A. C. VIARDOT.

RECORDING COUNTER FOR TELEPHONIC CONVERSATIONS AND SIMILAR PURPOSES.

APPLICATION FILED JUNE 29, 1911.

1,180,555.

Patented Apr. 25, 1916.

4 SHEETS—SHEET 1.

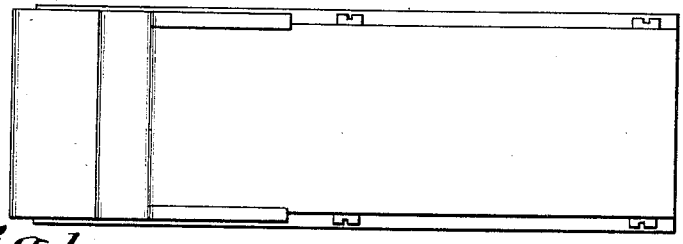


Fig. 1.

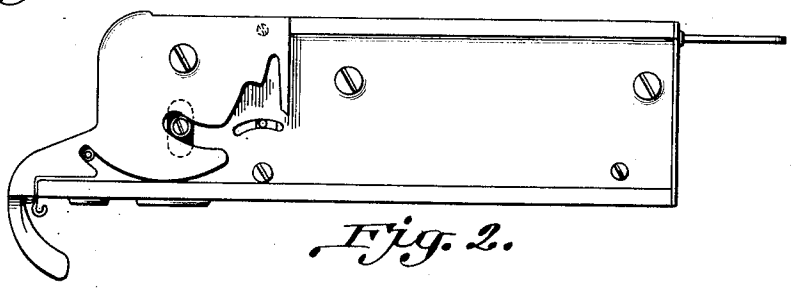


Fig. 2.

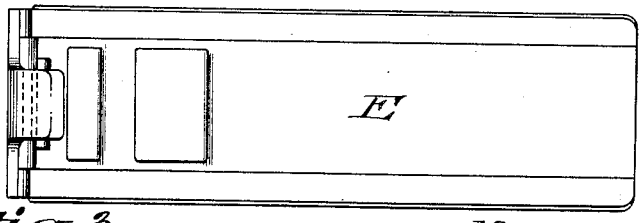


Fig. 3.

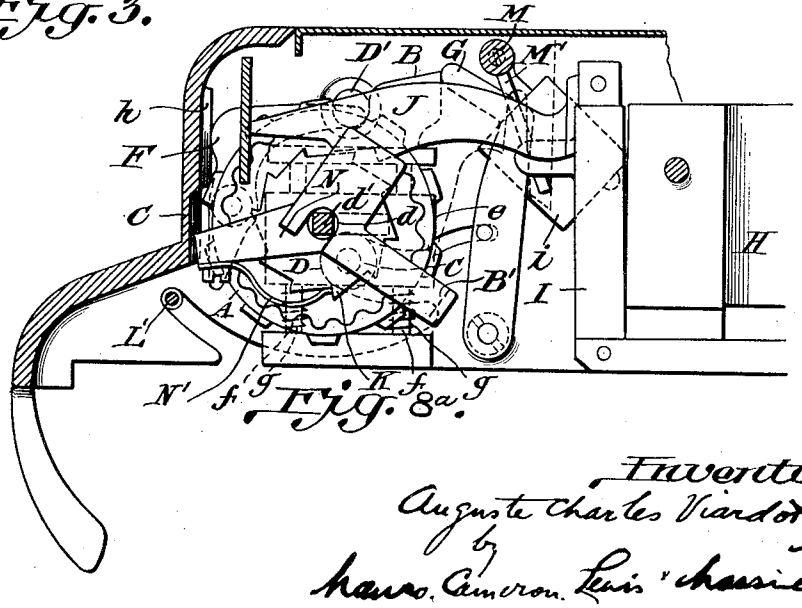


Fig. 8a.

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Fig. 4.

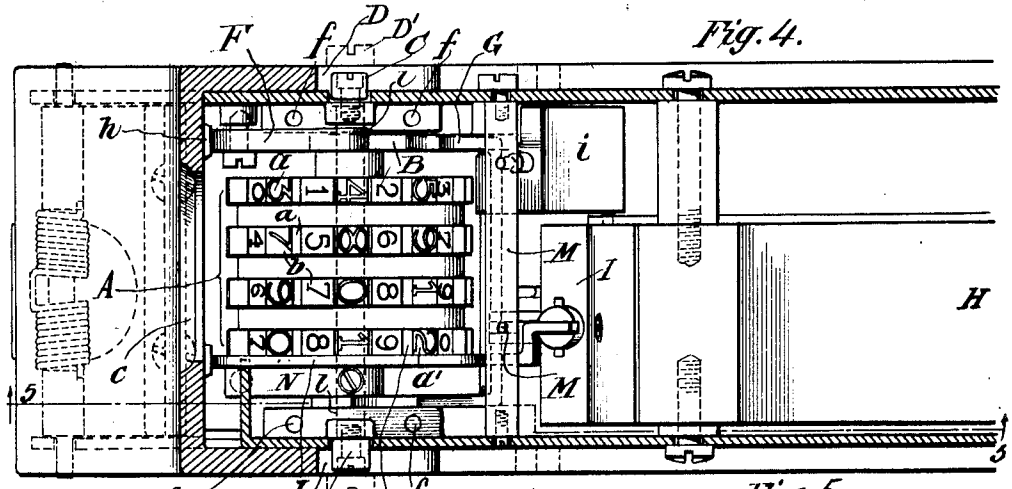
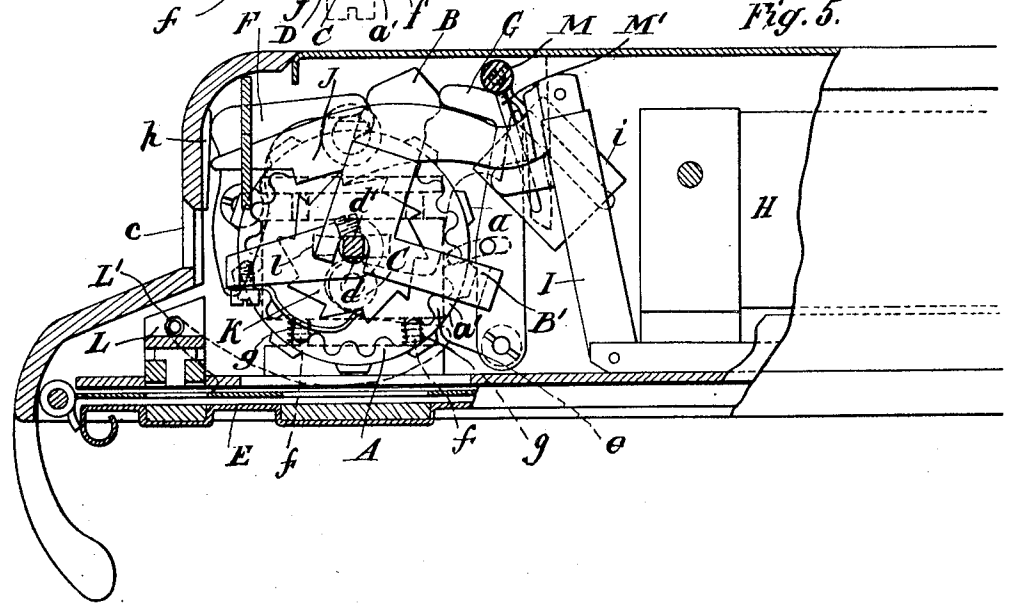


Fig. 5.



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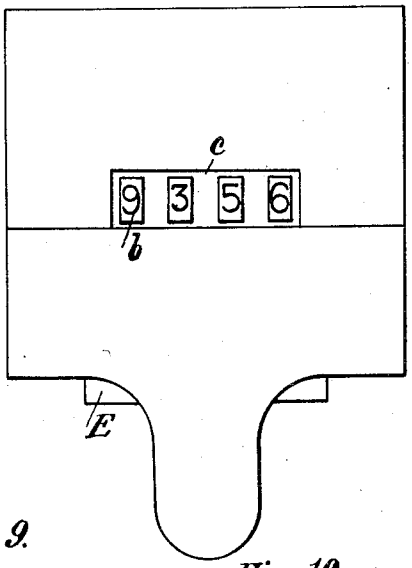
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4 SHEETS—SHEET 3.

Fig. 6.



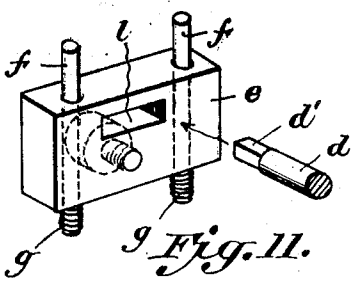


Fig. 11.

Fig. 9.

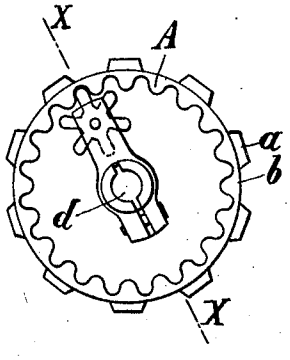
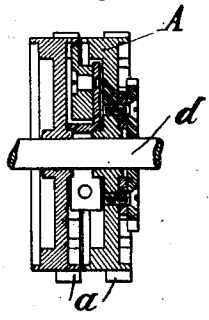


Fig. 10.



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4 SHEETS—SHEET 4.

Fig. 7.

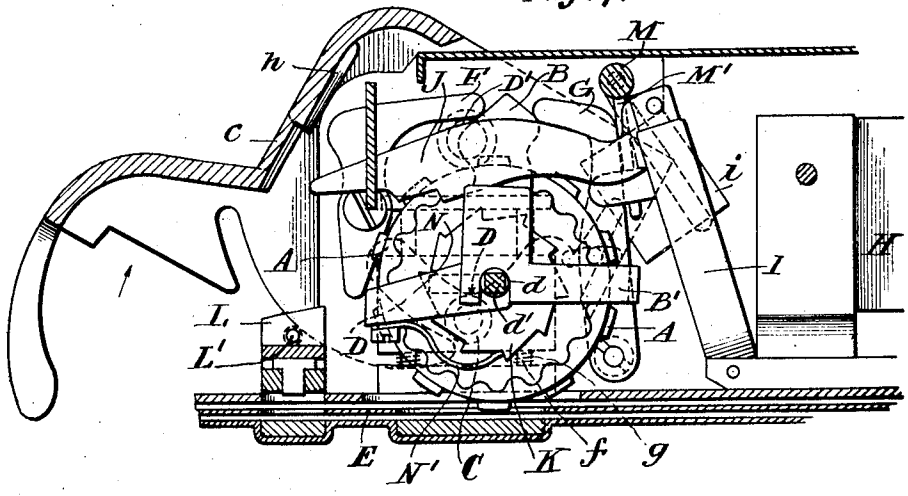
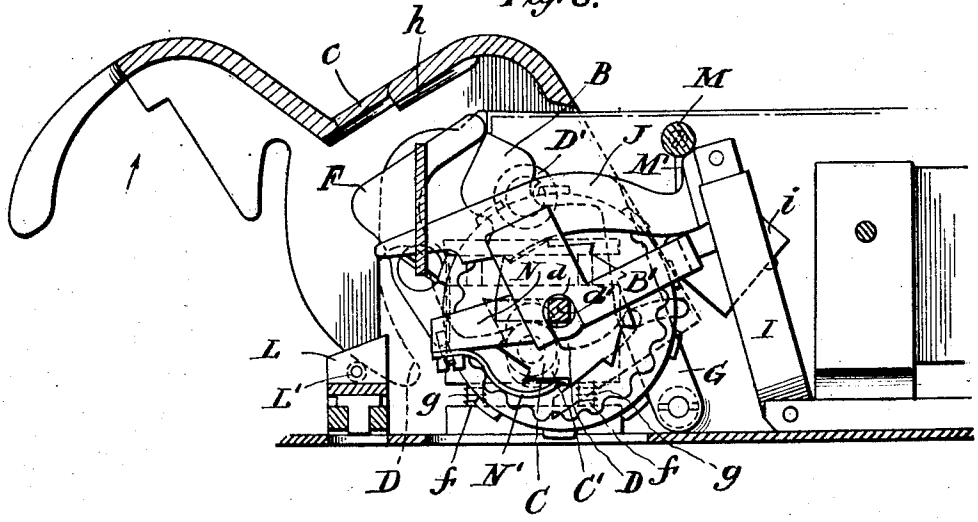


Fig. 8.



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UNITED STATES PATENT OFFICE.

AUGUSTE CHARLES VIARDOT, OF PARIS, FRANCE, ASSIGNOR TO ASSOCIATION DES OUVRIERS EN INSTRUMENTS DE PRECISION, OF PARIS, FRANCE.

RECORDING-COUNTER FOR TELEPHONIC CONVERSATIONS AND SIMILAR PURPOSES.

1,180,555. Specification of Letters Patent. Patented Apr. 25, 1916.

Application filed June 29, 1911. Serial No. 636,134.

To all whom it may concern:

Be it known that I, AUGUSTE CHARLES VIARDOT, a citizen of the Republic of France, residing at and whose post-office address is 10 Rue Charles Fourier, Paris, France, have invented a new and useful Improvement in Recording-Counters for Telephonic Conversations and Similar Purposes, which invention is fully set forth in the following specification.

With known counters, it has been necessary for recording the numbers transmitted or registered, to employ a person specially to write in a register the numbers read off from the counter. Errors and frauds can be thus committed without it being possible to exercise a proper practical control. In places where the counters are connected up in large numbers, as for example in central telephone exchanges having fixed charges for conversations, recourse is sometimes had to photography for recording the numbers on the counters. This system, besides necessitating a laboratory and the employment of specialists, is not very practical because the photographs are oftentimes not sufficiently clear and the figures of the counters, which are of small dimensions, are not legible, even when the photographs are enlarged; besides, every place, where apparatus of this kind is installed, does not lend itself for this purpose.

The counter according to this invention, has for its object to remedy this inconvenience by automatically and at the desired moment imprinting on a special recording strip:—1st, the number which has been transmitted and recorded at the previous reading; 2nd, the number which is inscribed or recorded at the moment the reading of the record is taken; 3, the serial number of the counter. Those concerned have thus absolute assurance of the truthfulness of the records which are given them.

The invention will be described as applied to a counter for telephonic conversations or messages, and the following description, with reference to the accompanying drawings, will explain the distinctive features of such a counter.

Figures 1 and 2 are plan and side views of the counter; Fig. 3 shows the recording strip carrier; Fig. 4 is a plan, partly in section, of the counter; Fig. 5 is a longitudinal section of the apparatus; Fig. 6 is an end view of the counter; Figs. 7, 8 and 8^a show details of mechanism in different positions; Fig. 9 is a detail of the driving mechanism of the rollers of the counter, and Fig. 10 is a section along the line X—X of Fig. 9. Figs. 4—10 represent the counter drawn to a larger scale for facilitating the explanation; Fig. 11 is a detail perspective view.

This counter of telephonic conversations comprises chiefly a variable number of rollers A (four are shown in the illustration to be described) carrying on their peripheries a series of figures a, in relief, for producing the impression and a second series of figures b, sunk or impressed, adapted to appear behind an opening c formed in the door of the counter and to be read off from outside the counter. The first of these rollers a', that is the unit wheel or roller, can be operated, as in the type of apparatus referred to, by a magnet driven pawl J engaging the teeth of a ratchet wheel K or by other known means.

In the drawings, the movement of a wheel other than the first is effected by means of the wheel next in prior order to it by gearing placed in the interior of the wheels; but the imprinting arrangement of this invention can be applied also to counters the wheels of which are exteriorly controlled in one of the customary ways. The figure rollers A are mounted loose on a shaft d having squared ends d' taking into rectangular recesses l formed in two vertically movable bearing pieces e in which they can be displaced in a direction perpendicular to the axis of the spindle. One of these bearing pieces e is shown in detail in Fig. 11. The pieces or bearings e are themselves mounted on two pins or projections f fixed to the bottom plate of the counter and they can be displaced vertically in respect to the pins; coil springs g around the pins tend to keep the whole mechanism in a raised position.

Mounted to rock on shaft d are two members B one near each end of the shaft and connected to each other by a bail-shaped member B', the whole constituting a forked member. The purpose of members B is to displace shaft d horizontally in its support e and thereby displace printing rolls A horizontally as explained below. Mounted on the movable bearing pieces e are rollers C. These rollers pass through slots C' formed

in opposite side walls of the casing and engage cam slots D formed in each side piece of the counter door, see Fig. 2. When the counter door is opened or closed the cam surface of the slots D impart a vertical movement of the bearing pieces *e* which support the printing rolls A and so cause the figures in relief on the rollers A to imprint the record strip of paper or other material contained in the strip carrier E, which has been previously introduced into the space provided for the purpose in the apparatus. After the cams have ceased to operate the springs *g* raise the whole mechanism again to a suitable initial position.

When the door is closed a commencing number or sum is impressed on the record strip and when it is opened the new number or sum that is registered by the counter at the moment of opening, by reason of the counting operations that have taken place, is then imprinted. To facilitate the subtraction by which the number counted is obtained the first of these sums or numbers should be imprinted below the second.

In the counter apparatus represented on the drawings the impressions of the numbers is obtained in desired positions by displacing the spindle of the figure rollers. The two connected members B, for guiding or moving the shaft *d* is shifted into place by means of two levers F, G which pivot on the plate on each side of the movable bearing. The forward lever F is controlled by a lug or projection *h* fixed on the inner face of the door in such a manner that when the latter is closed the lever and the two members 3 are pushed toward the rear, the rollers being thus moved into a forward position ready to impress the number corresponding to that which would be indicated by the counter at the moment of opening; as the door is opened the cam placed on the side of the door at the rear acts on a pin G′ on the rear lever G which pushes the members B toward the front of the apparatus while the printing rolls A move into the rear position ready to imprint the same number on the new record strip that has been introduced. The impression of this number is made during the period that the first part of the path is traversed by the door during the closing movement; it will represent on the new strip the number registered by the counter at the previous opening and which constituted the subtrahend of the immediate prior operation which subtrahend was imprinted as the door was opened.

To obviate during the horizontal displacement of the rollers, the erroneous displacement of the unit wheel, the pawl J abuts against a part of the casing, which momentarily frees the ratchet wheel. The cams on the side and to the front of the door Fig. 2 act on the idle roller L′ of a subsidiary counter L placed in front of the main counter and adapted to impress on the record strip the serial number of the apparatus. At each telephonic communication, an electric current is sent into the electro-magnet H which attracts the armature I; this armature draws with it the pawl J. When the communication has terminated the current is cut off, the armature is retracted by a working arm. M′ which is carried by a shaft M to which the counter-weight *i* is secured, the pawl J engages in the teeth of the ratchet wheel K and turns the counter roller by a unit. A spring pawl N′ carried by an arm D fast to shaft *d* holds the ratchet wheel K from rotating in one direction.

The system of telephonic counting as has been described can be applied to all sizes of counters, whatever may be the mode for controlling the rollers and the use to which they are put.

Having thus described my invention and the best means I know of carrying the same into practical effect, I claim:—

1. A recording counter for telephone conversations and like purposes, comprising in combination a casing provided with a door, movable bearings in said casing, a plurality of printing rolls and means for rotating the same, a shaft for said rolls mounted to slide on said bearings to bring said rolls into different printing positions, a record slip carrier in operative relation to said rollers and means operated by movements of said door for shifting said printing rolls in and out of printing relation with said slip carrier.

2. A recording counter for telephone conversations and like purposes, comprising in combination a casing provided with a door, movable bearings in said casing, a plurality of printing rolls and means for rotating the same, a shaft for said rolls mounted to slide on said bearings to bring said rolls into different printing positions, a record slip carrier in operative relation to said rollers and a forked member pivotally mounted on said bearings, and door operated means for rocking said member to shift said printing rolls into different positions and to depress said rolls into printing relation with said slip slide on opening and closing said door.

3. A recording counter for telephone conversations and like purposes, comprising in combination a casing provided with a door, movable bearings in said casing, a plurality of printing rolls and means for rotating the same, a shaft for said rolls mounted to slide on said bearings to bring said rolls into different printing positions, a record slip carrier in operative relation to said rollers and a forked member pivotally mounted on said bearings, a cam mounted on said door, and means operated by said cam and engaging

said forked member to shift said rolls into different positions, and means on said bearings adapted to engage said cam for depressing said printing rolls into printing relation with said slip slide on opening and closing said door.

4. A recording counter for telephone conversations and the like, comprising in combination a casing provided with a door having an opening, movable bearings in said casing, a shaft carried by said bearings and a plurality of printing rolls provided with raised and with engraved characters, the latter being visible through said opening, electromagnetic means for rotating said rolls, a record strip carrier arranged in operative relation with said rolls and means controlled by the opening and closing of said door for bringing said rolls into printing relation with said slip carrier and means for shifting said rolls into different printing positions.

5. A recording counter for telephone conversations and like purposes, comprising in combination a casing provided with a door, movable bearings in said casing, a plurality of printing rolls and means for rotating the same, a shaft for said rolls mounted to slide on said bearings to bring said rolls into different printing positions, a record slip carrier in operative relation to said rollers and a forked member pivotally mounted on said bearings and engaging said shaft, oppositely disposed levers pivoted on the wall of said casing adapted to rock said member, and cam means on said door for alternately engaging said levers to operate said member and shift the printing rolls into different positions on opening and closing said door.

6. A recording counter for telephone conversations and the like, comprising in combination a casing provided with a door, spring-pressed bearings in said casing normally held in raised position, a plurality of printing rolls and means for rotating the same, a shaft for said rolls mounted to slide on said bearings to bring said rolls into different printing positions, a record slip carrier in operative relation to said rolls, a cam on said door and means operated by said cam to shift said rolls on said carrier, and means on said bearings engaging said cam to move said printing rolls into printing position on opening and closing of said door.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

AUGUSTE CHARLES VIARDOT.

Witnesses:
H. C. COXE,
GABRIEL BELLIARD.