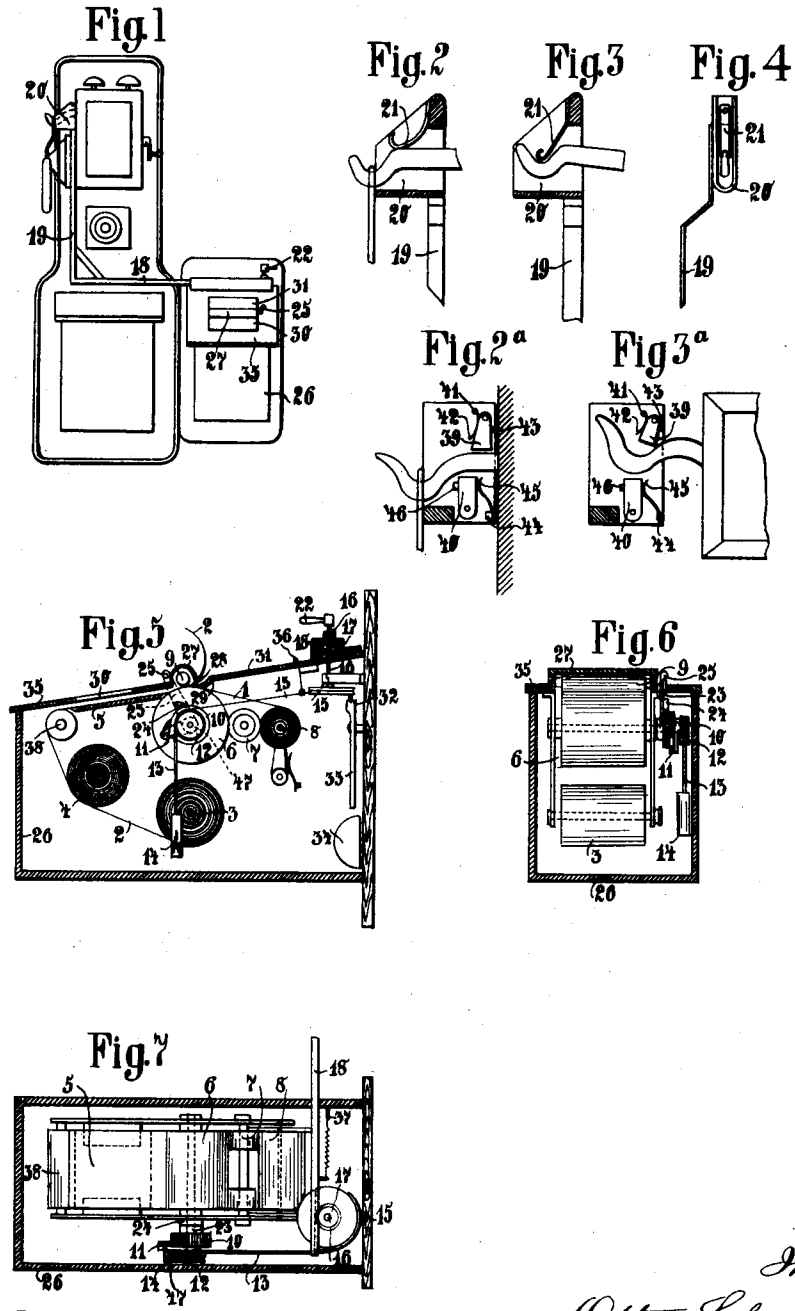


O. SCHMID.
 APPARATUS FOR CHECKING THE USE OF TELEPHONES.
 APPLICATION FILED FEB. 10, 1911.

997,012.

Patented July 4, 1911.

3 SHEETS—SHEET 1.



Witnesses
Chas. H. Smith
Bertha M. Allen.

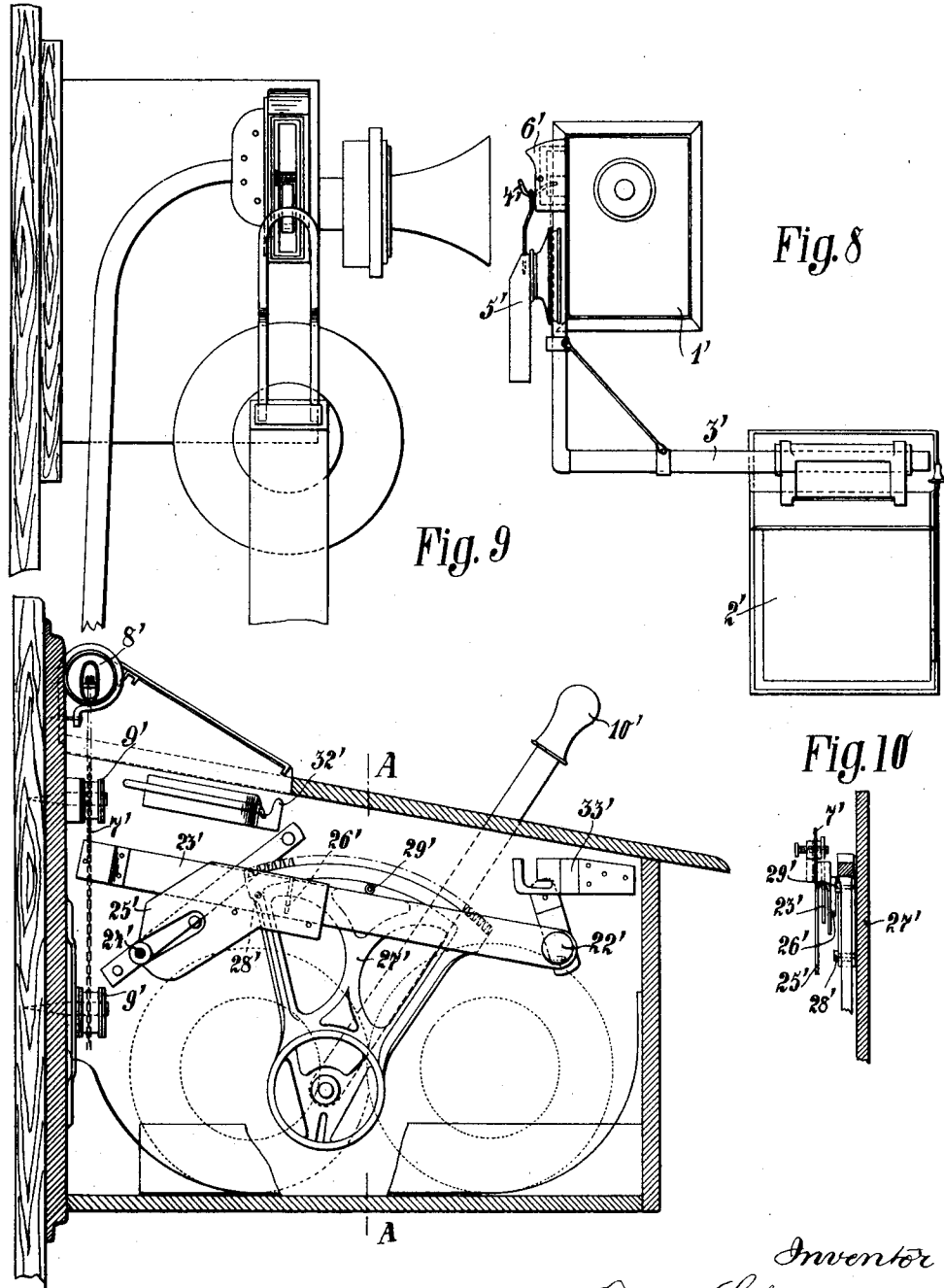
Inventor
Otto Schmid.
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his atty

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3 SHEETS—SHEET 2.



Witnesses
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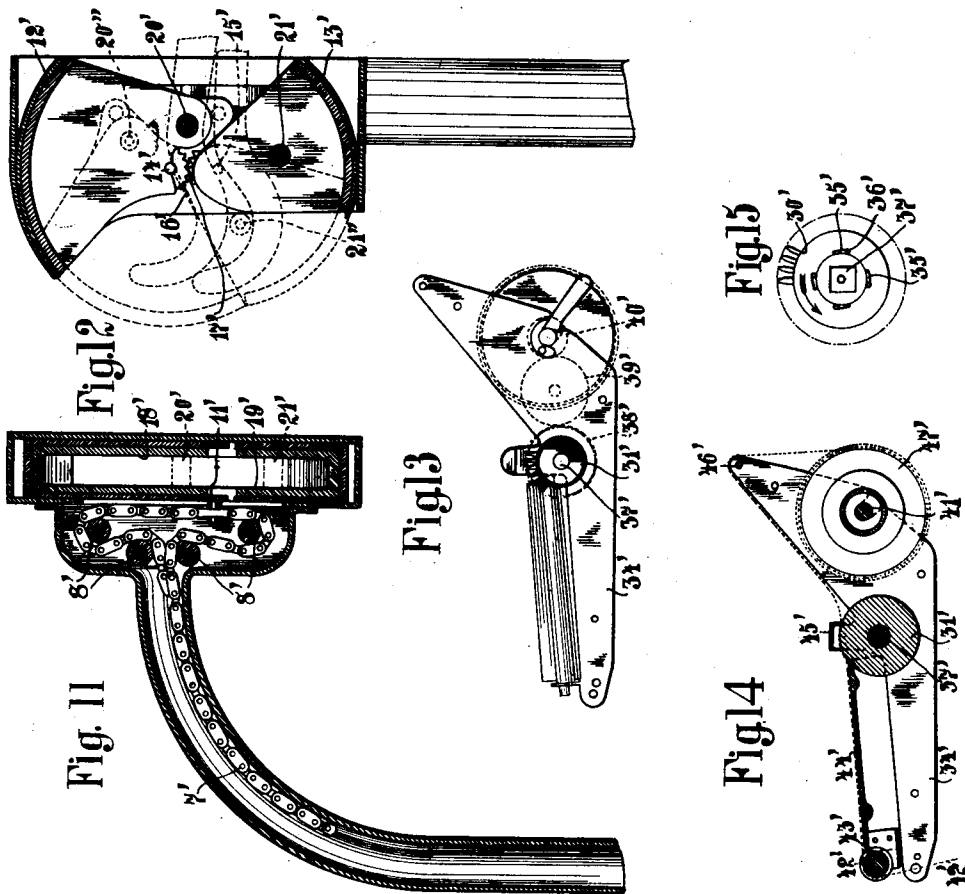
Inventor
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3 SHEETS—SHEET 3.



Witnesses
 Charles H. Smith
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UNITED STATES PATENT OFFICE.

OTTO SCHMID, OF HEILBRONN, GERMANY.

APPARATUS FOR CHECKING THE USE OF TELEPHONES.

997,012.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed February 10, 1911. Serial No. 607,819.

To all whom it may concern:

Be it known that I, OTTO SCHMID, a subject of the King of Württemberg, residing at 29 Moltkestrasse, Heilbronn-on-the-Neckar, Germany, have invented certain new and useful Apparatus for Checking the Use of Telephones; and I do hereby declare the following to be a full, clear, and exact description of the invention.

My invention relates to apparatus for checking the use of subscribers' telephones, and a primary object is to provide apparatus which enables not only the number, but also the subject of telephonic conversations to be accurately checked after they have taken place. To this end, I provide the hook of the telephone with a locking device which locks the hook during a conversation and prevents the receiver being replaced until the locking device has been rendered inoperative by a manipulation which simultaneously feeds forward a strip of paper for memoranda. By determining the number of times the strip of paper has been fed forward after the conversations, the number of the conversations can be determined, and by reading the records on the strip of paper, the subjects of the conversations can be subsequently determined, any portion of the strip not written upon indicating either that the subject of a conversation was not recorded or that a private conversation took place.

Two illustrative embodiments of my invention are represented by way of example in Figures 1 to 7 and in Figs. 8 to 15, respectively, in the accompanying drawings, wherein:—

Fig. 1 is a front elevation showing a telephone provided with my apparatus; Figs. 2 and 3 are front sectional elevations showing a case for the telephone-hook with the receiver suspended on the latter, and removed from the same, respectively; Figs. 2^a and 3^a are like views, respectively, of another form of the case; Fig. 4 is a side elevation of the telephone hook and its case as shown in Figs. 2 and 3; Fig. 5 is a side sectional elevation showing the controlling or checking device, Fig. 6 a cross-section thereof, and Fig. 7 a top plan view after the lid has been removed; Figs. 8 and 9 are front elevation, and side elevation, partly in section, respectively, showing the second illus-

trative embodiment; Fig. 10 is a section taken on the line A—A in Fig. 9, the parts being in a different position than in Fig. 9 however; Fig. 11 shows the case of the telephone-hook in section, and Fig. 12 is a front elevation, partly in section, thereof; Figs. 13 and 14 are side elevation, and side sectional elevation, respectively, showing the desk withdrawn from its case which serves as support for the strip of paper to be written upon; Fig. 15 is a detail.

Referring firstly to Figs. 1 to 7 it is assumed that the records are to be produced by duplication. To this end, the casing 26 surrounding the paper feed mechanism contains, in addition to a roll 4 whose strip of paper 1 is wound up on a roll 8, a roll 3 whose strip of paper 2 is fed automatically out of the casing. Both these strips are guided together over a guide 38, a table 5 and between two rolls 6 and 9 which are pressed together. The roll 9 is covered by a guard 27 whose rear edge 28 is sharp. This sharp edge facilitates the tearing of the strip of paper 2 which is lifted from the strip of paper 1 by a tongue 29 on the lid 35 of the casing 26, and guided outward. The check-strip or counterfoil 1 is wound up on the said roll 8 which is springpressed against a roller 7 driven by friction by the roller 6. Owing to this mode of mounting and driving the roll 8 the variation of the depth of paper wound on it is taken into account.

The strips of paper are fed by the roller 6. To this end, I secure to the one end of the shaft of this roller a ratchet wheel 10 which is fed by a pawl 11 carried by a lever 47 free to rotate on the shaft of the roller 6, the pawl being moved clockwise (Fig. 5) about the shaft of the roller. Firmly connected with the lever of the pawl 11 is a grooved pulley 12 over which is slung a cord 13 carrying at one end a weight 14, its other end being attached to a grooved pulley 15 journaled horizontally in the casing 26. The shaft 16 of the pulley 15 projects upward out of the casing 26 and is provided at its top end with a grip 22. A gear 17 meshing with a rack 18 pulled toward the left (Fig. 1) by a spring 37 is also fastened on the shaft 16. A handle 25 is provided on an operating-lever 23 projecting upward out of the casing 26. This lever is fulcrumed on the

shaft of the feed roller 6 and carries a pawl 24 engaging with the ratchet wheel 10. The purpose of this arrangement will be described hereinafter when the mode of operation of the mechanism is described. On the bottom side of the pulley 15 is a pin 32 which coacts with a hammer 33 adapted to strike a bell 34. The lid 35 has not only an aperture 30 over the table 5 enabling records to be made on the strips of paper, but also a glass-covered aperture 31 for subsequently reading the memoranda. The entire paper feed mechanism is carried by the lid 35 which is hinged at 36, so that when the front part of the lid is raised, the rolls of paper are readily accessible.

The rack 18 which is lengthened laterally (Fig. 1) is connected with a vertical rod 19 carrying at its upper end the above mentioned case 20 for the telephone-hook. In this case is a spring 21 or the like which presses the telephone-hook downward and, in the position of the case shown in Fig. 3, rests in the bend of the hook allowing the hook to pass into the upper contact-making position.

My apparatus is operated as follows:—When the receiver is taken from the hook, the rod 18 is pushed under the action of the spring 37 to the left (Fig. 1) and pushes the case 20 out of its position shown in Fig. 2 into that shown in Fig. 3, when it completely covers the hook so that it is not at present possible to replace the receiver. Owing to the rod 18 being longitudinally shifted, the gear 17 is rotated and rotates both the shaft 16 and the pulley 15 a definite distance. The pin 32 on the pulley 15 causes the hammer 33 to strike the bell 34, so that the person telephoning is reminded of making memoranda. Further, owing to the pulley 15 rotating, the cord 13 is partially unwound from it, so that the pulley 12 and the pawl 11 connected with it are rotated counter-clockwise (Fig. 5) about the shaft of the feed roller 6, the pawl sliding over the ratchet wheel 10. During the conversation which now takes place the person telephoning makes memoranda on the strips of paper. If the strips of paper at disposal are not sufficient for the memoranda, the speaker will grasp the handle 25 and move it to the right (Fig. 5), whereby the paper is fed forward. At the end of the conversation, in order to be able to replace the receiver the case 20 covering the telephone-hook must be returned into its normal position. To this end, the speaker will grasp the grip 22 and rotate it counter-clockwise (Fig. 7) a definite distance. Through the medium of the gear 17 the rod 18 and with it the case 20 will thereby be driven backward, so that not only can the receiver be hung up again, but the cord 13 is simultaneously wound up on the pulley 15, whereby

the pawl 11 is rotated clockwise (Fig. 5) and the strips of paper fed farther forward, so that the next user of the telephone finds ready a fresh part of the strip of paper.

The spring 21 in the case 20 is for preventing any unauthorized person deceptively conducting a conversation by holding back the rod 18 by force. In such an event, as will be understood from Fig. 2, the spring 21 would prevent the hook occupying its upper contacting position requisite for enabling a conversation.

In order to prevent deceits, the case may be made also as shown in Figs. 2^a and 3^a. In the modification of the case of the telephone-hook, the case contains two pivotally mounted retaining members 39 and 40. The member 39 located above the telephone-hook is under the action of a spring 42 which is attached to a pin 41 and normally presses the member 39 against a stop 43. The bottom retaining member 40 is under the action of a spring 45 which is attached to a pin 44 and normally presses this member against a stop 46. When the parts are in the position shown in Fig. 2^a telephonic conversations are prevented by the member 39 because this does not allow the hook to occupy its upper contacting position. When the case is moved into the position shown in Fig. 3^a, when telephoning can take place, the member 40 prevents the hook being depressed, in order to prevent the part of the hook accessible between the case 20 and the case of the telephone being depressed and the exchange called again, whereby two conversations could deceitfully take place in immediate succession. This described device also has the advantage that interruptions of conversations, when the apparatus must be left during the conversation for the purpose of obtaining information or the like, are impossible, because the hook is locked and the receiver cannot be replaced. Also, it is impossible for the telephone bell to be rung during the conversation, because the apparatus will be indicated as occupied at the exchange during this time.

The illustrative embodiment according to Figs. 8 to 15 differs from that above described principally in that the case for locking the telephone-hook is arranged fixedly, members arranged movably therein for locking the hook being moved by gearing of suitable kind when the hand lever which feeds forward the paper is tilted. Bolts arranged in the movable members on the one hand prevent the telephone-hook from occupying its upper contacting position necessary for speaking after the receiver has been removed until the movable members occupy their locking position and, on the other hand, after the telephone-hook has been locked prevent it occupying the bottom contacting position requisite for again calling

the exchange until the hook has been released by the members by actuating the hand lever.

Referring now to Figs. 8 to 15, as shown in Fig. 8 the telephone case 1' proper is connected by a fixedly mounted pipe 3' with the desk-like casing 2'. A case 6' is secured to the top end of the pipe 3' near the telephone hook 4' normally carrying the receiver 5'. As shown in Figs. 9 and 11, the pipe 3' contains an endless chain 7' which runs not only over rollers 8' provided both in the lower part of the pipe 3' and in the upper enlarged end attached to the case 6', but also over guides 9' in the casing 2', and can be driven in the one or other direction in the manner described hereinafter by means of a hand lever 10'. The part of the chain 7' located near the casing 6' carries a pin 11' (Fig. 11), whose end turned away from the pipe 3' is secured to the upper of the two members 12' and 13' for locking the telephone-hook 4'. These members 12' and 13' are journaled in the case 6' on short shafts 14' and 15' and are formed at their ends facing one another as gears 16' and 17' meshing one with the other. The locking members 12' and 13' are lined with a suitable material, *e. g.* ebonite, designated in Fig. 11 by 18' and 19'. The upper of these two members carries a transverse pin 20' and the lower a similar pin 21'. The locking members have somewhat the shape of jaws which inclose the hook 4' when they are closed.

The members 12', 13' normally occupy the positions shown in Fig. 12 when the receiver is hung up on the hook which then occupies the lower of the positions indicated in dotted lines. When the receiver is removed from the hook in order to telephone, the hook can move upward a short distance out of the lower of the positions indicated in dotted lines, but then hits against the pin 20' which prevents it arriving into the upper of the positions shown in dotted lines, in which the contact at the hook requisite for speaking is made. Only by rotating the locking member 12' about the shaft 14' is the contacting position of the hook requisite for telephoning obtained. Therefore the lever 10' must be actuated; this lever pulls the chain 7' and rotates the locking member 12' which, owing to its meshing with the locking member 13', rotates the latter in the opposite direction so that the two members 12' and 13' are brought into the position shown in dotted lines. In this position of the two members 12' and 13' the pin 20' is located at 20'' and the pin 21' at 21'', and the latter prevents the hook arriving into its bottom contacting position. The object of both these is to prevent the hook being depressed with the aid of a suitable instrument in an unauthorized manner at the

termination of a conversation, whereby it would be possible afresh to call the exchange.

The following mechanism is provided for moving the chain and the strip of paper by means of the hand lever 10':—A lever 23', which can rock about the pivot 22' and on which is displaceably mounted a slide 25' guided on a fixed bolt 24', is attached to the part of the chain 7' located in the casing 2'. This slide 25' has a lug 26' which coacts with two stops 28' and 29' provided on a sector-gear 27' connected with the lever 10'. The sector-gear meshes with a pinion 30' (Fig. 15) provided on the shaft of a paper feed roller 31' journaled in the removable frame 34' normally resting in the slots cut in the supports 32' and 33' (Fig. 9). The wheel 30' has eccentric or wedge-shaped recesses 35' in which short rollers 36' are located. When this wheel is rotated in the direction of the arrow shown in Fig. 15, the rollers remain in their position, as shown, so that the wheel can rotate freely on the shaft 37' of the paper feed roller 31', while during rotation in the other direction they jam and therefore drive the roller 31'. As shown in Fig. 13, fastened on the shaft 37' is a friction wheel 38' which coacts with a second friction wheel 39' which is also mounted in the frame 34' and coacts with a third friction wheel 40' fastened on the shaft 41' of a paper feed roller 47'. The strip of paper 42' is drawn by way of a guide roller 43' over the desk 44', thence between the feed roller 31' and a pressure spring 45' over a guide, 46' to the paper roller 47'.

This form of my apparatus operates as follows:—When the receiver is removed from the hook, in order to bring the hook into its upper contacting position requisite for telephoning, the lever 10' must be tilted to the left (Fig. 9). The sector-gear 27' is rotated and the stop 29' strikes against the lug 26' on the slide 25' and drives the latter. Owing to the arrangement of the pin 24', the slide 25' and the lever 23' are moved downward, so that the chain is pulled in one direction and the locking members 12' and 13' arrive into their locking position. At the same time as the sector-gear is rotated the wheel 30' is rotated, but in the direction of its arrow, so that the paper is not fed forward. When the conversation is finished and the necessary memoranda have been made on the part of the strip of paper 42' resting for the time being on the desk or table 44', the receiver cannot at first be replaced on its hook owing to the members 12' and 13' being in their locking position. The person telephoning must therefore tilt the lever 10' back again. The wheel 30' is now rotated in the other direction, the paper feed roller is rotated and

the paper is simultaneously fed one step forward. Accordingly, not only can a telephonic conversation only take place when the telephone-hook has been inclosed by the members 12', 13' by moving the hand lever 10' in the one direction, but the receiver can only be replaced on the hook when the case formed by said members has been opened again by moving the hand lever in the other direction. But as the paper is also fed forward during the latter motion of the lever, it is not possible to conduct a conversation without feeding the strip of paper, so that a perfectly positive connection between the utilization of the telephone and the forward feeding of the paper is obtained.

Instead of the motion of the hand lever 10' being imparted to the case comprising the members 12', 13' through the medium of a chain, other mechanism may be employed without departing from the spirit and scope of my invention.

I claim:—

1. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, means whereby said mechanism is actuated to feed a strip of paper each time the telephone instrument is used, means so operative after the receiver has been removed from the hook that the receiver cannot be replaced on the hook until after the paper feed mechanism has been actuated.

2. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, means whereby the paper feed mechanism is actuated to feed a strip of paper a predetermined distance each time the telephone instrument is used, devices which are so moved after the receiver has been removed from the hook that the said receiver cannot be replaced thereon until the paper feed mechanism has been actuated, and means whereby when the paper feed mechanism is actuated, the said devices return to their normal positions in order that the receiver may be replaced on the hook.

3. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, means whereby the paper feed mechanism is actuated to feed a strip of paper a predetermined distance each time the telephone instrument is used, devices which are so moved after the receiver has been removed from the hook that the said receiver cannot be replaced thereon until the paper feed mechanism has been actuated, means whereby the hook is prevented from reaching its upper or contact position until the said devices have assumed the position in which the receiver can be replaced on the hook, and means whereby when the paper feed mechanism is actuated, the said devices

return to their normal positions in order that the receiver may be replaced on the hook.

4. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, means whereby the paper feed mechanism is actuated to feed a strip of paper a predetermined distance each time the telephone instrument is used, devices which are so moved after the receiver has been removed from the hook that the said receiver cannot be replaced thereon until the paper feed mechanism has been actuated, means whereby when in its upper or contact position, the hook cannot return to its lower or normal position until the said devices have been returned to their normal positions, and means whereby when the paper feed mechanism is actuated, the said devices return to their normal positions in order that the receiver may be replaced on the hook.

5. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, means whereby the paper feed mechanism is actuated to feed a strip of paper a predetermined distance each time the telephone instrument is used, devices which are so moved after the receiver has been removed from the hook that the said receiver cannot be replaced thereon until after the paper feed mechanism has been actuated, means whereby the hook is prevented from reaching its upper contact or position until the said devices have assumed the position in which the receiver can be replaced on the hook, means whereby when in its upper or contact position, the hook can not return to its lower or normal position until the said devices have been returned to their normal positions, and means whereby when the paper feed mechanism is actuated, the said devices return to their normal positions in order that the receiver may be replaced on the hook.

6. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, devices adapted to inclose the hook of the telephone instrument, a lever, means operated by the said lever when moved in one direction for actuating the said hook inclosing devices to inclose the hook, and means operated by the lever when moved in the opposite direction for simultaneously actuating the paper feed mechanism and returning the hook inclosing devices to their normal positions.

7. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, devices adapted to inclose the hook of the telephone instrument, a lever, means operated by the lever when moved in one direction for moving the said hook inclosing devices to an abnormal position to

inclose the said hook, means whereby the said hook is prevented from reaching its upper or contact position until the said devices have assumed their said abnormal position, and means operated by the lever when moved in the opposite direction for simultaneously actuating the paper feed mechanism and returning the said hook inclosing devices to their normal positions.

8. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, devices adapted to inclose the hook of a telephone instrument, a lever, means operated by the lever when moved in one direction for moving the said hook inclosing devices to an abnormal position to inclose the said hook, means whereby the said hook is prevented from reaching its upper or contact position until the said devices have assumed their said abnormal position, means operated by the lever when moved in the opposite direction for simultaneously actuating the paper feed mechanism and returning the said hook inclosing devices to their normal positions, and means whereby after assuming its upper or contact position, the said hook cannot be returned to its lower or normal position until after the said devices have been returned to their normal positions.

9. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, a lever, a case, members pivoted in said case and adapted to be moved to inclose the said hook therein, means operated by the said lever when moved in one direction for swinging the said members from their normal to their abnormal positions to inclose the said hook, and means operated when the said lever is moved in the opposite direction for simultaneously actuating the paper feed mechanism to feed a strip of paper a predetermined distance and to return the said pivoted members to their normal positions, thereby uncovering the said hook.

10. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, a lever, a case, members pivoted in said case and adapted to be moved to inclose the said hook therein, means operated by the said lever when moved in one direction for swinging the said members from their normal to abnormal positions, to inclose the said hook, means associated with one of the said pivoted members whereby the said hook is prevented from reaching its upper or contact position until the said members have attained their abnormal positions, and means operated when the said lever is moved in the opposite direction for simultaneously actuating the

paper feed mechanism to feed a strip of paper a predetermined distance and to return the said pivoted members to their normal positions, thereby uncovering the said hook.

11. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, a lever, a case, members pivoted in said case and adapted to be moved to inclose the said hook therein, means operated by the said lever when moved in one direction for swinging the said members from their normal to abnormal positions to inclose the said hook, means associated with one of the said pivoted members whereby the said hook is prevented from reaching its upper or contact position until the said members have attained their abnormal positions, means operated when the said lever is moved in the opposite direction for simultaneously actuating the paper feed mechanism to feed a strip of paper a predetermined distance and to return the said pivoted members to their normal positions, thereby uncovering the said hook, and means associated with the other of said pivoted members whereby after assuming its upper or contact position the hook cannot be returned to its lower or normal position until the said members return to their normal positions.

12. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a paper feed mechanism, a lever, a case, members pivoted in said case and adapted to be moved to inclose the said hook therein, means operated by the said lever when moved in one direction for swinging the said members from their normal to abnormal positions to inclose the said hook, a pin connected to one of the said pivoted members for preventing the hook from reaching its upper or contact position until the said members have attained their abnormal positions, a pin connected to the other of said pivoted members for preventing the hook from being returned to its lower or normal position until the said pivoted members have been returned to their normal positions, and means operated when the said lever is moved in the opposite direction for simultaneously actuating the paper feed mechanism to feed a strip of paper a predetermined distance and to return the said pivoted members to their normal positions, thereby uncovering the said hook.

13. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a case, members pivotally mounted in said case and geared so as to be moved together to completely inclose the said hook of the telephone instrument, a paper feed mechanism, a casing in which the paper feed mechanism is

contained, an operating lever, a lever pivoted at one end in said casing, means actuated by the said operating lever when moved in one direction to move the said pivoted lever to actuate the said pivoted members, to cause the same to inclose the hook of the telephone instrument and when the said operating lever is moved in the opposite direction to actuate the said pivoted lever in the opposite direction to return the said pivoted members to their normal positions, and means also operated by the said lever when moved in the opposite direction for actuating the paper feed mechanism to cause a strip of paper to be fed a predetermined distance.

14. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a case, members pivotally mounted in said case and geared so as to be moved together to completely inclose the said hook of the telephone instrument, a paper feed mechanism, a casing in which the paper feed mechanism is contained, an operating lever, a lever pivoted at one end in said casing, means connecting the free end of the said pivoted lever with one of the said pivoted members for inclosing the hook, a slide on the said pivoted lever, and means actuated by the said operating lever when the same is moved in one direction to actuate the said slide to depress the said pivoted lever and so actuate the means connecting the pivoted lever with the said pivoted members to move the latter from their normal to abnormal positions and when the said operating lever is moved in the opposite direction, to return the said pivoted members to their normal positions, and means also actuated by the said oper-

ating lever when moved in the said opposite direction for actuating the paper feed mechanism.

15. In an apparatus for checking up the use of telephones, the combination with the hook of a telephone instrument, of a case, members pivotally mounted in said case and geared so as to be moved together to completely inclose the said hook of the telephone instrument, a paper feed mechanism, a casing in which the paper feed mechanism is contained, an operating lever, a lever pivoted at one end in said casing, means connecting the free end of the said pivoted lever with one of the said pivoted members for inclosing the hook, a slide on the said pivoted lever, a lug on the said slide, a fixed pin adapted to enter and move within a recess in a projection of the said slide, a segment actuated by the said operating lever and stops on the said segment adapted to contact with the said lug on the slide to move the same to lower said pivoted lever when the operating lever is moved in one direction and to raise the pivoted lever when the operating lever is moved in the opposite direction, thereby actuating the said pivoted members by the means connecting the same to the said pivoted lever, and means actuated by the operating lever when moved in the said opposite direction for actuating the paper feed mechanism.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

OTTO SCHMID.

Witnesses:

ERNST EPPLE,
EUG. KÜHNE.