No. 722,893. PATENTED MAR. 17, 1903.

F. D. POTTER.

SAFETY DEVICE FOR ELEVATORS.

APPLICATION FILED NOV. 13, 1902.

NO MODEL.

Fig. 1

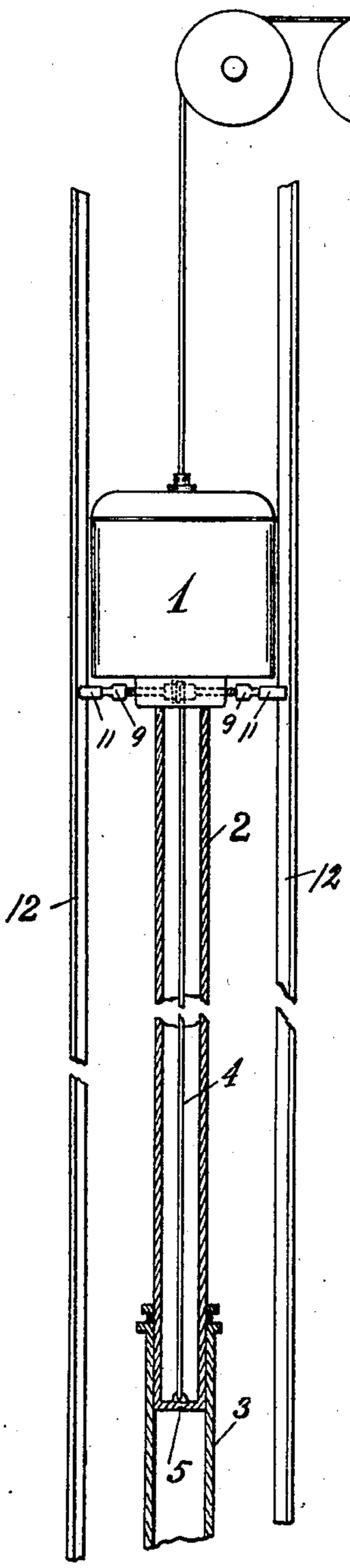


Fig. 2

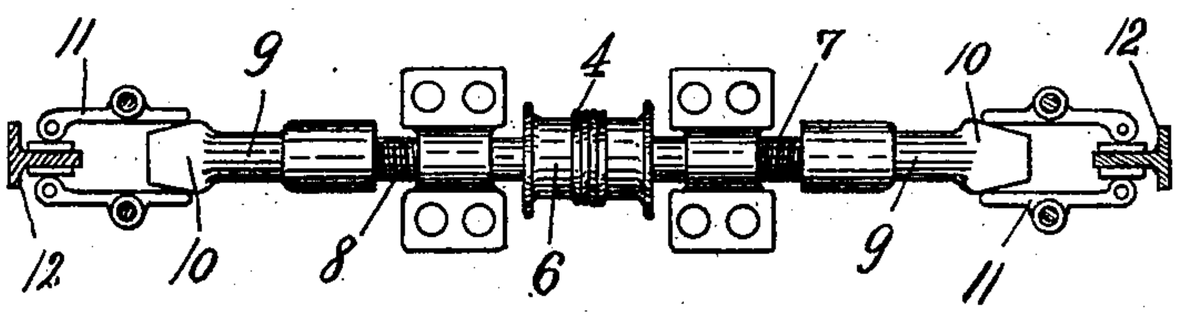
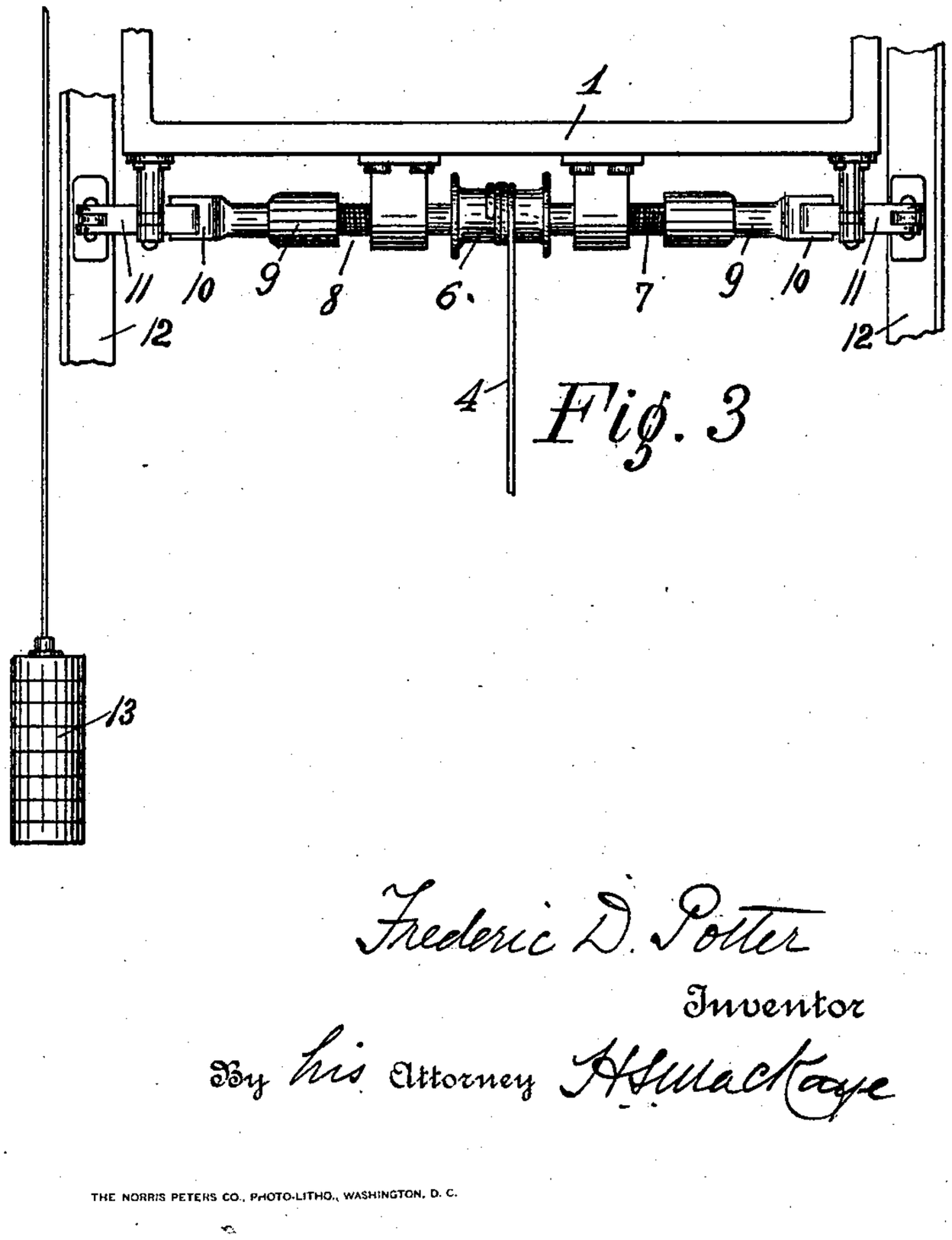


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

FREDERIC D. POTTER, OF LINDEN, NEW JERSEY, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO OTIS ELEVATOR COMPANY, OF EAST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SAFETY DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 722,893, dated March 17, 1903.

Application filed November 13, 1902. Serial No. 131,276. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC D. POTTER, a citizen of the United States, residing in Linden, Union county, State of New Jersey, have invented a certain new and useful Improvement in Safety Devices for Elevators, of which the following is a specification.

In elevators of that type wherein a car is carried by a vertical plunger or wherein the car is connected to an intermediate device carried by a plunger moving with the car at the same or less speed the principal danger from accident lies in the possibility of fracture of the plunger and consequent running away of the car, either under the influence of an overweighted counterweight or under the influence of its own gravitative tendency. My present invention applies to means for guarding against accident to the car in case of a fracture or failure of this kind.

The accompanying drawings illustrate an illustrative and preferred form of device made in accordance with my invention.

In said drawings, Figure 1 is a side elevation of an elevator-shaft with the car and the supporting and operating column. Fig. 2 is a plan view of the holding device looking upward beneath the car, and Fig. 3 is a side view of what is shown in Fig. 2.

The car 1 is supported, as is usual in this art, by the hollow steel column or plunger 2, which works in a long cylinder 3 for receiving the water under pressure, whereby the elevator is operated in a well-known manner.

One broad feature of my present invention lies in the provision of a safety operating-cable permanently fixed to an operating means normally moving with the car, and in the form shown this cable is shown at 4 anchored at 5 within the plunger 2 and at the bottom thereof. The upper end of this cord or cable 4 is connected to means beneath the car 1, (or these means may be otherwise placed on the car,) whereby on the occurrence of tension in the cable a brake is applied to the guides along which the car is normally moved. These means may take many forms without departing from this invention; but I prefer the means shown in the drawings, wherein the cable is wound over a drum 6, on each side of which is a screw 7 and 8, which two screws are respectivelv left and right. These screws work in nuts 9, connected to wedges 10, placed between the outer arms of oppositely-working levers 11, the inner arms or jaws of which grip the guides 12. It is evident that by use of this arrangement when there is tension on the cable or cord 4 the drum and its screws 7 and 8 will be turned, thereby pushing the wedges 10 outward and opening the outer arms 11 to make the jaws bite upon the sides of the guides 12. This is what will occur in case of fracture of the column 2 whether the car be moving up or down. In this case the counterweight 13 will tend to draw the car upward; but this will cause a pull upon the cable 4, which, turning the drum, will set the brakes. By properly calculating the pitch of the screws 7 and 8 the brakes once set will have no tendency to relieve themselves. The cable 4 may thus be made of comparatively light and fragile material, since all that is required is that it set the brake before breaking.

A variety of modifications of this device will occur to those skilled in the art which may be made without departing from this invention, and I am not to be understood as confining myself to the details of the device as herein shown and described.

What I claim is—

1. In an elevator, a car, a safety device thereon, a cable for operating said device and means permanently attached to said cable for holding it fixed for operation of the safety device, said means normally moving as a whole when the car moves, substantially as described.

2. In an elevator, a car, a cylinder and plunger for operating said car, means on the car for holding the same to the shaft in which it runs, and a cable for operating said means permanently attached to the lower end of said plunger.

3. In an elevator, a car, a cylinder and a hollow plunger working in said cylinder to drive said car; in combination with a safety device on the car, a cable within said hollow

plunger to operate said safety device and a permanent attachment for said cable at the bottom of said plunger.

4. In an elevator, a car, a cylinder and a hollow plunger working in said cylinder to drive the car; in combination with a drum under the car, right and left screws operated by said drum, a gripping device for catching the elevator-guide on each side of the car operated by said screws respectively and a cable wound on said drum, passing down through said plunger and attached permanently to the bottom thereof.

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