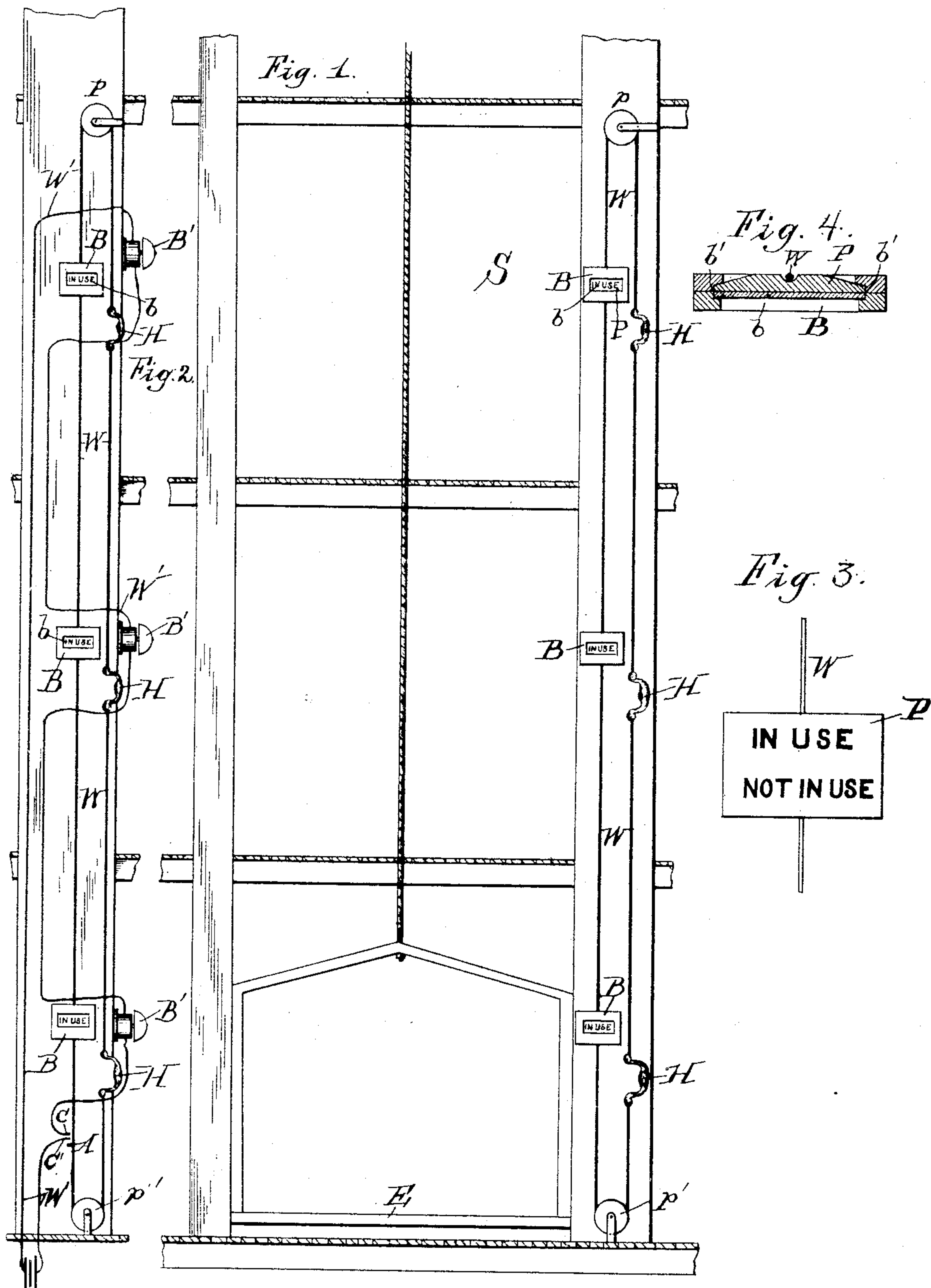


(No Model.)

E. WHITLOCK.
INDICATOR FOR ELEVATORS.

No. 446,907.

Patented Feb. 24, 1891.



Witnesses:
Henry M. [Signature]
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Inventor:
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UNITED STATES PATENT OFFICE.

EDWARD WHITLOCK, OF RICHMOND, VIRGINIA.

INDICATOR FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 446,907, dated February 24, 1891.

Application filed November 13, 1889. Serial No. 330,200. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WHITLOCK, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Indicators for Elevators; 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 letters of reference marked thereon, which form a part of this specification.

Referring to the drawings, Figures 1 and 2 are sectional views of so much of a building and elevator-shafts as is necessary to illustrate my invention. Fig. 3 is a face view of the indicator-slide, and Fig. 4 is a cross-section of the indicator-box.

Although applicable to elevators traveling in closed shafts, my improvements are more especially designed for application to or operation with elevators traveling in open shafts, such as are commonly found in warehouses for the transportation or shifting of goods from one floor to another, and where accidents are more liable to occur to incautious persons in endeavoring to look up or down the shaft to locate the elevator-cage.

The invention is designed to provide means whereby such accidents may be averted; and it consists in providing suitable indicators at each floor of a building to indicate whether the elevator is in use or not by means of visible indices.

The invention further consists in combining with the usual indices an audible signal operated either mechanically or electrically, substantially as hereinafter fully described, and pointed out in the claim.

In the drawings, S is the elevator-shaft, and E the elevator platform or cage, of any usual or preferred construction. On the ground floor and the upper story of the building I arrange a grooved pulley p and p' , respectively, at suitable points in proximity to the elevator-shaft, over which pulleys is stretched an endless wire W, that has at each landing a hand-hold H, said wire being arranged to run along one of the studs or uprights of the elevator-shaft from the upper to the lower

floors, so as to be conveniently manipulated from the platform or cage. At each story I secure to the stud along which the wire runs an indicator-box B, the front of which has a slot b closed by a pane of glass. The back of the box or frame has vertical grooves b' , one on each side, and in said grooves slides the indicator-plate P. This plate has two indices consisting of the words "In use" or "Not in use," or words to that effect, arranged one above the other, so that either may be exposed to view through the slot or window b of the indicator box or frame.

The extent of vertical motion of the indicator-plate P is so limited in either direction that when displaced by pulling upon the wire W to move said plate up or down the words "In use" or "Not in use" will be displayed in the slot.

I have hereinbefore referred to an endless wire W as a means for operating the sliding indicator-plates P; but I would state that it is not necessary to use an endless wire, as the plates P may be interconnected by wire sections, the top of one plate being connected with the bottom of the plate on the floor next above, while the top and bottom of the indicator-plate on the upper and lower floors, respectively, are connected to the opposite ends of a wire that travels over the pulleys p and p' , to which the hand-holds are secured, thus forming practically an endless system. When, however, an endless wire W is used, said wire runs along and is secured to or connected with the back of the indicator-plates. In either case, when the wire is pulled down, for instance, the words "In use" will be displayed at all the floor-landings and when pulled in a reverse direction the words "Not in use" will be displayed.

I have before stated that an audible signal may be combined with the visible indices, and that such signal may be operated either mechanically or electrically. In either case the signal, preferably a bell B', is constructed in a well-known manner, so that its hammer when released will strike a number of blows. This release may be effected by a tappet on the wire W at each floor, which I have deemed unnecessary to show, such arrangements being within the skill of all mechanics versed in this branch of the arts. When the bell-ham-

mer is operated electrically, the armature that releases it has its bobbins in a normally-interrupted circuit W', which is closed by an insulated tappet or circuit-closing arm on the wire W, as shown in Fig. 2, the line-contacts C C' being flexible or spring contacts, so that each time the circuit-closing arm A passes up or down it will bring the contact-springs together to close the circuit and cause the bells to ring on each floor. If desired, the contacts may be so arranged that the circuit will be closed only when the wire W travels in a given direction—as, for instance, when pulled down to indicate that the elevator is in use. In this case one of the contacts will be a rigid one, while the other will be hinged to its support and held normally away from the fixed contact by means of a spring, the fixed contact being arranged out of the path of travel of the circuit-closer on wire W. All these arrangements are well known in the art of electricity and need, therefore, no illustration in the drawings, as any competent electrician will be enabled to construct the devices for operation as described.

The means for indicating whether the elevator is in use or not are, as will be seen, of the simplest construction and comparatively

inexpensive, and so arranged as that no mistake can be made in positioning the index-plate.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

A combined indicator and alarm for elevators, comprising a stationary indicator-box on each floor, said box being provided with a slot in its front face and endless wire, a supporting-pulley therefor at top and bottom of the elevator-shaft, an indicator-plate for each floor, attached to said wire and having a limited motion in opposite directions within its stationary box, an electric circuit, an alarm mechanism for each floor interposed in said circuit, and a circuit-closer controlled by the movements of the endless wire and adapted to close and interrupt the electric circuit, said wire being so arranged relatively to the elevator-shaft as to be operated from the cage or platform thereof, substantially as and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD WHITLOCK.

Witnesses:

JULIUS STRAUS,
PHILIP WHITLOCK.