

1,270,080.

Patented June 18, 1918.
2 SHEETS—SHEET 1.

Fig. 1.

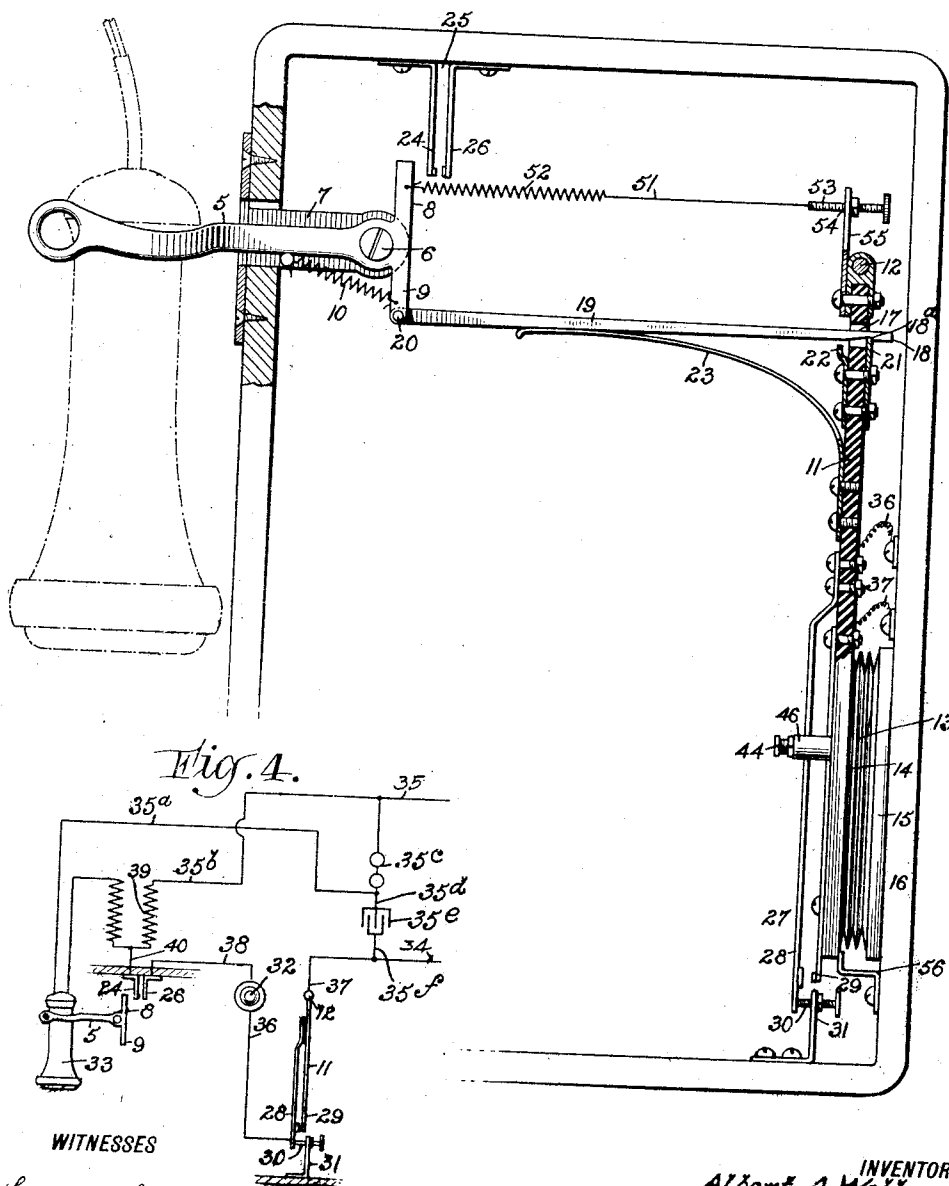
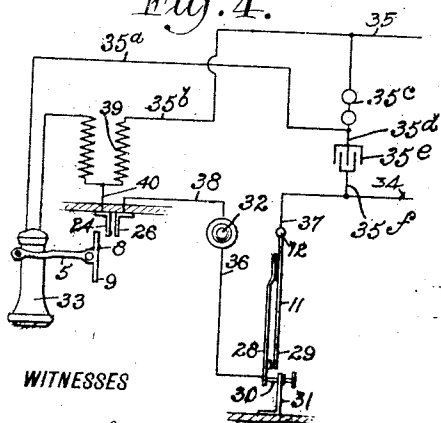


Fig. 4.



WITNESSES

Frederick Dick.
E. B. Marshall

INVENTOR
Albert A. Wells
BY *Mum Co*
ATTORNEYS

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 2 SHEETS—SHEET 2.

Fig. 2.

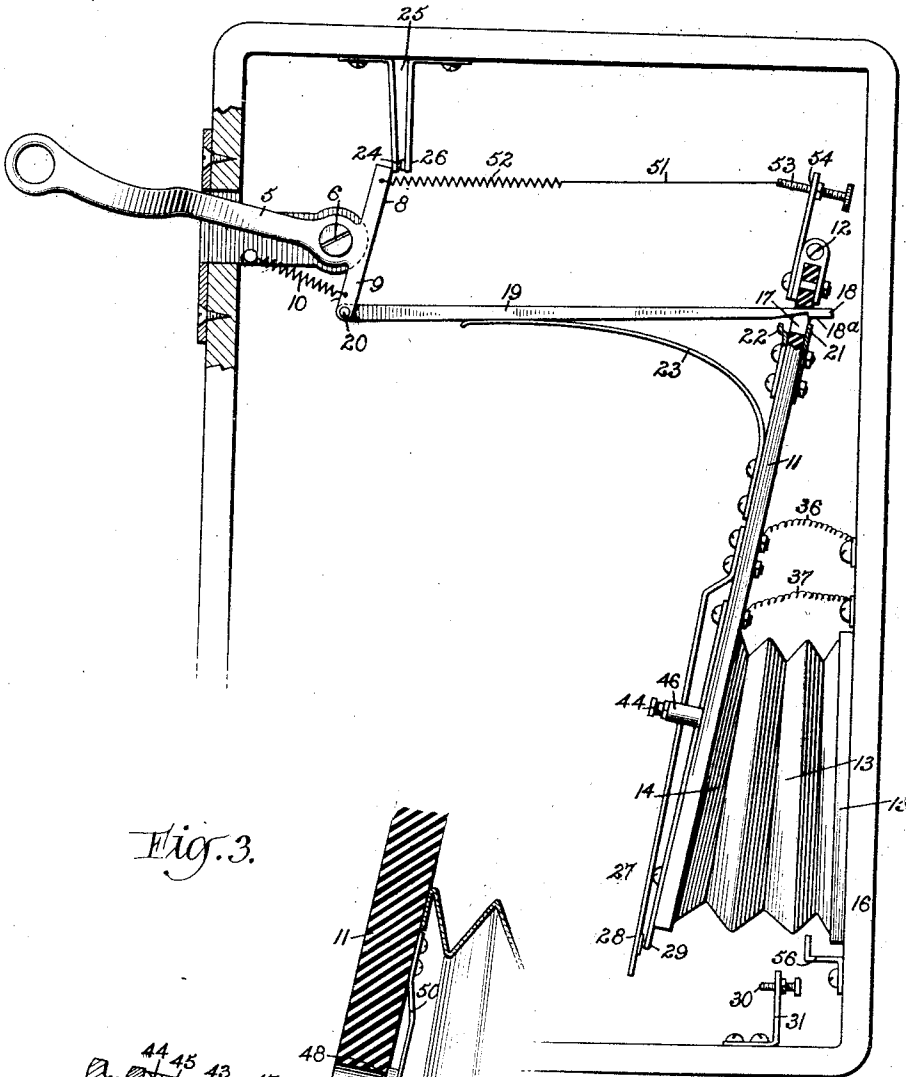
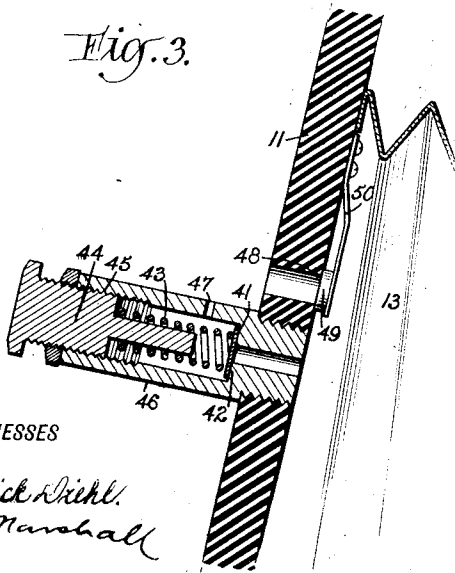


Fig. 3.



WITNESSES

Frederick Kiehl.
 E. B. Marshall

INVENTOR
 Albert A. Wells
 BY *Mum Co*
 ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT A. WELLS, OF DETROIT, MICHIGAN.

TELEPHONE TIMER AND SWITCH.

1,270,080.

Specification of Letters Patent. Patented June 18, 1918.

Application filed May 4, 1917. Serial No. 166,290.

To all whom it may concern:

Be it known that I, ALBERT A. WELLS, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Telephone Timer and Switch, of which the following is a full, clear, and exact description.

My invention has for its object to provide a telephone timer and switch which will limit the use of a telephone by a subscriber. The timer will not only operate the switch to cut out the transmitter and receiver after a predetermined period of use, but it may also be adjusted to prevent the subscriber from again making use of the telephone for a predetermined period, thereby permitting the other subscribers on a party line to make use of the telephone. The invention also assists in eliminating unnecessary conversations, thereby relieving congestion in the telephone system, whether or not party lines are used, which permits the telephone company to give better service to all its subscribers.

Additional objects of the invention will appear in the following specification, in which the preferred form of the invention is disclosed.

In the drawings similar reference characters denote similar parts in all the views, in which—

Figure 1 is a view showing in elevation my invention, parts being shown in section to illustrate the construction;

Fig. 2 is a view similar to that illustrated in Fig. 1, but showing the position of the parts when the telephone receiver has been removed and the telephone receiver hook has been raised by the resilient means provided;

Fig. 3 is an enlarged sectional view showing the valves on the bellows; and

Fig. 4 is a diagrammatic view illustrating the circuits.

By referring to the drawings, it will be seen that a telephone receiver hook 5 is pivoted at 6 to a bracket 7, the telephone receiver hook 5 having arms 8 and 9. A spring 10 connects the bracket 7 with the arm 9 on the telephone receiver hook 5, for raising the telephone receiver hook 5, as illustrated in Fig. 2 of the drawings when the telephone receiver is removed from the telephone receiver hook. A timing member 11 is pivoted at 12, a bellows 13 being secured at its end 14 to the timing member 11, the

other end 15 of the bellows 13 being secured to a casing 16. The timing member 11 has an opening 17 in which the hooked end 18 of a rod 19 is disposed, this rod 19 being articulated to the arm 9 of the telephone receiver hook 5 at 20. A hook 18^a on the hooked end 18 of the rod 19 engages a flange 21 on the timing member 11 so that when the spring 10 moves the telephone receiver hook 5 with its arm 9 to the position indicated in Fig. 2 of the drawings when the telephone receiver is removed from the telephone receiver hook, the rod 19 will move the timing member 11 to the position indicated in Fig. 2 of the drawings. When the timing member 11 is moved to the said position a flange 22 will engage the bottom of the rod 19 to move the rod 19 so that its hook 18^a will be disengaged from the flange 21, after which the rod 19 will be supported by a leaf spring 23 which is also secured to the timing member 11. This spring 23, while sufficiently strong to support the rod 19 when the timing member 11 is in the position indicated in Fig. 2 of the drawings, is not strong enough to force the rod 19 upwardly so that its hook 18^a is disengaged from the flange 21. Nevertheless, when the timing member 11 returns to normal position the spring 23 permits the rod 19 to move to a position where its hook 18^a will reengage the flange 21. With the movement of the timing member 11 to the left as indicated in Fig. 2 of the drawings, the arm 8 on the telephone receiver hook 5 is moved to the right and with the last portion of the movement of the timing member to the left, the arm 8 engages a contact 24 of a switch 25 to press the said contact 24 of the said switch into engagement with the switch contact 26. When the switch 25 is closed by the engagement of the contact 24 with the contact 26 by means of the arm 8 in the manner described, the hook 18^a on the hooked end 18 of the rod 19 is disengaged from the flange 21 so that the timing member 11 cannot be held in the position indicated in Fig. 2 of the drawings by means of the rod 19 with its hook 18^a. While this is true, the movement of the timing member 11 to its normal position indicated in Fig. 1 of the drawings is retarded by a means which will shortly be described.

In addition to the switch 25 there is a switch 27 mounted on the timing member 11 and having contacts 28 and 29, the contact 28 being resilient and engaging the contact

29 to close the switch 27 when the timing member 11 is in the position indicated in Fig. 2 of the drawings, this switch 27, however, being opened when the timing member 11 is in the position indicated in Fig. 1 of the drawings, inasmuch as an adjusting screw or member 30 engages the contact 28 and prevents its movement to the right with the contact 29. The screw 30 is adjustable on a bracket 31 in a manner readily understood.

By referring to Fig. 4 of the drawings, it will be seen that a transmitter 32 and a receiver 33 are illustrated, the main circuit wires being shown at 34 and 35, the circuit wire at 34 leading to the timing member 11 and the contact 29, the wire 36 leading from the contact 28 to the transmitter 32, and the wire 38 leading from the transmitter 32 to the contact 26. The contact 24 is connected with the telephone receiver coils 39 by a wire 40. Two wires 35^a and 35^b lead one from each of the telephone receiver coils 39, one to the main circuit wire 35 at one side of the bells 35^c, the other to the wire 35^d leading from the bells 35^c to the condenser 35^e, the condenser 35^e being connected by a wire 35^f with the main circuit wire 34.

As has been stated, the movement of the timing member 11 from the position indicated in Fig. 2 to the position indicated in Fig. 4 of the drawings, is retarded. To accomplish this result, I provide the member 11 at the bellows 13 with a valve 41 which seats on a valve seat 42 and is held on this seat 42 by means of a spring 43, a screw plunger 44 meshing in a thread 45 in a valve nipple 46, by which means the pressure against the valve 41 may be regulated, and the flow of air through the valve seat 42 may be retarded as desired to retard the movement of the timing member 11 back to its normal position. Air passes from the nipple through a vent 47.

When the timing member 11 is moved to the left air is permitted to flow into the bellows 13 through a valve seat 48 which is normally held closed by means of a valve 49 held against this seat 48 by a leaf spring 50. A wire or cord 51 is connected with the arm 8 of the telephone receiver hook 5 by means of a spring 52, this wire or cord 51 being secured to the end of a screw 53 meshing in a threaded orifice 54 in a flange 55 secured to the timing member 11 and extending above the timing member's pivot 12. This means is provided for moving the timing member 11 back to normal position. The time required for the timing member 11 to move from the position indicated in Fig. 2 of the drawings to its normal position indicated in Fig. 1 of the drawings is regulated by means of the adjustment of the screw plunger 44 and the screw 53, it being

understood that after the circuit has been

closed through the transmitter by the closing of the switches 25 and 27, it is possible to make use of the telephone until the switch 27 is opened by means of the screw 30, which may be adjusted to open the switch 27 at a predetermined time. It will also be understood that after the switch 27 has been opened it is impossible to make use of the telephone until the timing member 11 reaches normal position and the hook 18^a on the rod 19 engages the flange 21 to permit the telephone receiver hook 5, through its arm 9 and the rod 19, to move the timing member 11 to the position indicated in Fig. 2 of the drawings which has been described. A bracket 56 is provided to stop the timing member 11 when it reaches normal position.

Inasmuch as the switch 25 is not closed until the hook 18^a of the rod 19 is disengaged from the flange 21 and the telephone receiver hook 5 is in the position indicated in Fig. 2 of the drawings, the subscriber is prevented from holding the telephone receiver hook 5 half way up and making use of the telephone an unlimited length of time.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second member, means for moving the first member in the direction of the second member, and means for retarding the movement of the first member in the last mentioned direction.

2. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, a hook articulated to the telephone receiver hook normally engaging the first member for moving the first member away from the second member when the telephone receiver hook is raised, means on the first member for raising the second mentioned hook out of engagement therewith with the said movement of the first member, means for moving the first member in the direction of the second member, and means for retarding the movement

of the first member in the last mentioned direction.

3. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second member, resilient means connecting the telephone receiver hook with the first member for moving the first member in the direction of the second member, and means for retarding the movement of the first member in the last mentioned direction.

4. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second member, means releasing the said means from the first member, means for moving the first member in the direction of the second member, and means for retarding the movement of the first member in the last mentioned direction.

5. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second member, means on the first member for releasing the said means from the first member, resilient means for supporting the first means, means for moving the first member in the direction of the second member, means for retarding the movement of the first member in the last mentioned direction.

6. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second mem-

ber, means for moving the first member in the direction of the second member, a bellows having an end secured to the first member, and valved means for permitting the entrance of air into the bellows and for retarding the escape of air therefrom.

7. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, a hook articulated to the telephone receiver hook and normally engaging the first member for moving the first member away from the second member when the telephone receiver hook is raised, a flange on the first member for engaging and raising the second mentioned hook out of engagement with the first member, a spring on the first member for supporting the second mentioned hook when the first member is in abnormal position, means for moving the first member in the direction of the second member, and means for retarding the movement of the first member in the last mentioned direction.

8. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second member, means for disengaging the first means from the first member when the second switch is operated, means for moving the first member in the direction of the second member, and means for retarding the movement of the first member in the last mentioned direction.

9. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second member, means for disengaging the first means from the first member when the second switch is operated, means for moving the first member in the direction of the second member, and valved means for retarding the movement of the first member in the last mentioned direction.

10. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit, operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second member, means for moving the first member in the direction of the second member, and valved means for retarding the movement of the first member in the last mentioned direction.
11. In a telephone timer and switch, a telephone receiver hook, a circuit, transmitting means, a normally open switch in the circuit, means by which an upward movement of the telephone receiver hook on the removal of the telephone receiver is adapted to close the switch, and automatic means for opening the switch after it has been closed for a predetermined time.
12. In a telephone timer and switch, a telephone receiver hook, a circuit, a transmitting means in the circuit, a switch in the circuit, a second switch in the circuit, means by which a movement of the telephone receiver hook is adapted to close both switches, automatic means operable by the telephone receiver hook for opening the first switch after it has been closed a predetermined time which is actuated when the second switch is closed.
13. In a telephone timer and switch, a telephone receiver hook, a normally open circuit, a transmitting means in the circuit, means for closing the circuit operable by the telephone receiver hook, and automatic means for opening the circuit after it has been closed a predetermined time.
14. In a telephone timer and switch, a telephone receiver hook, an open circuit, a transmitting means in the circuit, means for closing the circuit operable by the telephone receiver hook, automatic means for opening the circuit after it has been closed a predetermined time, and means to prevent the second means from delaying the action of the automatic means after the circuit has been closed.
15. In a telephone timer and switch, a telephone receiver hook, a circuit, transmitting means and a switch in the circuit, means by which a movement of the telephone receiver hook is adapted to close the switch, and automatic means adapted to be actuated by the telephone receiver hook for opening the switch after it has been closed for a predetermined time and preventing the closing of the switch a second time for a predetermined interval after it has been once closed.
16. In a telephone timer and switch, a telephone receiver hook, a circuit, a transmitting means in the circuit, a switch in the circuit, a second switch in the circuit, means by which a movement of the telephone receiver hook is adapted to close both switches, automatic means operable by the telephone receiver hook for opening the first switch after it has been closed a predetermined time which is actuated when the second switch is closed, and means to prevent the second means from closing one of the switches a second time for a predetermined interval after it has been once closed.
17. In a telephone timer and switch, a telephone receiver hook, a circuit, a transmitting means in the circuit, a switch in the circuit, a second switch in the circuit, means by which a movement of the telephone receiver hook in one direction is adapted to close both switches, automatic means operable by the telephone receiver hook for opening the first switch after it has been closed a predetermined time which is actuated when the second switch is closed.
18. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member free from the switch and from the first member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second member, means for moving the first member in the direction of the second member, and means for retarding the movement of the first member in the last mentioned direction.
19. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member free from the switch and from the first member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to move the first member away from the second member, means for moving the first member in the direction of the second member, a bellows having an end secured to the first member, and valved means for permitting the entrance of air into the bellows and retarding the escape of air therefrom.
20. In a telephone timer and switch, a circuit, a movably mounted member, a switch in the circuit and mounted on the member, a second member for operating the switch when the first member reaches a predetermined point relatively to the second member, a telephone receiver hook free to

move independently of the first member, a second switch in the circuit operable by the telephone receiver hook, means by which the telephone receiver hook is adapted to
5 move the first member away from the second member, means for moving the first member in the direction of the second member, and valved means for retarding the movement of the first member in the last
10 mentioned direction.

21. In a telephone timer and switch, a telephone receiver hook, a normally open circuit, a transmitting means in the circuit, means for closing the circuit operable by the telephone receiver hook on the removal of
15 the telephone receiver therefrom, and automatic means for opening the circuit after it has been closed a predetermined time.

ALBERT A. WELLS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."