

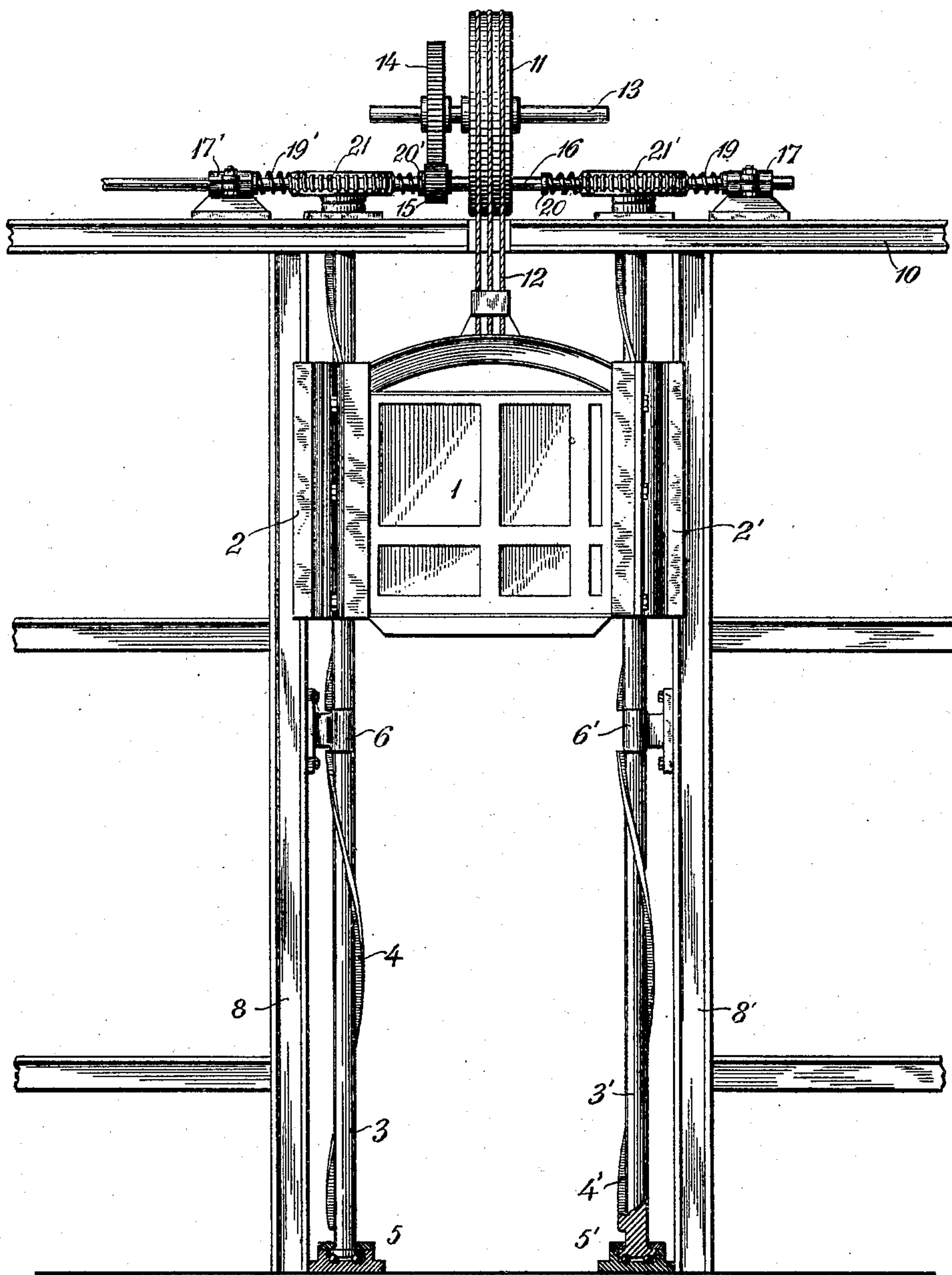
No. 795,875.

PATENTED AUG. 1, 1905.

F. W. A. WIESEBROCK.
ELEVATOR SAFETY DEVICE.
APPLICATION FILED OCT. 31, 1904.

2 SHEETS—SHEET 1.

Fig: 1



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2 SHEETS—SHEET 2.

Fig. 2.

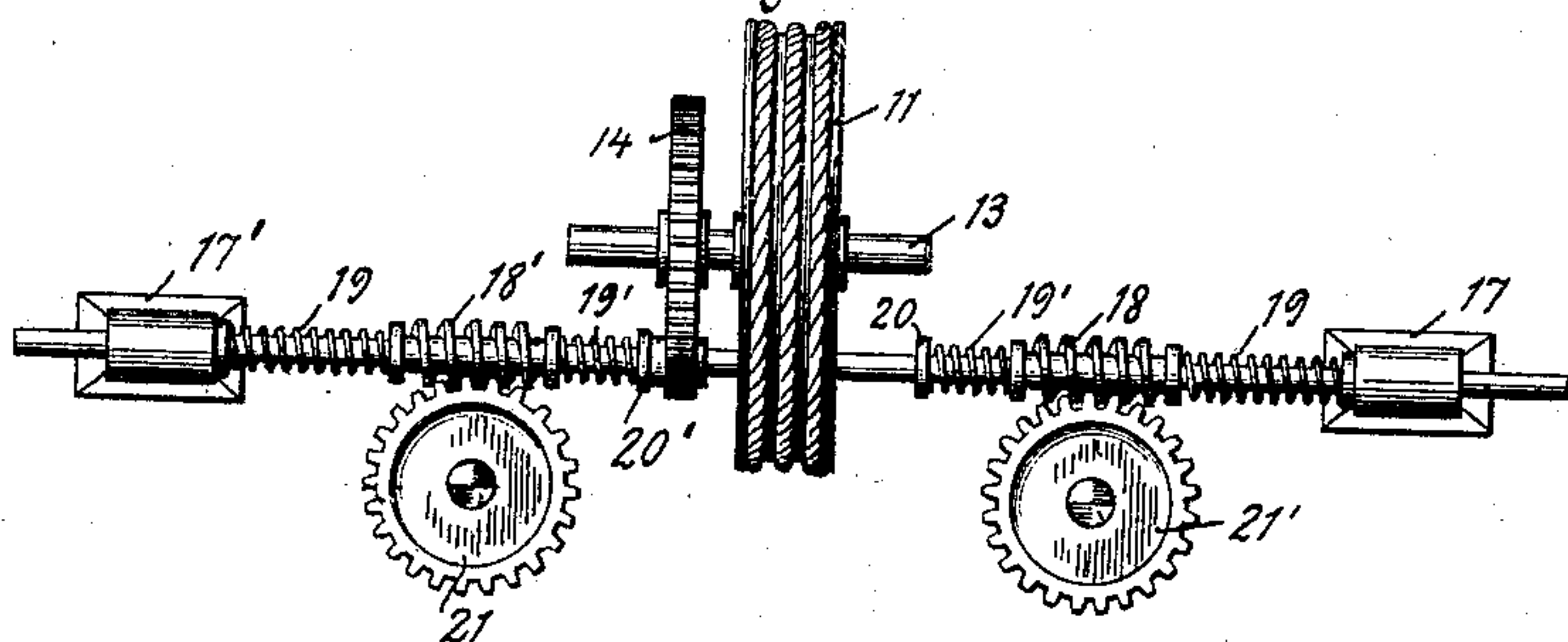


Fig. 3.

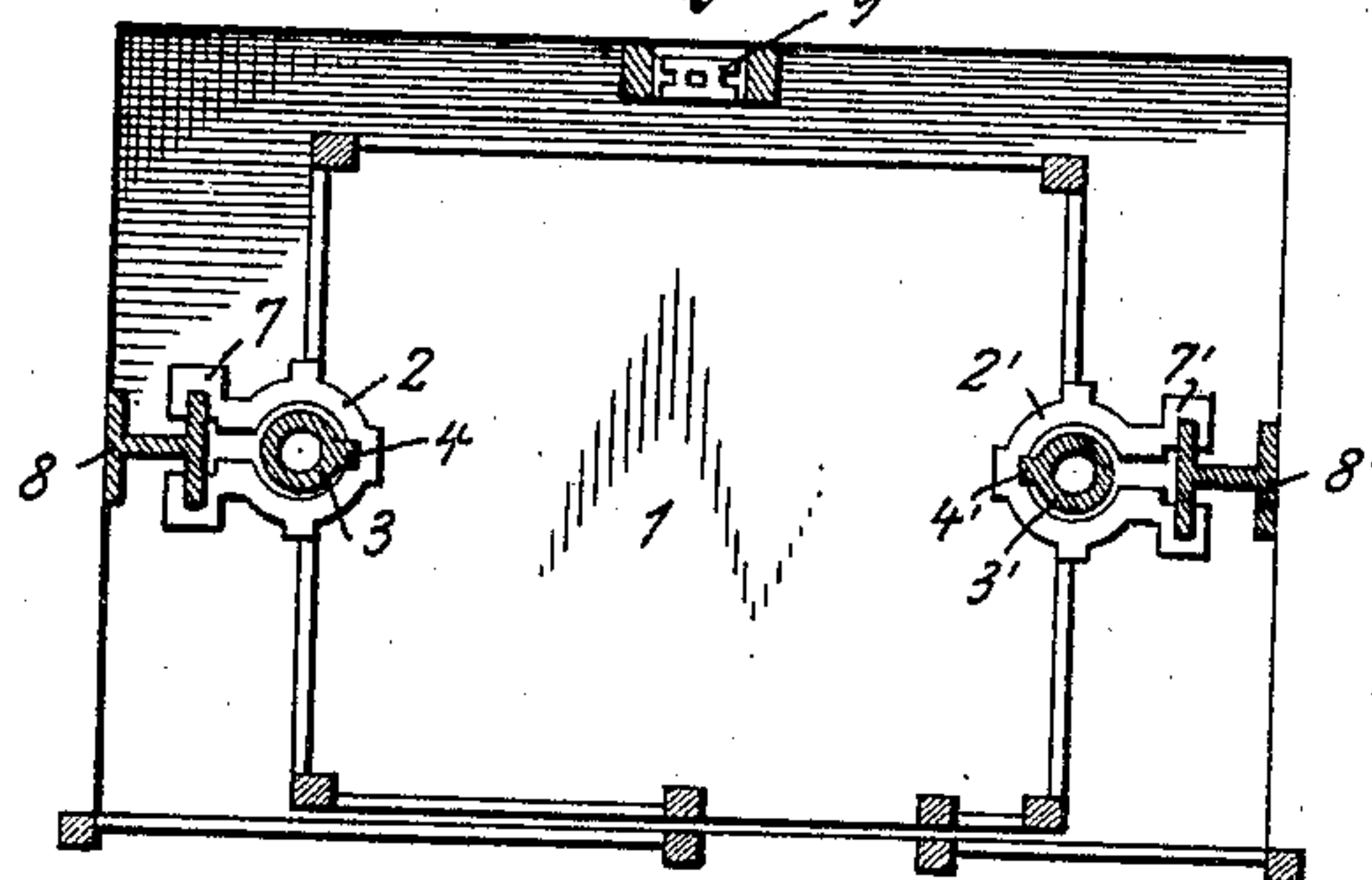
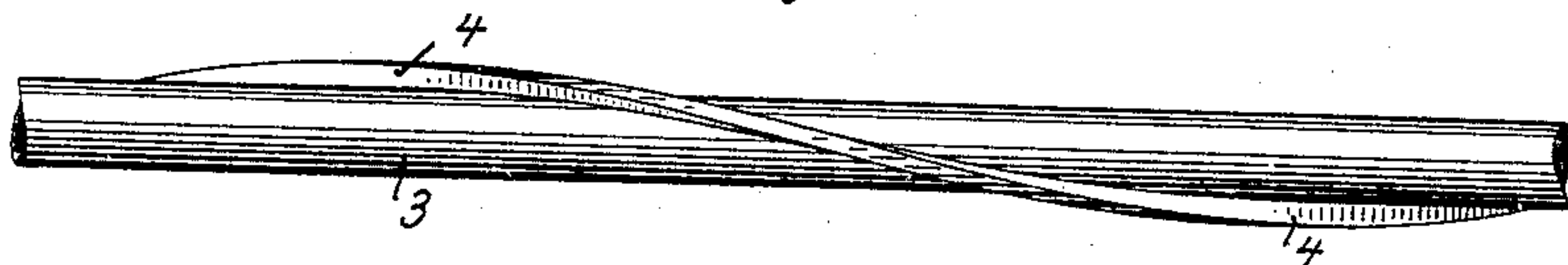


Fig. 4.



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UNITED STATES PATENT OFFICE.

FREDERICK WILLIAM A. WIESEBROCK, OF NEW YORK, N. Y.

ELEVATOR SAFETY DEVICE.

No. 795,875.

Specification of Letters Patent.

Patented Aug. 1, 1905.

Application filed October 31, 1904. Serial No. 230,862.

To all whom it may concern:

Be it known that I, FREDERICK WILLIAM A. WIESEBROCK, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented new and useful Improvements in Elevator Safety Devices, of which the following is a specification.

It is the object of this invention to provide new and novel means of safety devices for elevators whereby the elevator-car is held in position in case of accidental derangement of the hoisting machinery or the parting of the hoisting-rope—safety devices which are always in position to act.

The invention consists in the several novel features of construction and new combination of parts hereinafter fully set forth and then specifically pointed out in the claims following this specification.

Referring to the accompanying drawings, Figure 1 is an elevation of an elevator containing my invention. Fig. 2 is a plan view of the top, showing the arrangement of the sheave and locking device. Fig. 3 is a cross-section of elevator on line *a b*. Fig. 4 is a part of the upright guard with incline plane.

In the said drawings the reference-numeral 1 denotes the car of the elevator. 2 and 2' are the sleeves attached to the car sliding on the guards 3 and 3', having projecting inclined planes 4 and 4'. Guards 3 and 3' are preferably made of hollow cylinders mounted at the bottom on roller-bearing platforms 5 and 5' and supported sidewise at intervals by brackets 6 and 6', fastened to the side structure of the elevator-shaft. Said brackets 6 and 6' are flush with the outside diameter of the cylindrical guards 3 and 3' to allow the ready passage of the sleeves 2 and 2', attached to the car. The sleeves 2 and 2' of the car are also provided with grooves fitting the inclined plane of the guard. The frames of the sleeves 2 and 2' are also provided with grooves 7 and 7', sliding straight up and down on the I-beams 8 and 8', fastened to the structure of the elevator-shaft.

9 is the counterweight to the hoisting appliance.

To the rigid platform 10 at the top of the elevator-shaft is fitted in bearings the shaft 13 with sheave 11, carrying hoisting-ropes 12. On this same shaft 13 is also fitted the spur-gear 14, driving the pinion 15, mounted on shaft 16, which bears in brackets 17 and 17'. On shaft 16 are movably fitted on

feathers the worms 18 and 18', which are held in place by spiral springs 19 and 19', which springs in turn are held in place by collars 20 and 20'. The worms 18 and 18' mesh into the worm-gears 21 and 21', which are rigidly keyed to the guard-cylinders 3 and 3'.

The operation of the apparatus is as follows: After the different parts of the elevator are placed in position and hoisting machinery connected to the car in the proper manner and the elevator set in motion the rope over sheave 11 will by rotating the sheave also rotate the spur-gearing 14 and 15, which in turn rotates the shaft 16 and by means of the worm and worm-gearing also rotates the cylindrical guards 3 and 3'. The proportion of the spur-gear 14 to the pinion 15 is such that the distance traveled by the car corresponds exactly to the rotation of guards 3 and 3', with their inclined plane or flange 4' engaged in sleeve 2, attached to the car. In fact, the sleeve 2, attached to the car, forms, as it were, the nut to a screw-bolt, (represented by the guard 3.)

To provide for any slipping or stretching of the rope over the sheave, whereby the juxtaposition of the car to the guard 3 would be disarranged, the worms 18 and 18' are adjusted to the shaft by means of feathers and are held in place by spiral springs 19 and 19', which will by their elasticity adjust the worms according to the different strains exerted by such slipping or stretching of the rope.

The projecting inclined planes 4 of the guards 3 and 3' sliding in correspondingly-formed inclined grooves in sleeves 2 and 2' of the car allow the free passage of the car up and down as long as the hoisting-rope engages and rotates the sheave 11; but the moment the rotation of the sheave 11 is interrupted by a breakage of the rope, whereby the adhesion of the rope to the sheave is destroyed, the rotary motion of the shaft 16 is stopped, locking the cylindrical guards 3 and 3' instantaneously and holding the car where it is at such time located, preventing its falling down the elevator-shaft.

What I claim, and desire to secure by Letters Patent, is—

1. In an elevator, the combination of a car or platform, spirally-grooved sleeves attached thereto, spirally-flanged upright rotatable guards in said sleeves, worm-gears secured to said guards, a shaft, worms on the

shaft and meshing with said worm-wheels, a second shaft, a sheave thereon, a rope connected to the car and passing over the sheave, and gearing between the said shafts, whereby the operation of the sheave causes a corresponding operation of the guards, substantially as set forth.

2. In an elevator, the combination of a car or platform, spirally-grooved sleeves attached thereto, spirally-flanged upright rotatable guards in said sleeves, worm-gears secured to said guards, a shaft, worms movably secured on the shaft by means of springs and collars and meshing with said worm-wheels, a second shaft, a sheave thereon, a rope connected to the car and passing over the sheave, and gearing between the said shafts whereby the operation of the sheave causes a corresponding operation of the guards, substantially as set forth.

3. In an elevator the combination of a car or platform, spirally-grooved sleeves attached thereto, spirally-flanged upright rotatable guards in said sleeves, worm-gears secured to said guards, side brackets fastened at proper intervals as bearings for these guards, a shaft, worms on the shaft movably secured, and meshing with said worm-wheels, a second shaft, a sheave thereon, a rope connected to the car and passing over this sheave, and gearing between the said shafts, whereby the operation of the sheave causes a corresponding operation of the guards, substantially as set forth.

4. In an elevator the combination of a car or platform, spirally-grooved sleeves attached thereto, spirally-flanged upright rotatable guards in said sleeves, worm-gears secured to said guards, side brackets and ball-bearing steps as bearings for said guards, a shaft, worms on the shaft, movably secured, and meshing with said worm-wheels, a second shaft, a sheave thereon, a rope connected to the car and passing over the sheave, and gearing between the said shafts, whereby the operation of the sheave causes a corresponding operation of the guards, substantially as set forth.

5. In an elevator, the combination of a car or platform, spirally-grooved sleeves attached thereto provided with grooves for the straight guide-bars, spirally-flanged upright rotatable guards in said sleeves, worm-gears secured to said guards, a shaft, worms on the shaft and meshing with said worm-wheels a second shaft, a sheave thereon, a rope con-

nected to the car and passing over the sheave, and gearings between the said shafts, whereby the operation of the sheave causes a corresponding operation of the guards, substantially as set forth.

6. In an elevator, the combination of a car or platform, spirally-grooved sleeves provided with grooves for the straight guide-bars attached thereto, spirally-flanged upright rotatable guards in said sleeves, worm-gears secured to said guards, a shaft, worms movably secured to the shaft and meshing with said worm-wheels, a second shaft, a sheave thereon, a rope connected to the car and passing over the sheave, and gearing between the said shafts, whereby the operation of the sheave causes a corresponding operation of the guards, substantially as set forth.

7. In an elevator, the combination of a car or platform, spirally-grooved sleeves provided with grooves for the straight guide-bars attached thereto, spirally-flanged upright rotatable guards in said sleeves, worm-gears secured to said guards, side brackets and step-journals, as bearings for said guards, a shaft, worms on the shaft and meshing with said worm-wheels, a second shaft, a sheave thereon, a rope connected to the car and passing over the sheave, and gearing between the said shafts, whereby the operation of the sheave causes a corresponding operation of the guards, substantially as set forth.

8. In an elevator, the combination of a car or platform, spirally-grooved sleeves provided with grooves for the straight guide-bars attached thereto, spirally-flanged upright rotatable guards in said sleeves, worm-gears secured to said guards, side brackets and step-journals as bearings for said guards, a shaft, worms movably secured to the shaft and meshing with said worm-wheels, a second shaft, a sheave thereon, a rope connected to the car and passing over the sheave, and gearing between the said shafts, whereby the operation of the sheave causes a corresponding operation of the guards, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 24th day of October, 1904.

FREDERICK WILLIAM A. WIESEBROCK.

Witnesses:

ROBT. T. GIBBONS,
F. C. BERTHOUD.