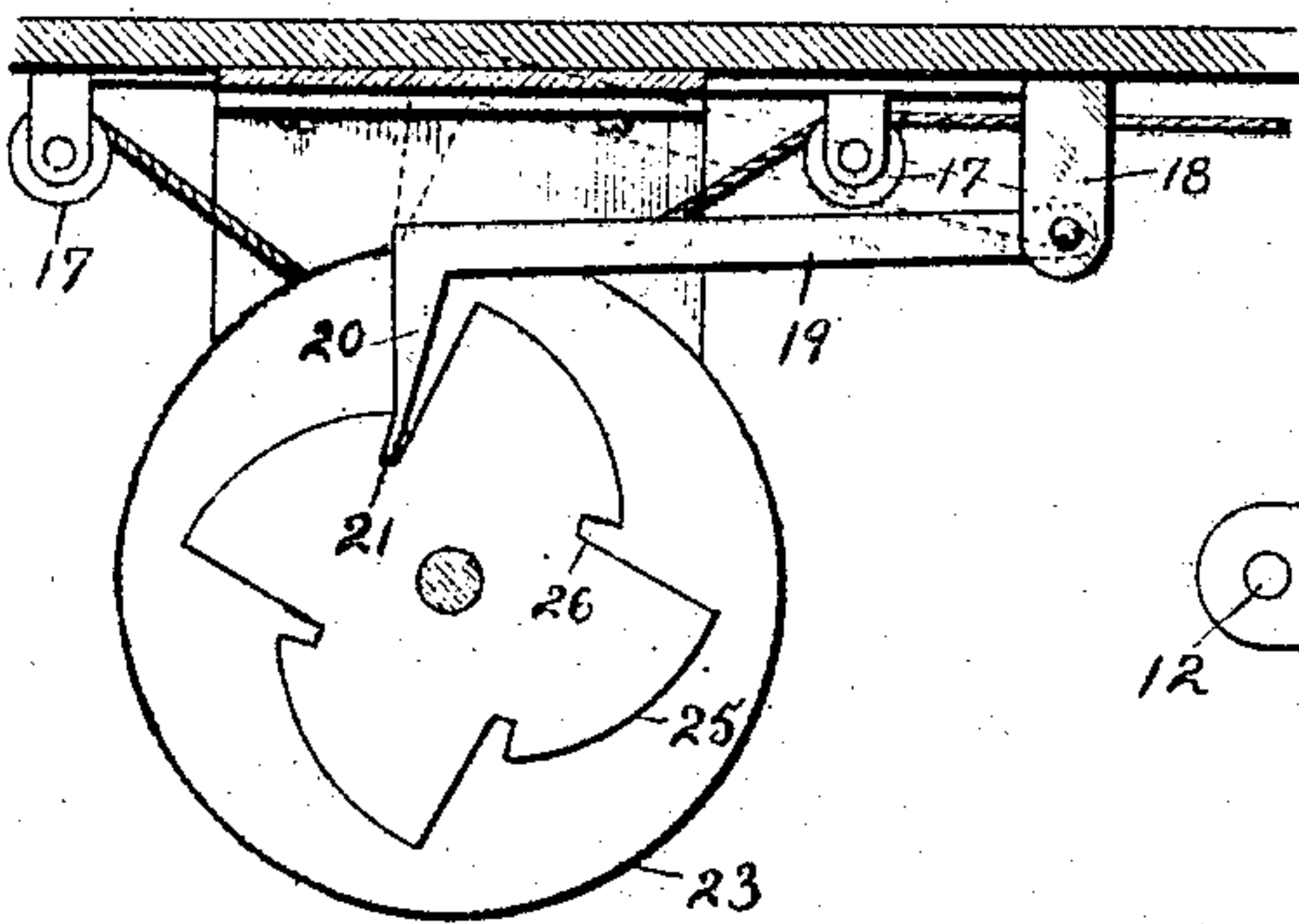


Fig. 2.

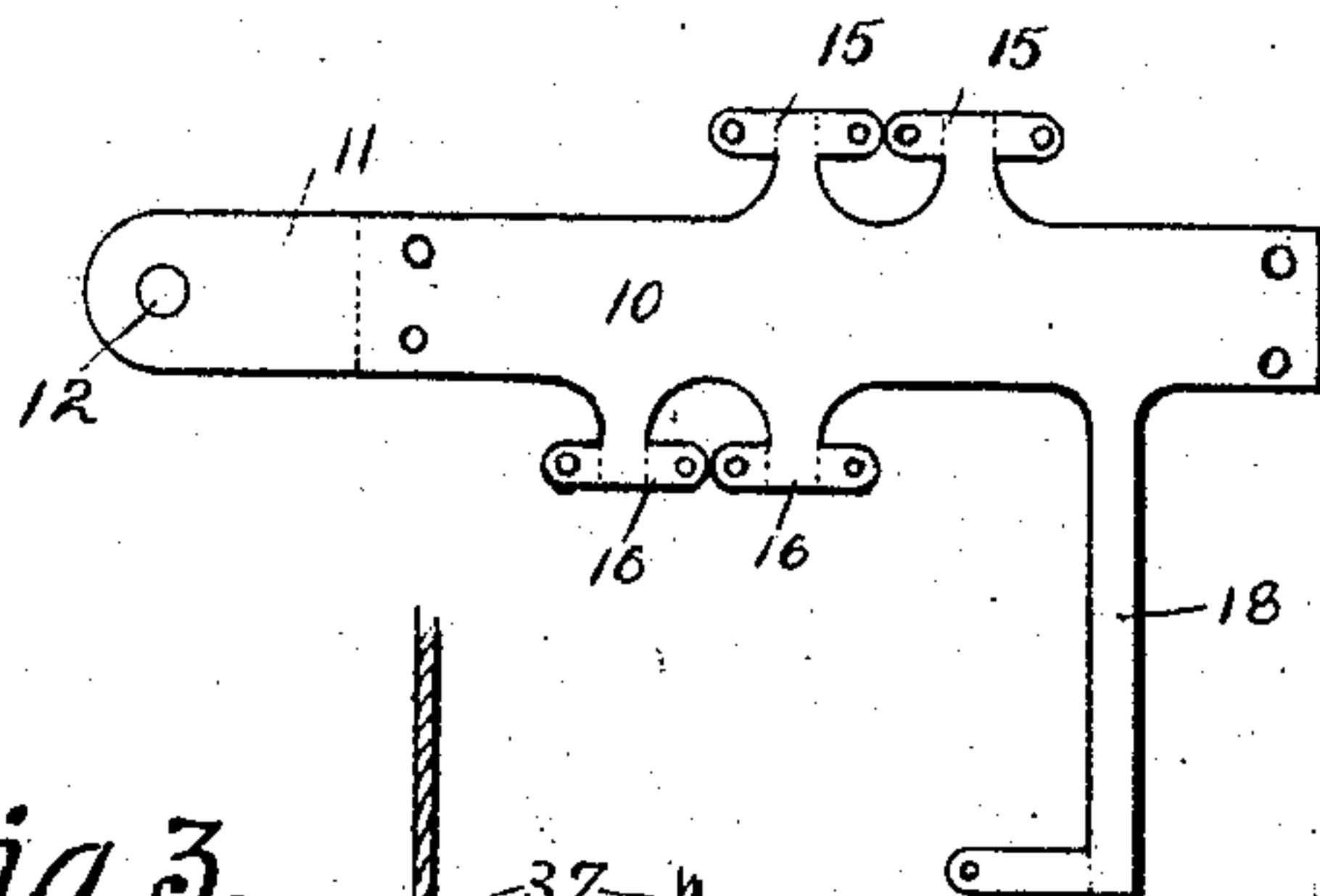


Fig. 3.

Fig. 4.

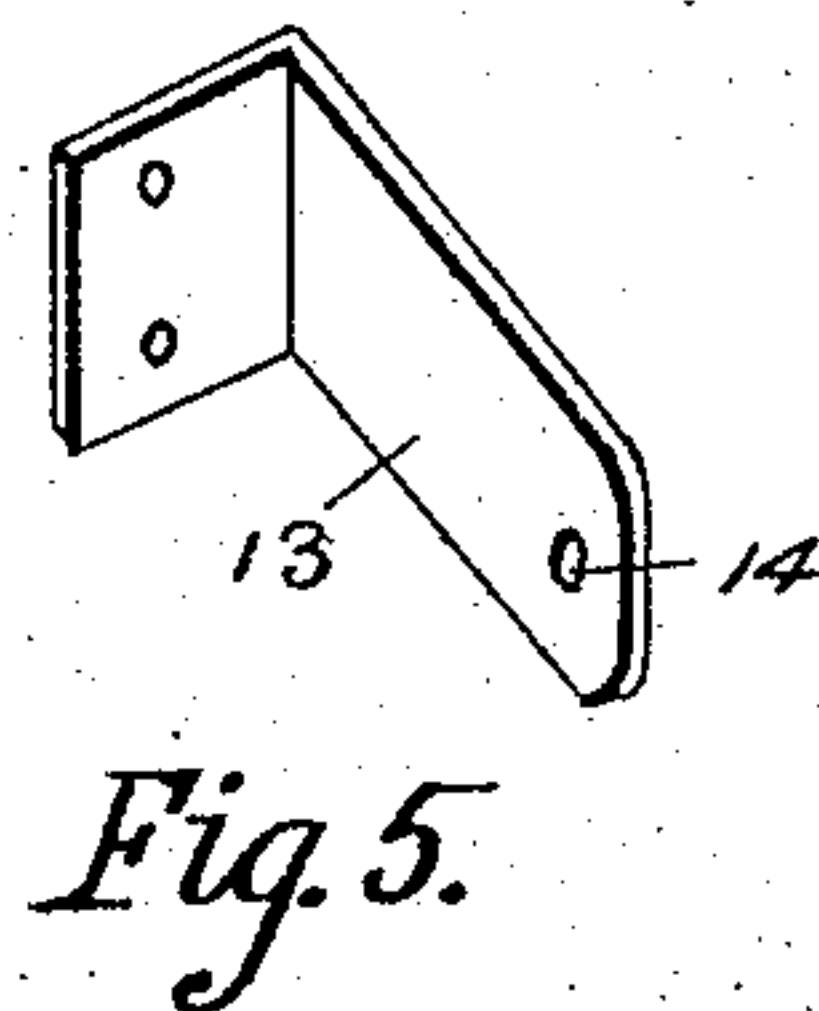
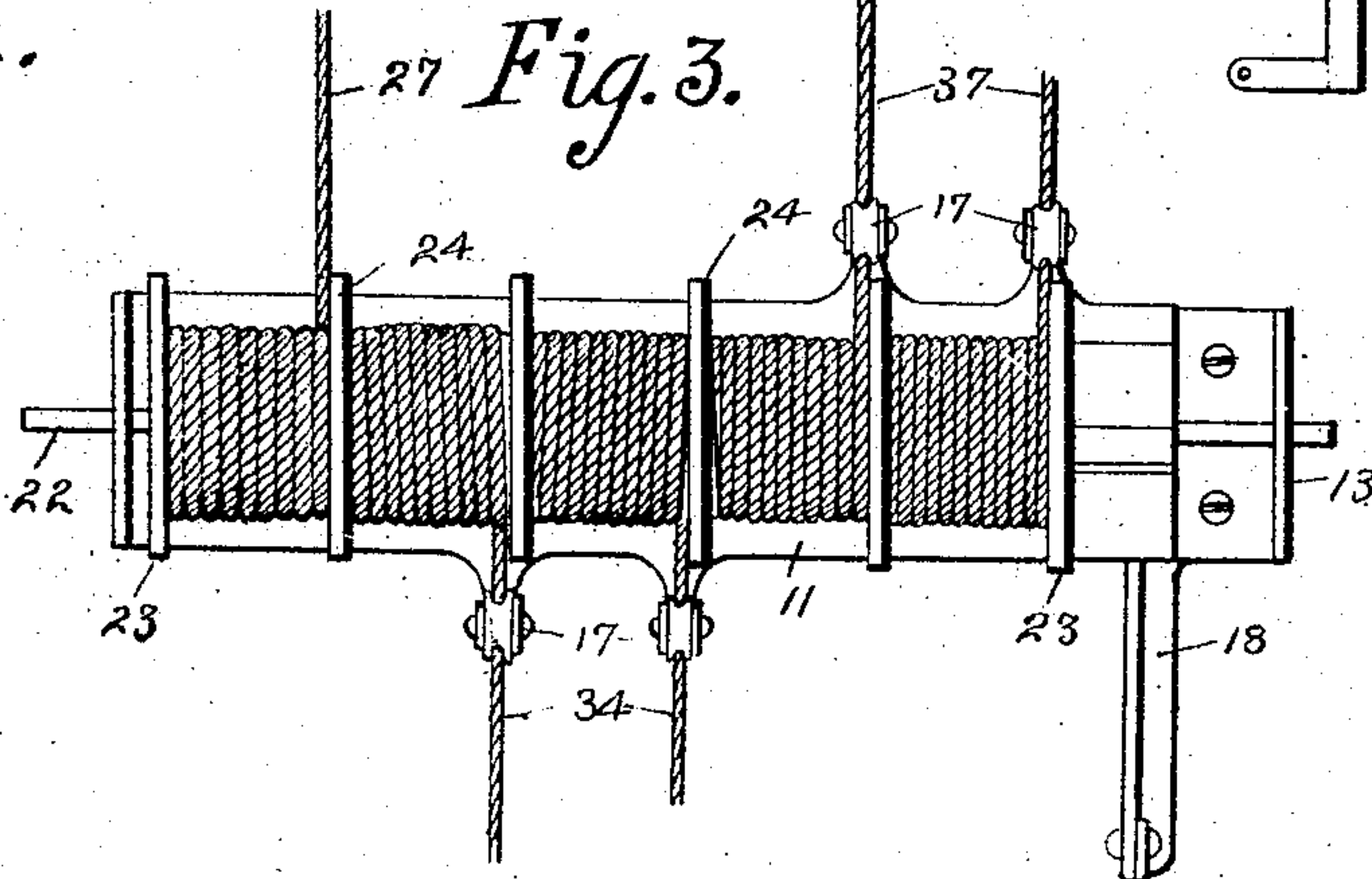


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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DISPLAY-RACK HOLDER.

SPECIFICATION forming part of Letters Patent No. 765,610, dated July 19, 1904.

Application filed June 1, 1903. Serial No. 159,429. (No model.)

To all whom it may concern:

Be it known that I, EDDIE BOLLHOEFER, a citizen of the United States, residing at Colfax, in the county of Jasper and State of Iowa, have invented certain new and useful Improvements in Display-Rack Holders, of which the following is a specification.

The objects of my invention are to provide a device of simple, durable, and inexpensive construction to be attached to an elevated support and provided with a number of ropes or cords designed to support a display rack or rod to receive articles intended to be displayed, and, further, to provide means by which said rack or rod may be quickly and easily elevated by pulling upon a rope or cord and supported in any position in which it may be placed, and, further, to provide means whereby a pull upon the same rope or cord will release the rack or rod, so that it may descend by gravity and be stopped and held automatically at any point.

A further object is to provide a device of this class in which the various cords or ropes may be wound up in a uniform manner, so as to avoid danger of their becoming entangled or unevenly wound.

A further object is to provide means by which the cord or rope for raising and lowering the rack or rod will be automatically supported at a certain height when released, so that the operator may easily and quickly grasp the handle on the end thereof.

My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a perspective view of the complete device attached to an elevated support as in practical use. Fig. 2 shows an end elevation of the drum upon which the ropes or cords are wound and connected parts. Fig. 3 shows an inverted plan view of same. Fig. 4 shows a plan view of the blank from which the supporting-frame of the drum is formed, and Fig. 5 shows in perspective the detachable end of said frame or support.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the body portion of the frame of my device. It is intended that the frame shall be attached to the under surfaces of ceiling-joists or other elevated supports, and for this reason I have made the body portion of the frame long and narrow, adapting the frame to be attached to the under surface of a joist. At one end of the frame 10 is an integral lug 11, having an opening 12 therein for purposes hereinafter made clear. At the other end of the body portion 10 is a detachable lug 13, having an opening 14 therein.

Formed on one side of the body portion are two brackets 15, and on the other side are two similar brackets 16. Each of these brackets is designed to support a direction-pulley 17.

The numeral 18 indicates an arm integral with the body portion 10, said arm having a detent 19 pivoted thereto, the outer end of the detent having an inclined surface 20 and a flattened lower end 21 for purposes hereinafter made clear.

The reference-numeral 22 indicates a shaft having formed on or fixed thereto a drum 23. The body portion of this drum is provided with a number of partitions 24, dividing the drum into a number of different compartments, and formed on or fixed to the same shaft is a ratchet-wheel of peculiar design arranged to be engaged by the detent 19. This ratchet-wheel is provided with a number of cam-faces 25 on its periphery, each of said faces being of segmental form eccentrically arranged, and between each pair of said cam-faces 25 is a notch 26. These parts are arranged substantially as shown in the accompanying drawings and operate as follows: Assuming that the detent and ratchet-wheel are in the position shown in Fig. 2 of the drawings, it is obvious that the upper portion of the ratchet-wheel is locked against rotation toward the right because the flattened end of the detent is in one of the notches 26. However, if the upper end of the ratchet-wheel is moved toward the left then one of the shoulders on the ratchet will engage the inclined surface 20 of the detent and elevate it out of the notch 26. This is made possible by hav-

ing the part 20 inclined away from a line drawn from the top of the part 20 toward the center of the ratchet-wheel, and also by having the shoulders on the ratchet-wheel inclined in the same way to such an extent that when the shoulder on the ratchet-wheel presses against the inclined face of the part 29 said part will be elevated out of the notch 26. Then if the upper end of the ratchet-wheel is rotated toward the right with considerable speed the flat end of the detent will not fall into the same notch 26, but will strike upon one of the segmental eccentric faces 25, and as the ratchet-wheel rotates each one of these faces will tend to throw the detent upwardly, so that it may not enter any of the notches 26. However, if the speed of rotation of the ratchet-wheel is decreased to a sufficient extent then the flat end of the detent will enter one of the notches 26 and stop further rotation of the ratchet-wheel.

From the foregoing description it is obvious that the drum may at any time be freely rotated in one direction, but locked against movement in the other direction, and can only move in this latter direction when going at a certain speed, and it will again become locked by the detent when the speed is sufficiently decreased.

I have provided for rotating the drum in one direction as follows: The numeral 27 indicates a cord or rope wound upon one end of the drum 23 between said end and the adjacent one of the partitions 24. This cord or rope 27 is passed over a direction-pulley 28, then under a pulley 29, which supports a weight 30, then over a direction-pulley 31, and the end of said cord or rope is provided with a handle 32. A stop 33 is attached to the said rope to limit the upward movement of the end portion thereof when the said stop strikes the pulley 31. In use with this portion of the device it is obvious that the handle 32 is always at the same elevation when it is released, because the weight 30 will always draw the end of the rope upwardly until the stop 33 strikes the pulley 31. When it is desired to rotate the drum, the operator pulls downwardly upon the handle 32, and the first effect of this pull will be simply to elevate the weight 30. A further pull upon the handle 32 will cause the drum to rotate as the cord or rope 27 is being unwound therefrom.

The means for supporting a display rack or rope comprises two cords or ropes 34, wound upon the drum 23 between separate ones of the partitions 24. These cords or ropes 34 are passed over the direction-pulleys 17 at one side of the drum and also over direction-pulleys 35, attached to an elevated support some distance from the drum, and the lower ends of said cords or ropes are attached to and support the display rack or rod 36. The other end of the display rack or rod is sup-

ported by the two cords or ropes 37, wound upon the drum 23 in the remaining spaces between the partitions 24, passed over the pulleys 38, attached to an elevated support, the other ends of said cords or ropes being attached to the other end of the display rack or rod 36.

I provide for winding the various cords or ropes upon the drum in an even and uniform manner by mounting the shaft 22 in its supports in such manner that the said shaft may freely move longitudinally to a limited extent, and when the shaft of the drum is rotated in a direction to unwind the cords or ropes the shaft and drum move longitudinally in the shaft-supporting brackets, because the direction-pulleys 17 are placed quite close to the drums, and then when the drum is rotated in a direction to wind up the cords or ropes the shaft will be moved longitudinally in an opposite direction, so that at all times the cords or ropes are wound uniformly and regularly upon the drum.

In practical use I first attach my improvement to the ceiling or some other elevated support and connect the cords or ropes therewith in the manner shown, the handle 32 being so arranged as to be readily accessible and the display rack or rod 36 being attached to the cords or ropes 34 and 37. My improvement is of especial value in displaying dry goods, and the articles to be displayed are placed upon and draped over the rack or rod 36. The work of draping the said rack and of displaying the goods in an artistic manner thereon may be done when the rack or rod is in a lowered position, and obviously when in this position the operator may easily, readily, and quickly display the goods thereon to the best advantage. When the goods have been secured to the rack or rod, the operator pulls upon the rope 27, and when the said rope is pulled the shoulders of the ratchet-wheel engage the inclined edge of the detent and keep the detent out of the notches 26, so that the detent does not in any way retard this movement of elevating the display rack or rod with the goods thereon. This rack or rod is elevated to any desirable height, and this is another material advantage of my device, because with other methods of displaying goods the goods cannot be readily and quickly changed from one elevation to another until the operator determines by experiment which is the most desirable height. As soon as the operator releases the rope 27 the weight 30 elevates the end of the rope until the stop 33 engages the pulley 31, so that said rope is drawn up to a position where it will not be conspicuous or objectionable. If at any time it is desired to lower the display rack or rod, the operator does this by simply pulling upon the handle 32 until the detent 19 is elevated out of the notch in which it rests. Then by releasing the said handle 32 the weight of the

rack or rod will cause the drum to rotate rapidly, and the cam-faces 25 of the ratchet-wheel will prevent the detent from entering any of said notches until when the rack or rod is sufficiently lowered the operator holds the rope 27, thus slowing up the movements of the ratchet-wheel and permitting the detent to drop into the adjacent one of the notches 26, whereupon the rack or rod is locked in position.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

1. In a device of the class described, a drum rotatably supported, one or more cords wound upon the drum in the same direction and projected laterally from the drum, one or more cords wound upon the drum in an opposite direction and projecting laterally from the drum, a display-rack supported by said cords, an operating-cord wound upon said drum, and means controlled by said operating-cord for locking and releasing the drum.

2. In a device of the class described, a drum rotatably supported, one or more cords wound upon the drum in the same direction and projected laterally from the drum, one or more cords wound upon the drum in an opposite direction and projecting laterally from the drum, a display-rack supported by said cords, an operating-cord wound upon said drum, a ratchet device fixed to the drum and having segmental eccentric cam-faces with notches between them, and a detent engaging the said ratchet device.

3. In a device of the class described, a drum rotatably supported, one or more cords wound upon the drum in one direction and projecting laterally from the drum, one or more cords wound upon the drum and extended in an opposite direction, pulleys supported at the sides of the drum and having said cords passed over them, a display-rack supported by said cords, an operating-cord wound upon said drum and means controlled by the operating-cord for locking and releasing the drum.

4. In a device of the class described, the combination of a drum, rotatably and slidably supported, a number of cords or ropes wound upon the drum in the same direction,

guides adjacent to the drum and having said cords or ropes passed through them, a display rack or rod attached to said cords or ropes, and means for turning the drum in a direction for winding up the cords or ropes.

5. In a device of the class described, the combination of a drum rotatably and slidably supported, a number of partitions on said drum dividing it into separate compartments, a number of cords or ropes fixed to and wound upon said drum, all in the same direction, a number of guides adjacent to the drum and having said cords or ropes passed through them, and means for rotating the drum in a direction required for winding up the cords or ropes, for the purposes stated.

6. In a device of the class described, the combination of a frame, a perforated lug at one end of the frame and a detachable perforated lug at the other end thereof, a shaft rotatably and slidably mounted in said lugs, a drum formed on or fixed to the shaft, a ratchet-wheel fixed to the shaft and having a number of segmental eccentric cam-faces with notches between them on its periphery, a detent having an inclined face and a flat end to engage the ratchet-wheel, a number of partitions on said drum dividing it into separate compartments, a number of cords or ropes fixed to and wound upon the drum, each in a different compartment, a pulley for each of said cords or ropes connected with the frame, a second pulley for each of said cords or ropes some distance from the frame, a display rack or rod supported by the ends of said cords or ropes, and a cord or rope fixed to and wound upon the drum in one of its compartments in a direction opposite from the other cords or ropes, two pulleys for supporting said cord or rope, a weighted pulley mounted upon the cord or rope between said pulleys, and a stop on the cord or rope to engage the outer one of the two pulleys, all arranged and combined substantially in the manner set forth and for the purposes stated.

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Witnesses:

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