(No Model.) 3 Sheets--Sheet 1.

A. D. SAUNDERS.

MAIL CONVEYING APPARATUS.

No. 383,771. Patented May 29, 1888.

Fig. 5

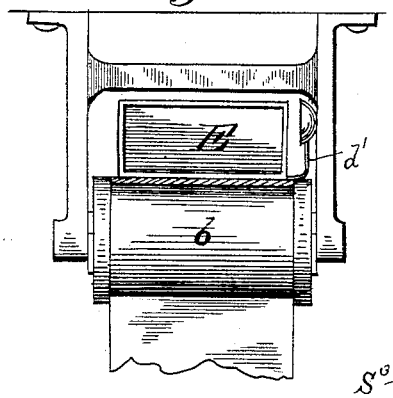
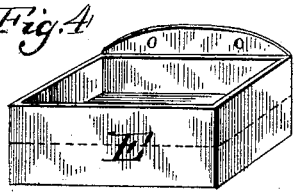


Fig. 4



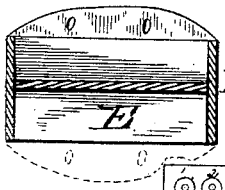


Fig. 4'

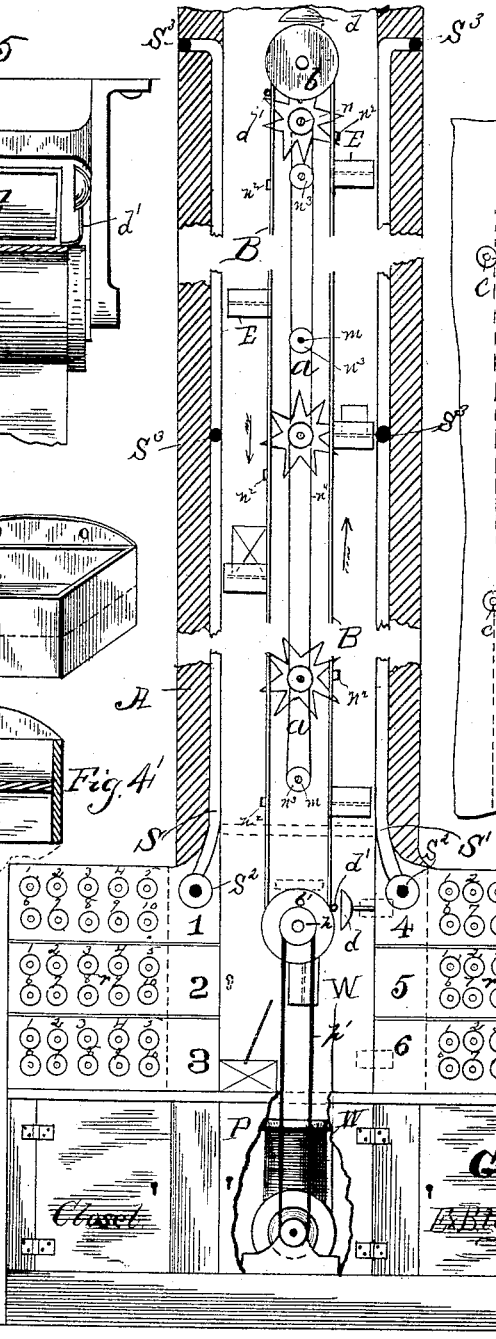
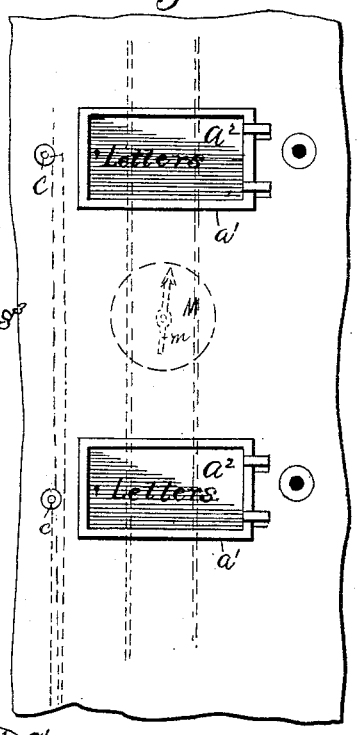


Fig. 1

Fig. 3



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By his Attorney

O. E. Duffy

(No Model.) 3 Sheets—Sheet 2.

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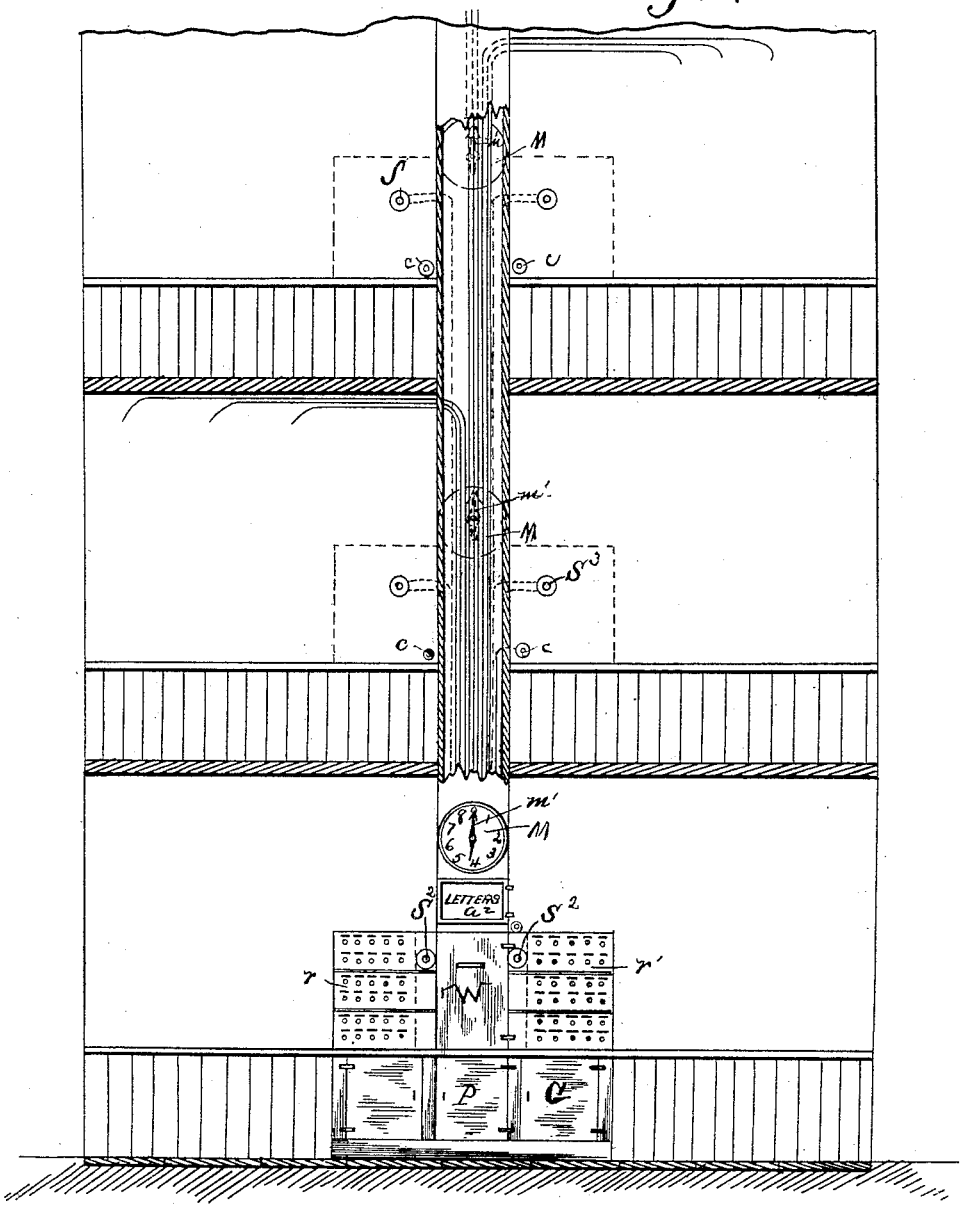
Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

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Fig. 6.

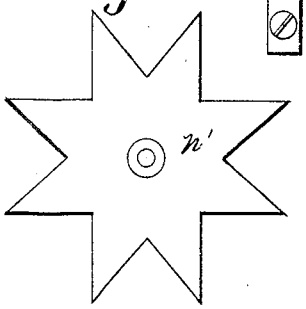


Fig. 9.

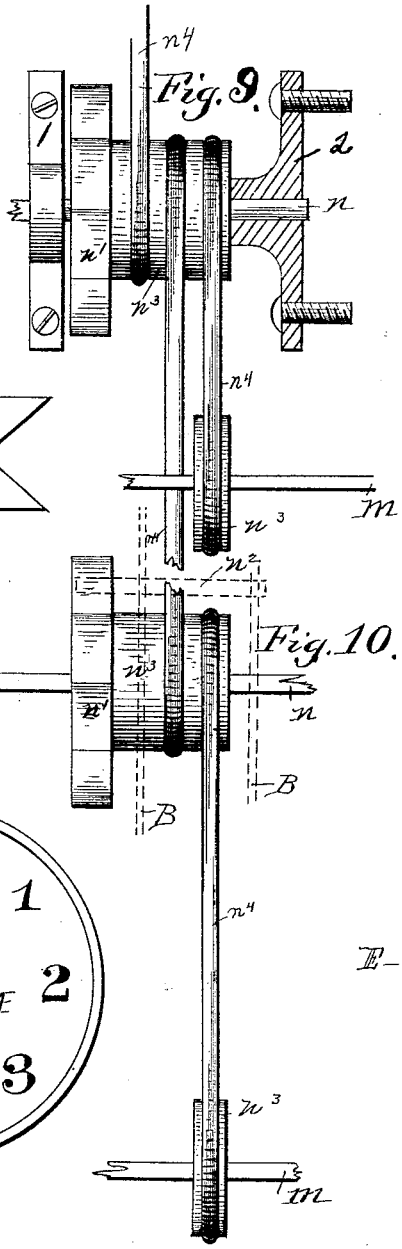


Fig. 10.

Fig. 7.

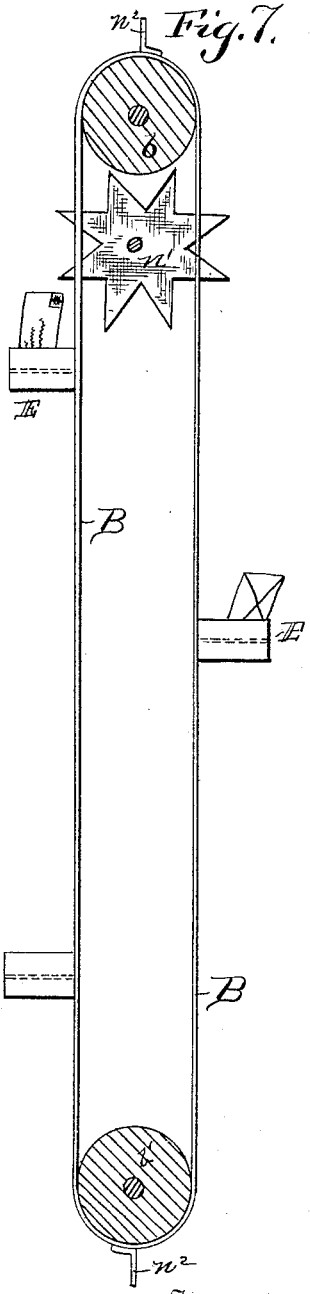
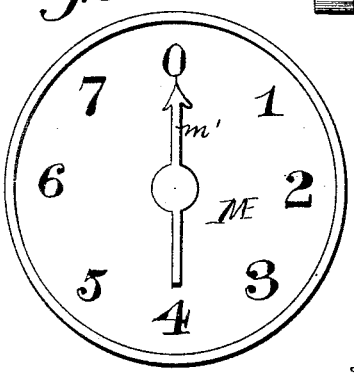


Fig. 8.



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UNITED STATES PATENT OFFICE.

ALFRED D. SAUNDERS, OF BROOKLYN, NEW YORK.

MAIL-CONVEYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 383,771, dated May 29, 1888.

Application filed January 16, 1888. Serial No. 260,924. (No model.)

To all whom it may concern:

Be it known that I, ALFRED D. SAUNDERS, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Mail-Conveying Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 the letters of reference marked thereon, which form part of this specification.

My invention relates to an improved apparatus for conveying mail or packages, and is especially adapted for use in office or other buildings, in post-offices, and in very tall buildings divided up into separate rooms or apartments. It can be cheaply and quickly put into a building, and is extremely useful and convenient, saving a great deal of time and trouble to business men or others who might wish to send from below a package, letter, or other article to a certain upper floor of a building, or to those on the upper floors who wish to send such articles to a mail-box or to a person in the lower portion of the building.

The object of my invention is to provide improved, cheap, and effective means whereby a person upon any floor of a building can send a letter or package to the lower floor, or a person at the lower floor could send a letter or package to an upper floor without sending a messenger or going up and down himself.

With these ends in view my invention consists in certain novel features of construction and combinations of parts, more fully described hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 represents a section of the well-hole extending through the several floors or stories of the building, showing the conveyer and the electric motor for actuating the same. Fig. 2 is a section through several stories or floors of a building, the outer wall of the well-hole being broken away to show the wires attached to the wall of the same. Fig. 3 is a view of the openings through the wall of the building into the shaft, said openings being closed by suitable doors or the like. Figs. 4 and 4′ are respectively a detail perspective view and a cross-section of one of the letter pockets or receptacles carried upon the conveyer. Fig. 5 is a detail view of the pulley over which the upper portion of the conveyer passes, showing the indicating bell or gong; and Figs. 6, 7, 8, 9, and 10 are detail views illustrating the indicator and manner of operating the same.

In the drawings, the reference-letter A indicates the wall or casing of a vertical well-hole, *a*, extending from the bottom floor upward, preferably through all the stories of a building. This well-hole is preferably constructed of iron, and is intended to pass through the wall of the main hall or most central part of each floor or story of a building, and the well-hole is provided at each floor with one or more openings or apertures, *a′*, through its outer wall, and which are located at such points in the well-hole as to be within easy reach from each story, and are normally closed by means of doors a^2, hinged to open inwardly into the room or hall in each floor through which the well-hole passes. An endless belt or conveyer, B, operates vertically in the well-hole over a pulley, *b*, horizontally journaled in the upper portion of the well-hole, and is driven by a pulley, *b′*, horizontally mounted in the lower portion of the well-hole. The pulleys are mounted upon suitable shafts or axles, carried, preferably, by hangers, and mounted upon the shaft which carries the lower driving-pulley is a pulley, *h*, adapted to be driven by a belt, *p′*, or the like, operated by a pulley carried by the armature of any suitable electrical motor, W, preferably located in a suitable receptacle, P, at the bottom of the well-hole, and the poles of the electrical motor are so connected with the source of electrical energy which drives the motor that the current can be broken and closed by means of push-buttons *c*, located on each floor near the doors or openings in the well-hole, each button being electrically connected with a circuit breaker and closer (not shown) by means of wires extending from each floor down through the well-hole at one side of the belt-conveyer, as shown in Fig. 2.

Pockets or receptacles E are secured at suitable intervals to the vertical endless conveyer. Said pockets are preferably rectangular in form, as shown in Figs. 4 and 4′, and are se-

cured at one edge to the belt, preferably by means of flaps extending from the receptacle. Each receptacle is divided into two pockets by means of a horizontal partition extending centrally through the same, thus forming a pocket upon the upper and lower sides of the receptacle, whereby the same are rendered reversible and can carry a letter or parcel when they are going up on one side or down on the other side of the conveyer.

Suitable gongs or bells, *d*, are located in the shaft near the upper and lower pulleys, and are adapted to be struck and rung by projections *d'*, carried by the belt, to notify when a receptacle carrying a letter or parcel has reached the bottom or top of the well-hole. A mail or letter box, W, is located at the bottom of the well-hole to receive the letters sent down by the conveyer, and said box is provided with the usual door, that can be opened by the mail-man.

S S' represent speaking-tubes, of any approved construction, running upwardly through the well-hole from the lower portion of the same, and at each floor or story each tube is provided with a branch mouth or ear-piece, S^3, and at the lower end each tube is provided with a mouth and ear piece, S^2, as shown in Fig. 1.

r r' represent suitable key-boards provided with the numbers of the rooms in the building, and opposite each number is a separate push-button, and each separate push-button is in electrical communication with a separate call-bell in the room represented by the push-button.

The reference-letter M represents a clock face or dial located upon the outside of the well-hole at each floor or story, and upon said dial are the numbers of the floors or stories of the building. (See Figs. 2 and 8.) Horizontal shafts *m* are suitably journaled across the hollow shaft between the belt conveyer in suitable hangers, 1 2, at each floor, and one end of each shaft is adapted to pass through the wall of the well-hole and through the center of each face or dial M, and each shaft is provided upon its outer end with an indicating-finger, *m'*, adapted to pass over the numbers of the floors of the building arranged in regular order around the dial. Another series of shafts, *n*, is also suitably journaled across the well-hole at each floor, upon each of which is mounted a star-wheel, *n'*, provided with a series of teeth equal to the number of stories or floors in the building. Said star-wheels are so located in the well-hole that a tooth of each will be engaged once in every complete revolution of the endless belt conveyer by each of two operating lugs or projections, n^2, oppositely located upon the belt-conveyer. Also, rigidly mounted upon each of said shafts *n* and each of shafts *m* are pulleys n^3, connected by means of belting n^4, so that all of the shafts *n* and *m* are connected together. Thus it will be seen that if a person upon the lower floor placed a letter in a pocket of the conveyer and started the same to take the letter to a person on a certain floor of the building, when the receptacle containing the letter had passed up the hollow shaft one story one of the projections n^2 would engage a tooth on one of the star-wheels and turn the wheel one tooth, which operation would turn all the indicating-fingers *m'* to the figure 1 on all of the dials, the indicating-fingers having been first set at zero, thus showing that the letter had passed up one story, and when the letter passes up through the second story a projection, n^2, will engage and turn another wheel one tooth, and turn all the indicating-fingers to the figure 2 on each dial, thus showing that the letter had passed the second story. Thus the person sending the letter, and the person to receive the same, can tell, by the indicating-fingers and dials, when the receptacle holding the letter reaches its destination, and both can then act accordingly.

Any person on entering the building will find the key-board *r* or *r* preferably near the entrance. He will then press the button communicating with the room in which is the person he wishes to communicate with. This operation will ring the bell in that room. The call will then be answered by some one from the room going to the opening in the shaft on that floor and making known the fact that he was there by calling through the speaking-tube, and the person below will then, if he wishes to send up a letter or note, open a door, a^2, Fig. 2, put his letter in one of the receptacles on the right-hand side of the conveyer, and then press one of the push-buttons *c*, which will complete the circuit through the electrical motor, and thus start the motor and hence the conveyer. The person above will then open the door at the opening into the well-hole and take out the letter when it reaches him.

Supposing a person on one of the upper floors wished to send a letter down into the mail-box, he would simply open one of the doors closing the opening into the well-hole, place his letter in one of the receptacles on the right-hand side of the conveyer and press the push-button near the door, which would set in operation the motor, and then hold the push-button depressed until the gong at the bottom of the well-hole indicated that the letter had been dropped into the mail-box by the projection on the belt near the receptacle engaging a bell.

It will be observed that the pocket on one side of a receptacle is used for conveying articles upward, and that the pocket upon the opposite side of the receptacle is to be used in conveying articles downward.

The batteries to furnish the electricity for the various purposes before mentioned are preferably located in the bottom of the receptacle or closet P, which contains the motor, or in a receptacle, G, near the foot of the well-hole or shaft.

It is clearly evident that numerous slight changes might be made in the form and arrangement of the various parts described with-

out departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the precise construction herein set forth, but consider myself entitled to all such slight changes.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The herein-described package or mail conveying apparatus, comprising a vertical closed well-hole extending through the several floors of a building, and provided with apertures or openings through its wall within easy reach from each floor, doors or the like normally closing said openings, an endless conveyer vertically operating in said well-hole, receptacles carried by said conveyer and adapted to pass within reach from each of said openings, each receptacle being provided with a pocket in its top and bottom, a motor in the bottom of said well-hole adapted to drive the conveyer, and connections between the motor and each floor, as set forth.

2. A conveying apparatus comprising a vertical well-hole extending through the several floors of a building, and provided with one or more openings through its wall at each floor, pulleys mounted at the top and bottom of said well-hole, an endless vertically-operating conveyer passing over said pulleys and adapted to be driven by the lower pulley, which is provided with an auxiliary pulley connected with an electric motor, and wires running through the well-hole from each floor, by which the operation of the motor can be started or stopped from any floor, as set forth.

3. The apparatus comprising a vertical well-hole extending through the several floors of a building, an endless conveyer operating in the same and provided with pockets or receptacles, and an indicating device whereby the number of floors traversed by the conveyer is shown and consisting of a graduated face or dial, and an indicating-finger operating over the face of the dial and located on and operated by a shaft or stud extending transversely into the vertical well-hole, said shaft or stud and the finger carried by the same being operated by the operation of the conveyer, substantially as described.

4. The apparatus comprising a vertical well-hole extending through the several floors of a building, an endless belt conveyer operating in the same and provided with pockets, and an indicating device whereby the number of stories traversed by the conveyer is shown upon every floor and consisting of a graduated face or dial upon each floor, an indicating-finger for each dial, horizontal shafts or studs extending transversely into the vertical well-hole and carrying said fingers and rotated by the belt conveyer as it operates, and belting whereby the shafts are connected and made to operate simultaneously when one shaft is turned, as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ALFRED D. SAUNDERS.

Witnesses:

JULIUS SOLGER,

CHARLES M. WERLE.