C. H. WELLER.

ELEVATOR CUPBOARD.

APPLICATION FILED JUNE 11, 1909.

943,498. Patented Dec. 14, 1909.

2 SHEETS—SHEET 1.

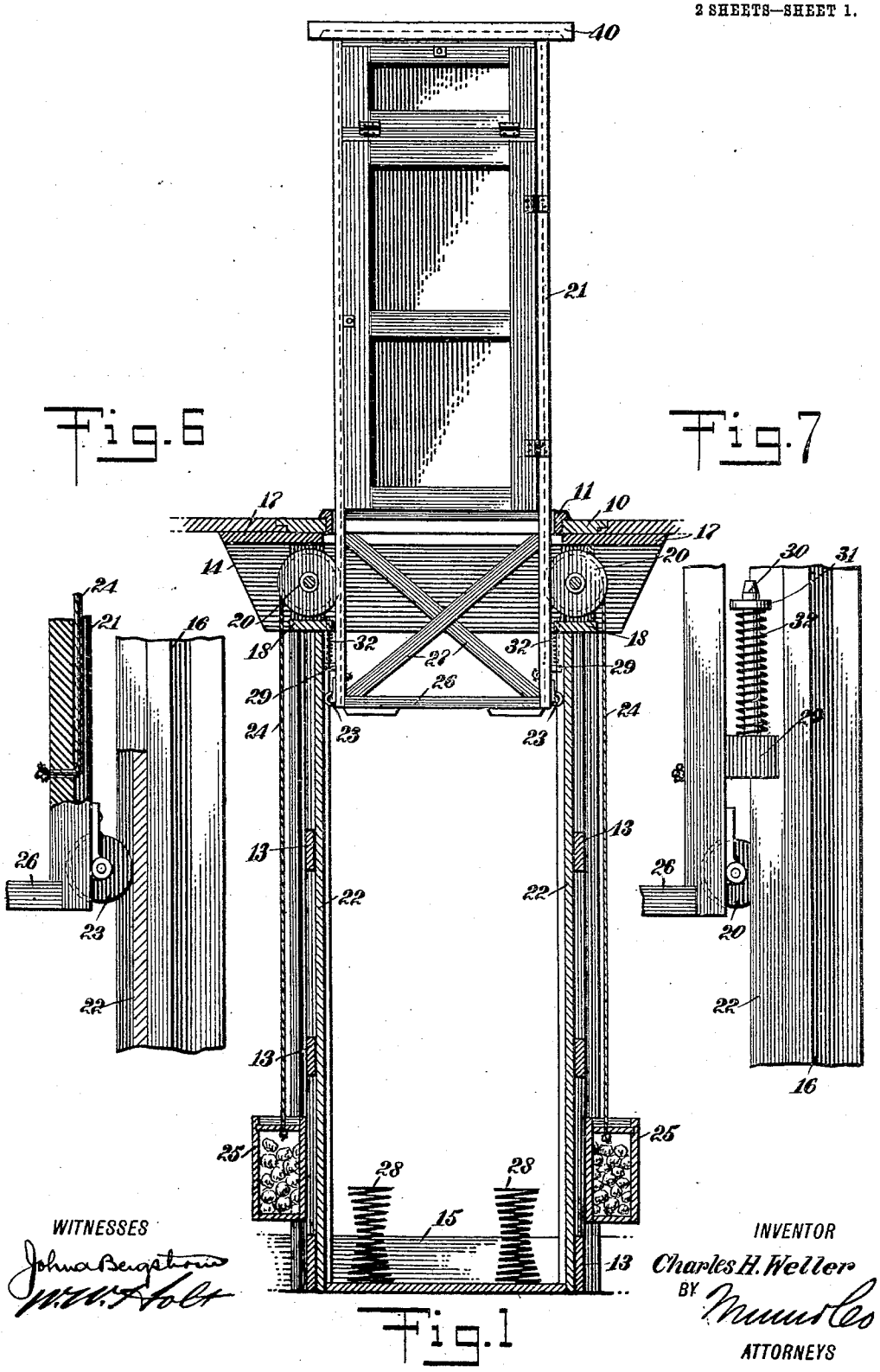

Fig. 6

Fig. 7

Fig. 1

WITNESSES

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2 SHEETS—SHEET 2.

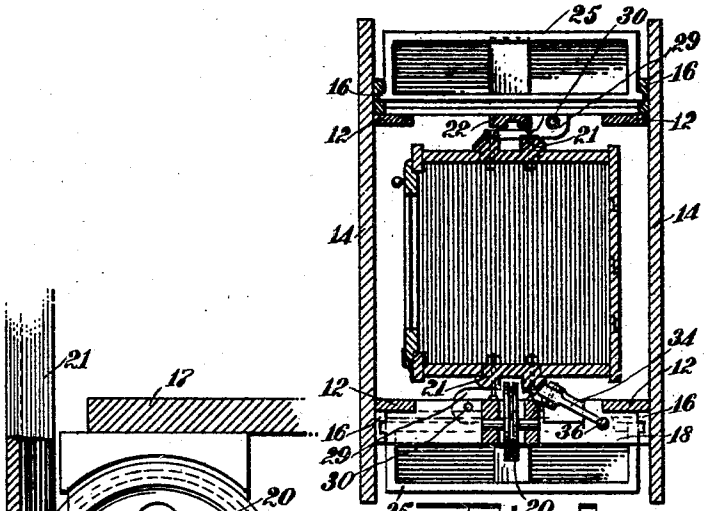

Fig. 3

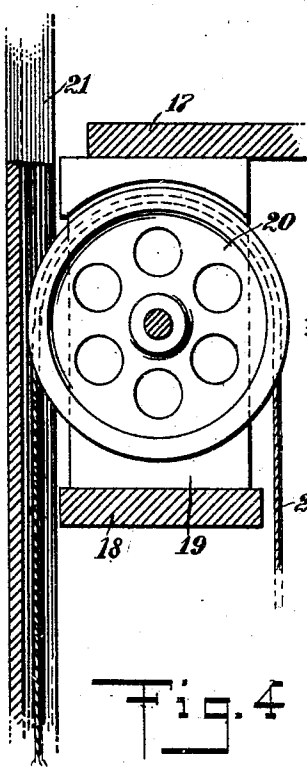

Fig. 4

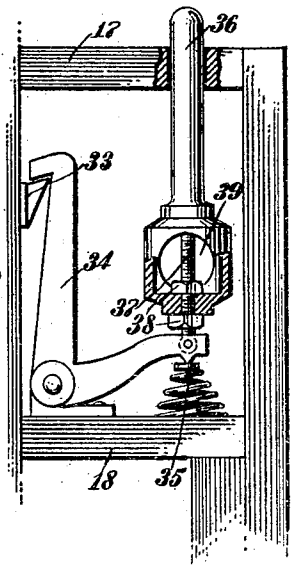

Fig. 5

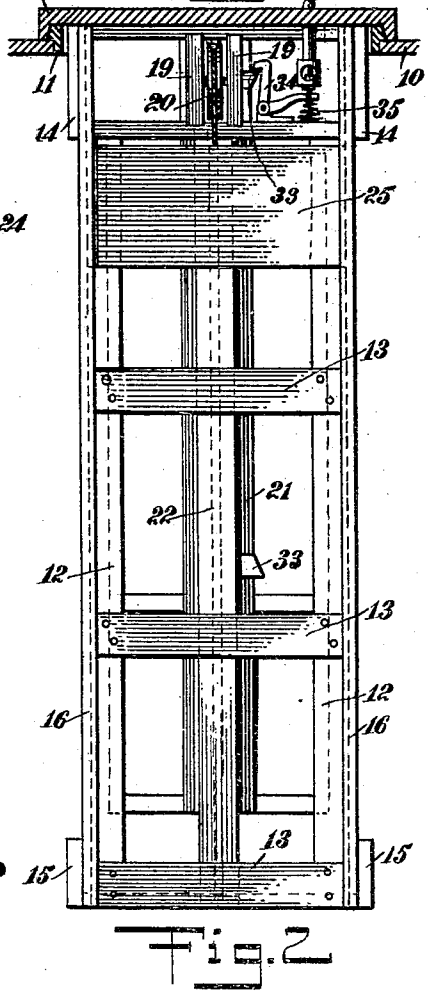

Fig. 2

WITNESSES

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CHARLES H. WELLER, OF CANTON, PENNSYLVANIA.

ELEVATOR-CUPBOARD.

943,498. Specification of Letters Patent. Patented Dec. 14, 1909.

Application filed June 11, 1909. Serial No. 501,510.

To all whom it may concern:

Be it known that I, CHARLES H. WELLER, a citizen of the United States, and a resident of Canton, in the county of Bradford and State of Pennsylvania, have invented a new and Improved Elevator-Cupboard, of which the following is a full, clear, and exact description.

The invention is an improvement in elevator or disappearing cupboards such as embody an elevator shaft frame in which the cupboard is vertically movable, the shaft frame being erected directly below an opening in the floor of the kitchen or other room where access to the cupboard is to be had.

The invention has in view means to automatically lock the cupboard when moved to its uppermost and lowermost positions, the same being releasable from the room in which the cupboard is elevated, preferably by a foot-actuated device in the floor, and buffers for respectively checking the ascent and descent of the cupboard, arranged to be held under compression by the locking means, whereby when the latter is released, the cupboard will be given an initial movement.

The invention further contemplates the guiding of the cupboard in the elevator shaft frame in a manner such that friction will be reduced to a minimum, and the counterbalancing of the cupboard in a way as to remove any excess of, or make up for any deficiency in, the weight.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation, partly in vertical section, of an elevator cupboard constructed in accordance with my invention; Fig. 2 is a side elevation of the same, showing the top and floor in section; Fig. 3 is a cross-section taken through the upper portion of the elevator cupboard; Fig. 4 is a fragmentary sectional view showing the arrangement of one of the sheaves of the counterbalancing means; Fig. 5 is a fragmentary sectional view showing the latch for locking the cupboard in its elevated and depressed positions; Fig. 6 is a view of the lower portion of the cupboard and adjacent shaft frame partly in vertical section; and Fig. 7 is a similar view showing the attached buffer.

In carrying out my invention I provide an elevator shaft frame having a vertically movable cupboard, the frame being set up or erected directly below an opening in the floor 10 of the room in which access to the cupboard is to be had, the opening being lined with a floor-plate 11, through which the cupboard passes and having an outwardly-projecting flange provided with a beveled edge, as shown in Figs. 1 and 2. The shaft frame embodies in its construction, corner posts or standards 12, the corner posts at each side being secured together by cross pieces 13 extending from front to rear at different elevations, and the corner posts being further connected at the top by front and rear boards 14, 14, and at the bottom by similar boards 15, the front and rear boards being extended at each end beyond the corner posts 12. In the outer corners between the corner posts and the front and rear boards, grooved guides 16 are secured, and at the upper and lower edges of the front and rear boards 14, top and bottom boards 17 and 18 respectively extend between the corner posts at each side, the top and bottom boards at each side of the elevator shaft frame being connected together by spaced bearing blocks 19, 19, in which a sheave 20 is journaled, the sheave projecting into a grooved guide 21, centrally and vertically secured to the side of the cupboard. Directly opposed to the grooved guides 21, grooved guides 22, similar to the grooved guides 16, are secured to the inner faces of the cross pieces 13, the grooves of which receive rollers 23 secured at opposite sides of the lower portion of the cupboard. Attached at or near the same point to the cupboard are counterweight cords 24, passing over the sheaves 20 and connected at their opposite ends to counterweight boxes 25, the inner sides of which, as best shown in Fig. 3, project beyond the ends of the boxes and into the grooves of the guides 16, which operate to direct the counterweight boxes in their vertical movement. The tops of the counterweight boxes are open for receiving and removing stones, gravel, dirt or such other material as may be used to counterbalance the elevator.

The cupboard proper is provided with suitable doors, all of which pass above the floor plate 11 when the cupboard is in its uppermost position. Below these doors the cupboard is extended in the form of an open framework 26, reinforced at the front and rear by diagonal braces 27. On the bottom

of the shaft frame adjacent to each side is an upright helical buffer spring 28, the buffer springs being arranged to be struck by the bottom of the cupboard when the latter is passing to its lowermost position. To check the cupboard in its ascent, buffers are secured to the opposite sides of the extended frame portion of the cupboard, each consisting of a block or projection 29 having an upright pin 30, and a collar 31 slidable on the pin and normally forced upwardly thereon by a spring 32, the pin being arranged in alinement with an opening in the inner projecting edge of the bottom board 18, as shown in dotted outline in Fig. 1.

To automatically lock the cupboard in its elevated and depressed positions, catch blocks 33 and a latch lever 34 are provided, the catch blocks being secured to one side of the cupboard and the latch lever being fulcrumed to a bracket secured to one of the bottom boards 18. The lever, as best shown in Fig. 5, is of bell-crank form and is normally forced in a direction to carry its latching end into engagement with the catch block, by a spring 35, the spring being positioned under the tail end of the lever, which is depressed to disengage the catch blocks, by a foot-actuated device or pin 36 projecting through an opening in the floor, in which it is slidably guided. The connection between the lever 34 and the foot-actuated device 36 is effected by providing the latter with an enlarged casing in its lower end portion which receives a stud 37 pivoted to the tail of the lever and secured in adjusted position by lock nuts 38, these nuts being arranged at opposite sides of the bottom of the casing, with the inner nut accessible for adjustment through openings 39 in the side of the casing. By this construction the foot-actuated device 36 may be adjusted to project above the floor sufficiently to move the hooked or engaging end of the latch lever out of the path of the catch blocks 33, when depressed. The catch blocks 33 have their opposed faces beveled to serve as cams in forcing the lever back until the same clears the opposite or outer faces of the catches respectively, and are arranged to lock the cupboard when the buffers are fully compressed, whereby when the latch lever is disengaged by the foot-actuated device, the cupboard will be given an initial start in its return movement. When the cupboard is in its lowermost position its top 40 seats over the floor plate 11 and covers the opening in the floor. In order that the top may seat directly on the floor when the cupboard is fully depressed, the top is grooved on its under side to fit over and conform to the head of the floor plate.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. The combination of an elevator shaft frame having vertical grooved guides, a cupboard movable within the frame, having vertical grooved guides, rollers secured to the opposite sides of the lower portion of the cupboard and projecting into the grooves of the shaft frame guides, sheaves journaled in the upper portion of the shaft frame and projecting into the grooves of the guides of the cupboard, and counterweights for the cupboard having attached flexible members passing over the sheaves.

2. The combination of an elevator shaft frame, a cupboard vertically movable within the frame having guiding devices at the lower portion thereof, sheaves carried at the upper portion of the frame at the opposite sides of the cupboard and arranged to operate in connection with said devices to prevent the cupboard from tilting within the frame, counterweights, and flexible members attached to the lower portion of the cupboard and passing over the sheaves to the counterweights.

3. The combination of an elevator shaft frame, a cupboard vertically movable within the frame, a spring-pressed latch lever carried by said frame, catch blocks attached to the cupboard and arranged to be respectively engaged by the latch lever when the cupboard is in its elevated and depressed positions, and a manually-actuated device for releasing the latch lever from the catch blocks.

4. In combination with a floor having an opening, an elevator shaft frame arranged beneath the floor around said opening, a cupboard vertically guided in the elevator shaft frame and passing through said opening, a bell-crank latch lever carried by the shaft frame, a spring arranged under the tail of the lever, normally forcing the upper portion of the lever inwardly to the cupboard, catch members attached to the cupboard and arranged to be engaged by the latch lever when the cupboard is respectively in its uppermost and lowermost positions, a foot-actuated device to release the lever from said catch members, connected to the tail of the lever over the spring and passing through the floor, and means for adjusting the elevation of said device relatively to the tail of the latch lever.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. WELLER.

Witnesses:
EDWARD W. HALLETT,
IRVIN G. FRY.