June 2, 1931. A. C. PETERSON 1,808,118

PHOTOGRAPHIC RECORDING APPARATUS

Filed Nov. 11, 1927

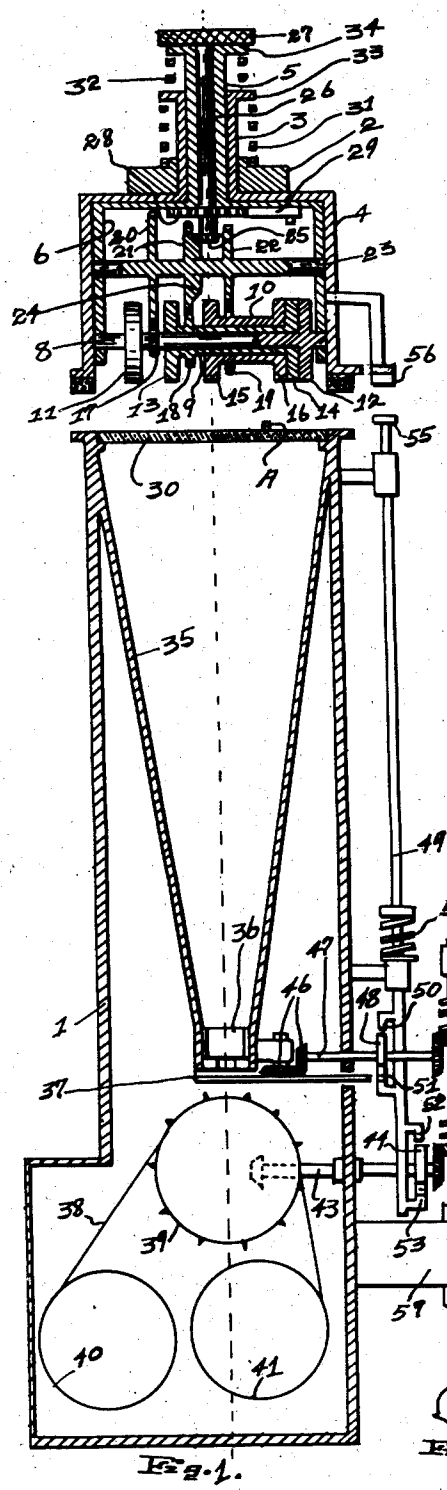


Fig. 1.

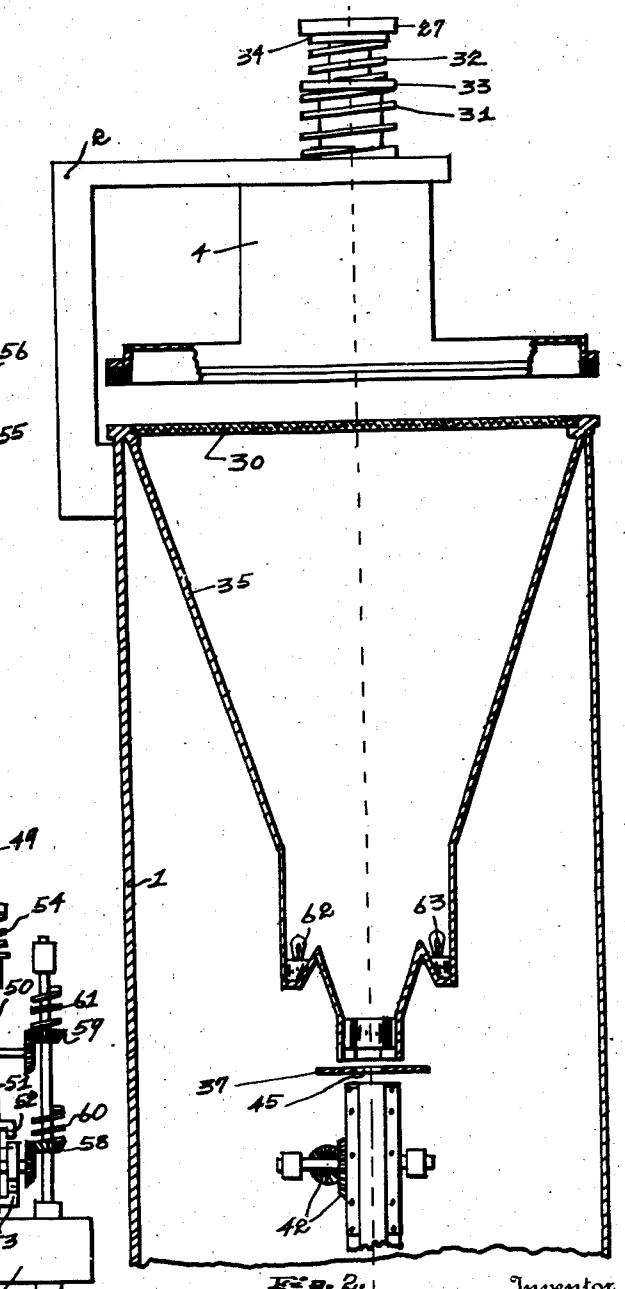


Fig. 2.

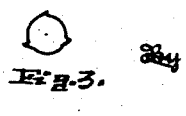


Fig. 3.

Inventor

Adolphus C. Peterson.

By

Patented June 2, 1931 1,808,118

UNITED STATES PATENT OFFICE

ADOLPHE C. PETERSON, OF MINNEAPOLIS, MINNESOTA

PHOTOGRAPHIC RECORDING APPARATUS

Application filed November 11, 1927. Serial No. 232,614.

My invention relates to accounting and recording means and particularly to a means for maintaining record of transactions, wherefore it is called a record means.

The principal objects of my invention are to provide a means for record of transactions in financial institutions particularly banks and to provide a means for such purpose which shall provide a simpler and less laborious means of record of transactions than the means which are commonly in use in institutions such as banks. The device is not limited to the use in financial institutions but is most particularly adapted to such institutions. It may be used in other commercial institutions or concerns and will have advantages in such institutions when adapted to use therein. The device is particularly intended to render the recording and other transactions or steps connected with the passing of large numbers of checks or drafts through a bank or into a bank. The device is intended to provide a means whereby a considerable amount or proportion of the labour connected with the innumerable transactions in commercial institutions may be avoided in part or wholly through use of the recording means provided by my invention. The device is particularly intended to eliminate much of the detail entries or memoranda necessary in connection with the large volume of transactions which are the daily experience of many commercial institutions. In general the object is to provide an improved, efficient, labour eliminating, cost eliminating recording and accounting means for use, particularly in commercial institutions.

The principal devices and combinations of devices comprising my invention are as hereinafter described and as defined in the accompanying claims. In the accompanying drawings which illustrate my invention in several different forms, like characters refer to like parts throughout the several views.

Referring to the drawings:

Figure 1 is a view in vertical section through the principal parts of an instrument embodying my invention.

Figure 2 is a view in vertical section on a plane at right angles to the plane of the section in Figure 1, showing some parts in full side elevation.

Figure 3 is a detail view of the escapement means employed.

Referring to the drawings, the numeral 1 indicates a base casing which contains and carries the component parts of my device. The base casing 1 has firmly attached to it or cast with it at its rear side a rigid preferably cast iron or cast aluminum arm 2 which is of such form and size that it rises over the upper end of the base casing and forms a support for certain active parts located above the base casing. The arm 2 at its forward end projects approximately over the center of the base casing somewhat above the upper end thereof and has in its extreme forward end a vertically located square bore wherein is reciprocably mounted vertically a square tube 3 which latter has constructed integrally therewith a larger rectangular so-called cover-box 4. The cover-box 4 is as commonly constructed or for one use, particularly in banks, of a varying size but preferably about say five or six inches wide and about ten or twelve inches long. The cover-box 4 is of a size such that it will be a little larger than the full face size of the checks or drafts usually used in financial institutions or commercial institutions and is also approximately of such a size that it will just cover the upper end or face of the base casing 1 when placed down upon the latter, the upper face thereof. These parts may be made of a larger or smaller size however, depending upon the intended use and the remaining parts of the device would of course be proportionately constructed.

Within the square tube 3 there is slidable vertically, that is reciprocable another square tube 5 which latter extends upward above the upper end of the square tube 3 and extends downward within the cover box 4 and therein carries a small U shaped frame 6 integrally constructed or secured to it. The U shaped frame 6 in its lower part carries in bearings in the lower ends of the U shaped frame the horizontal axle 8 and

thereupon two tubes 9, 10, concentrically with the axle 8 and each other, and placed upon each other as shown, that is tube 9 on 8 and tube 10 on 9. The axle 8 carries at its ends numeral wheels 11, 12; the tube 9 carries at its ends numeral wheels 13, 14; the tube 10 carries at its ends numeral wheels 15, 16. The numeral wheels at one end of all the tubes are relatively close together and the numeral wheels at the other end of all the tubes are relatively close together so that the numeral wheels at one end of the tubes constitute numbering devices from 1 to 999 and so that the numeral wheels at the other end of the tubes constitute numbering devices from 1 to 999. The order of the numbering will be reversed in actuation, that is the numeral wheels 11, 13, 15 will be readable in the opposite direction collectively from the numerals adapted to be printed by the numeral wheels 12, 14, 16 so that for any particular setting of the numeral wheels the one set of numeral wheels will present downwardly the same figure for printing as the other set of numeral wheels presents downwardly for photographing. All of the numeral wheels are such that is they have such numerals on them 1 to 9 and 0 that they will print these figures and they may be made of rubber or metal or otherwise. The members 8, 9, 10 are provided with spur gears 17, 18, 19 whereby they may be actuated by spur gears 20, 21, 22 on a gear shaft 23, the latter being revolvable through mitre gears 24, 25 by a vertical round shaft 26 which passes upwardly through the center of the square tube 5 so that the upper end of shaft 26 protrudes above the square tube 5 and carries a knurled hand nut 27 fixed thereto whereby the shaft 26 may be revolved and with it the numeral wheels actuated for consecutive numbering. The shaft 26 carries a notched wheel 28 which is in such relation with a spring leaf 29 that the latter provides such yieldable retention of the shaft 26 that the latter may in each movement thereof by the operator be readily turned an amount and automatically located by the spring leaf 29 so that my each such single movement the numeral wheels are rotated exactly the amount to secure locating of the numerals of each set of numeral wheels for the presenting of the next number in the progression.

The base casing 1 has in its upper face beneath the cover box a glass face 30, the latter being fixed in the upper end of the base casing 1 so that it forms a so called counter upon the upper end of the base casing 1 so that any thing to be recorded as a check or draft may be placed on the glass face 30 and be covered by the cover box 4 when the latter is depressed. A spring 31 between the upper end of the square tube 3, a flange thereon, and the arm 2 provides means for yieldably holding the cover box and related parts in the upper position. A spring 32 between the flange 33 on the square tube 3 and the flange 34 on the upper end of the square tube 5 provides for yieldable holding the square tube 5 and its related parts upwardly relative to the cover box 4. The spring 32 is relatively stronger than the spring 31 whereby the cover box 4 will be depressed first and then the U shaped frame 6 with its related parts will be further relatively depressed when an operator places his hand upon the knurled nut 27 and presses downwardly.

The base casing 1 is light proof except for the glass face 30 and the cover box 4 carries on its lower edge a felt or rubber or other relatively soft material whereby close and light proof contact is made when the cover box 4 is placed down upon the face of the glass face 30. The edge of the cover box 4 meets the edge of the casing 1 so that the glass face 30 is not exposed at any part.

Immediately beneath the glass face 30 in the base casing there is an inverted, square cone shaped so-called projector tube 35 which at its upper end is approximately as large as the glass face 30 and at its lower end is relatively small and carries in the lower end a lense tube 36 which latter contains such lenses or combinations of lenses as will project an image from the glass face 30, that is an object above the latter, in reduced form and in such projected manner that a reduced size image, say about a quarter or half inch long by about an eighth or a quarter inch wide (or of any proper reduced size) through the aperture of a shutter 37 (when exposed) to a film 38 carried by a film moving wheel or locator wheel 39. The film 38 is like the usual moving picture film although preferably and customarily smaller and has apertures on its edges or indentations or cuts which provide means whereby the film wheel 39 will move it exactly a fixed distance, that is carry the film accurately in its progression. The film is shown carried by a single wheel of relatively large size but it is contemplated that any number of wheels or devices may be used for this purpose as is commonly used in moving picture projectors, there being shown here only the simplest means for purpose of illustration. The film 38 unwinds from a reel device 40 (diagrammatically shown only) and winds upon a reel device 41 (diagrammatically shown only).

The film wheel 39 through mitre gears 42 is revolved a fixed distance in its forward rotation at each actuation of the device by shaft 43 which latter carries an escapement wheel 44. The shutter 37 has an aperture 45 and is revolved by mitre gears 46 by shaft 47 which latter carries an escapement wheel 48. The escapement wheels 44 and 48 are

controlled by a vertical finger arm 49 which carries escapement fingers 50, 51 and 52, 53 which provide control of the escapement wheels according to the vertical reciprocation of the finger arm 49. The finger arm 49 at its upper end is yieldably raised by spring 54 and has a knob 55 which is abutted by a knob 56 affixed by an arm on U shaped frame 6, the relation being such that the shutter is moved to bring the aperture into position exposing the film to the projection tube after the cover box is tight upon the upper face of the base casing 1 and such that the shutter aperture exposes the film and the film is moved at different periods but slightly removed. This relation is accomplished through the fact that the fingers are relatively longer or shorter or differently placed with relation to their related escapement wheels so that in the vertical movement of the finger arm the shutter and film wheel move or are permitted movement only so that this end is accomplished. The shutter may be moving when the film wheel moves but the aperture exposes the film only when the film is still or the shutter may be held completely still in the exposing position when the film is still, it being noted that the requirement is that the film be still when the film is exposed and that the film be exposed only when the cover box 4 is firmly down on the base casing 1. The shafts 43 and 47 are moved or rotated by an electric motor 57 acting on gear sleeves 58, 59 through springs (coil) 60, 61 so that the latter springs are always when the device is in use kept in taut condition by the motor so that there is always urge upon the shafts 43, 47 to be rotated, but so that this rotation will be only in the successive progressive intervals as controlled by the escapement devices. The gear sleeves through gears as shown impart their rotation urge or impulsion to the shafts 43, 47. The motor need not be in constant rotation but is always (when in use) ready for such movement as is necessary to keep the springs in the actuation condition.

In the use or operation of my device, the operator lights the lights 62, 63 so that these lights, which are located in the projection tube, emit a light which will provide the form of light or rays upon the object placed upon the glass face 30 so that this light will cause the necessary projection of the proper character of light upon the film for properly projecting the image upon the film, when the latter is exposed. These lights may be Klieg lights of a minature size or any form of light which will be of the proper character. With the electric motor in the operating condition (current supplied by any means) and with the film properly placed the operator may place checks or drafts successively upon the glass face 30 with their face downwardly thereon and as each check or instrument is placed the operator places his hand on the knurled nut 27 and presses downwardly until first the cover box 4 covers the base casing and glass face and then the U shaped frame 6 is pressed downwardly imprinting a number on the back of the check placed on the glass face 30. The ledge A provides means whereby the operator locates the check only on the left side of the ledge so that the numeral wheels on the other side are exposed. The numeral wheels exposed on the right side of the ledge should be relatively larger for better photography on the film.

After each check has been thus exposed and a numeral imprinted on its back and a similar numeral or number exposed and substantially contemporaneously so photographed with the face of the check on a portion of the film, the operator before depressing the parts on the next check to be recorded turns the knurled nut 27 through one space whereby the numeral wheels are so turned that the next number in progression is exposed both for the printing process and the photographing process. Each check as recorded has the identical number printed on its back as is photographed with it upon the film. Each check is photographed on the film in a space with its related number beside it, and the checks as so photographed are placed in progression on the film by the successive movement of the film, somewhat as moving pictures are placed on a picture film with the exception that the film advances one space for each check in accordance with the manual actuation of the device by the operator. The numeral wheels have such movement and such relation by their spur gears that the numerals in the higher places from the decimal point remain in substantially a proper place for printing and photographing until they should make their proper advance. This may be accomplished in the device shown by a proper size and spacing of the spur gears, their teeth and the numerals, although it is to be noted that in practice it would be preferable to employ any means more definitely locating the numeral wheels so that they perform their several functions accurately. Any of the means usually employed in accounting or adding machine devices may be employed for this purpose. It is to be noted that a letter or any paper strip may be placed on the back of the checks, as they are severally placed, and the imprinted number may be printed thereon in succession for each check instead of on the back of the check, the photographed numeral being however similarly recorded on the film. My device would be employed particularly in banks and they may be used by a teller for recording checks or drafts as

they come in or by a bookkeeper or clerk as he makes individual letters to corresponding banks or clients. It may be used in various departments of a bank or financial or commercial institution and may be used in various ways and in combinations other than that shown. It may particularly be used in various combinations with other recording or accounting devices.

While I have shown particular devices and combinations of devices in the illustration of my invention I contemplate that other detailed devices and combinations of devices may be used in the realization of my invention without departing from the spirit and contemplation of my invention.

What I claim is:

1. In a record means, means whereby documents are serially exposed to a photographing means and a numeral imprinting means, and means whereby the numeral imprinting means and the photographic means are coordinated so that the numeral imprinting means prints numbers serially on the documents as exposed and the photographic means successively photographs the documents with numbers like the imprinted numbers on the documents on a photographically sensitive film.

2. A numeral imprinting means having means whereby numerals are serially exposed in progression for printing, a photographic means adapted to photograph documents upon a film successively as exposed, and means whereby the imprinting means and photographic means are coordinated so that documents as exposed are imprinted with a number in the progression and so that a like number is photographed with the document upon a photographically sensitive film.

3. A numeral imprinting means having means whereby numerals are serially exposed in progression for printing, a photographic means adapted to photograph documents upon a film successively as exposed, and means whereby the imprinting means and photographic means are coordinated so that documents as exposed are imprinted with a number in the progression and so that a like number is photographed with the document upon a photographically sensitive film, and means for moving the film progressively to expose a new section thereof successively for each document.

4. A recording apparatus comprising a light projecting means, a film moving means, a base and a cover related, a number imprinting means having progressive numbering, and means whereby the cover may be so actuated relative to the base as to permit successive placing of documents between the base and cover and the enclosing of the document thereby, and means whereby the number imprinting means is progressively actuated for each placement of the cover upon the base.

5. A record apparatus comprising a light projecting means, a film moving means, a base and a cover related, a number imprinting means having progressive numbering, means whereby the cover may be so actuated relative to the base as to permit successive placing of documents between the base and cover and the enclosing of the document thereby in photographic relation to the film carried by the film moving means, and means whereby the number imprinting means is progressively actuated for each placement of the cover upon the base, and means whereby the relation of the film to the photographic zone is altered for each succession in the numeral relation.

6. A record apparatus comprising a light projecting means, a film moving means, a base having such relation to the film moving means that a photographic zone is constituted thereby, a cover related and having manual actuation means for the successive emplacement of the cover relative to the base, a number imprinting means having progressive numbering facility, and means whereby the number imprinting means is progressively actuated for successive numbering for each placement of the cover relative to the base, and means whereby the relation of the film to the photographic zone is altered for each succession in the numeral relation.

7. A record apparatus comprising a base having formed therein a photographic zone, a film carrying mechanism adapted to placement of the film in the photographic zone for exposure of successive portions of the film, a ray projecting means for exposure of the photographed object in the zone, a cover having manual actuation means for the successive emplacement of the cover relative to the base for enclosure of the photographic zone, a document holding means in the zone, a numeral imprinting means having manual actuation means for the imprinting of numerals in succession upon documents successively placed in the photographic zone.

8. A record apparatus comprising a base having formed therein a photographic zone, a film carrying mechanism adapted to placement of the film in the photographic zone, for exposure of successive portions of the film, a ray projecting means for exposure of the photographed object in the zone, a cover having manual actuation means for the successive emplacement of the cover relative to the base for enclosure of the photographic zone, a documental holding means in the zone, a numeral imprinting means having manual actuation means for the imprinting of numerals in succession upon documents successively placed in the photographic

zone and means whereby the movement of the film is synchronized with that of the numeral progression means.

9. A record apparatus comprising a base having formed therein a photographic zone, a film carrying mechanism adapted to placement of the film successively for exposure of successive portions of the film in the photographic zone, a ray projecting means for exposure of the photographed object in the zone, a light translucent document holding means in the zone, means whereby documents may be successively exposed in the zone, a numeral imprinting means having related means for actuation for the progressive imprinting of numerals upon documents as exposed in the zone.

10. A record apparatus comprising a base having formed therein a photographic zone, a film carrying mechanism adapted to placement of the film successively for exposure of successive portions of the film in the photographic zone, a ray projecting means for exposure of the photographed object in the zone, a document holding means in the zone, means whereby documents may be successively exposed in the zone, a numeral imprinting means having related means for actuation for the progressive imprinting of numerals upon documents as exposed in the zone, and a supplementary numeral exposing device for the exposing of numerals in progressive succession synchronously with the numerals of the imprinting means for the photographing of the supplementary exposed numeral upon the film with the document as photographed.

11. A record apparatus comprising a base having formed therein a photographic zone, a film carrying mechanism adapted to placement of the film successively for exposure of successive portions of the film in the photographic zone, a ray projecting means for exposure of the photographed objects in the zone, a document holding means in the zone, a numeral imprinting means having related means for actuation for the progressive imprinting of numerals upon documents as exposed in the zone, a supplementary numeral exposing device for the exposing of numerals in progressive succession synchronously with the numerals of the imprinting mechanism for the photographing of the supplementary exposed numeral upon the film with the document as photographed.

12. A record apparatus comprising a base having formed therein a photographic zone, a film carrying mechanism adapted to placement of the film successively for exposure of successive portions of the film in the photographic zone, a ray projecting means for exposure of the photographed objects in the zone, a document holding means in the zone, a numeral imprinting means having adaptation for the imprinting of numerals in arithmetic progression, a supplementary numeral exposing device for the exposing of numerals in the same arithmetic progression in the zone for photographing on the film with the exposed document, and means whereby the movement of the several means is synchronously actuated for the functioning in the required order.

13. A photographic zone having ray projection and film moving means related, a document holding means in the zone and an enclosing means adapted to securing the successive entry of documents to the zone and the departure therefrom of the documents, an imprinting means adapted to imprint numerals in arithmetic progression upon documents successively exposed in the zone, and a supplementary numeral exposing means adapted to the successive exposing of numerals in arithmetic progression synchronous with the imprinting numerals in the zone for photographing with the documents.

In witness whereof I have hereunto set my hand this 6th day of November, 1926.

ADOLPHE C. PETERSON.