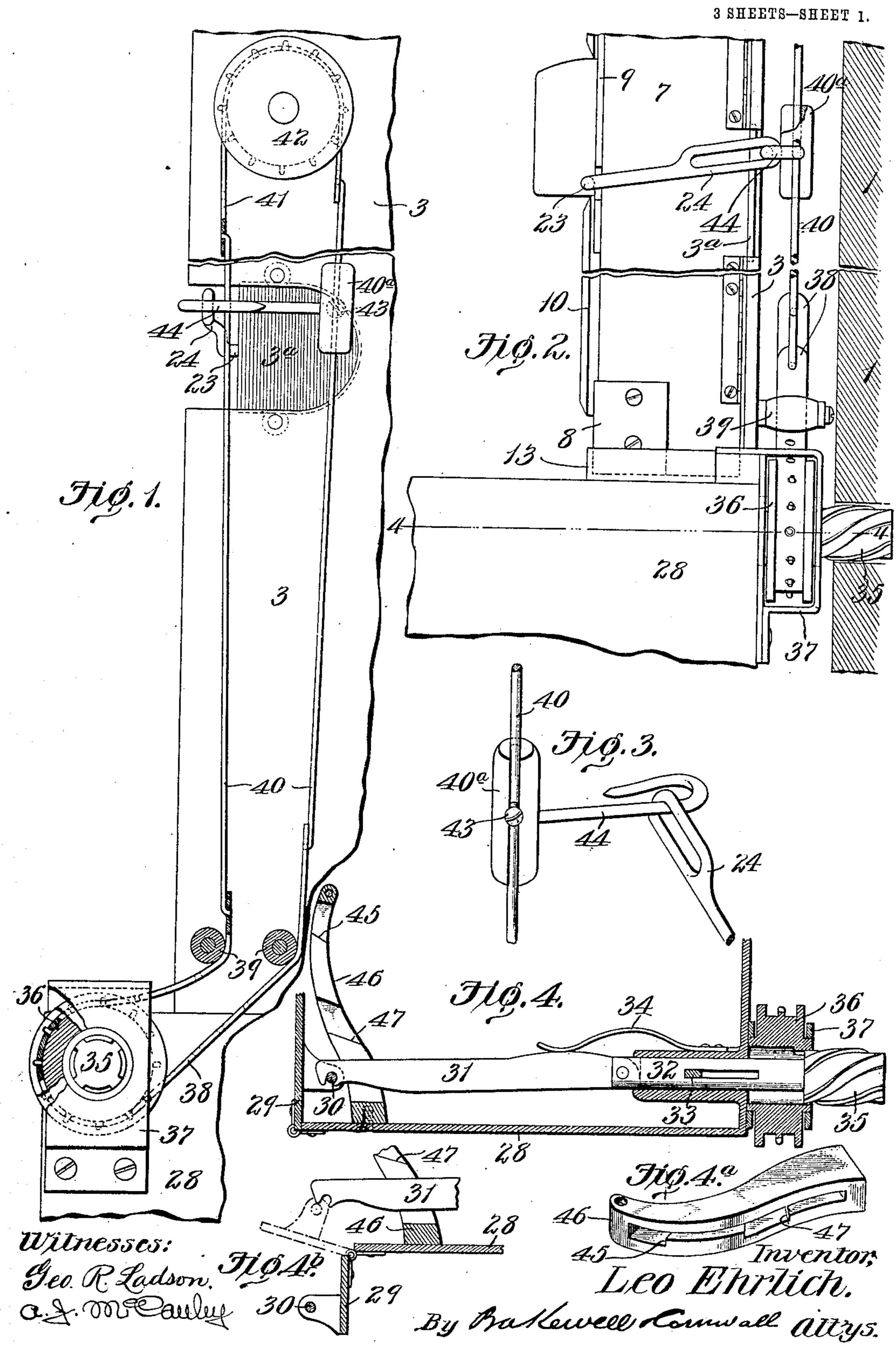
L. EHRLICH.

MAIL CHUTE.

APPLICATION FILED OCT. 1, 1906.

913,111.

Patented Feb. 23, 1909.



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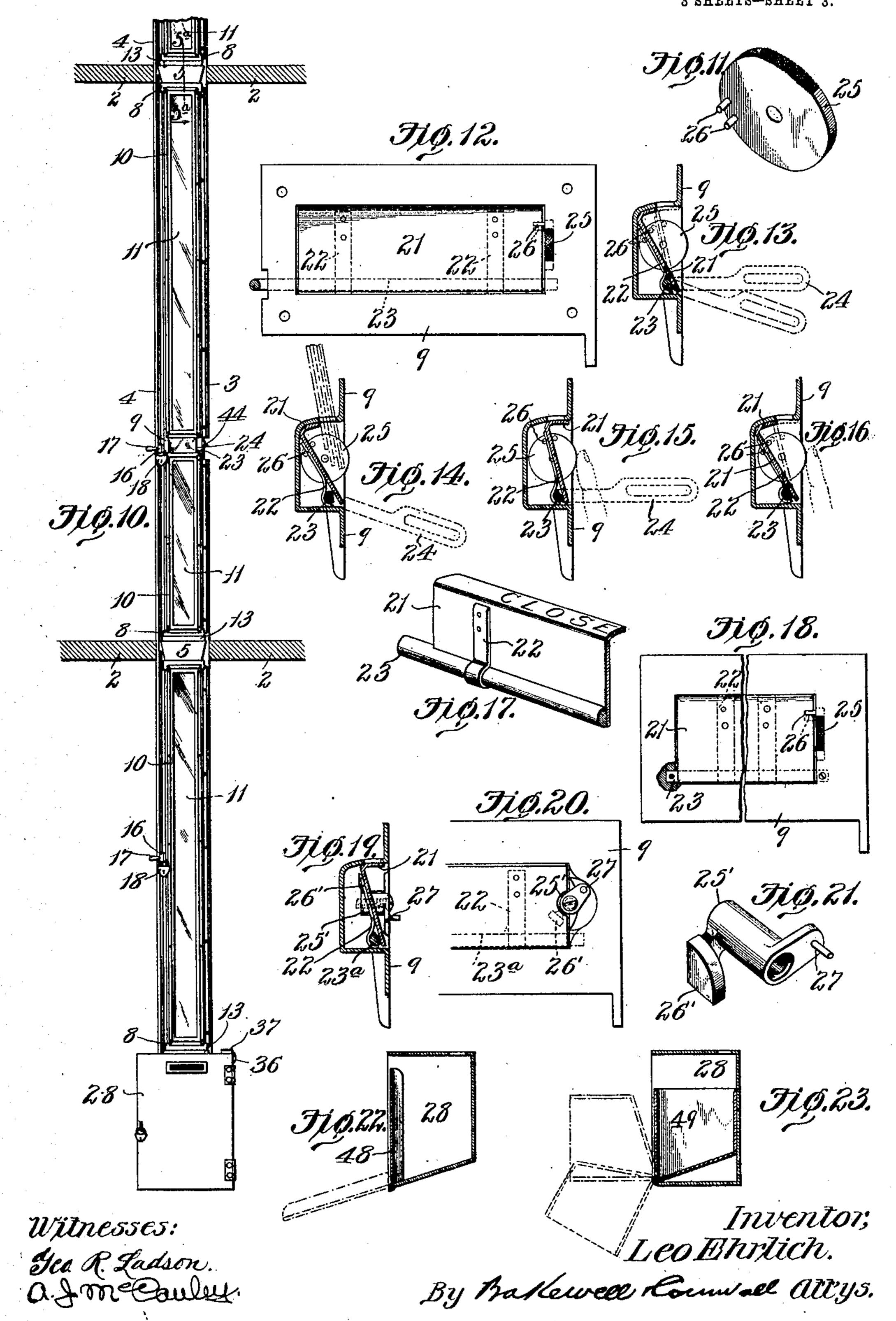
APPLICATION FILED OCT. 1, 1908. Patented Feb. 23, 1909. 3 SHEETS-SHEET 2. Fig.6. Tig. 9. Inventor,
Leo Enrich.

By Bakewell Cornwall attys.

## L. EHRLICH. MAIL CHUTE. APPLICATION FILED OUT. 1, 1908.

913,111.

Patented Feb. 23, 1909.
3 SHEETS—SHEET 3.



## UNITED STATES PATENT OFFICE.

LEO EHRLICH, OF ST. LOUIS, MISSOURI, ASSIGNOR TO UNITED STATES MAIL CHUTE EQUIP-MENT COMPANY, OF ST. LOUIS, MISSOURI.

## MAIL-CHUTE.

No. 913,111.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed October 1, 1906. Serial No. 336,963.

To all whom it may concern:

Be it known that I, Leo Ehrlich, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and 5 useful Improvement in Mail-Chutes, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the ac-10 companying drawings, forming part of this

specification, in which— Figure 1 is a fragmentary rear elevational view; Fig. 2 is a fragmentary side elevational view; Fig. 3 is a detail view illustrating the 15 connection between the cable and the gate for opening and closing the letter-aperture; Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 2; Fig. 4a is a perspective view of part of the lever or latch controlling 20 mechanism; Fig. 4b is a detail view illustrating the connection between the door of the collecting box and the letter-aperture-gateoperating mechanism; Fig. 5 is a fragmentary side elevational view of the chute as 25 viewed from the side opposite to that shown in Fig. 2; Fig. 5<sup>a</sup> is a sectional view on the line 5<sup>a</sup>—5<sup>a</sup> of Fig. 10; Fig. 6 is a detail view of a part of the mechanism for locking the tube sections in position; Fig. 7 is a frag-30 mentary front elevational view illustrating part of said locking mechanism; Fig. 8 is a detail view of a strip for holding the pane of glass in position; Fig. 9 is a horizontal sectional view on the line 9—9 of Fig. 5; 35 Fig. 9a is a detail view of the bar-locking spring which is operated by the movable part of the tube section; Fig. 9b is a sectional view on line 9b—9b of Fig. 5; Fig. 10 is a

front elevational view of the mail chute in 40 position; Fig. 11 is a detail view of the rotary disk which coöperates with the letter-aperture gate; Fig. 12 is an elevational view as seen from the inside of the letter-aperture gate, showing the same in position; Figs. 13, 14,

45 15 and 16 show the gate in its different positions; Fig. 17 is a detail view of the gate; Fig. 18 is a side elevational view as seen from the inside of a modified form of gate-operating mechanism; Figs. 19, 20 and 21 are views

50 illustrating the different modified forms of

gate-operating mechanism; Fig. 22 is a detail view illustrating one form of discharging mechanism for the contents of the collecting box; and Fig. 23 illustrates another form of discharging mechanism for the collecting box. 55

This invention relates to a new and useful improvement in mail chutes for public buildings, the object being to construct a chute in such manner that the several sections composing the tube may be so manipulated as to 60 give access to the interior of the tube.

Another object is to provide the apertures through which mail may be introduced into the chute from the different floors, with suitable gates or closures which may be 65 moved to their open or closed positions from the interior of the tube, and held in such position by means of a spring. These gates, in addition to being independently and manually operable, are collectively and 70 mechanically operable by the door of the collecting box at the bottom of the chute, whereby when said door is opened all of the gates are moved to a closed position and in this manner letters and packages cannot be 75 mailed while the collector is removing the mail from the box.

Another object of the invention is to provide the collecting box with a tilting section to facilitate the removal of mail therefrom. 80

Another object is to so construct the tube sections that they may be transported to the point of installation in dismantled condition, the parts being in readiness for assembling.

The parts of the tube sections may thus be 85 nested and occupy a small space compared to the space occupied by the assembled tube sections.

With the above-mentioned principal objects in view, the invention consists in the 90 construction, arrangement and combination of the several parts, all as will be hereinafter described and afterwards pointed out in the claims.

In the drawings, 1 indicates the vertical 95 wall of a building and 2 the floors thereof, these parts being illustrated conventionally for the purpose of locating the same with respect to my improved mail chute.

Referring to Fig. 9, the tube sections of my 100

mail chute consist of a back plate 3 which is composed of pieces of sheet metal cut in appropriate lengths and connected together so as to extend practically throughout the 5 length of the chute. This back plate may be flanged at both side edges (only one flange 4, however, is shown in the drawings), for the purpose of giving it strength. The back plate 3 is secured by suitable fastening de-10 vices to the vertical wall of the building in such manner as to provide a space between said back plate and the vertical wall of the building, as shown in Fig. 2. This back plate 3 may also be connected to thimbles 5 15 (see Fig. 10), which thimbles are in the horizontal planes respectively of the floors of the building. 6 indicates facing plates secured to the back plates 3. The joints between the back and facing plates may be broken so 20 that the said plates constitute splices for each other. These plates are riveted together at the building, the heads of the rivets being counter-sunk in the facing plate so as to offer no obstruction to the descent of mail. 25 The facing plate 6 is as wide as the interior width of the chute, its edges forming shoulders by which rabbeted joints may be made with the side walls of the tube sections. Each tube section consists, in addition to 30 the facing plate 6, which forms the back wall of the tube, of two side angles 7 constituting the side walls of the tube section and a front wall, which latter is made up principally of glass panels through which the condition of 35 the interior of the tube may be seen. The angles 7 may be made up by forming a flange along one edge (the forward) of a sheet metal plate, as shown in Fig. 9. These angles are connected together at their upper and lower 40 edges by means of connecting straps 8 riveted or otherwise fastened thereto. In addition to the straps 8, the angles have secured to them a plate 9 which contains the mail-receiving apertures and the frames 10 45 in which the glass panels are mounted. Frames 10 are preferably made of polished brass so as to give an ornamental finish to the tube sections. The panels of glass, indicated at 11, are arranged inside the frames 50 10 and are held in position by strips 12, the latter being preferably thin spring metal of suitable character and which are secured to the inner faces of the flanges or front legs of the side plates 7. As the glass panels 11 are 55 not usually of uniform thickness, I prefer to cut the free edges of the strips 12 as shown in Fig. 8 so as to form independently yielding spring tongues. These tongues are placed under tension and in addition to hold-60 ing the glass panels 11 tightly against their frames, leave no crevice in which mail may be caught.

Means for shedding the mail and prevent-

ing it from being caught by the upper ends

65 of the strips 12, is illustrated in Fig. 8, where-

in it will be seen that the metal strip is beveled and bent so as to hug the inner face of the chute closely.

The length of the so-called tube section is

The length of the so-called tube section is coincident with the length of the side plates 70 7, and one of these side plates is hinged substantially throughout its length to the back plate 3, as shown in Fig. 9. The tube section composed of the front and two side walls may thus swing outwardly from the back 75 wall, the said tube section clearing the floor and ceiling in its swinging movement.

The thimbles 5 before referred to have their front and side walls tapering, as shown in Fig. 10. Each thimble is flush with the 80 floor but projects a short distance below the ceiling so that when the tube section is closed it embraces the tapered lower end of the thimble. In this manner mail falling from above and passing through the thimble can-85 not be caught upon any projection at the joint between the upper end of the swinging tube section and the lower end of the thimble. The lower end of each tube section may swing free of the thimble located there-90 under.

The means for locking the tube sections closed consists of a vertically slidable coupling sleeve 13 which is carried by a slide bar 14, said bar being guided in its movements 95 by slot and pin connections to the flange 4 of the back plate. The coupling sleeve 13 is in the form of an open-ended box whose back wall is housed behind the thin cover plate 15 constituting a flush portion of the facing 100 plate 6. The side and front walls of the sleeve 13 are of such size and shape as to snugly fit around the lower end of the swinging tube section, as shown in Fig. 5<sup>a</sup>. The lower end of this coupling sleeve section is at 105 all times received in the thimble 5. When the rod 14 is moved downwardly it carries with it the coupling sleeve section 13, which is telescopically housed in the thimble 5 when it releases the lower end of the swing- 110 ing tube section, which may then be swung outwardly. When the sleeve section 13 is closed and the rod 14 is raised the coupling sleeve section embraces the lower end of the tube section and locks the same in its closed 115 position.

It will be observed with relation to the construction just above described that no obstructions are left in the chute on which mail may lodge.

120

The rod 14 preferably extends from floor to ceiling, as shown in Fig. 5, and is pivotally connected to an operating lever 16 whose rear end is provided with a curved slot for engagement with the pivot pin mounted in 125 the back plate of the chute. The forward end of this lever 16 is provided with an operating handle 17, said lever also having an opening at its forward end which, when the lever is raised, registers with an opening in a 130

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lug on the plate 9. Thus a key-operated lock 18 may be introduced through these registering openings to lock the lever 16 in

place.

The facing plate 6 has been heretofore described as being located between the edges of the side walls 7 so as to form a rabbeted joint. In order to insure a full closing movement being given the swinging tube section, means under control of said swinging tube section and actuated thereby are coöperatively related to the bar 14 and lock said bar 14 in its lowered position, preventing any rising movement thereof until the swinging tube section is fully closed. By provision of this means no crevice is left at the back edges of the side walls 7 in which

mail matter may be caught. Referring now to Figs. 9 and 9<sup>a</sup>, 19 indi-20 cates a leaf spring secured behind the back plate 3 and provided with a pin 20 which passes through an opening into said back plate in line with the back edge of one of the side walls 7 adjacent the bar 14. The back 25 plate is provided with a slot in which the spring 19 may operate and engage a notch or recess 14ª in the slide bar 14, which notch is in line with the free end of the spring when the bar 14 is in its lowermost position. In 30 this manner when the swinging tube section is closed the spring 19 will be forced back out of the recess 14a; but when said swinging tube section is open, at which time the bar 14 stands in its lowermost position, said bar 35 cannot be raised until the swinging tube section is closed and stands fully closed both at its top and at its bottom. There are two springs 19 for each swinging tube section, one located near the top and the other 40 near the bottom thereof. The rear edge of bar 14 is cut and the tongue portion between the cuts is bent laterally as at 14b so as to cooperate with lateral projections 7<sup>a</sup> on the side wall of the swinging tube section. 45 When the bar 14 is depressed these tongues 14<sup>b</sup> are moved away from the projections 7<sup>a</sup>. When the swinging tube section is closed

50 thus lock the swinging tube section home, as shown in Fig. 5.

Referring now to Figs. 11 to 18, the plate 9 in which is formed the mail-receiving apertures, has an offset which constitutes a housing for the gate 21; which gate is substantially in the form of an inverted L in cross-section. The short leg of the gate is designed to move across and close the mail-receiving opening or be housed in the hous60 ing out of the way of the mail. This gate has leaf springs 22 secured to its front face, the lower free edges of which springs engage a rod 23 constituting a pivot rod for the gate. Rod 23 has a flattened face against which the gate is held by the springs 22 and one end of

and the bar 14 raised the tongues 14<sup>b</sup> will

move over and engage projections 7<sup>a</sup> and

rod 23 extends outside the housing and is provided with a slotted crank 24 by which rod 23 may be rocked, and with it the gate 21 to its open and closed positions. 25 indicates a disk arranged in one end of the hous- 70 ing and having pins 26 which engage the gate, the inner edge of disk 25 being knurled so that it may be manually rotated. The normal position of the slotted rock arm 24 is the raised one, as indicated by dotted lines 75 in Fig. 13, in which position the gate uncovers the mail-receiving openings. Should this arm be depressed at the time mail is being introduced into the chute, as shown in Fig. 14, it will be obvious that the gate can- 80 not close the opening. Under these circumstances the springs 22 yield and permit the flat faced pivot rod 23 to rotate independently. The friction of the springs 22 is such that they will not force the gate to assume its 85 normal position relative to rod 23 when once the gate is displaced, as in Fig. 14, and this is taken advantage of, as illustrated in Fig. 15, to enable the operator to manually move the gate to a closed position, notwithstand- 90 ing the fact that the rock arm 24 is in its elevated position. In Fig. 16 I have shown the position of the parts when restored by the operator from the position to which they were moved in Fig. 15. This method of 95 frictionally mounting the gate enables it to be manually positioned by the person having access to the interior of the chute as when the chute is opened after the operation of bar 14. Thus if the chute is out of order in 100 the upper stories of a building the gates cooperating with the mail-receiving apertures on the upper floors may be closed without disturbing the gates on the lower floors.

In Fig. 18 I have shown a modified form 105 of gate in which the pivot rod 23 may be circular and held in a stationary position, the gate being frictionally mounted thereon so as to occupy either the open or closed position to which it may be moved.

In Figs. 19, 20 and 21 I have shown another modification of manually operable means for opening and closing the gate, in which the gate is mounted by means of leaf springs on a flat-faced rock shaft 23° corresponding to the shaft shown in Figs. 12 to 17 inclusive. 25' indicates a rocking element having a projection 26' located in front of the gate. The sleeve 25' has a handle 27 at its front end by which it may be rocked, 120 and when the parts are moved to the position shown in Fig. 19 the gate is closed. By raising the handle and depressing the projection 26' out of the way of the gate, the gate may be opened.

Means for mechanically operating all of the gates is shown in Figs. 1 to 4<sup>a</sup> inclusive. The chute discharges into a collecting box 28 and this box is provided with a hinged door 29 locked by a suitable pad lock to 130

which the mail carrier has a key. The door 29 carries a pin 30 which coöperates with a recess in the forward end of a spring-pressed arm 31. This arm is connected by a rulejoint to a sliding member 32 which is slotted for the passage of a cross key 33, whereby said member may be moved longitudinally and prevented from turning. The bearing for the sliding member 32 is arranged within 10 the box 28. A spring 34 is mounted on this bearing to hold the member 31 in normal position. The outer end of the sliding member 32 is provided with a worm 35 which operates in a sprocket wheel 36. The bore of 15 the sprocket wheel has threaded engagement with the worm 35. A yoke piece 37 embraces the sprocket wheel and provides a bearing for the hollow axle thereof, said yoke piece permitting rotation of the 20 sprocket wheel but preventing longitudinal

38 indicates a flexible band preferably made of steel and containing perforations for engagement with the teeth on the sprocket 25 wheel 36. This band passes under idle rollers 39 mounted behind the back plate 3. The ends of band 38 are connected to wires or cables 40 whose upper ends are connected to a flexible band 41 similar to the band 38, 30 and which band 41 passes over an idle sprocket wheel 42 mounted behind the back | plate 3 at the upper end of the chute.

movement thereof.

40° indicates a slotted block arranged upon the wire 40 and clamped thereon by a 35 set screw 43. This block has an arm 44 with an open loop at its end which engages the eye of the rock arm 24 which is on the end of the flat-faced rod 23 on which a gate is mounted. The back plate 3 and facing 40 plate 6 are cut away at appropriate points in order to permit of the positioning of the slotted blocks 40<sup>a</sup>. This opening is closed by a movable plate 3a, see Fig. 1, which plate is held in position by suitable screws. 45 There is a connection between cable 40 and each gate in the chute so that when said

door 29 is closed all of the gates will, in the 50 normal position of the parts, be opened. In the event that a person is mailing a letter or letters at the time the door 29 is opened, the springs 22 will permit the arm 24 to be depressed by the cable 40, as shown in Fig. 14.

cable is operated by the opening of the door

29 all of the gates are closed. When the

No damage, however, will be done to the gate which is held open by reason of the letters in its path; nor will the fact that one gate is prevented from fully closing its opening interfere with the cable 40 or with any other

60 gate. When the door 29 is fully open as shown in Fig. 4b, the stud 30 is disengaged from the arm 31, such disengagement occurring shortly after the door 29 starts to swing, and before it reaches its fully open

position. This insures a full stroke being 65 imparted to the lever 31 at each opening and closing movement of the door 29. The stroke of the lever 31 and its connected sliding member 32 causes the worm 35 to move longitudinally in the sprocket 36, and the 70 sprocket is thus made to rotate the proper part of a revolution to give to the cable 40 requisite movement to operate arms 24.

Should it be desired for any reason, such for instance as to make repairs, etc., to close 75 all of the gates so as to prevent the introduction of mail into the chute, the door 29 may be opened by an authorized person who manually forces the pivoted member 31 and its connected parts rearwardly. In order to 80 prevent reëngagement between the door and the lever 31 after the door is closed, lever 31 could be moved against its spring 34 and introduced behind a shoulder 45 in a bracket 46 arranged in the box 28. Should it be 85 desired to disconnect the lever 31 from the door 29 so that the gates would remain open, even when the door 29 was open, lever 31 would be swung against the spring 34 and located behind the shoulder 47 in the bracket 90 46. This bracket and shoulder is illustrated in detail in Fig. 4a.

In Figs. 22 and 23 I have illustrated means for facilitating the discharge of mail from the collecting box 28. In Fig. 22 there is 95 shown a hinged plate 48 having flanges at its sides and when the door 29 is opened this hinged plate may be dropped so as to discharge the mail into the bag. In Fig. 23 a box 49 open at its top is arranged inside of 100 the box 28 and hinged at its forward lower edge so that the entire contents of the mail in the collecting box may be lifted and dumped.

I am aware that minor changes in the con- 105 struction, arrangement and combination of the several parts of my device can be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A mail chute having mail-receiving apertures in different horizontal planes, a 115 yieldingly mounted independently movable gate for each aperture, and manually operable means for moving said gates to open and closed positions; substantially as described.

2. A mail chute having mail-receiving 120 apertures in different horizontal planes, a yieldingly mounted independently movable gate for each aperture, and mechanically operable means for moving said gates to open and closed positions; substantially as 125 described.

3. A mail chute having a mail-receiving aperture, a yieldingly mounted gate or closure

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for said aperture, and friction means for | gate against the flat face of said rod, and

tially as described.

4. A mail chute having a mail-receiving 5 aperture, a yieldingly mounted gate or closure for said aperture, manually and mechanically operable friction means for holding said gate to its open or closed position; substantially as described.

10 5. A mail chute having a mail-receiving aperture, a yieldingly mounted gate or closure for said aperture, a rod on which said gate or closure is mounted, and friction means connecting said gate and rod; sub-

15 stantially as described.

6. A mail chute having a mail-receiving aperture, a yieldingly mounted gate or closure for said aperture, a rod on which said gate or closure is frictionally mounted, and 20 manually operable means for moving said gate to open or closed position; substantially as described.

7. A mail chute having a mail-receiving aperture, a yieldingly mounted gate or 25 closure for said aperture, a rod on which said gate or closure is frictionally mounted, and mechanically operable means for moving said gate to open or closed position; substantially

as described.

8. A mail chute having a mail-receiving aperture, a yieldingly mounted gate or closure for said aperture, a rod on which said gate or closure is frictionally mounted, and manually and mechanically operable means 35 for moving said gate to open or closed position; substantially as described.

9. A mail chute having a mail-receiving aperture, a yieldingly mounted gate or closure for said aperture, a mechanically 40 operated part, and a yielding connection between said mechanically operated part and said gate; substantially as described.

10. A mail chute having a mail-receiving aperture, a yieldingly mounted gate or 45 closure for said aperture, a mechanically operated part, a yielding connection between said gate and said mechanically operated part, and manually operable means for moving said gate; substantially as described.

50 11. A mail chute having a mail-receiving aperture, a gate or closure for said aperture, a flat-faced rod on which said gate or closure is mounted, and means for holding said gate against the flat face of said rod; substan-

55 tially as described.

12. A mail chute having a mail-receiving aperture, a gate or closure for said aperture, a rod having a flat face with which said gate coöperates, and springs for holding said gate 60 against the flat face of said rod; substantially as described.

13. A mail chute having a mail-receiving aperture, a gate or closure for said aperture, a rod having a flat face with which said gate 65 coöperates, yielding means for holding said

holding said gate open or closed; substan- | manually operable means for swinging said gate and said rod; substantially as described.

14. A mail chute having a mail-receiving aperture, a gate or closure for said aperture, a 70 rod having a flat face with which said gate cooperates, yielding means for holding said gate against the flat face of said rod, and mechanically operable means for rotating the rod and with it the said gate; substan- 75

tially as described.

15. A mail chute having a mail-receiving aperture, a gate or closure for said aperture, a rod having a flat face with which said gate coöperates, yielding means for holding said 80 gate against the flat face of said rod, mechanically operable means for rotating the rod and with it the said gate, and manually operable means for moving the gate independently of the rod; substantially as de- 85 scribed.

16. In a mail chute, a mail-receiving box at the lower end of the chute, a door for closing said box, closures for the different mailreceiving apertures in the chute, and means 90 operated by said door for opening and closing said closures; substantially as described.

17. A mail chute having mail-receiving apertures, a manually operable closure for each aperture, a mail-receiving box at the 95 lower end of the chute, a door for said box, and means operated by said door for actuating said closures; substantially as described.

18. A mail chute having mail-receiving apertures, a box at the lower end of the chute, 100 a door for said box, independently operable closures for said apertures, means for operating said closures by friction, and connection between said door and said operating means; substantially as described.

19. A mail chute having mail-receiving apertures, a box at the lower end of the chute, a door for said box, closures for the apertures, means connected to said door for operating all of said closures simultaneously; 110

substantially as described.

20. A mail chute having a mail-receiving aperture, a closure for said aperture, a box at the lower end of the chute, a door for said box, and means located within the box and 115 connected to said door for operating said closure; substantially as described.

21. A mail chute having a mail-receiving aperture, a closure for said aperture, a box for receiving the mail from said chute, a door 120 for said box and means arranged within the box and connected to said door for opening and closing said aperture and holding said closure in either of said positions; substantially as described.

22. A mail chute provided with mail-receiving apertures in different horizontal planes, closures for said apertures, means for operating said closures simultaneously, and means whereby some of said closures can re- 130

main open when the other closures move into their closed position; substantially as described.

23. A mail chute provided with mail-re-5 ceiving apertures in different horizontal planes, closures for said apertures, operating mechanisms for said closures, and means for yieldingly connecting said closures to said operating mechanism; substantially as de-10 scribed.

24. A mail chute provided with mail-receiving apertures in different horizontal planes, yieldingly mounted closures for said apertures, and means for operating said clo-15 sures simultaneously; substantially as de-

scribed.

25. A mail chute provided with mail-receiving apertures in different horizontal planes, closure supports, closures yieldingly 20 connected to said supports for closing said apertures, and means for operating said supports simultaneously; substantially as described.

26. A mail chute provided with mail-re-25 ceiving apertures in different horizontal planes, closures for said apertures, a cable provided with adjustable blocks, arms on said blocks, and yielding connections between said blocks and arms; substantially as de-

30 scribed.

27. A mail chute provided with mail-receiving apertures in different horizontal planes, closures for said apertures, an operating member arranged between the chute 35 and the wall on which it is mounted, adjustable devices on said operating member that are connected to said closures, and plates closing openings in the back wall of the chute through which access may be had to the ad-40 justable devices on the operating member; substantially as described.

28. In a mail chute having a back plate spaced from the vertical wall of a building, the combination with gates or closures for the 45 mail-receiving apertures in said chute, and mechanism for operating said gates or closures, said mechanism being located in the space behind the back plate; substantially

as described.

50 29. A mail chute having apertures in different horizontal planes, closures for said apertures, a cable to which said closures are connected, and means for operating said cable, said means including a sprocket, and 55 a worm having threaded engagement with said sprocket; substantially as described.

30. A mail chute having apertures in different horizontal planes, closures for said apertures, a cable to which said closures are 60 connected, means for operating said cable, said means including a sprocket held against longitudinal movement, and a longitudinally movable worm having threaded engagement with said sprocket; substantially as de-

65 scribed.

31. A mail chute having apertures in different horizontal planes, closures for said apertures, a cable to which said closures are connected, means for operating said cable, said means including a sprocket, a worm 70 having threaded engagement with said sprocket, a lever connected to said worm, and a detachable actuating device for said

lever; substantially as described.

32. A mail chute having apertures in dif- 75 ferent horizontal planes, closures for said apertures, a cable to which said closures are connected, means for operating said cable, said means including a sprocket, a worm having threaded engagement with said 80 sprocket, a lever yielding in one direction and connected to said worm, a detachable actuating device for said lever, and means for holding said lever in operative position with respect to its actuating device; sub- 85 stantially as described.

33. A mail chute having apertures in different horizontal planes, closures for said apertures, a cable to which said closures are connected, means for operating said cable, 90 said means including a sprocket, a worm having threaded engagement with said sprocket, a lever yielding in one direction and connected to said worm, a detachable actuating device for said lever, and means 95 for holding said lever in an inoperative position with respect to its actuating device; substantially as described.

34. A mail chute having apertures in dif-ferent horizontal planes, closures for said 100 apertures, means connecting all of said closures that they may be moved together, a box at the lower end of the chute, a door for said box, and means for detachably connecting said door and connecting means together 105 whereby when said parts are operatively connected said closures are simultaneously operated upon the movement of said door;

substantially as described.

35. In a mail chute, a flanged back plate 110 having an opening, a movable plate closing said opening, and means for securing said plate in position; substantially as described.

36. In a mail chute, a flanged back plate, a facing plate, said plates being connected 115 together and provided with openings through which access may be had through the tube behind the back plate, removable plates closing said openings, and means for securing said plates in position; substantially as de- 120 scribed.

37. In a mail chute having a back plate spaced from the vertical wall of a building, the combination with gates or closures for the mail-receiving apertures in said chute, 125 and mechanism for operating said gates or closures, said mechanism being located in the space behind the back plate; substantially as described.

38. A mail chute having a back plate 130

spaced from the wall of the building to accommodate mechanism connected with the chute, said back plate being provided with openings through which access may be gained to said mechanism, and closures for said openings; substantially as described.

In testimony whereof I hereunto affix my

signature in the presence of two witnesses, this twenty-seventh day of September 1906.

LEO EHRLICH.

Witnesses:

LENORE WILSON, GEORGE BAKEWELL.