W. T. OTTO & J. R. DOUGLASS.

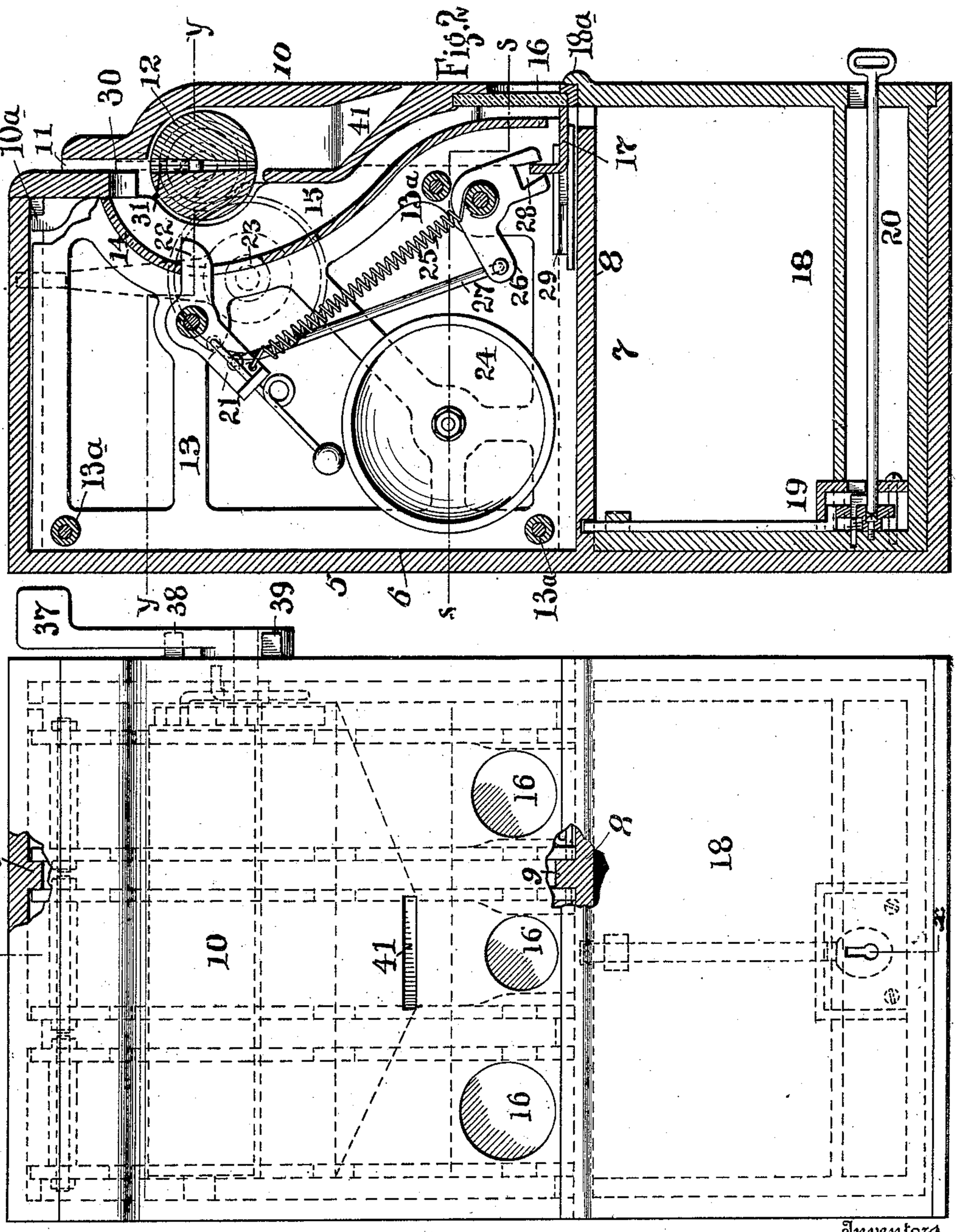
TELEPHONE TOLL BOX.

APPLICATION FILED DEC. 5, 1907.

917,115.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.



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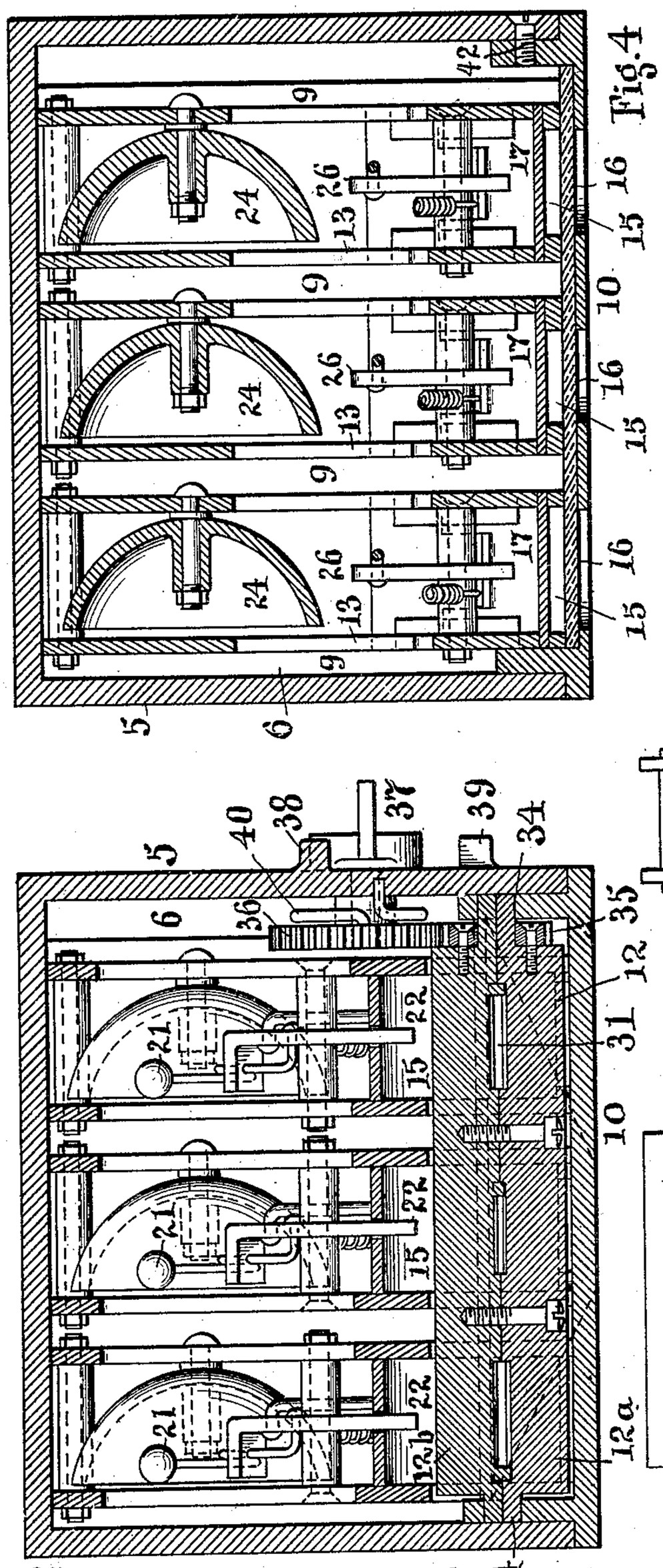

Fig. 4.

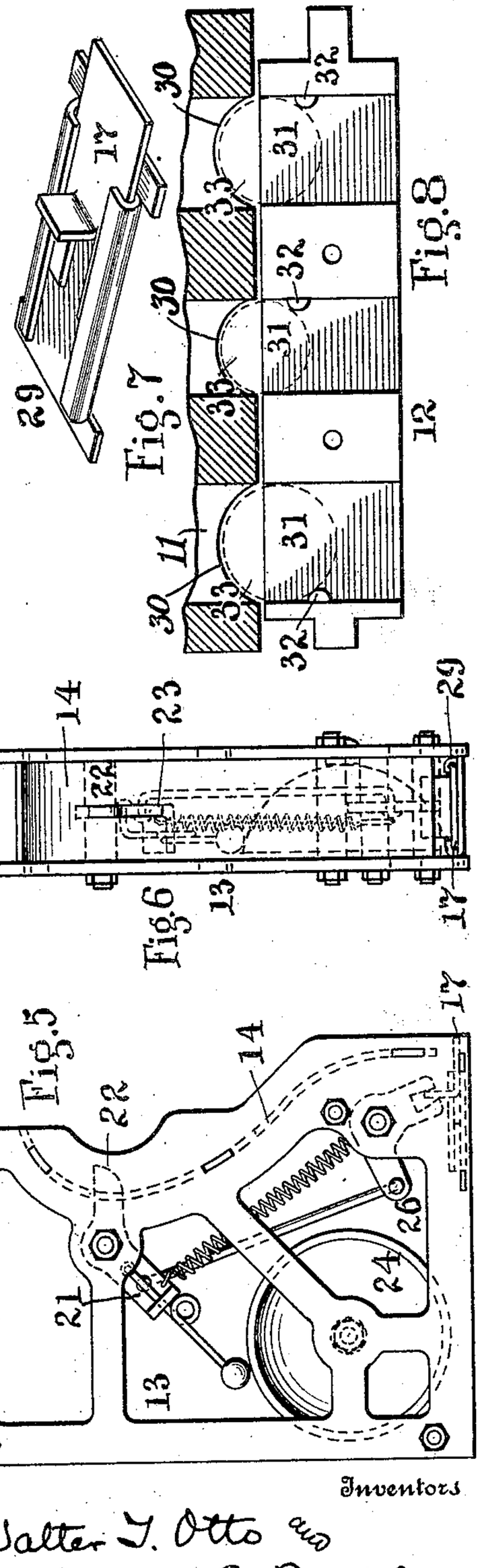

Fig. 7.

Fig. 8.

Fig. 6.

Fig. 3.

Fig. 5.

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By

Witnesses

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UNITED STATES PATENT OFFICE.

WALTER T. OTTO, OF PHILADELPHIA, PENNSYLVANIA, AND JOHNSON R. DOUGLASS, OF ATLANTIC CITY, NEW JERSEY, ASSIGNORS OF ONE-THIRD TO WILLIAM E. GREGG, OF PHILADELPHIA, PENNSYLVANIA.

TELEPHONE TOLL-BOX.

No. 917,115. Specification of Letters Patent. Patented April 6, 1909.

Application filed December 5, 1907. Serial No. 405,155.

To all whom it may concern:

Be it known that we, WALTER T. OTTO, a citizen of the United States, and resident of the city and county of Philadelphia, State of Pennsylvania, and JOHNSON R. DOUGLASS, a citizen of the United States, and resident of Atlantic City, county of Atlantic, State of New Jersey, have invented an Improvement in Telephone Toll-Boxes, of which the following is a specification.

Our invention has reference to telephone toll boxes, and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof. Heretofore, toll boxes of this character have been employed but involved constructions which introduced, among others, the following objectionable qualities, to wit: In case of trouble in the operative mechanism of the box, repairs were most difficult because such repairs must be made within the confines of the case and this is usually located in places where little or no daylight is available, which conditions cause the repairs to be made with difficulty and at large cost; when the box is deranged, it has heretofore been put out of commission for the time being and this causes loss of revenue; the parts of the box for receiving the coins of different denominations have not been interchangeable, and consequently the first cost of the box has been needlessly large and repairs are of necessity costly; and no provision has been heretofore made for detecting depositors of spurious coins or slugs in the disk or other forms, and as a result, experience has shown that a very large proportion of the deposits are fraudulent.

The object of our invention is to overcome all of the above specified objections by providing a construction of toll box which eliminates the defective elements of construction heretofore employed and provides means of disclosing the deposit of the person who is using the box and telephone.

Our invention consists of a toll box in which the coin actuated sound producing devices for the coins of different denominations are made as sections independently removable from the case, whereby any defective section may be removed for easy and quick repair or for being replaced with another and similar section.

Our invention also consists of a multiple coin toll-box provided with means for supporting and exhibiting the coin or other deposit on its travel to the cash drawer.

Our invention also comprehends details of construction which, together with the features above specified, will be better understood by reference to the drawings, in which:—

Figure 1 is a front elevation of a telephone toll box embodying our invention; Fig. 2 is a sectional side elevation of the same on line *x—x;* Fig. 3 is a cross section of the same on line *y—y;* Fig. 4 is a cross section of the same on line *s—s;* Fig. 5 is a side elevation of one of the signal producing sections; Fig. 6 is a front elevation of the same; Fig. 7 is a perspective view of the coin supporting device for the exhibitor; and Fig. 8 is an elevation of one part of the coin operating cylinder.

5 is the box and contains an upper compartment 6 and a lower compartment 7, the latter being provided with the cash drawer 18 furnished with a lock 19 at the rear and adapted to be operated by a long key 20. By locating the lock in position only to be reached by a long key, a feature of safety against picking the lock is secured.

The upper compartment 6 is provided with a series of parallel guide ribs 9 at top and bottom between which the signal producing sections are arranged and supported, so that each section may be independently removed by withdrawing it like a book from a shelf after the front plate 10 of the case or box has been removed. These sections are indicated at 13, and consist of two light open side frames connected together by transverse bolts and spacing tubes or other equivalent means at 13ª, or the framework may be made in any other suitable manner. The forward portion of these sections are provided with a guide plate 14 which is suitably curved and furnished with a slot 23 through which the arm 22 of the striking lever 21 extends so as to be operated by the coin when forced downward by the rotating cylinder 12.

The striking lever 21 is pivoted to the frame of the section 13 and is pulled toward a bell 24 by a spring 25. The striking of the arm 22 against the upper edge of the slot 23 limits the downward movement of the striker. The elasticity of the end of the

striking lever is sufficient to allow the hammer thereof to strike the bell 24 which is secured within the framework of the section.

The front plate 10 of the case or box is attached in any suitable manner. As shown, it is hooked at 10ª to the upper part of the case, and has its lower part supported at the bottom upon the partition 8, and is secured in such position by a screw 42. The drawer 18 has a lip 18ª at the top which prevents the front plate 10 from being drawn out at the bottom, even should the screw 42 be removed, unless the drawer 18 should be unlocked and drawn out.

Pivoted to the upper part of this front plate at 34 is a cylinder 12, said cylinder being provided with three slots 31 to receive the coins of different denominations. As shown, the cylinder is divided by a plane through its axis, and the two parts secured together by suitable screws. Grooves are formed in each half, which, when the two halves are face to face, form the slotted portions 31, which are two or more and preferably three in number, corresponding to what would be required for receiving denominations of a quarter-dollar, a ten-cent piece, and five-cent piece. Lugs 32 are arranged in the sides of the slots in such positions (see Fig. 8) as to support the coins (indicated at 33 in dotted lines) so that they project to approximately the same distance from the axis of the cylinder. The object of this is to allow of the sections 13 and the operating arms 22 of the signal striking lever to be the same in construction and thereby reduce complication in manufacture and assemblage. The slots 31 are preferably somewhat tapering in cross section, as indicated in Fig. 2, so as to readily receive the coin deposited, and the slot being extended entirely through the cylinder prevents the same being clogged with dust and dirt, and also permits any article of materially less diameter than the coin, for which it is designed, passing through the cylinder into the conduit 41 from which it is discharged to the outside of the box. This conduit 41 extends below all three of the slots 31. It is evident that if a ten-cent piece were deposited in the slot adapted to receive either the five-cent piece or the quarter-dollar, the same would pass freely through the slot and out by the conduit 41 to the depositor. Also should the five-cent piece be deposited in the quarter-dollar slot, it would likewise pass through the cylinder and be discharged. The front plate 10 above the cylinder is provided with slots 11 of size to receive the respective coins and guide them into the slots 31 of the cylinder. As these slots 11 are of the right size for the different coins, it is evident that neither the quarter-dollar nor five-cent pieces could be deposited into the ten-cent slot, and consequently under no circumstances could the depositor lose the money which he might deposit.

That portion of the plate immediately to the rear of the slotted portions 11 and immediately above the respective slots 31 of the cylinder 12 is notched, to permit the coin when in the custody of the cylinder to be moved backward through the arc of a circle and be brought into contact with the arm 22 of the striking lever. During this operation, the coin depresses the corresponding lever 22 and is ultimately discharged by gravity into the conduit 15, which is formed between the curved plate 14 of the section and the front plate 10. The coin descends through this conduit, and is supported in a vertical position back of a window 16 through which it may be examined. The coin is supported in this position by a supporting plate or retainer 17 which is reciprocated in a suitable guide plate 29 by means of a pivoted bell crank lever 26 having a slotted portion 28 engaging an upwardly turned part of the supporting plate 17. This bell crank lever 26 is connected with the striking lever 21 by a link 27. It will now be seen that the coin deposited, will remain resting upon the supporting plate 17 back of the glass window 16 until the next deposit of the same denomination is made. During the deposition of the latter coin, it operates the striking lever 21, and through the parts 26 and 27 draws back the sliding plate or retainer 17 and permits the coin previously deposited and standing in front of the window 16 to drop down into the cash drawer 18. As soon as the actuating coin liberates the striking lever the parts return to their normal positions, indicated in Fig. 2, so that when the coin slides down the conduit to a position back of the window 16, it is received upon the plate or retainer 17 which has returned to its original position. This operation is performed with the deposition of each additional coin.

The several sections 13 are alike in all particulars with the exception of the fact that the bells 24 have different tones, so that the vibration of the said bells may indicate through the telephone transmitter, which is adjacent to the toll box, what denomination of coin has been deposited. The operator at the distant end of the telephone circuit can by the sound transmitter determine whether the person making the deposition has deposited the proper coin for the services to be rendered. In Fig. 4, the different bells are indicated as of different thicknesses, so as to impart different tones.

The cylinder 12 may be given a rotary reciprocation in any suitable manner, but preferably by the engagement of a gear 36 with a pinion 35 upon the said cylinder 12, and said gear 36 being rocked by means of a hand lever 37 upon the outside of the box. This lever 37 is limited in the arc through

which it may be moved by stops 38 and 39. Normally it rests against the stop 38 under the action of a spring 40 of any suitable construction. When the lever 37 rests against the stop 38, (the position indicated in the drawings), the cylinder 12 is in such position that the coin dropping through the slots 11 will be received in the slots 31 of said cylinder. Furthermore, the stop 39 is in such position that when the lever is brought down to said stop, the cylinder 12 is rotated sufficiently to cause the coin to be moved past the arm 22 and discharged into the conduit 15.

The curved plate 14 of the sections 13 is arranged at some distance back of the front edge of the side frames of said sections, so that the said side frames and curved part 14 act as a chute or guide conduit, which, when taken with the back wall of the front plate 10, constitutes the conduit 15 through which the coin passes. Any other suitable means or modification of the means shown may be employed for imparting a rotary reciprocation to the cylinder 12. It is also evident that as the effective portion of the rotation of the cylinder 12 is in causing the coin to move through a semi-circle and be discharged, it is immaterial how the cylinder may return to its original position, as it is evident that this may be accomplished either by rotating backward again or continuing its rotation to the original position. It is also evident that the details of construction for causing an operation of the support or retainer 17 by the action of the descending coin may be modified, as any means which is the equivalent of that shown would be equally effective for the particular purpose of sustaining the coin temporarily back of the window 16.

The arched portions 30 of the front plate 10, through which the free edges of the coins are required to pass when entering the conduit preliminary to striking the arm 22, are made of different radii to suit the different denominations of coins, as indicated in Fig. 7, so that should a rectangular slug or piece of metal be dropped into the slot 31, it could not be made to pass beneath the said arched portions 30 to reach the signal lever 32, but would instead lock the cylinder 12 against rotation. It is evident that where this precaution is not desired, the arch shaped portions 30 may be omitted.

It will now be understood that in the normal operation of the box, any coin or slug deposited and which has operated the signal lever will remain back of one of the windows 16 until the next coin is deposited, and the agent in charge may have the opportunity of looking through the window to know the character of the deposited coin or article before it finds its way into the box, and may know who the person was who deposited a spurious coin or slug with the object of defrauding the telephone company. Should the toll box become out of order, it is immaterial that it may be in a dark place because the operative parts of the box may be readily disconnected and taken to a position where there is either good daylight or illumination. To do this, it is only necessary to unlock the cash drawer, remove the screw 42, pull out the lower portion of the front plate 10, and drop the plate down for detaching it from the box. Either one of the three signaling sections may then be removed at will and repaired or substituted by another similar section, and the toll box as a whole quickly restored to working condition.

We have shown the general construction of the toll box in the form which is a practical embodiment of our invention adapted for commercial use, but while we prefer the construction shown as being excellently adapted to the purposes of our invention, we do not confine ourselves to the details thereof as these may be modified without departing from the spirit of the invention.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is:

1. In a telephone toll box, the combination of the case having an upper and lower compartment, removable fronts to the upper and lower compartments, two or more independently removable frames each containing signal producing devices and detachably arranged in the upper compartment, means common to all of the frames for receiving and moving the coins to operate the signal producing devices, and a hand operated part on the outside of the case for operating the means which receives and moves the coin.

2. In a telephone toll box, the combination of the case having an upper and lower compartment, removable fronts to the upper and lower compartments, two or more independently removable frames in the upper compartment each containing signal producing devices and also having means for guiding the coin to the lower compartment and a retaining device for temporarily arresting its descent until the deposition of the next coin of similar denomination, transparent windows arranged in the front of the case immediately above each retaining device, means common to all of the frames for receiving and moving the coins to operate the signal producing devices, and a hand operated part on the outside of the case for operating the means which receives and moves the coin.

3. In the telephone toll box the combination of a frame having a plurality of coin slots, a coin receiving cylinder below the slots and provided with a plurality of transverse slots extending through it of different width, means for imparting a rotary motion to the

cylinder, coin actuated signal devices operated by the coins in the coin receiving cylinder when rotated, a coin receptacle for receiving the coins after operating the signal devices, and a coin discharging chute opening to the outside of the case and comprising a transverse chamber extending backward beyond the center of the cylinder so as to open into the coin slots and a bottom inclined laterally and from the back forward and terminating in a coin slot through the front of the case, whereby a coin deposited in a wrong slot may pass through the cylinder and be directed to the outside of the case.

4. In a telephone toll box, the combination of the case, a plurality of independent frames each provided with coin operatable signal devices and arranged within the case and independently removable therefrom, means for receiving and moving coins of different denominations for operating the signal devices, a detachable cover or plate for sealing the case and shielding the plurality of independent frames upon the signal devices, a plurality of coin conduits arranged respectively between the respective signal devices and the detachable cover or plate, windows arranged in front of the conduits, and means for retaining the coin which descends the conduits temporarily in position back of the windows.

5. In a telephone toll box, the combination of the case, a plurality of independent frames each provided with coin operatable signal devices and arranged within the case and independently removable therefrom, means for receiving and moving coins of different denominations for operating the signal devices, a detachable cover or plate for sealing the case and shielding the plurality of independent frames upon the signal devices, a plurality of coin conduits arranged respectively between the respective signal devices and the detachable cover or plate, windows arranged in front of the conduits, means for retaining the coin which descends the conduits temporarily in position back of the windows, and connecting devices between the retaining devices and the signal devices whereby the former are automatically operated to release the coins from back of the windows and permit them to drop with the operation of the signal devices produced by the deposition of other coins.

6. In a telephone toll box, a plurality of signal devices, a pivoted coin receiving part having slots or recesses for coins of different denominations constructed to hold the coins, so that they project from the axis of rotation of said coin receiving part to substantially equal distances, and a plurality of arch-shaped portions of equal height through which the coins are moved positively by the pivoted coin receiving part to reach the signal devices and hand operated devices for imparting a rotary motion to the pivoted coin receiving devices whereby the coins are made to operate the signal devices.

7. In a telephone toll box, a plurality of signal devices, a pivoted coin receiving part having slots or recesses for coins of different denominations constructed to hold the coins, so that they project from the axis of rotation of said coin receiving part to substantially equal distances, hand operated devices for imparting a rotary motion to the pivoted coin receiving devices whereby the coins are made to operate the signal devices, and arch shaped portions through which the coins must pass to reach the signal devices each being of different radii but all being located the same distance from the axis of rotation of the pivoted coin receiving part.

8. In a telephone toll box, a coin actuating cylinder consisting of two semi-cylindrical parts secured together and having the opposing faces shaped to form a slot to receive a coin said slot extending entirely through the cylinder and having an obstruction to restrict the entrance of the coin whereby it may be supported in a partly extended position.

9. In a telephone toll box, a coin actuating cylinder 12, consisting of two semi-cylindrical parts secured together and having the opposing faces grooved to form a plurality of slots extending entirely through the cylinder and of different widths and also with obstructions to support the coins of different denominations within the slots whereby they are made to project to approximately the same distances beyond the cylinder, combined with hand operated means to rock the said cylinder.

10. In a telephone toll box, a case having an upper compartment combined with a series of removable frames guided within the said compartment and removable independently therefrom and each having a sound imparting device for producing a different tone than produced by the other sound imparting devices and also provided with a spring actuated pivoted signal lever having a coin operated part extended in the path of the coin, and a rotatable coin actuating part having means for receiving coins of different denominations and causing them to respectively operate the signal levers of the several independent frames.

11. In a telephone toll box, a case having an upper compartment and combined with a series of removable frames guided within the said compartment and removable independently therefrom and each having a sound imparting device for producing a different tone than produced by the other sound imparting devices and also provided with a spring actuated pivoted signal lever having a

coin operated part extended in the path of the coin, a rotatable coin actuating part having means for receiving coins of different denominations and causing them to respectively operate the signal levers of the several independent frames, a coin retaining device to support the coin with its side to view after operating the signal levers carried by each of the independent frames, connecting devices between the retaining devices and signal levers whereby they operate in unison, and transparent windows in the case whereby the coins supported by the retainers may be seen from the outside of the box.

In testimony of which invention, we have hereunto set our hands.

WALTER T. OTTO.
JOHNSON R. DOUGLASS.

Witnesses as to Walter T. Otto:
R. M. KELLY,
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Witnesses as to Johnson R. Douglass:
S. STEMBYN,
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