



**No. 636,418.**

**Patented Nov. 7, 1899.**

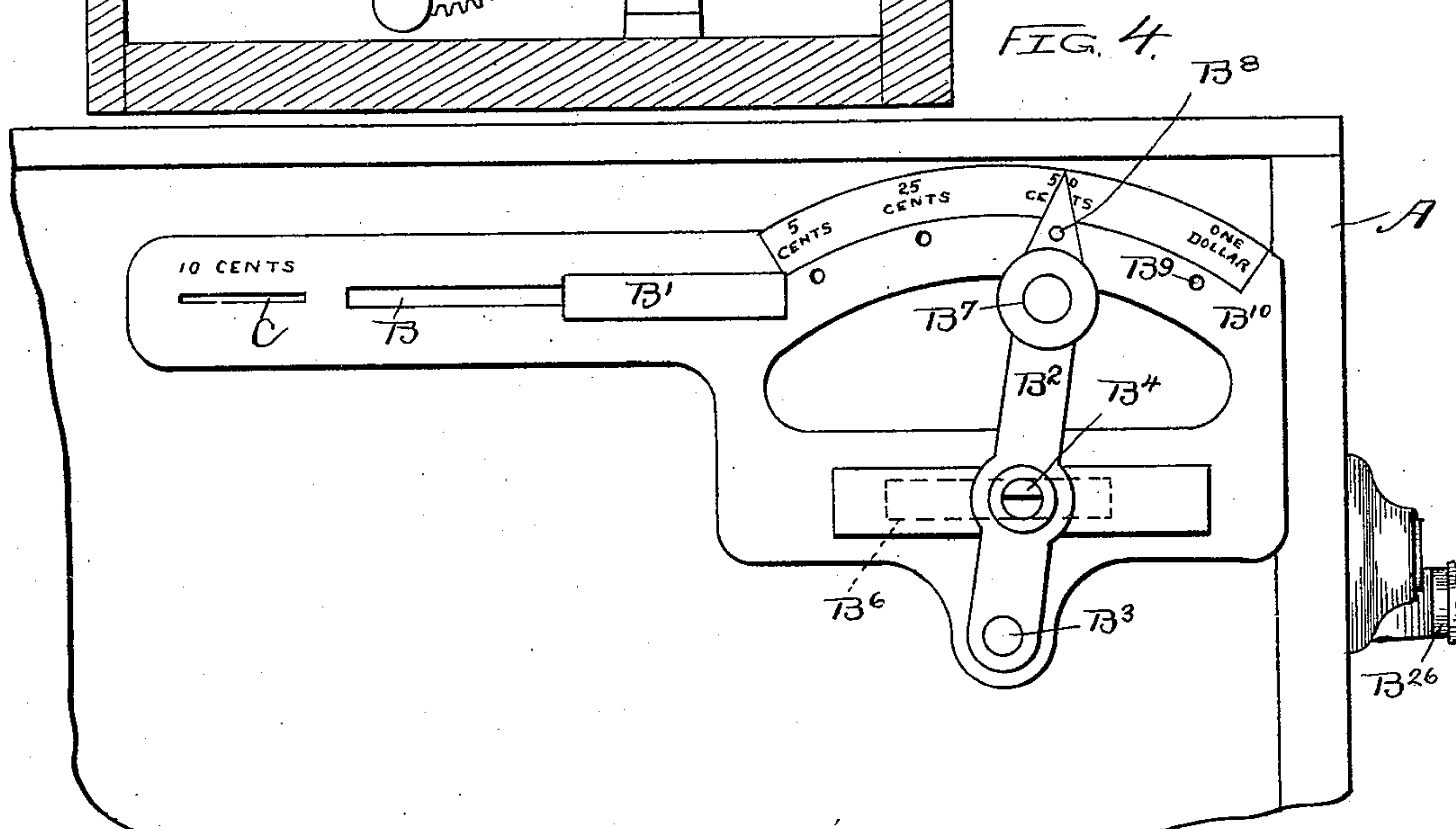
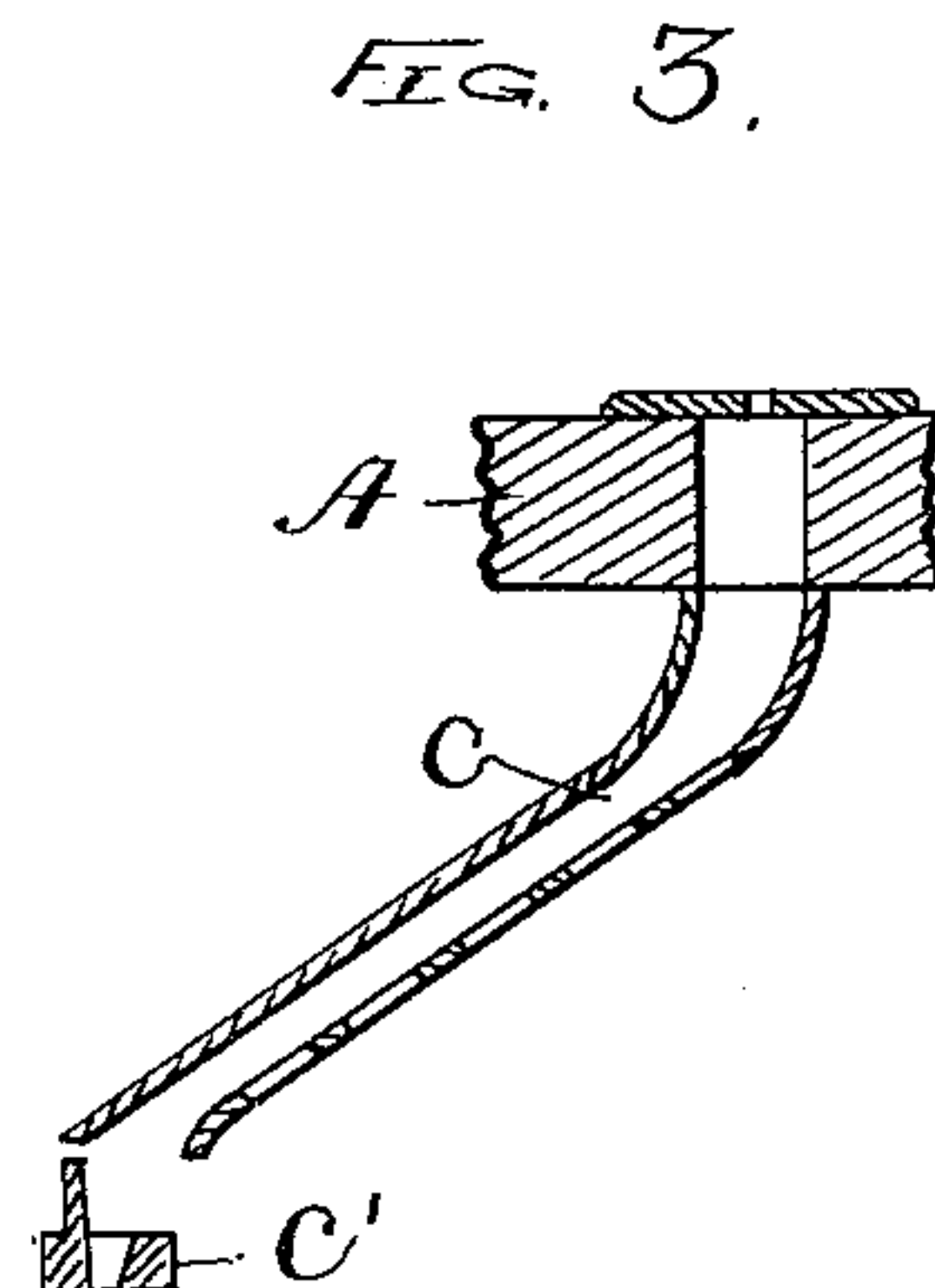
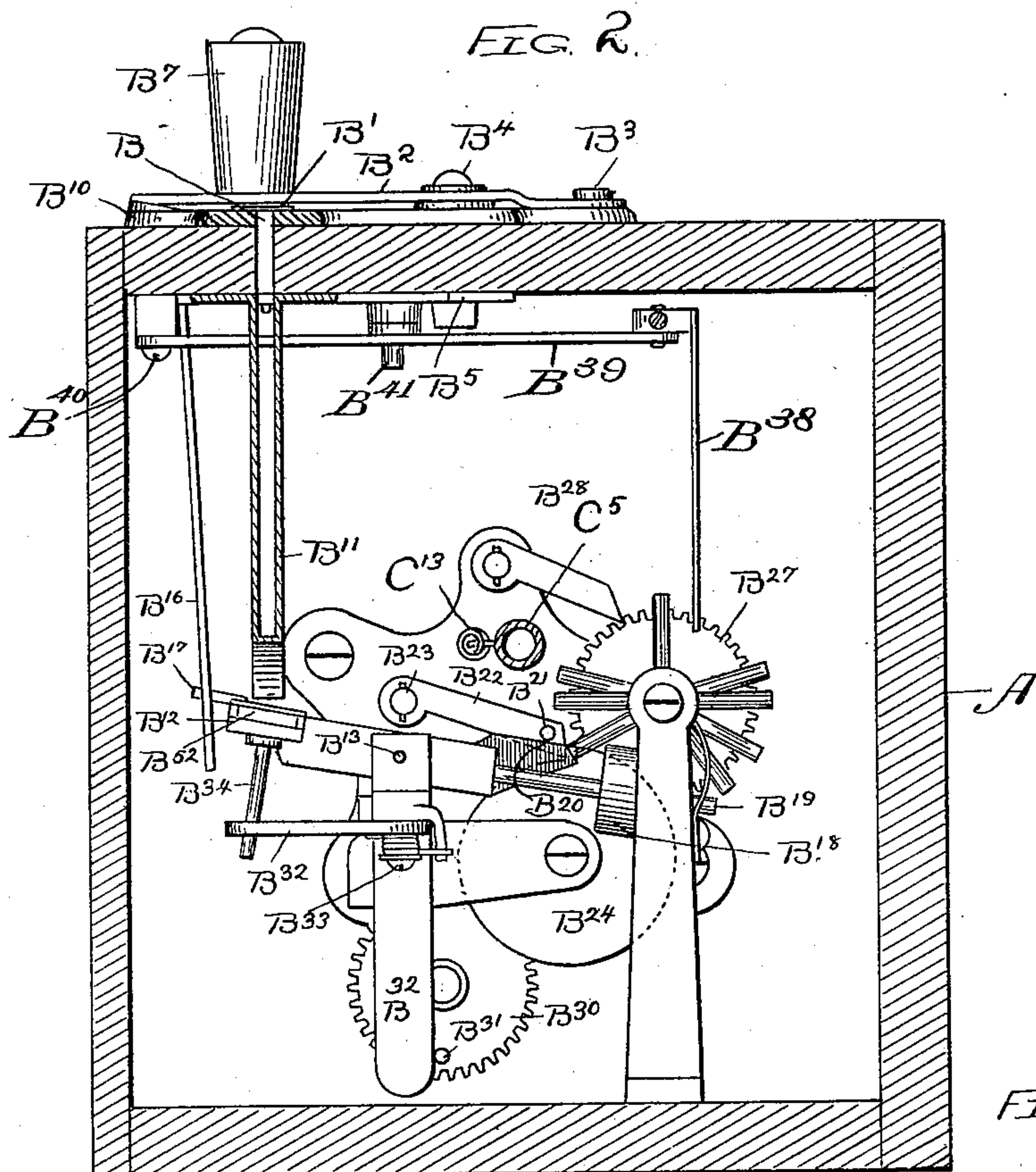
**H. G. SWEENEY.**

## TOLL COLLECTING APPARATUS FOR TELEPHONES.

(Application filed Feb. 14, 1899.)

(No Model.)

**3 Sheets—Sheet 2.**



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FIG. 5.

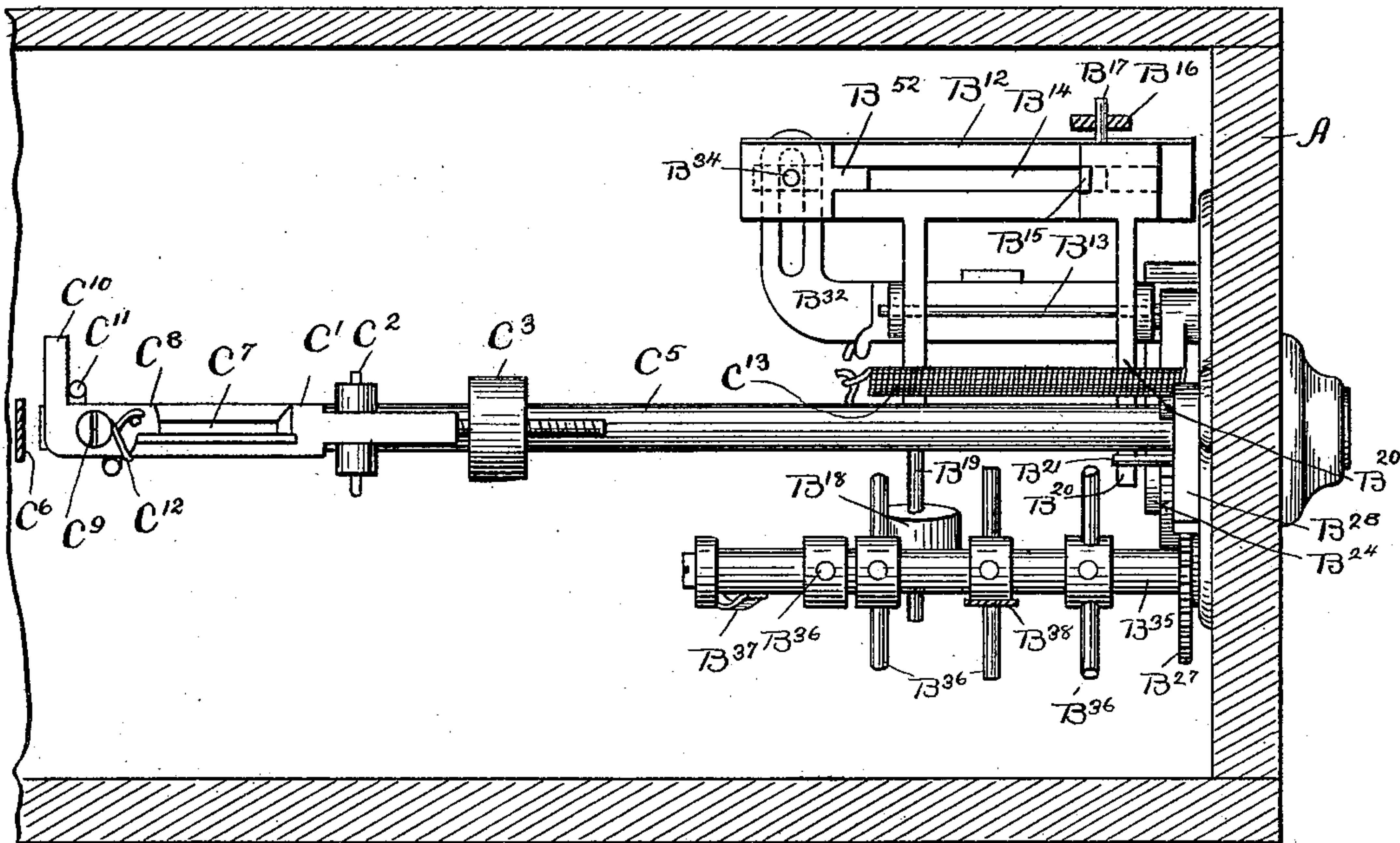
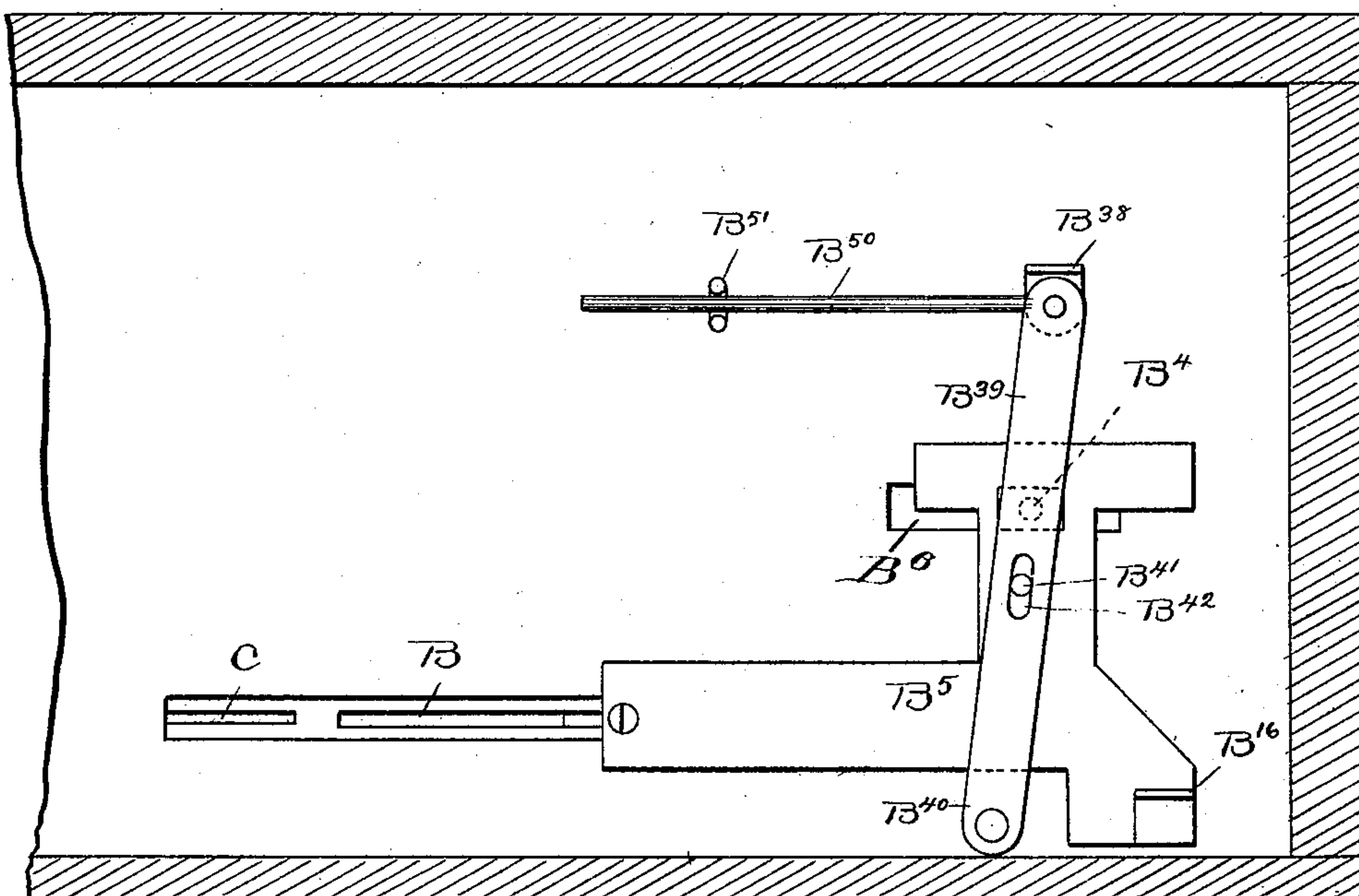


FIG. 6.



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# UNITED STATES PATENT OFFICE.

HENRY G. SWEENEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND  
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## TOLL-COLLECTING APPARATUS FOR TELEPHONES.

SPECIFICATION forming part of Letters Patent No. 636,418, dated November 7, 1899.

Application filed February 14, 1899. Serial No. 705,500. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY G. SWEENEY, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Toll-Collecting Apparatus for Telephones, of which the following is a specification.

This invention relates to that class of toll-telephones which are adapted to receive coins of several different denominations in payment for use of the telephones and to signal to the attendant at the central office the amount of the coin deposited, so that she may know to what service the patron is entitled.

The object of the invention is to provide a very simple coin controlling and signaling mechanism adapted to use with coins of different sizes which shall be reliable in its action.

The nature of my improvement is fully disclosed below and also illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of my invention. Figs. 2 and 3 are sections on the lines 2 2 and 3 3, respectively, of Fig. 1. Fig. 4 is a partial plan. Fig. 5 is a horizontal section. Fig. 6 is also a horizontal section showing the under surface of the top of the box in which the mechanism is located. Fig. 7 is an enlarged side view of the gearing employed, and Fig. 8 a vertical section of one of the coin-chutes.

In said drawings, A represents a box or case in which the toll collecting and controlling mechanism may be located and which is usually supported in close proximity to the telephone with which it is used. The person desiring to use the phone inserts a coin of a denomination corresponding with the toll charged for the service desired in one of the slots B or C. If it is a dime, he inserts it in slot C and it falls onto one end of a lever C', pivoted at C<sup>2</sup> and carrying a weight C<sup>3</sup> at its other end, and also carrying upon its weighted end a depending pin C<sup>4</sup>, which enters a recess in a sliding bar C<sup>5</sup> and normally locks the latter. This bar extends to the outside of the case and forms a push-bar to be operated by the patron. Behind the bar is a contact-spring C<sup>6</sup>, which is electrically connected

to the circuit-wire D, and the bar is electrically connected to a buzzer or other signaling device D', also connected in the circuit by wire D<sup>2</sup>. The coin-receiving end of the lever C' is slotted immediately below chute C, as seen at C<sup>7</sup>, and such slot is normally shortened by the latch C<sup>8</sup>, pivoted to the lever at C<sup>9</sup>, sufficiently to enable the lever to arrest the coin. The latch also has a right-angled projection C<sup>10</sup>, adapted to be engaged by the upstanding pin C<sup>11</sup>, carried by the push-bar. A spring C<sup>12</sup> holds the latch in its normal position, and a spring C<sup>13</sup> returns the push-bar to its original position after the impulse given it by the patron.

The operation so far as chute C is concerned is as follows: When a patron deposits his dime in chute C, (which, by the way, is not adapted to receive any other coin,) it drops onto and is arrested by lever C' and overcomes the gravity of weight C<sup>3</sup>, so that the lever swings sufficiently to release the push-bar from pin C<sup>4</sup>. The patron is now at liberty to operate the push-bar, and in so doing the push-bar meets the spring C<sup>6</sup> and establishes the electric circuit through the buzzer, so that the proper signal is given at the central station to insure the connecting of the phone with the subscriber desired. In the same operation the patron also secures the release of the coin from the lever, the pin C<sup>11</sup> swinging the latch away from the slot in the lever, so that the coin is given sufficient room to drop through the lever into the receptacle below.

For coins of other denominations than ten cents I employ a variable coin-chute—that is to say, a chute one side of which is adjustable and must be adjusted by the purchaser before insertion of the coin. My preferred construction of this chute is that illustrated. The mouth of the chute is adapted to admit a coin of the largest size and is provided with a slide B', adapted to reduce the width of the mouth to agree with the diameter of the coin to be inserted. This slide is operated by the patron before inserting the coin through the medium of a lever B<sup>2</sup>, pivoted at B<sup>3</sup> and connected by a screw or pin B<sup>4</sup> to a plate B<sup>5</sup>, located below the top of case A, such pin moving through a slot B<sup>6</sup> in said top and the plate being made rigid with said slide. The lever



is provided with a knob B<sup>7</sup>, so that it may be easily operated, and is preferably made of spring metal, so that the pin B<sup>8</sup>, carried upon its free end, may be made to engage the position-  
 5 ing-holes B<sup>9</sup> in the segmental indicator-plate B<sup>10</sup> automatically when the lever is moved over such indicator-plate. I not only provide these means for regulating the width of the mouth of the slot to accord with the diameter  
 10 of the coin, but I also provide further safeguards adapted to prevent the sending of a signal to central station indicating the payment of a large coin when in fact an inferior one has been inserted. For this purpose I  
 15 provide at the foot of the inclined portion B<sup>11</sup> of the chute a coin-arresting frame B<sup>12</sup>, pivoted upon a horizontal pivot B<sup>13</sup> and provided with a slot B<sup>14</sup>, into which the coin enters and by which it is caught. One end of this slot  
 20 is formed by a slide B<sup>15</sup>, and such slide is connected to the plate B<sup>5</sup>, so as to move in unison therewith, by a vertical arm or lever B<sup>16</sup>, rigid with the plate and engaging at its lower end a pin B<sup>17</sup>, projecting laterally from  
 25 the slide, which is perforated for this purpose. By this slide the slot B<sup>14</sup> is always maintained at a length corresponding to that of the mouth, the changes, if any, being made simultaneously and being equal in extent in  
 30 both. It will be seen that the slot B<sup>14</sup>, being somewhat less in length than the diameter of the coin, is adapted to momentarily arrest the coin and retain it a sufficient time to cause the swinging of frame B<sup>12</sup> on its pivot. This  
 35 swinging is due to the weight of the coin, which overcomes the weight B<sup>18</sup>, carried upon the arm B<sup>19</sup>, attached to the frame and acting normally to retain the side of the frame in which the slot is formed in its uppermost po-  
 40 sition and depresses that side. In this swinging movement of the frame the arm B<sup>20</sup>, also projecting from the frame, encounters a pin B<sup>21</sup>, projecting laterally from the gravitating dog B<sup>22</sup>, pivoted stationarily at B<sup>23</sup> and rest-  
 45 ing normally on the periphery of a cam or single-tooth ratchet-wheel B<sup>24</sup>, rigid on a shaft B<sup>25</sup>, projecting through the case, and provided on the outside of the latter with a crank B<sup>26</sup>, intended to be operated by the patron  
 50 after he has inserted the coin. The rotation of this shaft in one direction is prevented, except when the dog is raised, by the engagement of the dog with said wheel and is constantly prevented from turning in the other  
 55 direction by the toothed wheel B<sup>27</sup> and dog B<sup>28</sup>, said wheel meshing with a pinion B<sup>29</sup> on shaft B<sup>25</sup>. With this construction, the slide B<sup>15</sup> always acting to shorten the slot B<sup>14</sup> only slightly within the diameter of the coin for  
 60 which the chute is adjusted, it will be seen that if any one attempts fraud by putting in a coin of a smaller size than that for which he calls when he adjusts the lever B<sup>2</sup> it will be without avail, because such coin instead  
 65 of being arrested at the slot B<sup>14</sup> will fall entirely through the slot, and thus fail to operate the frame B<sup>12</sup>. Thus no signal to the

central office can be sent, as will be understood later on. The swinging of the coin-arresting frame also accomplishes the release  
 70 of the coin from the slot in the frame, as follows: The pinion B<sup>29</sup> also meshes with a pinion B<sup>30</sup>, carrying a laterally-projecting pin B<sup>31</sup>, and when the said pinion is rotated the pin is moved against the lower end of a lever  
 75 B<sup>32</sup>, made in right-angle form and pivoted upon a vertical pivot at B<sup>33</sup>, the lever being thus turned slightly upon said pivot. The horizontal arm of the lever is slotted, as seen  
 80 at Fig. 5, and this slot receives a pin B<sup>34</sup>, depending from a slide B<sup>35</sup> at the opposite end of the slot from the slide B<sup>15</sup>, so that the slide B<sup>35</sup> is moved in the direction necessary to re-  
 85 lease the coin upon the actuation of said lever by the pinion B<sup>30</sup>. The rotation given to shaft B<sup>25</sup> by the patron through crank B<sup>26</sup> also effects the sending of the proper signal to the central office, as follows: Upon the  
 90 shaft B<sup>35</sup>, the same being the shaft of pinion B<sup>27</sup>, are a series of contact-fingers B<sup>36</sup>, a different number of fingers for each size coin, two fingers for nickels, three for quarters,  
 95 four for half-dollars, and five for dollars. The shaft B<sup>35</sup> is electrically connected to the buzzer by the spring B<sup>37</sup> and the wire shown, and the fingers effect contact with a movable  
 100 spring B<sup>38</sup>, depending from one end of a lever B<sup>39</sup>, pivoted at its opposite end B<sup>40</sup> to the under surface of the top of case A and operated by a pin B<sup>41</sup>, depending from plate B<sup>5</sup>  
 105 and entering the slot B<sup>42</sup> in the lever. The spring B<sup>38</sup> is wired to the circuit-wire D, so that when the fingers B<sup>36</sup> are brought against it the circuit is completed. As the patron moves the crank B<sup>26</sup> through a complete revo-  
 110 lution it will be seen that each finger in the series before which the spring is at the time stationed will strike the spring and send a separate signal to the central station, so that  
 115 by counting the signals the operator at central will understand the size of the coin deposited.

By connecting the contact-spring to the plate which is actuated with slide B<sup>1</sup> when the patron sets the lever B<sup>2</sup> in the manner  
 115 described the spring is with certainty positioned opposite the fingers which should give the signal, and the lever B<sup>39</sup> is adapted to multiply the movement of the slide, so that the several series of fingers can be spaced  
 120 sufficiently apart to prevent accidental contact by any of them with the spring except the ones properly acting to send the signal for the coin at which the machine is set.

In order that the spring B<sup>38</sup> may always be  
 125 presented with its flat face squarely at right angles to all the contact-fingers, I pivot it to its operating-lever and keep it in this relative position by means of a governing-rod B<sup>50</sup>, extending laterally from and attached to the  
 130 spring and passing freely through a guide or eye B<sup>51</sup>, secured in the top of the case.

As further safeguards against the use of wires or pickers the chute B<sup>11</sup> is perforated



along its bottom, as seen at Fig. 8, and a depending plate B<sup>60</sup> is attached to it to shut off access to the coin-arresting frame or other parts of the mechanism. The chute C is inclined laterally, as at Fig. 3, and its under side is perforated, as shown, for the same purpose.

I claim—

1. In a coin-collecting apparatus, a chute made large enough to receive a large coin, and provided with a side movable by the patron and whereby it may be adjusted to the size of a smaller coin, substantially as specified.

2. In a coin-collecting apparatus, a chute made large enough to receive a large coin, and provided with a side movable by the patron at its mouth whereby it may be adjusted to the size of a smaller coin, substantially as specified.

3. In a coin-collecting apparatus, a chute made large enough to receive a large coin, and provided with a movable side whereby it may be adjusted to the size of a smaller coin, in combination with a coin-arrester also made adjustable to the same size coin as the chute, substantially as specified.

4. In a coin-collecting apparatus, a chute made large enough to receive a large coin, and provided with a movable side whereby it may be adjusted to the size of a smaller coin, in combination with a coin-arrester also having a movable side connected to and operated in unison with the movable side of the chute, substantially as specified.

5. In a coin-collecting apparatus, a chute made large enough to receive a large coin, and provided with a movable side whereby it may be adjusted to the size of a smaller coin, in combination with means whereby said movable side may be adjusted by the patron before insertion of the coin, substantially as specified.

6. In a coin-collecting apparatus, a chute made large enough to receive a large coin, and provided with a movable side whereby it may be adjusted to the size of a smaller coin, in combination with a coin-arrester also having a movable side, and means whereby the movable sides of both are adjusted by the patron to the size of the coin he inserts, substantially as specified.

7. In a coin-collecting apparatus, a chute made large enough to receive a large coin, and provided with a movable side whereby it may be adjusted to the size of a smaller coin, in combination with signaling apparatus operated by the patron and adjustable with said movable side of the chute, substantially as specified.

8. In a coin-collecting apparatus, a chute made large enough to receive a large coin, and provided with a movable side whereby it may be adjusted to the size of a smaller coin, in

combination with signaling apparatus and means whereby the patron may adjust both the chute and the signaling apparatus to accord with the coin he inserts, substantially as specified.

9. In a coin-collecting apparatus for toll-telephones, a chute and inferior-coin-detecting apparatus, both adapted to a large coin and adjustable for a smaller one, and adjustable means for signaling the amount deposited, substantially as specified.

10. In a toll-collecting apparatus for telephones adapted to be used with coins of different sizes, the combination of a signaling device and means for energizing it, such means consisting of an electrically-connected shaft operable by the patron and having a separate series of radiating fingers for each size of coin, and an electrical contact movable into contact with the series of said fingers which corresponds to the coin inserted in the machine, substantially as specified.

11. In a toll-collecting apparatus for telephones, the combination with an adjustable coin-detecting mechanism, and adjustable signaling apparatus, of means whereby the patron may set all the above to accord with the size of the coin he is about to insert, substantially as specified.

12. The toll-collecting apparatus embracing an adjustable chute, an adjustable coin-detecting apparatus, a signaling device, a rotatable shaft in circuit with the signaling device and carrying two or more series of contact-fingers, a spring-contact movable into contacting position relative to said fingers, and means whereby the detecting apparatus controls said shaft, substantially as specified.

13. The toll-collecting apparatus having a chute C, a weight and slotted lever acting to arrest the coin, a movable side to the slot of said lever whereby it is adapted to be used with coins of different sizes, a push-bar normally locked by said lever, and released upon the operation thereof by the coin, and means whereby the bar operates said movable side and releases the coin, substantially as specified.

14. The combination in a toll-collecting apparatus for telephones of a dime-chute, coin-detecting apparatus for said chute, means for operating the signaling device controlled by said detecting apparatus, a variable chute for coins larger than a dime, detecting apparatus for said variable chute, and means for operating the signaling device controlled by said last-mentioned detecting apparatus, substantially as specified.

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Witnesses:

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