

No. 719,852.

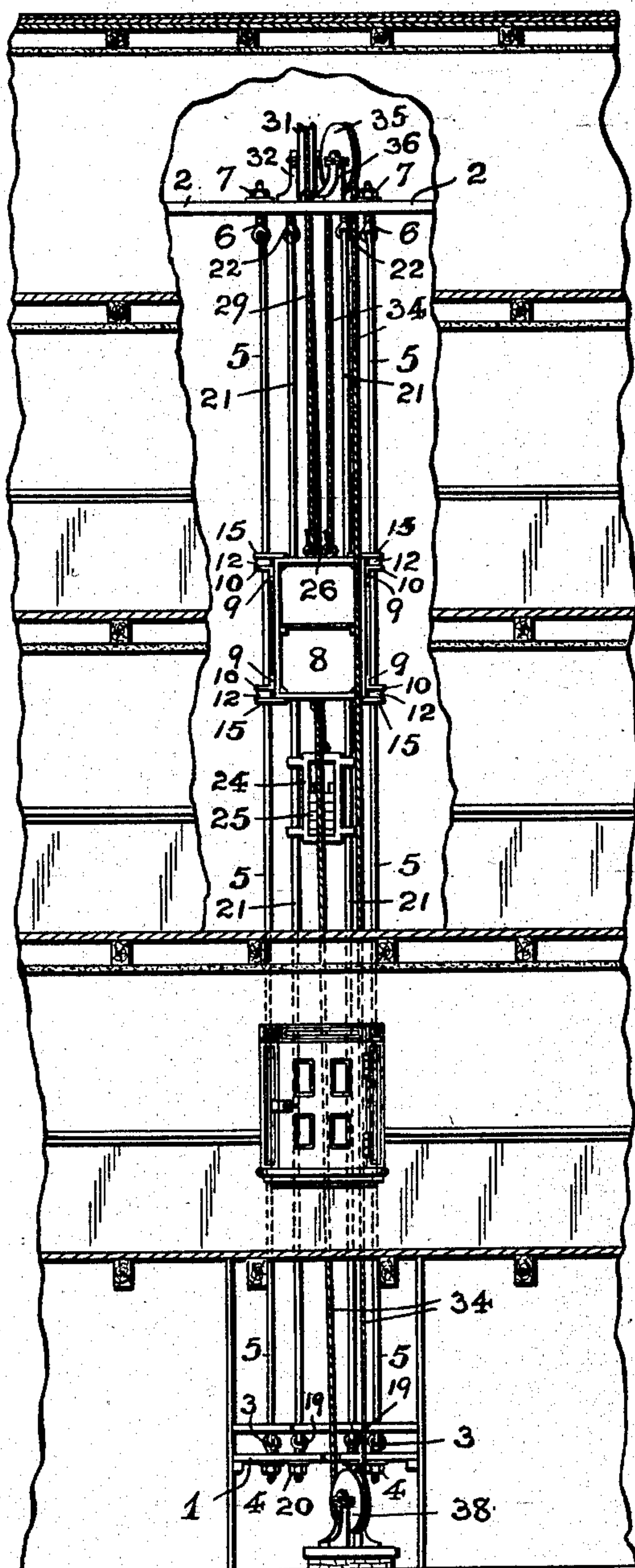
PATENTED FEB. 3, 1903.

J. E. ORTNER.  
DUMB WAITER.

APPLICATION FILED MAY 24, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

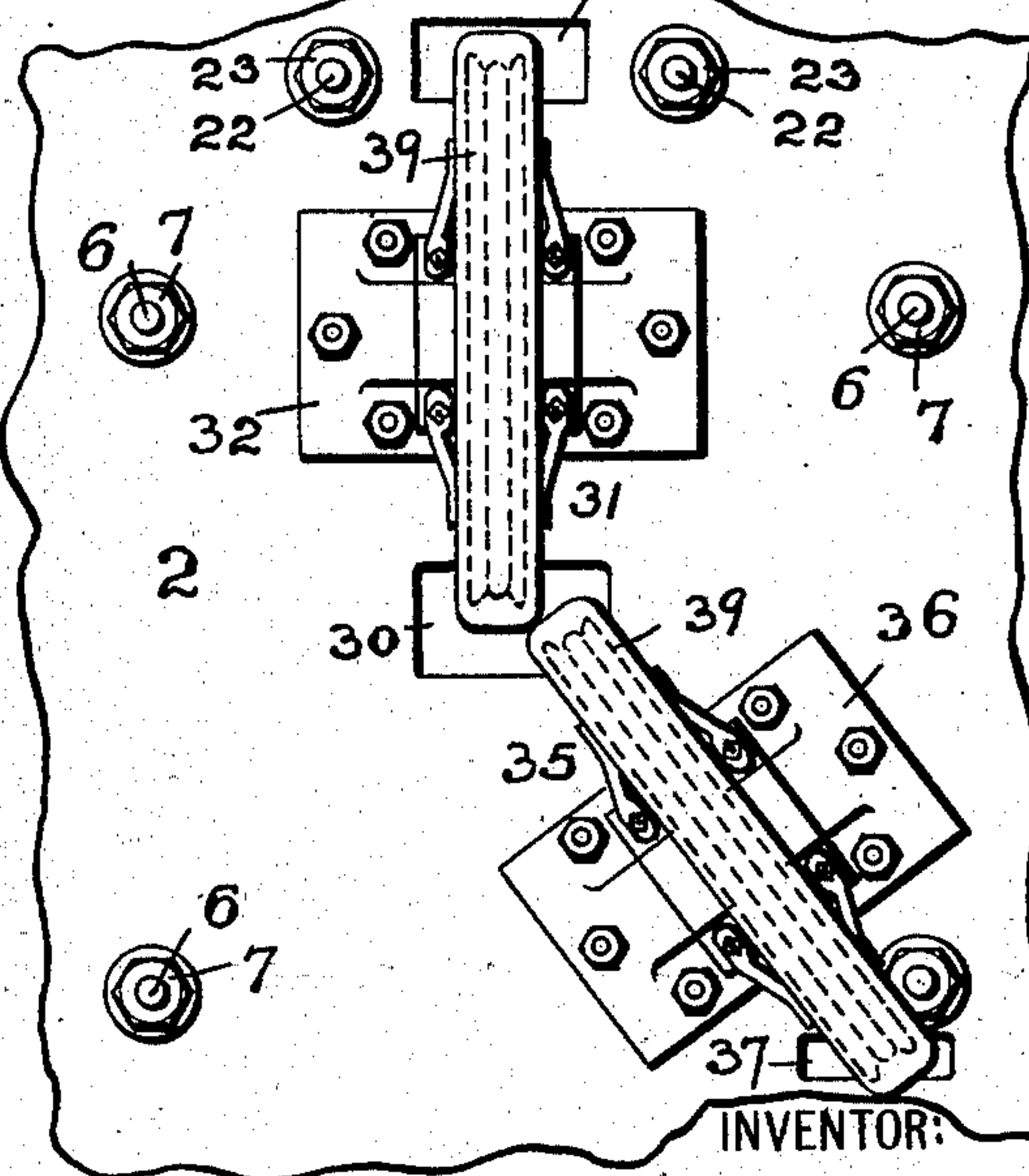
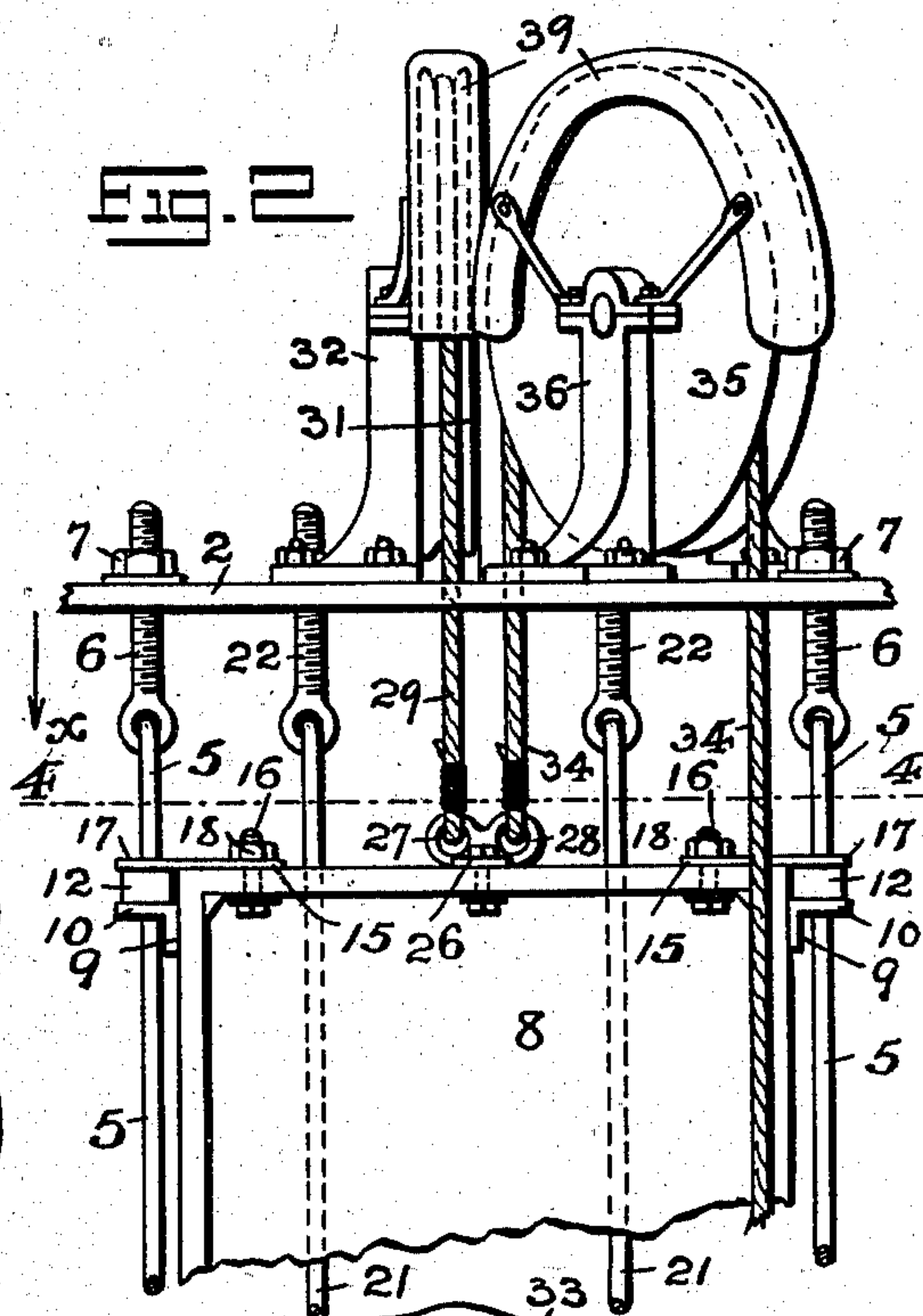


**WITNESSES:**

Fig. 1

Geo. S. Richards

John. M. Allen



**INVENTOR:**

Fig. 2

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BY

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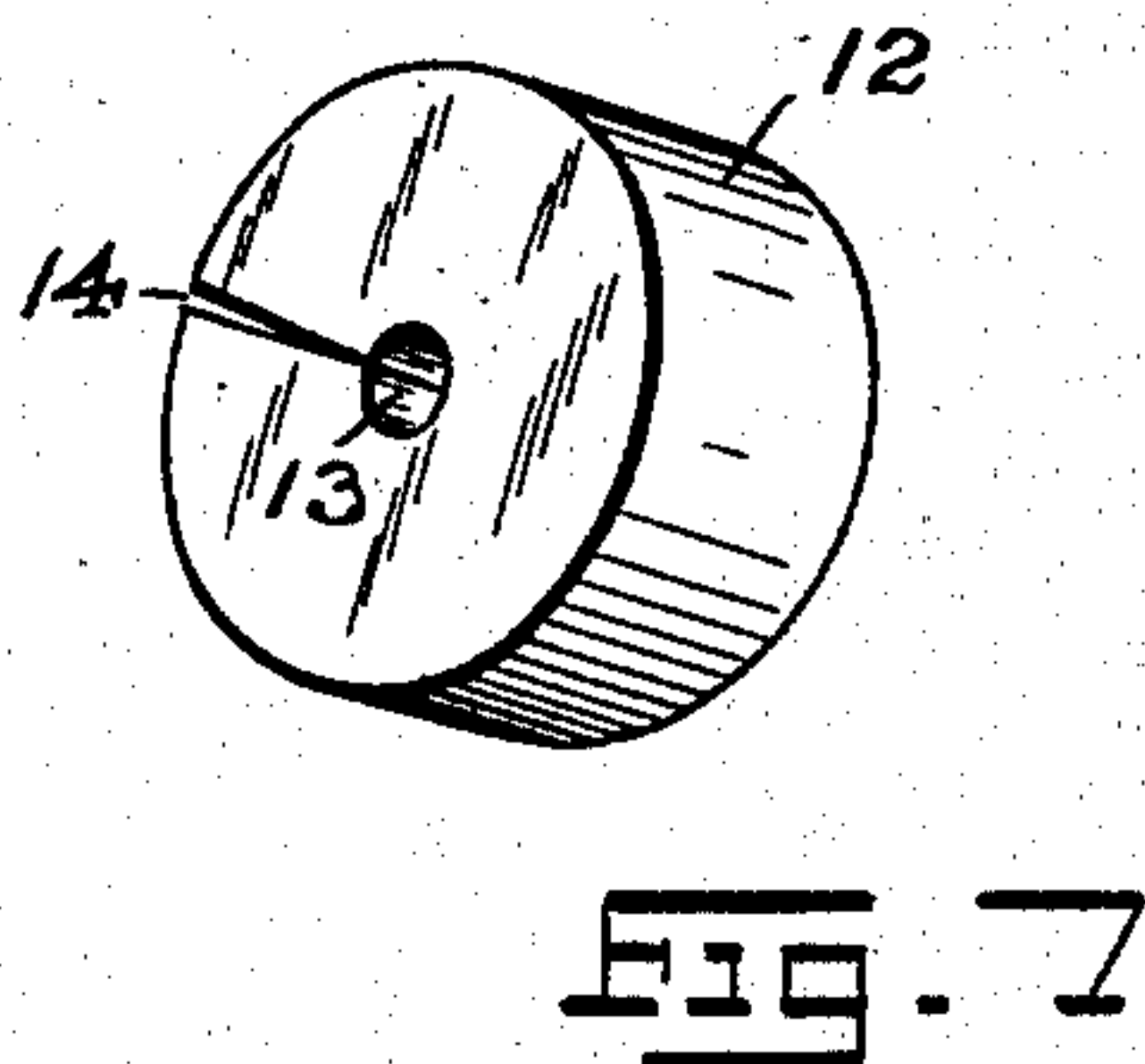
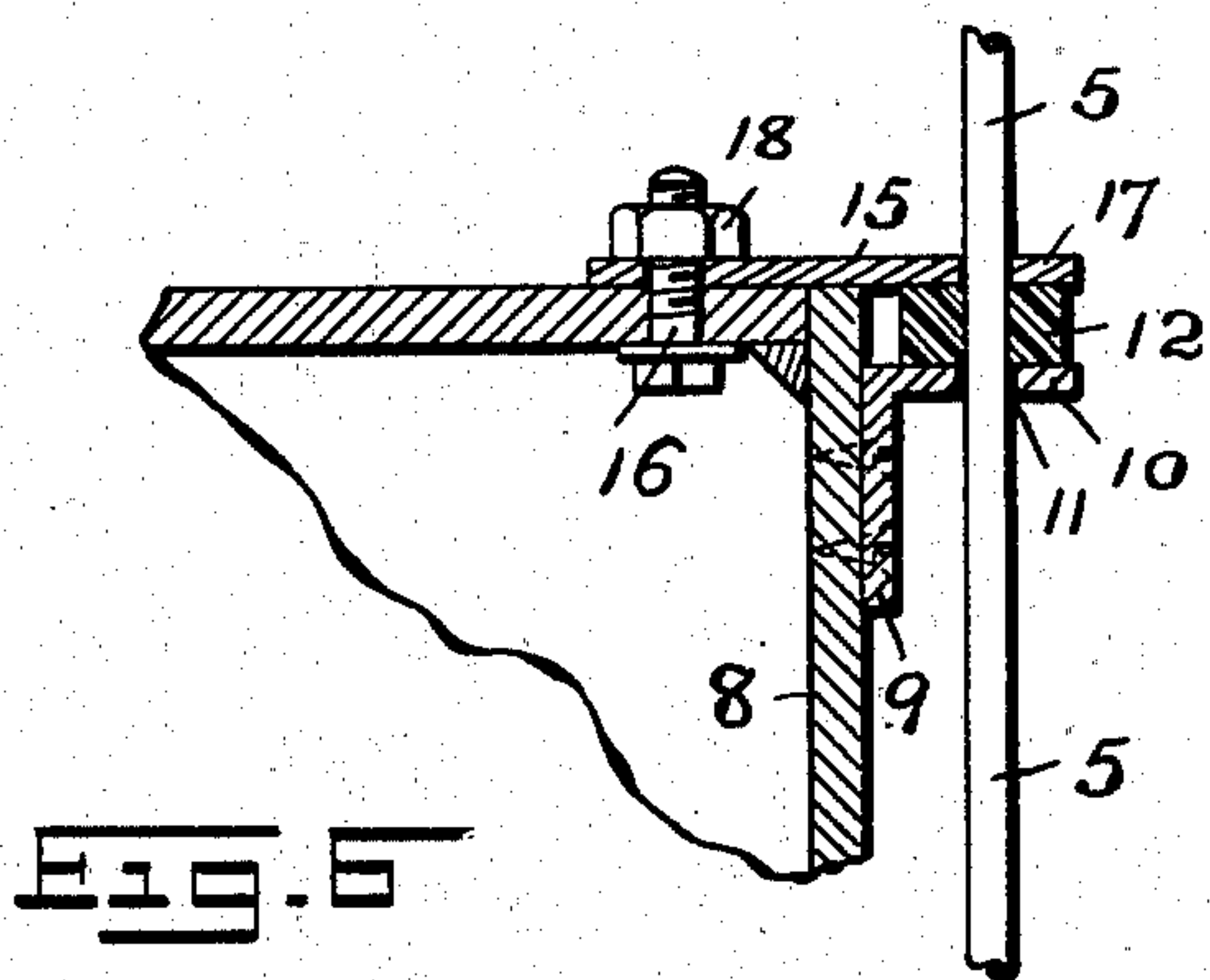
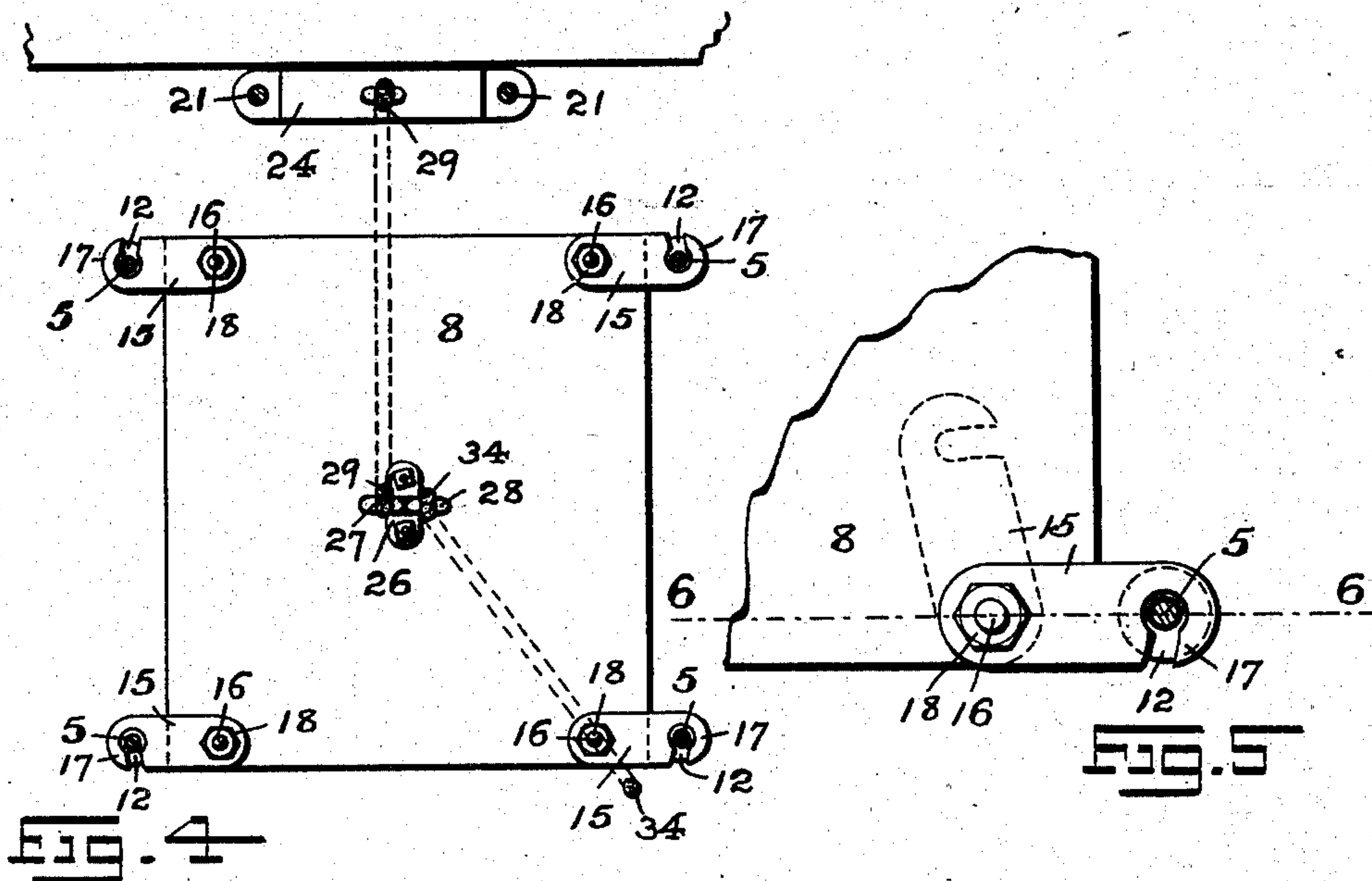
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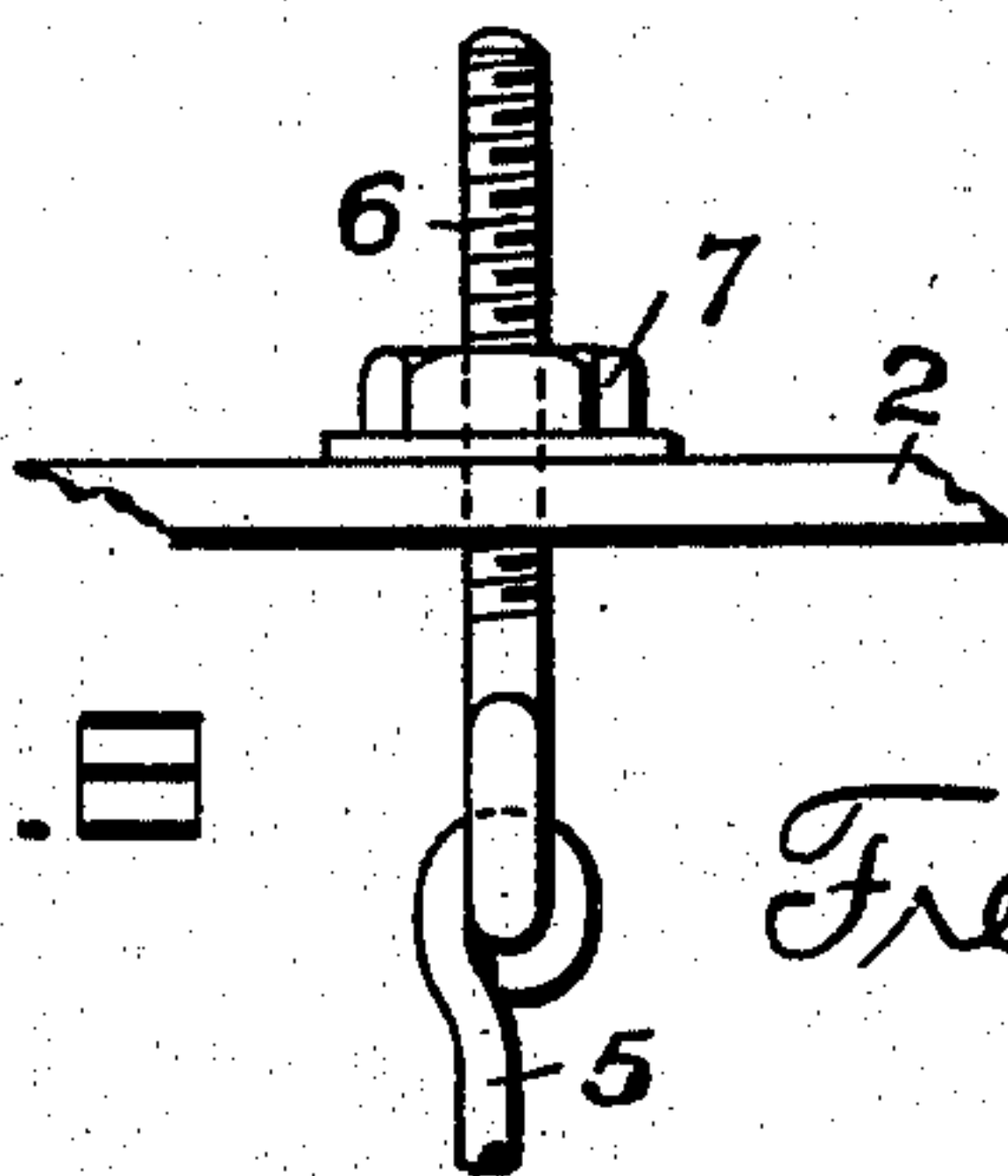
2 SHEETS—SHEET 2.



WITNESSES:

*G. S. Richards,*  
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FIG. 8



INVENTOR:

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# UNITED STATES PATENT OFFICE.

JOHN E. ORTNER, OF NEWARK, NEW JERSEY.

## DUMB-WAITER.

SPECIFICATION forming part of Letters Patent No. 719,852, dated February 3, 1903.

Application filed May 24, 1902. Serial No. 108,816. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. ORTNER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Dumb-Waiters or Hoists; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

The present invention has reference to improvements in dumb-waiters or hoists for buildings; and the invention has for its primary object to simplify the general arrangement and combination of devices and their parts with a view of providing an easily-operated and noiselessly-acting dumb-waiter or hoist which can be cheaply manufactured and which can be readily put in operative use in buildings of the various kinds.

My invention therefore consists in the novel construction of dumb-waiter or hoist herein-after set forth; and, furthermore, the invention consists in the various novel arrangements and combinations of devices, as well as in the details of the construction of the various parts of said devices, all of which will be more particularly described in the following specification and then finally pointed out in the clauses of the claim.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a diagrammatic sectional representation of a portion of a building and a front elevation of a dumb-waiter or hoist in its operatively-suspended position in the building, illustrating one embodiment of my invention. Fig. 2 is a front view of the upper hoisting mechanism and a portion of the car; and Fig. 3 is a top or plan view of the hoisting mechanism and a portion of a shelf or support upon which the said mechanism is arranged and to which the various guide wires or cables are connected and between which the car and a counterbalance or weight move up and down, both the said views being made on an enlarged scale. Fig. 4 is a horizontal section taken on line 4 4 in said Fig.

2 looking in the direction of the arrow X. Fig. 5 is a plan view of a portion of the car and one of the corner-guides employed with the car, and Fig. 6 is a vertical section taken on line 6 6 in said Fig. 5. Fig. 7 is a perspective view of one of the friction devices, of rubber or other suitable flexible material, employed with the corner-guides of the car to provide a noiseless guiding device and to prevent the "running away" of the car. Fig. 8 is a detail view of one of the tension devices, to which the ends of the guide wires or cables are attached.

Similar characters of reference are employed in all of the said above-described views to indicate corresponding parts.

In the said drawings the reference character 1 indicates a suitably-arranged lower shelf or support, and 2 is an upper shelf or support, both the said shelves or supports being secured in any desired manner and being arranged in any desired and suitable positions in a building. Suitably secured to the said lower shelf or support 1 are a set of four eyebolts 3, which are held in place by means of their nuts 4, and connected with the eyes of the said bolts 3 in any desired manner are the lower end portions of four guide wires or cables 5. These wires or cables 5 lead in an upward direction toward the upper shelf or support 2 and have their upper free end portions suitably attached to and connected with the eyes of another set of four eyebolts 6, which are connected with and are secured to the upper shelf or support 2 by means of their nuts 7. By screwing up these nuts 7 upon the screw-threaded shanks of the eyebolts 6 the wires or cables 5 can be pulled perfectly taut and the slack taken up at any time, whereby said wires or cables are made as rigid as solid rods or bars. Slidably arranged between the said four guide wires or cables 5 is the dumb-waiter car 8, the same being provided at its respective corners at the top and bottom of the car with suitably-constructed guides and retaining devices, substantially as illustrated in the various figures of the drawings. These several guides and retaining devices are preferably made as represented in Figs. 4, 5, and 6 of the drawings, each guide and retaining device comprising an angle iron or plate 9, secured to



the side of the car and having a perforated retaining plate or lug 10 extending therefrom at right angles, or approximately so, through the perforation 11 of which the cable or wire 5 has been passed before its upper end portion has been attached to and connected with the eyebolts 6 of the upper shelf or support 2. Resting directly upon the upper surface of said plate or lug 10 is a friction device 12, preferably in the shape of a disk, provided with a central hole or perforation 13 and preferably made with a slit 14, extending from said hole or perforation 13 to the outer marginal edge of the said device 12, to enable the device to be slipped over the guide wire or cable 5 or to be removed therefrom when it is desired to replace a device 12 which has become worn by a new device 12. Each device is firmly held in its operative position upon the plate or lug 10 and in frictional sliding contact with the wire or cable 5 by means of a presser-plate 15, pivoted on a pin or bolt 16 at the top or bottom of the car 8 and having a slotted and hook-shaped end portion 17, which can be slid over the wire or cable 5 and over the flat surface of the device 12, as clearly illustrated in said Figs. 4, 5, and 6. To slide the said presser-plate 15 into the position indicated in dotted outline in Fig. 5 when it is intended to remove the device 12 and replace it by another device 12, a nut 18 on the said pin or bolt 16 is slightly loosened, which permits of the sliding movement of the presser bar or plate 15, and when its hook-shaped end portion is again slid back into its position over the replaced friction device 12 the said nut 18 is again tightened, whereby the device 12 is held in its clamped and operative position upon the wire or cable, so as to be in sliding engagement therewith, as will be clearly evident. Suitably secured near the rear or other edge of the said shelf or support 1 by means of their nuts 20 are two eyebolts 19, to each eye of which is attached in any suitable manner the lower end portions of a pair of guide wires or cables 21, the upper end portions of said wires or cables 21 being connected in any suitable manner with the eyes of a second pair of eyebolts 22 or other tension devices provided with the nuts 23, which hold said bolts 22 in place and by means of which the said wires or cables 21 can be kept perfectly taut and any slack in the wires or cables taken up at any time. Slidably arranged between the said guide wires or cables 21 is a counterbalance 24, preferably in the form of an open receiving-frame, as represented in Fig. 1 of the drawings, so as to be adapted to receive any number of removably-arranged weights or bars 25 to add to or take away from the weight of the counterbalance, according to the normal weight of the car 8 and the loads to be carried by said car.

The car 8 is provided upon its upper surface with a suitably-constructed fastening device, as 26, (see more particularly Figs. 1 and

2,) having a pair of eyes 27 and 28, to one of which, as eye 27, is secured the end of a rope or cable 29, which passes in an upward direction through an opening 30 in the upper shelf or support 2 and over a grooved wheel or sheave 31, rotatably supported on a bracket 32, which is suitably secured upon the said shelf 2. The other portion of the said rope or cable 29 passes in a downward direction through another opening 33 in said shelf 2 and is suitably attached to a fastening means on the frame of the counterbalance. The car 8 can be raised or lowered from one floor to the other by taking hold of the rope or cable 29 and pulling on the same in the desired direction, and owing to the arrangement of the flexible friction devices 12 the car can be easily raised or lowered without the least noise and without any danger of the car running away, due to the fact that the car moves too freely in the construction of dumb-waiters or hoists as now ordinarily made. As a matter of convenience in raising or lowering the car 8 a second rope or cable 34 may be provided, said rope or cable 34 being secured to the eye 28 of the fastening device 26 and passing in an upward direction through the opening 30 in the shelf or support 2 and over a grooved wheel or sheave 35, which is rotatably supported on a bracket 36 on said shelf 3. The said rope or cable 34 then passes from said wheel or sheave 35 in a downward direction through an opening 37 in the said shelf or support 2 and at one side of the front of the car 8, where said rope or cable can be easily grasped. The lower portion of the said rope or cable 34 is next arranged over a lower wheel or sheave 38, from which it extends in an upward direction and is suitably secured to the bottom of the car 8.

The manner of operating the dumb-waiter or hoist is clearly evident from the above description of my invention and from an inspection of the accompanying drawings.

To prevent any possibility of the wheels 31 and 35 slipping their cables and to prevent dirt and dust from settling upon the said cables in the upper portions of the building, each bracket 32 and 36 may be provided with a suitable guard, as 39, arranged over the respective wheels, substantially as illustrated in Figs. 2 and 3 of the drawings.

I am fully aware that some changes may be made in the various arrangements and combinations of the devices and their parts without departing from the scope of my present invention. Hence I do not limit my invention to the exact arrangements and combinations of the devices as herein described and as illustrated in the accompanying drawings, nor do I confine myself to the exact details of the construction of the said parts.

Having thus described my invention, what I claim is—

1. In a dumb-waiter or hoist a lower and an upper supporting means, a set of guide-wires stretched between the said upper and lower



supporting means, tension devices connected with the said supporting means and said wires for pulling said wires taut, a car slidably arranged between said wires, and guiding devices at the respective corners of said car arranged over said wires, each guiding device comprising a perforated and slitted friction-disk, and means on said car for retaining the friction-disks in position, substantially as and for the purposes set forth.

2. In a dumb-waiter or hoist, a lower and an upper supporting means, a set of guide-wires stretched between the said upper and lower supporting means, tension devices connected with the said supporting means and said wires for pulling said wires taut, a car slidably arranged between said wires, guiding devices at the respective corners of said car, each guiding device comprising a perforated plate 10 extending from the side of the car, and a perforated friction device on said plate in frictional contact with the wire, said friction-disk being provided with a slit for its removal from the guide-wire, and means on said car for retaining said disk in position upon the plate 10, substantially as and for the purposes set forth.

3. In a dumb-waiter or hoist, a lower and an upper supporting means, a set of guide-wires stretched between the said upper and lower supporting means, tension devices connected with the said supporting means and said wires for pulling said wires taut, a car slidably arranged between said wires, guiding devices at the respective corners of said car, each guiding device comprising a perforated plate 10 extending from the side of the car, a perforated friction device on said plate in frictional contact with the wire, and a pivoted presser-bar provided with a hook-shaped portion adapted to be arranged about the wires and over the friction device, substantially as and for the purposes set forth.

4. In a dumb-waiter, or hoist, a lower shelf 1 and an upper shelf 2, eyebolts 4 in said shelf 1, and eyebolts in said shelf 2, a set of guide-wires stretched between the said eyebolts 4 and 5, and nuts on said bolts for pulling said wires taut, a car slidably arranged between said wires, and guiding devices at the respective corners of said car arranged over said set of guide-wires, each guiding device comprising a perforated and slitted friction-disk, and means on said car for retaining the friction-disks in position, substantially as and for the purposes set forth.

5. In a dumb-waiter or hoist, a lower shelf 1 and an upper shelf 2, eyebolts 4 in said lower shelf 1, and eyebolts 5 in said upper shelf 2, a set of guide-wires stretched between the said upper and lower eyebolts, and nuts on said bolts for pulling said wires taut, a car

slidably arranged between said wires, guiding devices at the respective corners of said car, having perforated portions arranged over said set of guide-wires, each guiding device comprising a perforated plate 10 extending from the side of the car, and a perforated friction-disk on said plate, in frictional contact with the wire, said friction-disk being provided with a slit for its removal from the guide-wire, and means on said car for retaining said disk in position upon the plate 10, substantially as and for the purposes set forth.

6. In a dumb-waiter or hoist, a lower shelf 1 and an upper shelf 2, eyebolts 4 in said lower shelf 1, and eyebolts 5 in said upper shelf 2, a set of guide-wires stretched between the said upper and lower eyebolts, and nuts on said bolts for pulling said wires taut, a car slidably arranged between said wires, guiding devices at the respective corners of said car, having perforated portions arranged over said set of guide-wires, each guiding device comprising a perforated plate 10 extending from the side of the car, a perforated friction-disk on said plate, in frictional contact with the wire, and a presser-bar provided with a hook-shaped portion adapted to be arranged about the wire and over the friction device, substantially as and for the purposes set forth.

7. In a dumb-waiter or hoist, the combination, with a car, and a set of guide-wires, of guide devices connected with said car, each guide device comprising a supporting-plate attached to the body of the car, and a perforated and flexible friction device 12 on each supporting-plate, said friction devices being in frictional sliding contact with said guide-wires, substantially as and for the purposes set forth.

8. In a dumb-waiter or hoist, the combination with a car, and a set of guide-wires, of guide devices connected with said car, each guide device comprising a supporting-plate attached to the body of the car, a perforated and flexible friction device 12 on each supporting-plate, said friction devices being in frictional sliding contact with said guide-wires, and a presser-bar pivotally connected with the body of the car, each presser-bar having a hook-shaped portion adapted to be arranged about said guide-wires and upon the said flexible friction devices, substantially as and for the purpose set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 22d day of May, 1902.

JOHN E. ORTNER.

Witnesses:

FREDK. C. FRAENTZEL,  
GEO. D. RICHARDS.