

(No Model.)

C. WITTENBERG.
TELEPHONE REGISTER.

No. 359,308.

Patented Mar. 15, 1887.

Fig. 1.

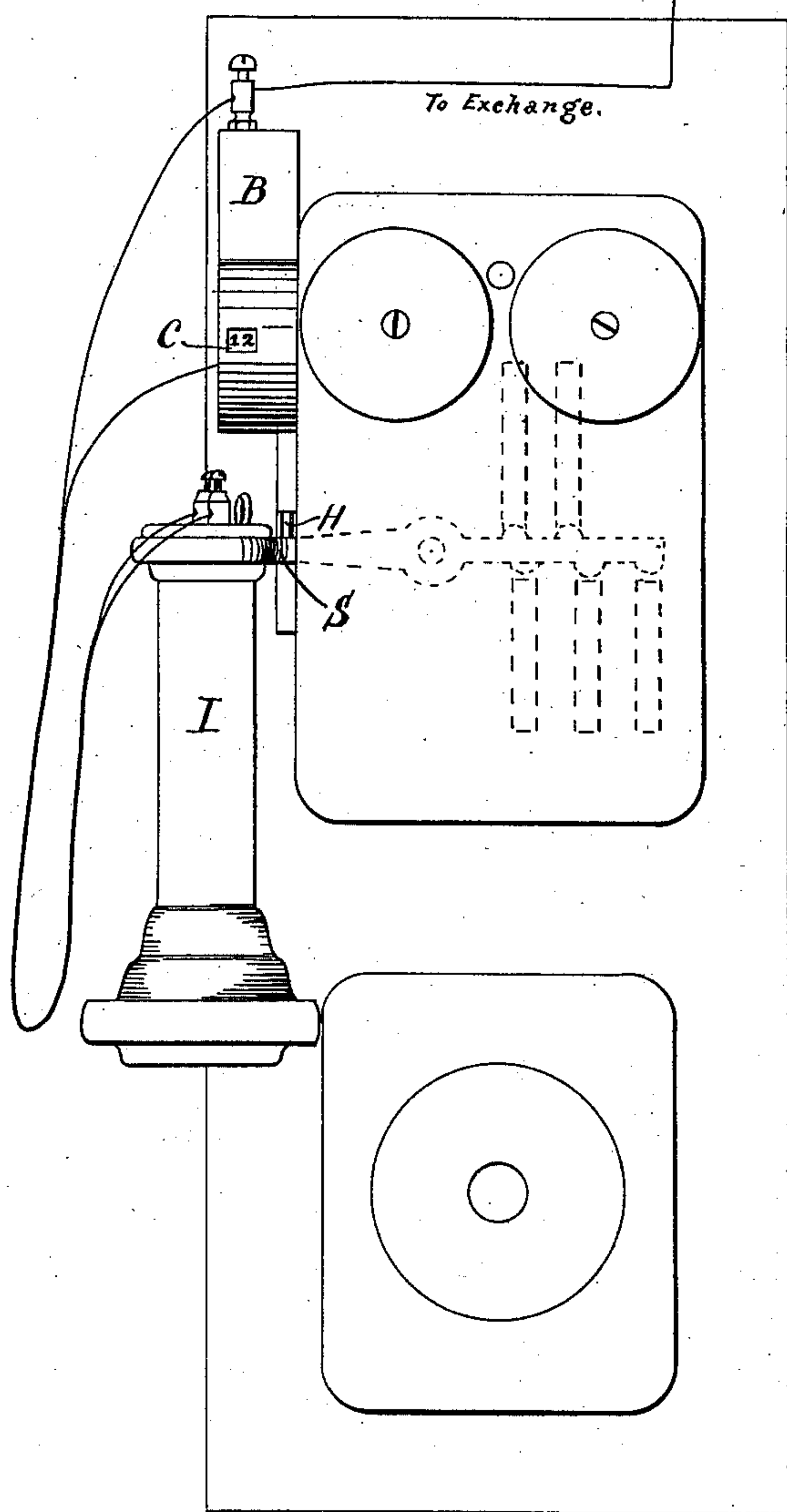
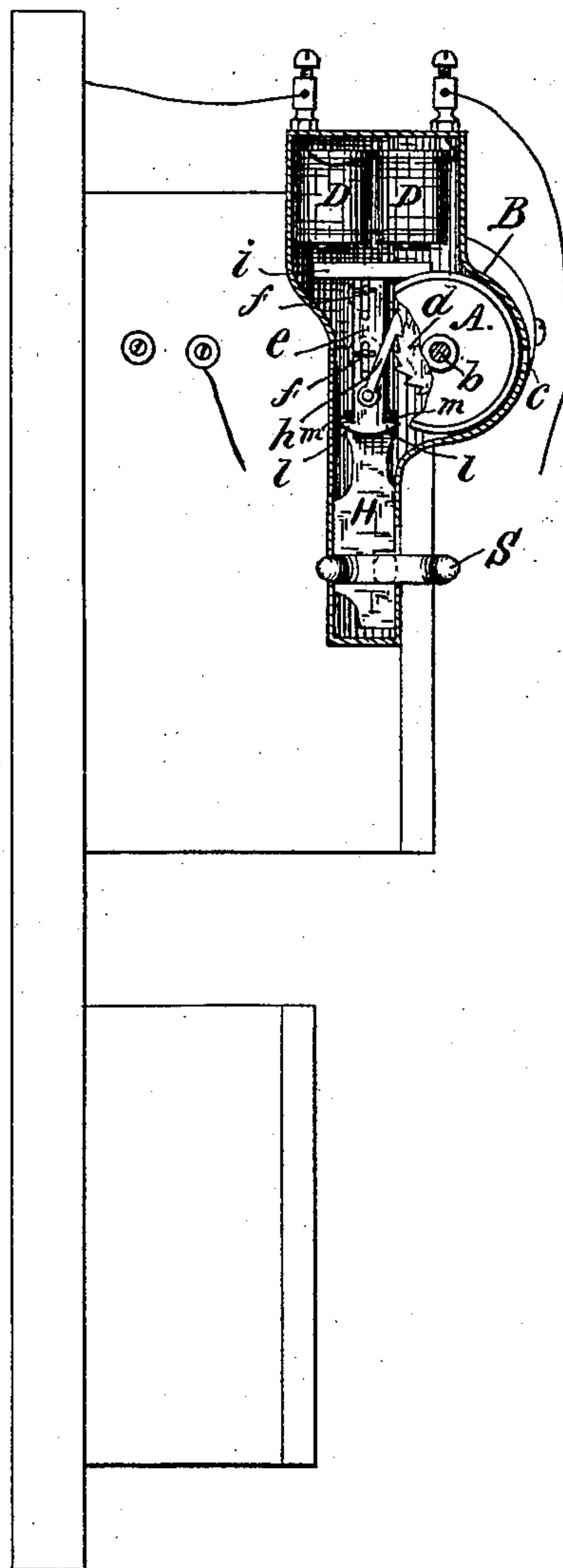


Fig. 2.



Witnesses
V. M. Hood.
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UNITED STATES PATENT OFFICE.

CHARLES WITTENBERG, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO EDWARD G. CORNELIUS, OF SAME PLACE.

TELEPHONE-REGISTER.

SPECIFICATION forming part of Letters Patent No. 359,308, dated March 15, 1887.

Application filed July 29, 1886. Serial No. 209,358. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WITTENBERG, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Telephone-Registers, of which the following is a specification.

My invention relates to an improvement in that class of telephone-registers in which the act of registering the number of times that the telephone is used is performed jointly by the person using the telephone at a subscriber's station and the operator at the exchange-station.

The object of my improvement is to provide means whereby the mechanism which actuates the register shall be set preparatory to carrying the register forward one point by means of an electro-magnet controlled by the operator at the exchange, and shall then be operated to carry the register forward by the movement of the switch-lever by which the subscriber connects his telephone with the line, the arrangement being such that the switch-lever, which forms also a support for the telephone-receiver, has a movement entirely independent of the registering mechanism, so that the exchange may be called any number of times without affecting the register until the actuating mechanism has been set by the operator at the exchange, the weight of the receiver when hung up then operating to carry the register forward one point, all as hereinafter fully described.

The accompanying drawings illustrate my invention.

Figure 1 represents a front elevation of a telephone with my register attached. Fig. 2 represents a side elevation of the same with the side of the register-case removed.

The register is of the step-by-step form, and may be constructed in any well-known manner.

The register shown consists of a disk, A, bearing on its periphery a series of numbers in regular numerical succession, and mounted on a short shaft, *b*, so as to turn and expose the numbers in succession through the opening *c* in the register-case B. Secured to disk A so as to turn therewith is a ratchet-wheel, *d*. The ratchet-wheel *d* and disk A are turned step by step by the reciprocating movement of the actuating-bar *e*, which is secured to the case

B, so as to slide thereon, by studs *f f*, and carries a pawl, *h*, which engages the ratchet-wheel.

D is an electro-magnet mounted in the electric circuit connecting the telephone at a subscriber's station, to which the register is attached, with the exchange-station. To the upper end of bar *e* is secured an armature, *i*, for magnet D. On the lower end of bar *e* are formed projecting lugs *l l*.

H is a short plate having projecting lugs *m m*, which are arranged to engage the lugs *l* on bar *e*. Plate H is notched at one edge to receive the switch-lever S, which is of the usual form found in the "Bell" telephone, the outer end forming a support for the telephone-receiver I, and the plate sliding in case B up and down with each movement of the switch-lever.

The operation of my device is as follows: When the receiver I is in position on the switch-lever, the lugs *m m* on plate H engage the lugs *l* on bar *e* and prevent the bar from moving upward. When the user of the telephone at the subscriber's station removes the receiver I from the switch-lever S, the outer end of the lever automatically moves upward, and the telephone is thereby put in the line-circuit with the exchange in the usual well-known manner. The upward movement of the switch-lever carries plate H upward also, and removes lugs *m* from engagement with lugs *l*, thereby freeing bar *e*. If the operator at the exchange finds that the connection desired by the subscriber cannot be made, he so informs the subscriber, who then hangs up his receiver, returning the switch-lever and plate H to their former position and the register is not actuated. If the operator at the exchange finds that the desired connection can be made, he first makes a connection of the subscriber's line with the "call-circuit" at the exchange, thereby sending a strong electric impulse through the subscriber's line and energizing the electro-magnet D, which at once draws bar *e* upward, thus moving the pawl *h* over one tooth of the ratchet-wheel *d* and bringing lugs *l* up against lugs *m*. The connection desired by the subscriber is now made, the bar *e* being held in its new position, after the strong current through the magnet has ceased, by the pawl and ratchet-wheel. After the subscriber has ceased talking he hangs up his receiver on the switch-lever, and

the weight of the receiver draws the switch-lever, plate H, and bar *e* downward, thus overcoming the resistance of the ratchet-wheel and turning the register-disk forward one point.

5 It will be observed that the movements of the switch-lever can have no effect on the registering mechanism except when the actuating-bar *e* has been drawn upward and set by the operator at the exchange-station, and the actuating-bar cannot be drawn up and set by said
10 operator until the subscriber has first removed his receiver from his switch-lever. It is thus impossible for either party to operate the register without the concurrent action of the other.

15 I claim as my invention—

1. That improvement in telephone-registers which consists in the combination, with the actuating mechanism of the register, of an electro-magnet arranged in the telephone-line current, a movable part of the telephone apparatus, as the switch-lever, by which the telephone
20 is connected with the line, and intermediate mechanism connecting said movable part with the actuating mechanism of the register, whereby said actuating mechanism is moved in one
25 direction by said electro-magnet and moved in the opposite direction by the movement of said movable part of the telephone apparatus, and the carrying forward of the register becomes the result of the concurrent action of the user of the telephone at a subscriber's station and the operator at the exchange-station, substantially as specified.

2. In a telephone-register, the combination, with a telephone apparatus and a step-by-step
35 registering mechanism, of an actuating-bar arranged to have a reciprocating movement, whereby said registering mechanism is actuated, an electro-magnet arranged to attract and
40 move said actuating-bar in one direction, and a movable part of the telephone apparatus, as the switch-lever, arranged to move the actuating-bar in the opposite direction, substantially as specified.

3. In a telephone-register, the revoluble
45 indicating-disk, the ratchet-wheel arranged to revolve with said disk, the sliding actuating-bar carrying a pawl arranged to engage said ratchet-wheel, an electro-magnet arranged to
50 attract and move said actuating-bar and thereby set the pawl preparatory to carrying the register forward one point, the telephone-receiver, the lever arranged to support the telephone-receiver, and intermediate mechanism
55 connecting said lever and said actuating-bar, all combined and arranged to co-operate as specified, whereby the registering mechanism is set by the action of the electro-magnet and the register is carried forward one point by the weight of the telephone-receiver.

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Witnesses:

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