

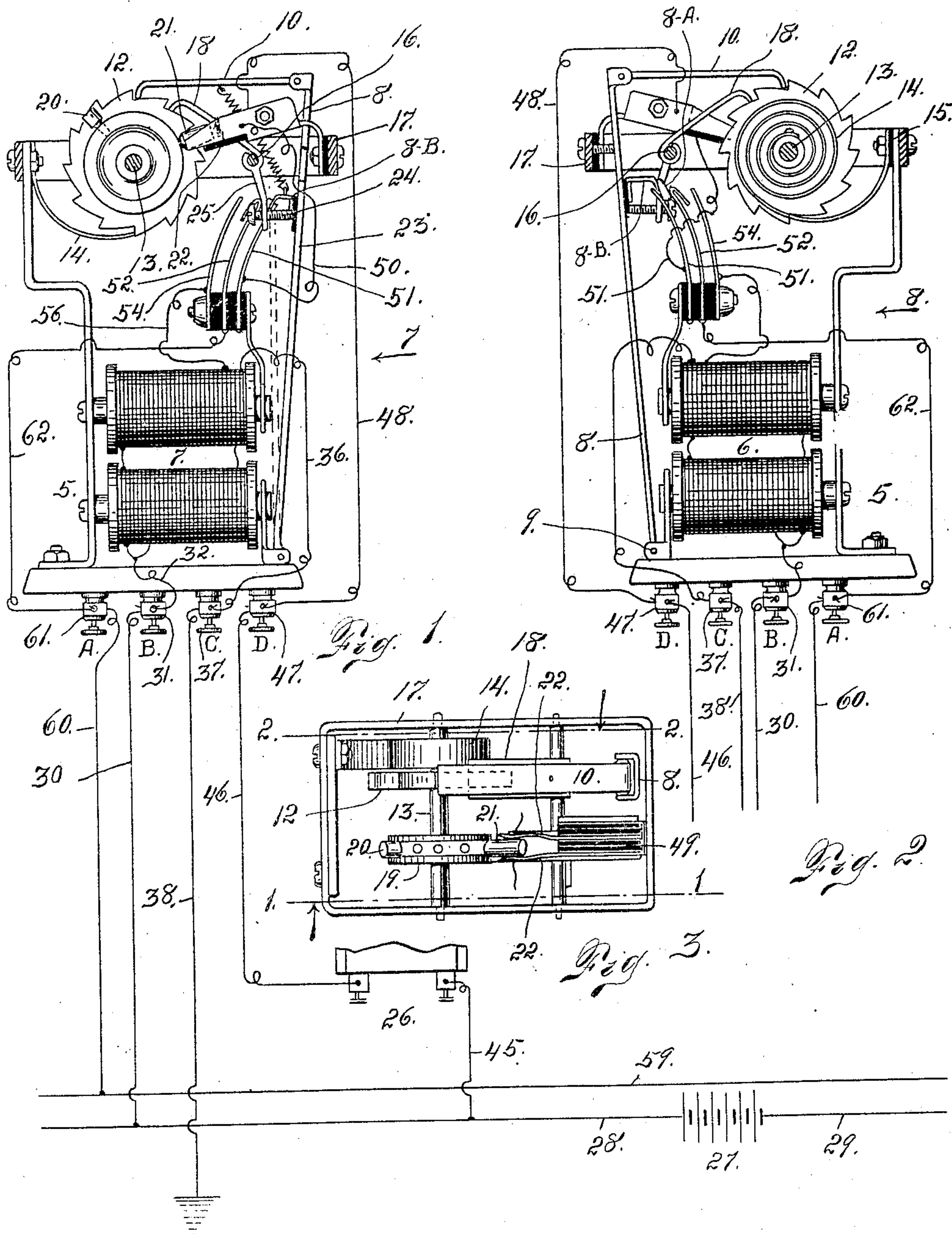
No. 868,594.

PATENTED OCT. 15, 1907.

J. H. BLYTHE.
ATTACHMENT FOR PARTY LINE TELEPHONES.

APPLICATION FILED MAY 21, 1906

3 SHEETS—SHEET 1.



Witnesses
Otto C. Hoddick.
Dena Nelson

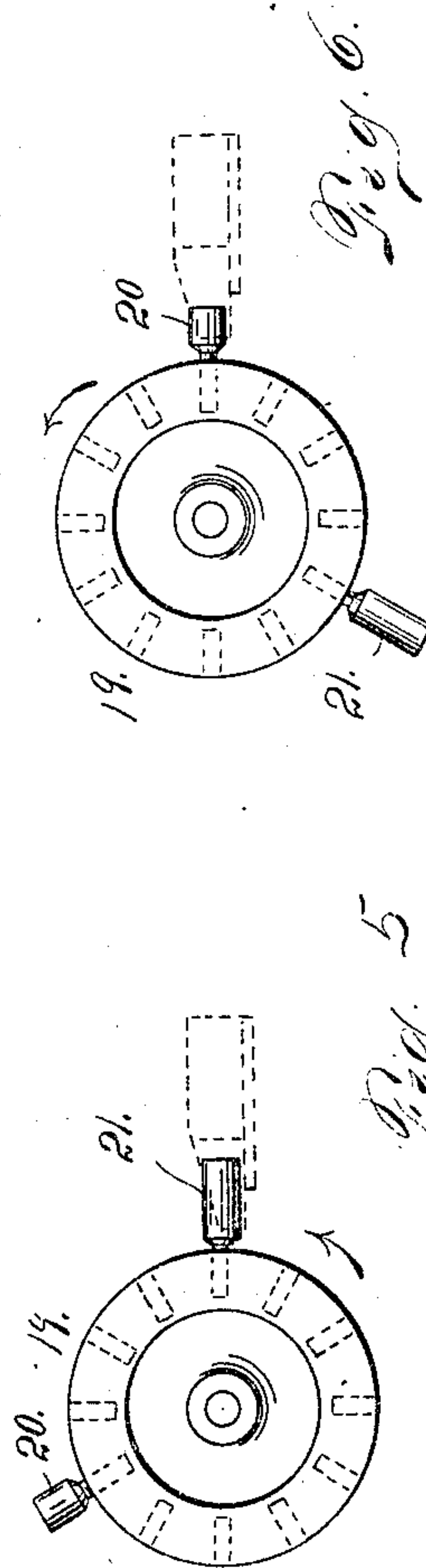
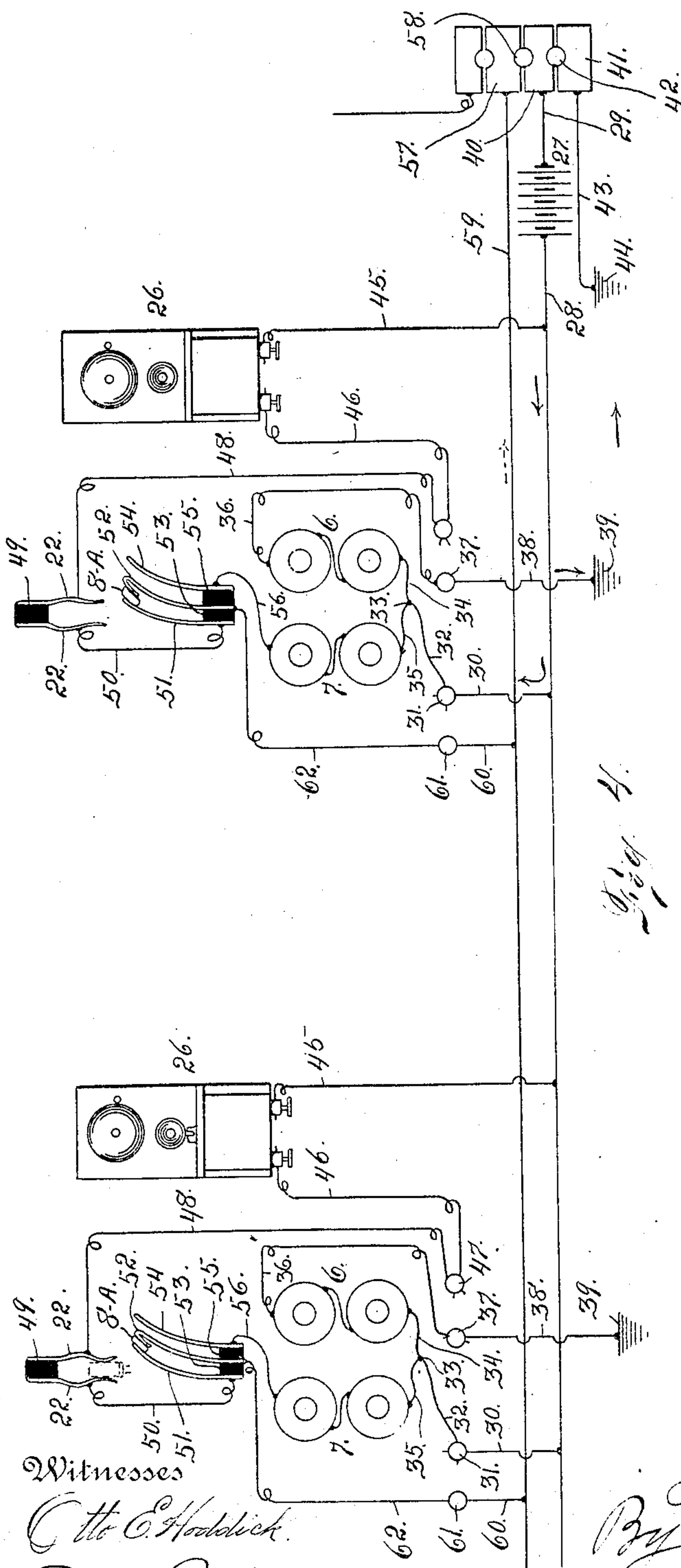
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3 SHEETS—SHEET 2.



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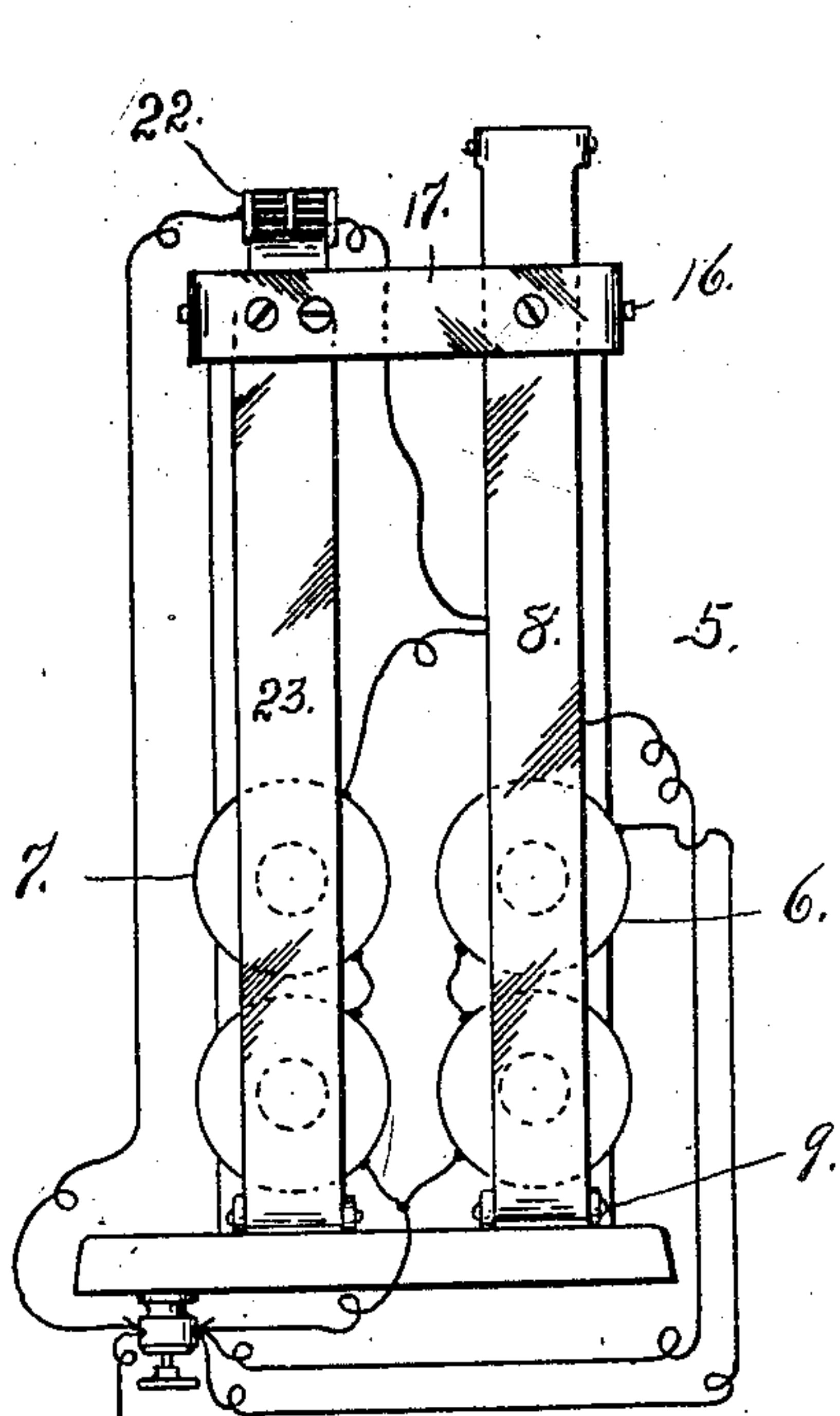


Fig. 7.

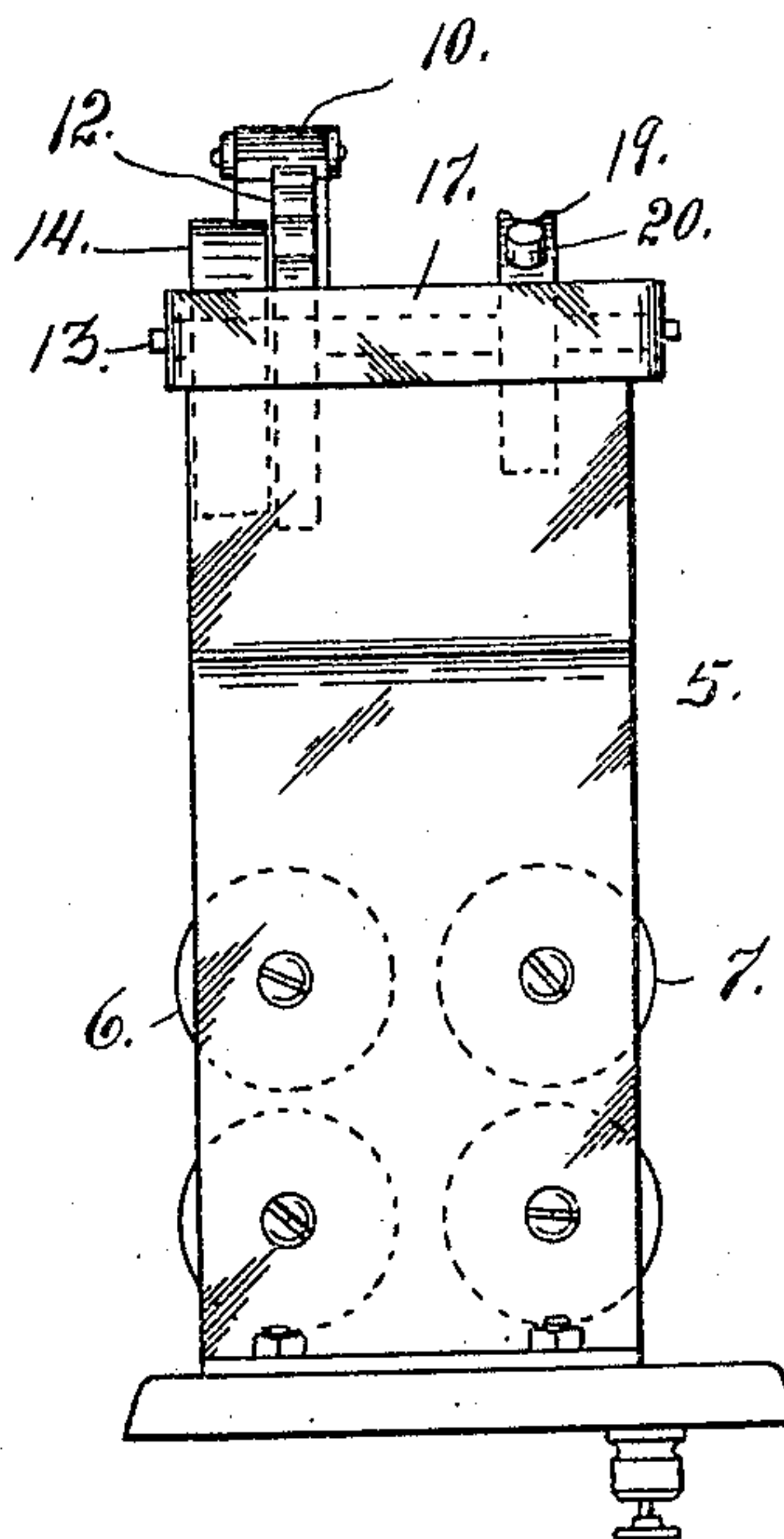


Fig. 8.

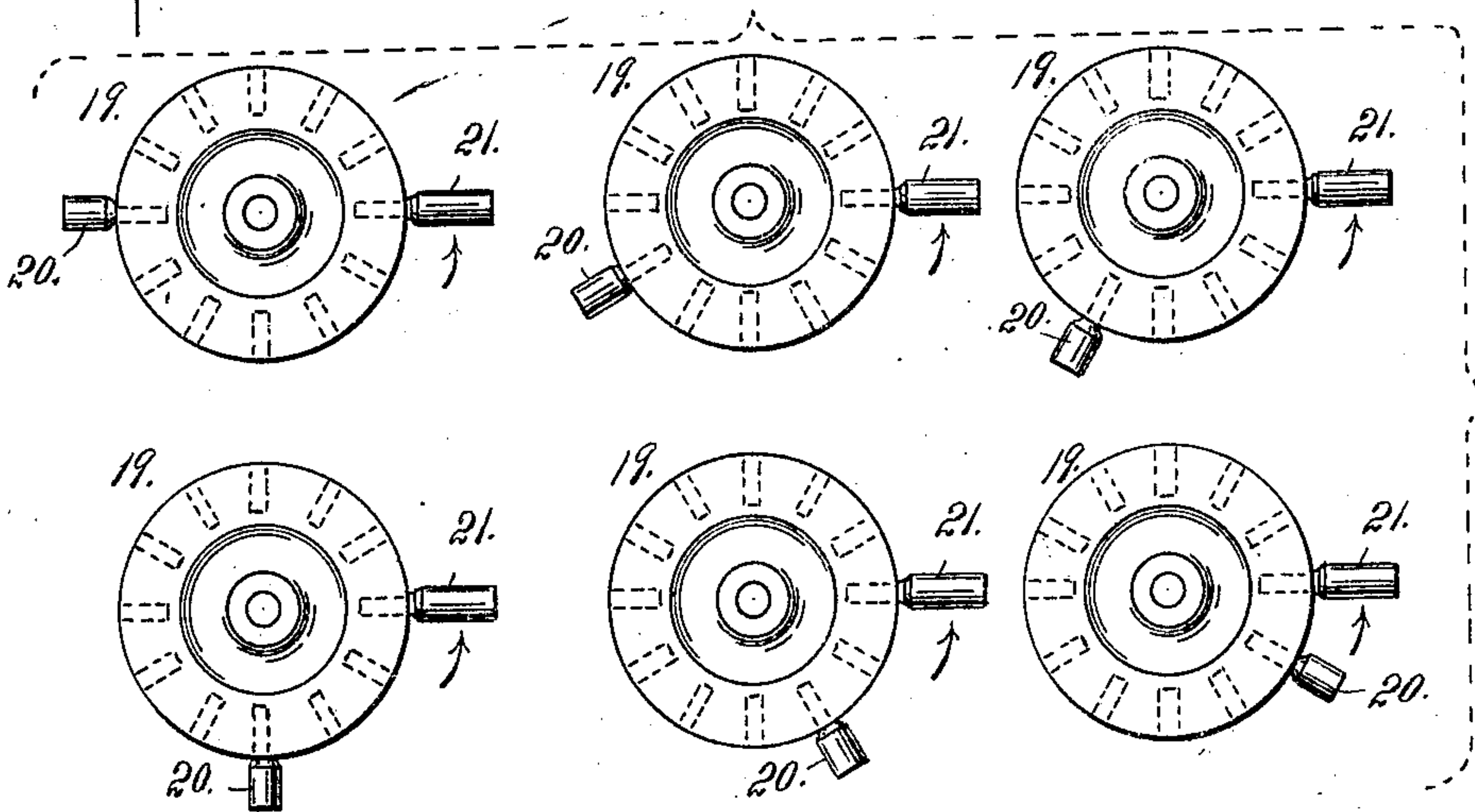


Fig. 9.

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UNITED STATES PATENT OFFICE.

JAMES H. BLYTHE, OF DENVER, COLORADO.

ATTACHMENT FOR PARTY-LINE TELEPHONES.

No. 868,594.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed May 21, 1906. Serial No. 317,902.

To all whom it may concern:

Be it known that I, JAMES H. BLYTHE, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Attachments for Party-Line Telephones; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in attachments for party line telephones, my object being to equip the ordinary party line instrument with such apparatus that when central rings any telephone of the party line, all of the other telephones will be cut out so that no other bell on the line will ring and no one else having a telephone on the line can hear the conversation carried on through another telephone.

Heretofore so far as I am aware where party line telephones are in use, any one whose telephone is on the line may by taking down the receiver of the instrument hear any conversation that is going on through any telephone of the line. Moreover where the ordinary party line telephones are used, the bells of all the telephones ring whenever central calls any particular telephone.

By virtue of my improved equipment, the operator at the central office is enabled to cut out all other telephones on the line before ringing up any particular telephone. My improvements do not necessitate the running of extra line wires, the construction being such that it may be attached to any telephone using only the ordinary wire equipment.

Having briefly outlined my improved construction as well as the function it is intended to perform, I will proceed to describe the same in detail reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a side elevation partly in section illustrating my improved attachment. The sectional part of this figure may be said to be taken on the line 1—1 Fig. 3. Fig. 2 is a view of the same looking in the opposite direction or a section taken on the line 2—2 Fig. 3 looking in the direction of the arrow adjacent said line. Fig. 3 is a top plan view of the instrument. Fig. 4 is a diagrammatic view showing a number of telephones with my improved instrument attached. Fig. 5 is a detail view of the wheel forming a part of my improvement and carrying the contact pins which are employed in making and breaking the telephone circuit. Fig. 6 is a similar view of the same device shown in a different position. Fig. 7 is an end elevation of Fig. 1 looking

ing in the direction of arrow 7 on the last named figure. Fig. 8 is an end elevation looking in the opposite direction or in the direction of arrow 8 in Fig. 2. Fig. 9 is a view illustrating a series of wheels 19 carrying contacts 20 differently arranged with reference to the contacts 21 for illustrating the arrangement of these wheels when used in connection with a series of telephones on the same line. From these views it will be understood that when the contact 20 of any wheel is in engagement with the brush 22, 22, the corresponding contacts 20 of all the other telephones will be disconnected from their corresponding brushes 22, 22.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a frame upon which are mounted two electro-magnets 6 and 7. I will designate the magnet 6 as the registering magnet, and the magnet 7 as the releasing magnet. The magnet 6 is provided with an armature 8 pivoted at the base of the frame as shown at 9. To the upper extremity of this armature is pivotally attached a pawl 10 acting on a ratchet wheel 12 fast on a spindle 13. Connected with this spindle and coiled around the same is a spring 14 whose extremity remote from the shaft is connected with the frame as shown at 15. Mounted on a spindle 16, journaled in the top frame work 17 is a locking pawl 18 which also engages the ratchet wheel 12 and locks the latter in any position to which it has been driven by the operating pawl 10. Upon the spindle 13 is also made fast a wheel 19 provided with a pin 20 and a pin 21. These pins engage a pair of metal contacts 22 which are separated sufficiently to form a good contact when any pin passes between them, the normal position of the wheel 19 when none of the party line telephones is in use, is that shown in Figs. 3 and 5, that is to say with the pin 21 engaging the springs which together may be termed a brush. When this pin 21 is in this position any telephone on the line is in position to call central. As soon as any one desires connection with any telephone on the line the operator at central by closing the circuit of the registering magnets 6 a given number of times depending upon the position of the pin 20 on the wheel 19, with reference to the pin 21 of the telephone to be connected, is enabled to bring the required pin 20 into engagement with the brush 22, 22. When this operation is completed every other telephone is cut out of the circuit since its pin 21 is disengaged from the brush 22, 22, and no other pin 20 is in engagement with the brush since no two telephones have pins 20 in the same relative position.

Each wheel 19 is equipped with but one pin 20, but every wheel is provided with threaded sockets adapted to receive a number of pins 20 corresponding with the

number of telephones on the line, so that the wheels 19 are interchangeable. The pins 20 are detachable from the wheels as will be readily understood. The operator at central knows the exact location of the pin 20 of every telephone with reference to the pin 21 and hence makes and breaks the circuit through the registering magnets 6 as many times as there are spaces between the pin 20 and the pin 21 of the instrument to be connected for talking purposes. The ratchet wheel 12 is so constructed that every time it is moved one tooth, the wheel 19 is moved the distance between two pins, and it will be understood that every time the circuit is closed with the registering magnet 6, the armature 8 is actuated sufficiently to move the ratchet wheel one tooth by virtue of the pawl 10, while the pawl 18 locks the ratchet wheel against the reverse movement and insures the closing of the telephone through the brush 22, 22 until the operator at central wishes to break the connection. After the connected telephone has been used, in order to restore all the telephones to their normal calling condition or bring the pin 21 of each of my improved attachments, back into engagement with the brush 22, 22 the operator at central pushes a button or otherwise closes the circuit of the electromagnet 7 and its armature 23 as it moves to the poles of the magnet by virtue of the electro-magnetic force, acts on a screw pin 24 connected with a depending arm 25 made fast to the spindle 16 and disengages the locking dog 16 from the ratchet wheel 12, when the recoil of the spring 14 returns the pin wheel 19 to its normal position with the pin 21 in engagement with the brush 22, 22. This occurs simultaneously at every telephone on the line though at only one of these telephones is the pin 20 of my improved attachment in engagement with the brush 22, 22. Or in other words all the telephones except one have been completely cut out of the circuit but by closing the releasing magnet all of them are placed in position for calling central the same as before the operation heretofore described took place. The circuits will be better understood by reference to Fig. 4. In this view the telephones are illustrated and designated 26. In this view let 27 designate the electric source from one pole of which leads a wire 28 and from the other pole a wire or conductor 29. From the wire 28 leads a branch wire 30 to a binding post 31. From this binding post a wire 32 leads to a point 33 from which leads a wire 34 to the coils of the registering magnets 6 while a wire 35 leads to the coils of the releasing magnet 7. From the magnet 6 a wire 36 leads to a binding post 37 and from this binding post a wire 38 leads to the ground at 39.

The wire 29 may be said to lead to a block 40. An adjacent block 41 is adapted to be connected with the block 40 by a push button 42. When this push button is pressed, the contact blocks 40 and 41 are electrically connected and when the pressure is released the two blocks are electrically disconnected. From the block 41 leads a wire 43 to the ground at 44.

A wire 45 leads from the line wire 28 to the telephone 26, while a wire 46 leads from the telephone to a binding post 47 whence a wire 48 leads to one member of the brush 22, 22. The two members 22, 22 of this brush are separated by insulating material 49. A wire 50 leads from the opposite brush member 22 to a brush 51 whose upper extremity is connected with a second

brush 52. The lower extremities of these brushes are separated by insulating material 53. A brush 54 is normally disconnected at the top from the brush 52 while its lower extremity is separated from the brush 52 by insulating material 55. A branch wire 56 leads from the base of the brush 55 to the coils of the releasing magnet 7.

Above the contact block 40 is located a similar block 57 which may be connected with the block 40 by a push button 58. From the block 57 leads a main line wire 59. From this main line wire, leads a branch wire 60 to a binding post 61 whence a wire 62 leads to the brush 52. The wiring is the same for my improved attachment in connection with every telephone on the line, a repetition is therefore unnecessary.

Assuming now that the operator at central has received a call requiring connection with a telephone on the party line whose pin 20 is in the position shown in Fig. 5, this pin in this event being separated from the pin 21 on the wheel 19 by eight spaces. Central will now press the push button 42 eight times causing the wheel 19 to travel in the direction indicated by the arrow 5 in Figs. 5 and 6 until the pin 20 is brought into the position shown in Fig. 6, also shown by dotted lines at the attachment connected with the telephone 26 farther to the left in Fig. 4. Now it is only necessary for the operator at central to close the signal circuit which is done by pressing the push button 58 which would cause the bell of the telephone 26 in question to ring. After the person at this telephone has finished talking, the operator first presses the push button 42 which energizes the registering magnet 6 and throws the armature 8 and the pawl 10 to their forward position, bringing the brush 52 in contact with the brush 54. Then while still pressing the push button 42, the push button 58 is pressed. The pressing of this button energizes the magnet 7, since the current may be said to pass from one pole of the source 27 through the wire 28, branch wires 30, 32 and 35 through the coils of the magnet 7, the wire 56, the brush 54, the brush 52 and the wires 62 and 60 through the main wire 59, through the contact blocks 57 and 40 to the other pole of the source. The magnet 7 being energized acts on the armature 23 which in moving toward the poles of the magnet 7, acts on a screw pin 24, and causes the arm 25 to disengage the locking pawl 18 from the ratchet wheel by lifting the same. The operating pawl 10 also being in the forward position is raised above the ratchet wheel 12 sufficiently to allow the latter to reverse under the influence of the recoil action of the spring 14. This throws all of the pin wheels 19 of the attachments belonging to the various telephones on the line, back into the original position or that shown in Fig. 5 of the drawing. In this event it will be understood that the pin wheel 19 moves in the direction the reverse of that indicated by the arrows in Figs. 5 and 6.

Attention is called to the fact that a contact 8^B is connected with and insulated from the armature 8 and is bent to cause its free extremity 8^A to pass between the two spring brushes 51 and 52, and form an electrical connection between the two brushes when the armature A is in its normal position or when not acted on by the electro-magnetic force of its magnet. When, however, the armature 8 is actuated to rotate the ratchet wheel 12, the contacts 8^A is disconnected from the spring

brush 51 and the spring brush 52 is brought into contact with the spring brush 54 as heretofore explained.

Having thus described my invention, what I claim is:

- 5 In a telephone attachment for party lines, a combination of means controllable from the central office for cutting all the telephones out of the circuit and then closing the circuit through a single telephone only, said means comprising a rotatable circuit make-and-break wheel for each
- 10 telephone provided with a main contact pin, a brush in the circuit and normally engaged by said pin, an electro-magnetic means for simultaneously rotating the make-and-break wheel of the telephones, each of said make-and-break
- 15 wheels being provided with an auxiliary contact pin occupying a different position with reference to the main contact from the auxiliary pin of any other make-and-break wheel whereby if the make-and-break wheels of all the tel-

ephones are actuated and the circuit broken through all the telephones, the circuit may be closed through any telephone by continuing the movement of all the make-and-break wheels until the auxiliary contact pin of any wheel is in the circuit-closing position, and electro-magnetic means for restoring the main pins on the make-and-break wheels to their normal position comprising an armature provided with a ratchet pawl and a locking pawl, the locking pawl having a downwardly projecting arm which is operated by any suitable means adapted to be attached to the armature, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES H. BLYTHE.

Witnesses:

DENA NELSON,

A. J. O'BRIEN.