No. 854,866. PATENTED MAY 28, 1907.

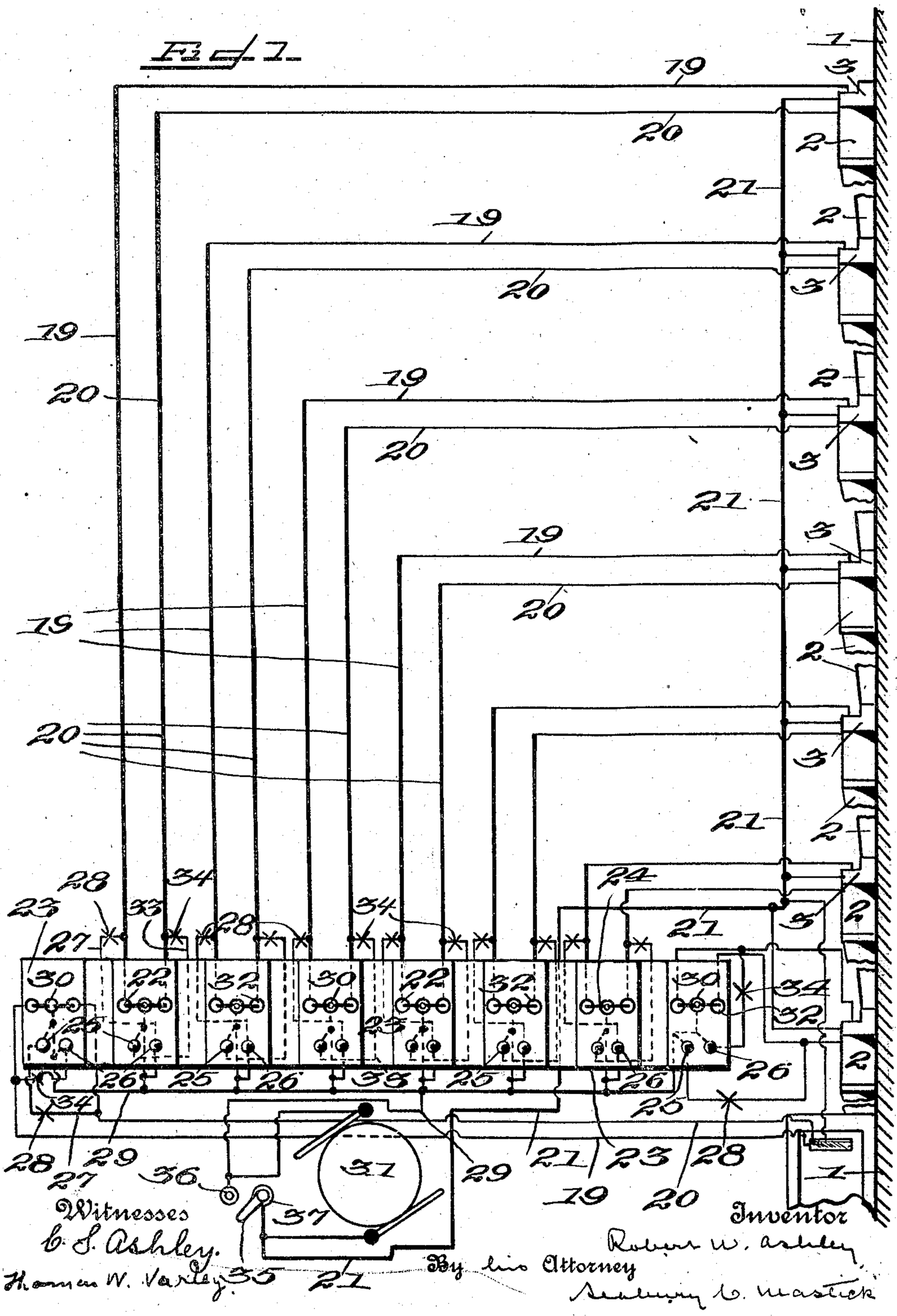
R. W. ASHLEY.

MAIL CHUTE.

APPLICATION FILED DEC. 23, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

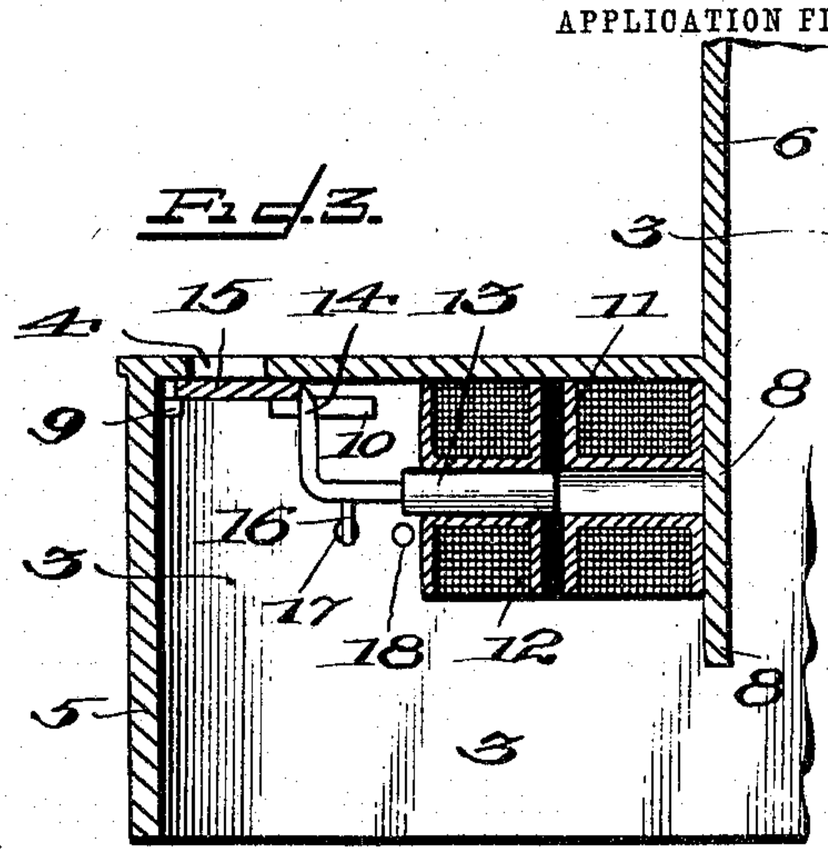


Fig. 2.

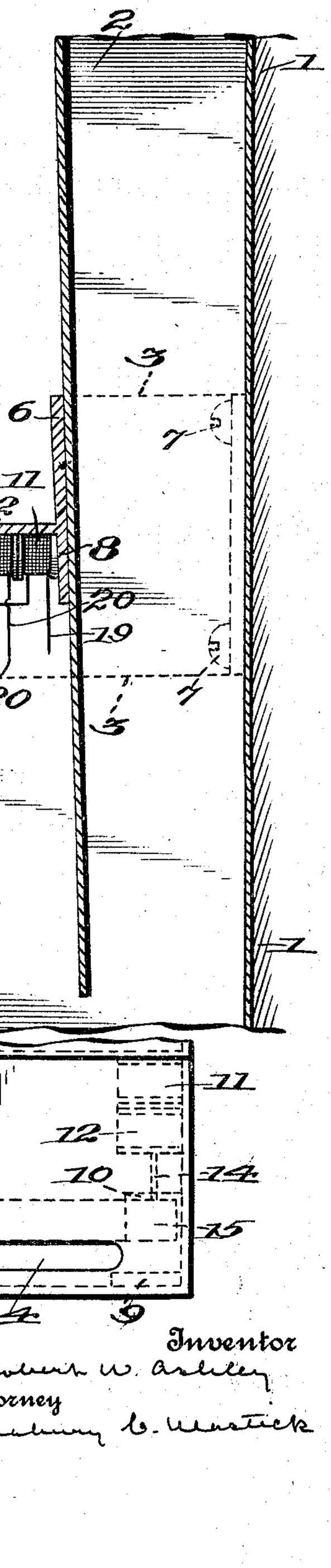


Fig. 4.

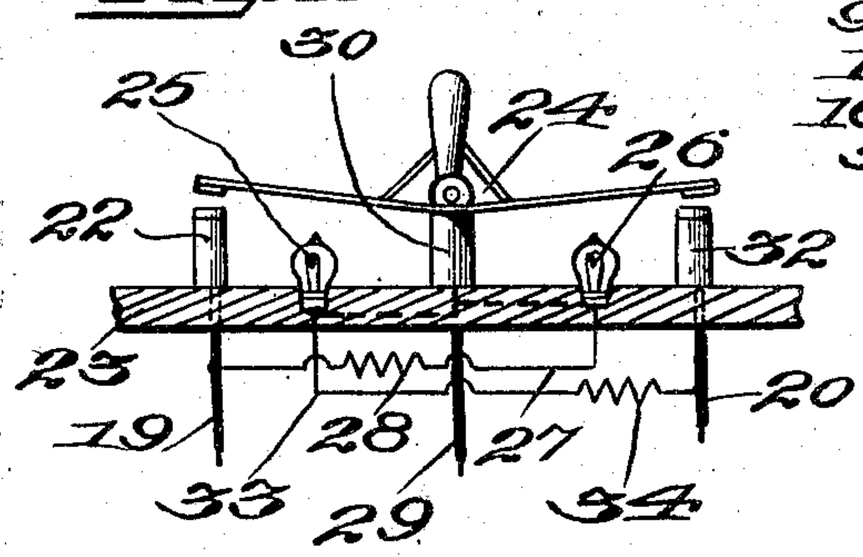
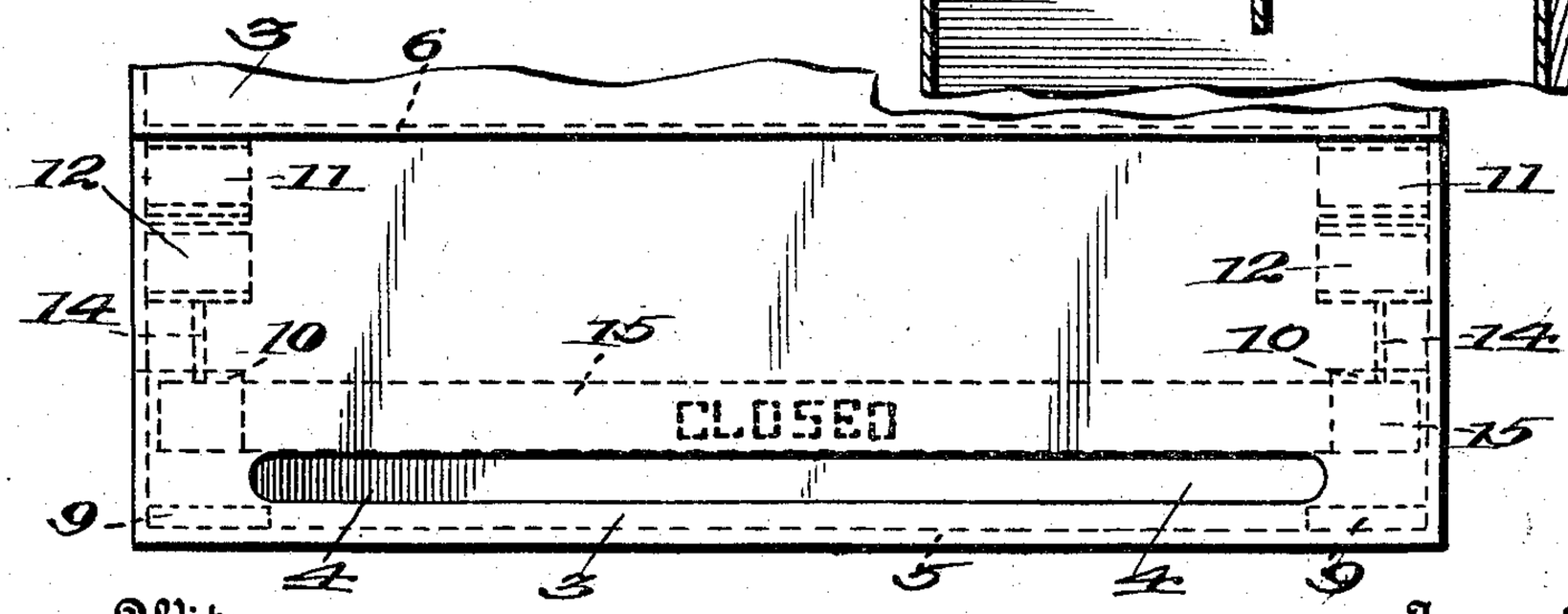


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MAIL-CHUTE.

No. 854,866. Specification of Letters Patent. Patented May 28, 1907.

Application filed December 23, 1905. Serial No. 293,084.

To all whom it may concern:

Be it known that I, ROBERT W. ASHLEY, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Mail-Chutes, of which the following is a specification.

My invention relates to improvements in mail chutes of that class adapted for use in office buildings, hotels and other large buildings and has particular reference to means for locking or unlocking the slots communicating with said mail chute on the several floors of the office or other building in which the same is installed. It has been found desirable in practice to provide means of this description because of the occasional blocking of the chute at one or more places necessitating the temporary discontinuance of service of the same.

A further object of the invention is to provide means for controlling said locking or unlocking of all or any desired number of said slots from a common point in connection with means for indicating at said common point the locked or unlocked condition of the respective slots.

Other objects of the invention will be pointed out hereinafter.

In the following I have described in connection with the accompanying drawings one form of structure illustrating the operation of my invention, the features thereof being more particularly pointed out hereinafter in the claims.

In the drawings Figure 1 is a diagrammatic view illustrating the operation of one form of my invention as the same may be applied to a seven story building. Fig. 2 is a vertical sectional view of a portion of the structure on an enlarged scale. Fig. 3 is a vertical sectional view on an enlarged scale to better illustrate certain operative features. Fig. 4 is a view partly in section and partly in elevation illustrating a preferred form of switch and indicator means. Fig. 5 is a plan view of a slot showing, in dotted lines, certain operating means in connection therewith.

Similar numerals of reference indicate similar parts throughout the several views.

1 indicates a side wall to which is fastened a chute or chute sections 2. As illustrated, the chute section of one floor tapers downwardly to the chute section of the floor below discharging into said lower section in the well known manner. As shown diagrammatically in Fig. 1 the chute sections are broken for convenience of illustration. The upper end of each chute section is closed by means of a plate 3 in which is formed the mailing slot 4. Plate 3 is provided with a downwardly projecting portion 5 and an upwardly projecting portion 6 the downwardly projecting portion 5 being adapted to surround the upper portion of one chute section and the upwardly projecting portion 6 being adapted to surround the lower portion of the chute section next above, the portions 5 and 6 forming a clamping collar adapted to hold the adjacent chute sections together and to be fastened to the wall by suitable screws or bolts 7, 7. Preferably integral with upwardly projecting portion 6 is a downwardly projecting portion or lug 8 for the purposes hereinafter set forth. Lugs 9, 9 and 10, 10 are provided near the upper end of downwardly projecting portion 5 at each end of the slot 4, the lugs 9, 9 being in front of said slot and lugs 10, 10 being at the rear of said slot for the purpose hereinafter described. Solenoid magnets 11, 11 are adapted to be supported on the downwardly projecting portion or lug 8 at each side and to the rear of slot 4. Supported by solenoid magnets 11 in front of the same, but insulated therefrom, are solenoid magnets 12, 12.

Solenoid cores 13 are each provided with an arm 14, said arms 14 carrying at their upper ends a closing or locking apron 15 adapted to slide on the lugs 9, 9 and 10, 10 acting as guide-ways for said apron. Arms 14 also carry contact fingers 16 adapted to make electrical contact with contact points 17 and 18 forming the terminals of wires 19 and 20 respectively. Wire 19 is wound about solenoid magnets 11 and wire 20 is wound about solenoid magnets 12, the wires being so wound on the magnets that magnets 11 act to throw the cores forward and magnets 12 act to throw the cores backward.

It is to be understood that contact fingers 16 and contact points 17 and 18 are in duplicate on each side of the slot 4 and that the wires 19 and 20 are divided or branched so as to energize both sets of solenoid magnets as described, so that the same operate in unison. Return wire 21 is in permanent electric connection with contact finger 16.

Wires 19 are in electrical connection with contacts 22 on the switchboard 23 provided with switches 24 and lamps 25 and 26.

Lamps 26 are each in a shunt circuit 27 from wires 19 around the contact points 22 and switches 24. 28 indicate resistances in shunt circuits 27. Wire 29 connects contacts 30 with one side of the generator 31. Wires 20 are in electrical connection with contacts 32 on said switchboard 23 and lamps 25 are each in a shunt 33 from wires 20 around said contacts 32 and switches 24. 34 indicate resistances in shunt circuits 33. Return wire 21 connects contact finger 16 with the other side of generator 31. 35 indicates a switch for completing the circuit between the two sides of generator 31 through contacts 36 and 37.

The operation of the structure as illustrated is as follows: It being desired to close any one of slots 4 the switch 35 is closed across contacts 36 and 37 and that switch 24 corresponding to the slot 4 which it is desired to close is thrown so as to complete connection from wire 20 to wire 29 through contacts 30 and 32. The solenoid cores 13 being in the retracted position in solenoid magnets 11 contact fingers 16 rest upon contacts 18 thus completing the circuit and causing the solenoid magnets 11 to act as push magnets and throw the cores forward so as to cause the apron to pass beneath and close the slot 4. Contact fingers 16 will now rest on contact points 17 completing the circuit including wire 19, resistance 28, shunt 27, lamp 26 and wire 29 back to the generator. The resistance 28 is of such strength that while it permits sufficient current to pass through the shunt to light the lamp it cuts out sufficient of the current so that solenoid magnets 12 are not sufficiently energized to throw solenoid cores 13 back again. The lamp 26 now being lighted will indicate that the particular slot with which it is in communication is closed. If it is desired to reopen the slot after the same has been closed switch 24 is reversed so as to close the circuit from contact 22 to contact 30. This will provide a path of less resistance for the current than through shunt 27 and resistance 28 and hence permit solenoid magnets 12 to be energized sufficiently to push back solenoid cores 13 carrying apron 15. Contact fingers 16 will now rest on contact points 18 completing the circuit including wire 20, resistance 34, shunt 33, lamp 25 and wire 29 to the generator 31 thus causing lamp 25 to be lighted and indicating that the particular slot with which it is connected is open. The arrangement of resistances in connection with shunts 34 is as heretofore described in connection with shunts 27 so as to permit sufficient current to pass therethrough to light lamp 25, but not sufficient to so energize solenoid magnets 11 as to throw out solenoid cores 13.

It is obvious that switches 24 may be actuated to operate any one or all or any combination of slots and that the operation as described will apply equally for all of the parts illustrated.

It is further obvious that by the means disclosed an automatic method of closing the slots is provided controllable from any predetermined common point and in any combination without the necessity of going to each floor and closing each slot individually as has hitherto been the case.

It is further obvious that the arrangement of apparatus illustrated may be widely varied and that other than electrical means of the character described may be utilized to actuate the parts and to accomplish the result desired, and I do not restrict myself to the arrangement of parts and details shown and described, said arrangement being merely illustrative of one means of carrying out my invention.

What I claim and desire to secure by Letters Patent of the United States is:—

1. An apparatus of the character described comprising a mail chute, a plurality of mailing slots therein, means for automatically closing said slots, means for actuating said closing means, means for indicating the position thereof and means for automatically opening said closing means.

2. An apparatus of the character described comprising a mail chute, a plurality of mailing slots therein, means for automatically closing said slots, means for actuating said closing means, means for indicating the position thereof and means for automatically opening said closing means dissimultaneously.

3. An apparatus of the character described comprising a mail chute, a plurality of mailing slots therein, means for automatically closing said slots, means for actuating said closing means, means for indicating the position thereof, and means for automatically opening said closing means in sequence.

4. An apparatus of the character described including a mail chute, a mailing slot therein, means for closing said slot, electrically controlled means for actuating said closing means and electrically controlled means for indicating the position of said closing means.

5. In an apparatus of the character described including a mail chute, a mailing slot therein, electrically controlled closing means interposed in said mailing slot portion, electrically controlled opening means interposed in said mailing slot portion and means for actuating said closing and opening means.

6. In an apparatus of the character described including a mail chute, a mailing slot therein, closing and opening means interposed in said mailing slot portion said closing and opening means comprising two sets of oppositely operating solenoid magnets.

7. In an apparatus of the character described including a mail chute, a mailing slot therein, closing and opening means inter-

posed in said mailing slot portion, two sets of oppositely operating solenoid magnets interposed therein and means for actuating said oppositely operating solenoid magnets.

8. In an apparatus of the character described including a mail chute, a mailing slot therein, closing and opening means interposed in said mailing slot portion, two sets of oppositely operating solenoid magnets interposed therein, means for actuating said oppositely operating solenoid magnets, and means for indicating the position of said solenoid magnets.

9. An apparatus of the character described including a mail chute, a plurality of mail reception apertures therein and means for automatically closing said mail reception apertures dissimultaneously from one or a common point.

10. An apparatus of the character described including a mail chute, a plurality of mail reception apertures therein, means for closing said mail reception apertures dissimultaneously from one or a common point and means for indicating the position of said closing means at said common point.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ROBERT W. ASHLEY.

Witnesses:
OLIN A. FOSTER,
CLARENCE S. ASHLEY