L. S. YOUNG & C. C. GALE.

Indicator Lock.

No. 198,961. Patented Jan. 8, 1878.

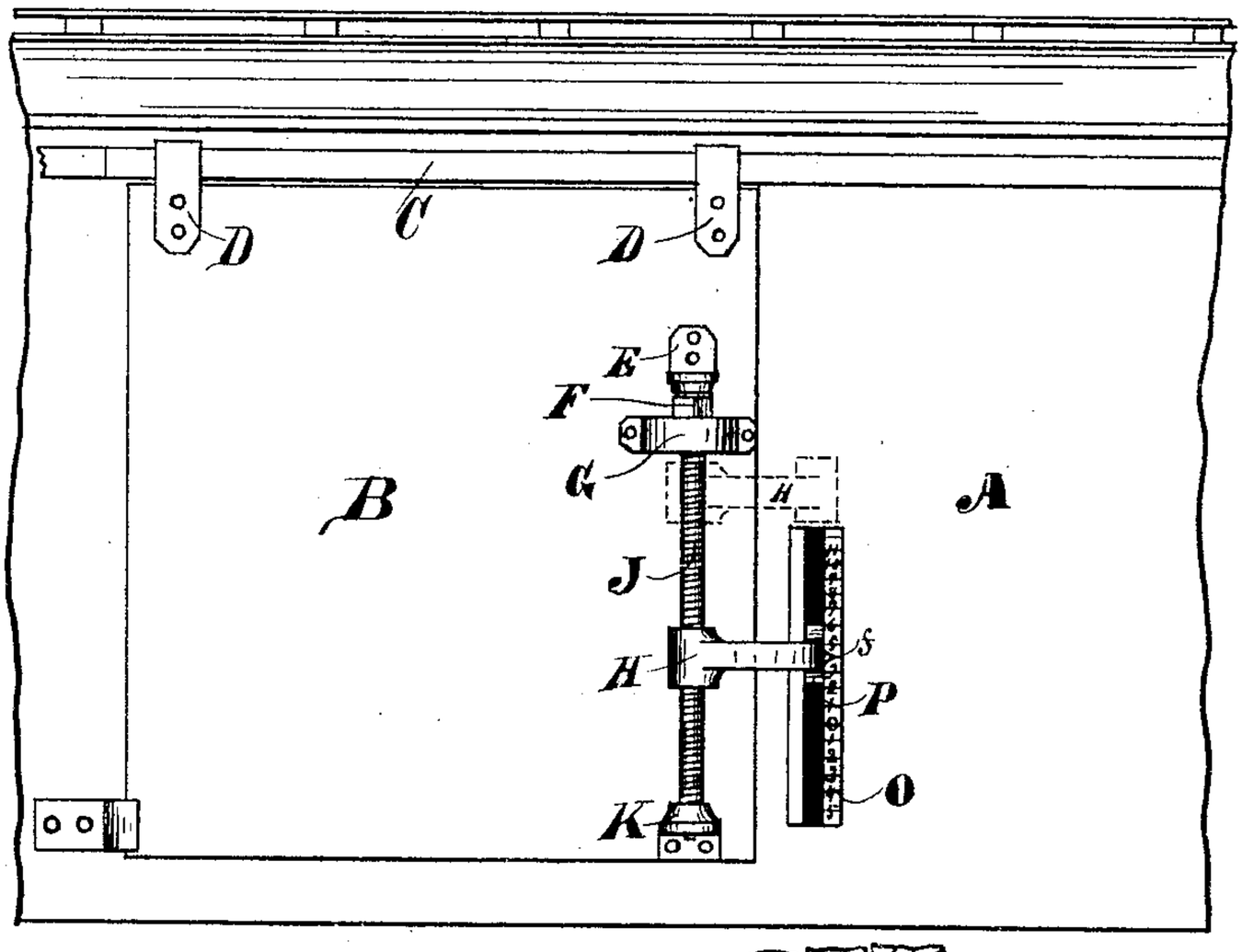

Fig 1.

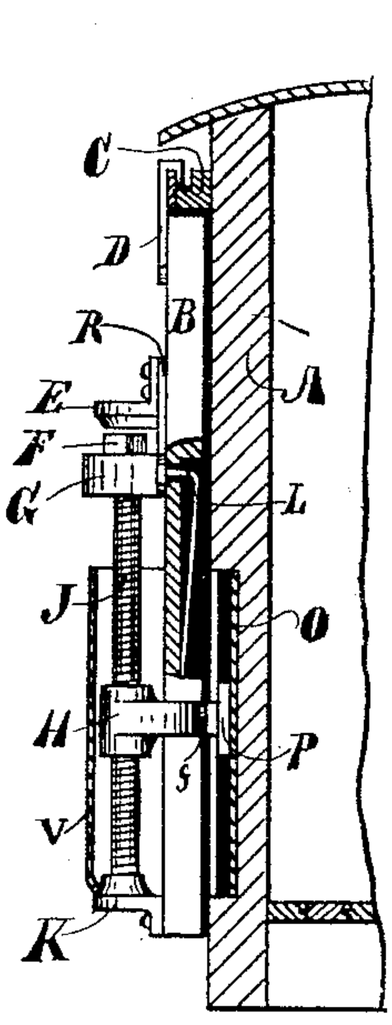

Fig 2.

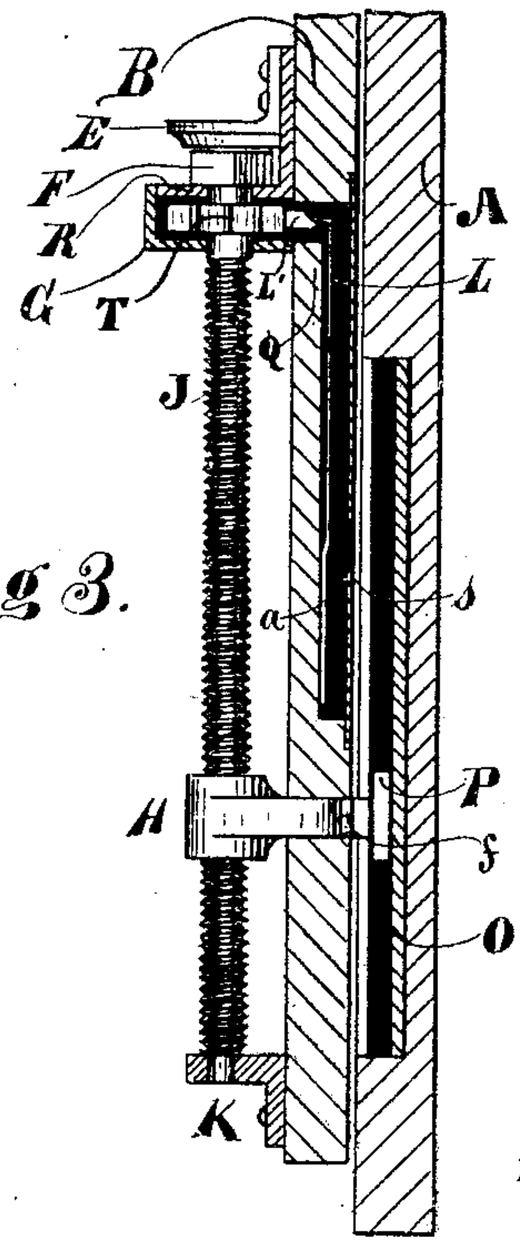

Fig 3.

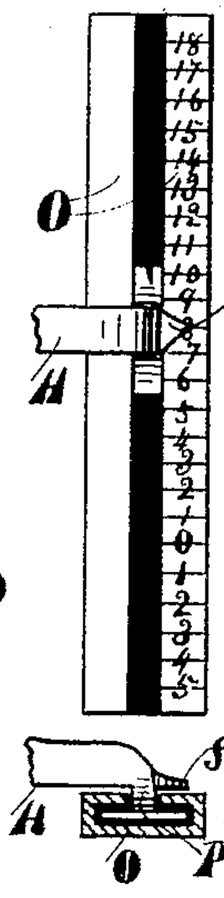

Fig 4.

Fig 5.

WITNESSES;

S. C. Frink

Louis M. Lee

INVENTOR'S.

Levi S. Young

Charles C. Gale,

Per. C. C. Frink. their atty.

UNITED STATES PATENT OFFICE.

LEVI S. YOUNG, OF CLEVELAND, OHIO, AND CHARLES C. GALE, OF INDIANAPOLIS, INDIANA.

IMPROVEMENT IN INDICATOR-LOCKS.

Specification forming part of Letters Patent No. **198,961**, dated January 8, 1878; application filed September 17, 1877.

To all whom it may concern:

Be it known that we, LEVI S. YOUNG, of Cleveland, in the county of Cuyahoga and State of Ohio, and CHARLES C. GALE, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Locking Device for Car-Doors, which is fully set forth and described in the following specification and illustrated in the accompanying drawings.

The invention relates principally to the construction and arrangement of a locking and alarm-sounding device, and in the new combination of parts, whereby better security and protection are afforded to freight while in transit or while temporarily detained on the route.

The object of the invention is to furnish means whereby the unfastening of car-doors will be made difficult, and to provide alarm-sounding mechanism that will give notice when the fastenings are meddled with.

The invention consists in the new construction and arrangement of particular parts, and in the new combination of elements in a car-door fastening, which are deemed essential to produce certain results, all of which will hereinafter be fully explained.

In the drawings, in which like letters of reference in the different figures indicate like parts, Figure 1 represents a sectional side view of a freight-car, and shows a front elevation of our improved locking device and the manner in which the door is secured. Fig. 2 is a vertical cross-section of a car-door and car, showing an edge view of the locking devices and of the alarm-sounding mechanism inside of the car-door. Fig. 3 is an enlarged sectional view, the same as that shown in Fig. 2, which represents the arrangement of parts more fully. Fig. 4 is a front view of the graduated locking-slide, and Fig. 5 is an end view of Fig. 4.

All ordinary car-doors and sides of freight-cars are susceptible of receiving our improved locking device.

A represents the side of a car, and B the door. On the door is secured, by bolts, the case G, which forms a bearing for the screw J to work in, and also forms a receptacle for the ratchet T, which is shown more fully in Fig. 3.

The top angular plate R of the ratchet-case G also forms a bearing for the said screw above the ratchet, and extends back flush with the door, and then upward, so that it can be secured to the door by the same bolts that secure the angular cap-plate E above the square head F of the screw J.

The space between the horizontal portions of the angular plates R and E is only wide enough to admit of a thin wrench being applied to the head F of the said screw for the purpose of operating it.

The screw J is provided with a fine thread, and may be incased in a jacket, V, which is open at one side to allow the arm of the nut H to work vertically therein. The said jacket extends upward even with the top of the graduated slide O, leaving a space between it and the bottom of the case G that will allow the arm of the nut H to swing clear of the case when freed from the slide O. This jacket is designed to protect the screw J, preserve its threads from being battered, and prevent tampering with the screw from below. The lower end of said screw is journaled in an angular step-plate, K, which is also secured to the door, in the manner shown.

The nut H is provided with a curved arm, and a T-shaped head, P, which is designed to work vertically inside of the graduated gibbed slide O and case V, as shown.

The slide O has a form similar to that shown in Figs. 4 and 5, and may be graduated like a thermometer, the zero-mark being located at any desirable portion thereof, which, by preference, we locate below the center of the vertical length of the slide.

There is a pointer, *f*, attached to the arm of the nut H, so as to indicate the number either above, at, or below zero that the lock has been registered on.

The screw J has a fine thread cut on it, that will require several minutes—say thirty—to screw the nut H down to the bottom of the

graduated slide O, thus rendering it difficult to release the T-shaped head P of the nut H from the guide or slide O. The object of thus making difficult the movement of the nut H is as follows:

Suppose a car is loaded with valuable freight at New York city, and its destination is St. Louis, Missouri; then, if the nut H has been screwed down until the pointer *f* indicates a certain number on the graduated slide below zero, which is registered, it is evident that the screw cannot at any one time, while the car is in transit, or while temporarily detained on the route, be tampered with sufficient to release the head P from the graduated slide O, and if it should be meddled with and partially unscrewed, the same would be detected by the person whose duty it is to attend thereto, because he would see at once that the pointer *f* had been removed from the registered St. Louis mark on the graduated slide O. But, in order to guard against successful tampering with the lock, an alarm-sounding mechanism may be attached to the car in such a manner that when the screw J is revolved either way an alarm will be sounded, and thus give warning to all persons within hearing thereof that some one is meddling with the lock.

We do not confine ourselves to the precise form or method shown by which an alarm is sounded, but simply illustrate the easiest and most comprehensive manner in which the alarm may be sounded, which is as follows:

The ratchet T is secured on the screw J inside of the case G, and the inside of the door B is partly cut away, so as to allow a stiff flat spring, L, to be secured in the recess at *a*. The upper end of the spring L is bent at right angles with the body of the spring, and twisted at L′, so as to engage with the teeth on the ratchet T. When the said ratchet is rotated either way by means of a wrench applied to the head F of the screw J, the spring is forced away from the door by each alternate tooth of the ratchet, and as the twisted end L′ slips off from the teeth the flat part of the spring strikes violently against the door, producing a drumming sound. The spring L is let into the door, so as to prevent it from being interfered with when the car-door is slid open, and is covered with a case or plate, *s*, to prevent persons from introducing obstructions between the spring and door to defeat the objects thereof. A gong or bell may be used, if desired; but we prefer the spring, as it is less liable to be disarranged.

It is not our purpose to actually prevent unauthorized persons from effecting an entrance to the car, as that would be practically impossible. Our main design is to lock the car-doors so that the time required to open them and the sounding of an alarm when the screw is meddled with will render difficult the successful entrance of unauthorized persons.

For local freights, the head P can be screwed a slight distance into the slide O, which will prevent tramps from effecting an entrance while the cars are under slow headway or stopped, and thus secure local freight from pillage.

What we claim as new, and wish to secure by Letters Patent, is—

1. The combination and arrangement of the screw J, the case G, the ratchet T, the brackets R, E, and K, and nut H, provided with an arm and head, P, in the manner and for the purposes hereinbefore set forth and described.

2. The combination and arrangement of the screw J, the nut H, provided with an arm and head, P, and pointer *f*, and the graduated slide-case O, as applied to freight-cars, in the manner and for the purposes set forth and described.

3. The jacket V, arranged and adapted to protect the screw J when applied to freight-cars, in the manner and for the purposes substantially as hereinbefore set forth and described.

4. The screw J, arranged to screw a locking device, H, in a slide, O, and provided with a ratchet or other equivalent means of operating an alarm, in combination with a car-door and car, in the manner and for the purposes substantially as hereinbefore set forth and described.

5. The slide-guide O, graduated so as to indicate different stations by means of a pointer, *f*, operated by a screw, J, in the manner and for the purposes substantially as set forth and described.

6. The alarm-sounding spring L, attached to a car-door or car, and operated by a ratchet, T, so as to sound an alarm on the door or car, in the manner and for the purposes substantially as set forth and described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LEVI S. YOUNG.
CHARLES C. GALE.

Witnesses:
E. O. FRINK,
S. C. FRINK.