April 14, 1931. P. MECUCCI 1,800,312

TRACING AND COPYING OR MANIFOLDING APPARATUS

Filed Sept. 20, 1929 2 Sheets-Sheet 1

Fig. 1

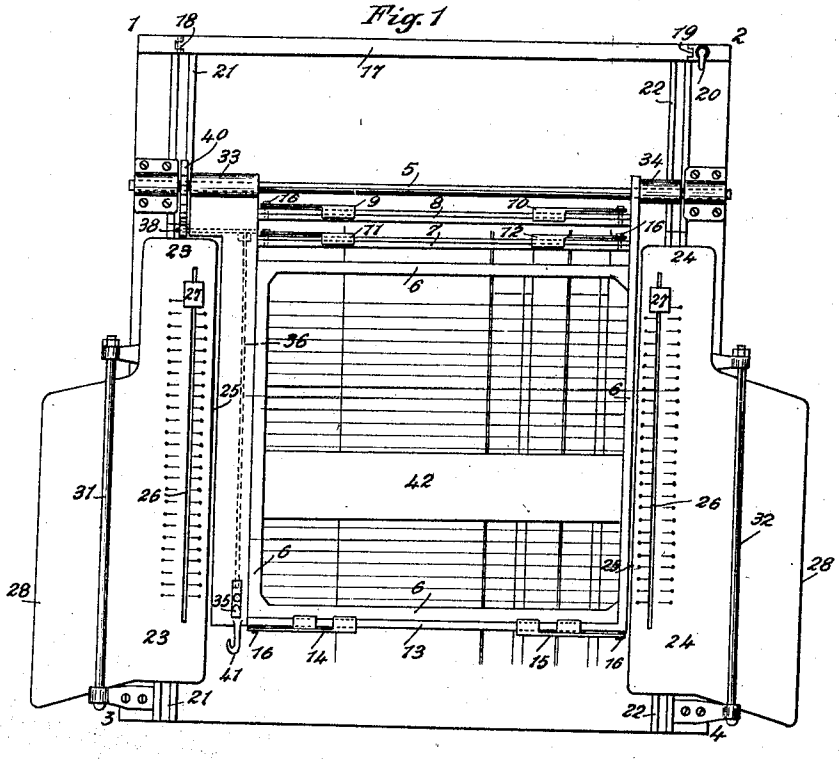


Fig. 2

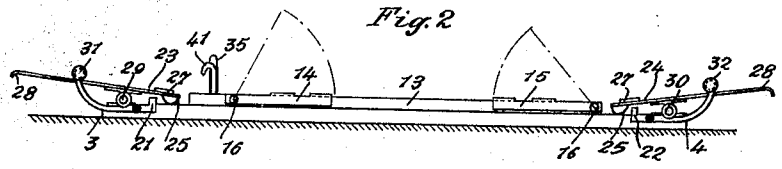
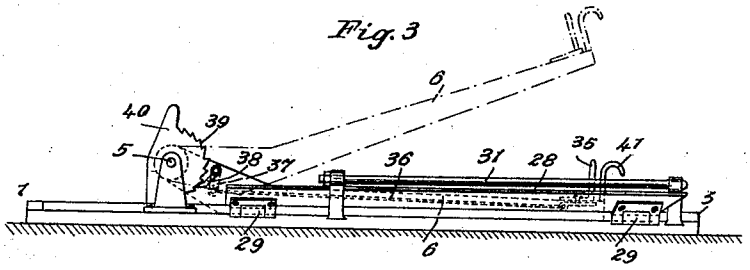


Fig. 3



P. Mecucci
INVENTOR

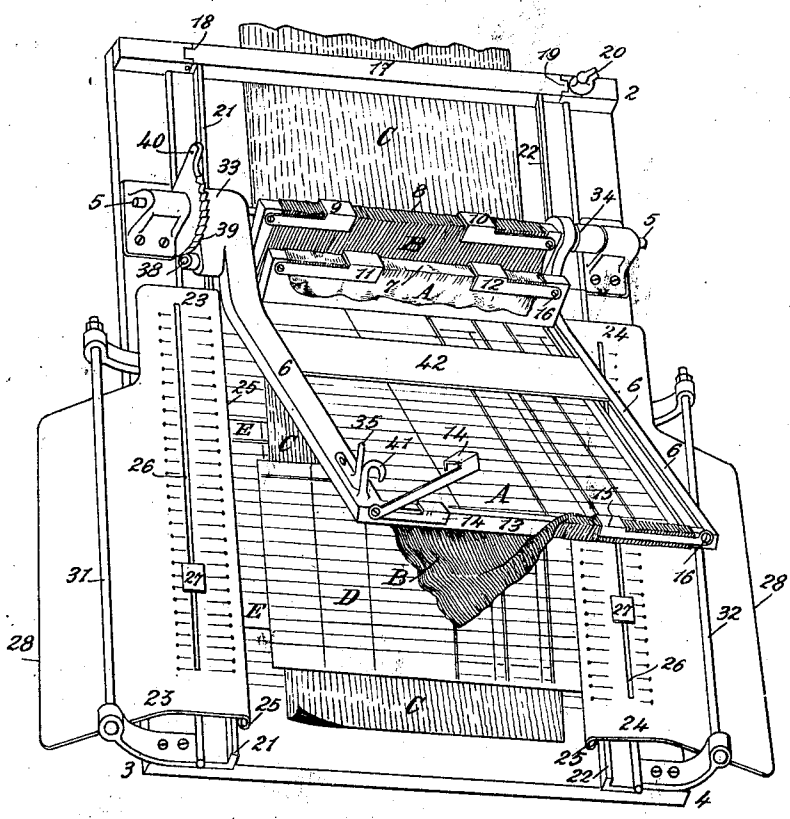
By: Marks & Clerk
Attys.

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TRACING AND COPYING OR MANIFOLDING APPARATUS

Filed Sept. 20, 1929 2 Sheets-Sheet 2

Fig. 4



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Patented Apr. 14, 1931 1,800,312

UNITED STATES PATENT OFFICE

PROSPERO MECUCCI, OF ROME, ITALY

TRACING AND COPYING OR MANIFOLDING APPARATUS

Application filed September 20, 1929, Serial No. 394,038, and in Italy January 28, 1929.

The object of my present invention is to provide a new and improved tracing and manifolding frame apparatus, i. e. a frame and apparatus for holding in place a plurality of sheets or forms with interposed carbon papers for permitting the operator to simultaneously write or trace records and items of any kind, on a plurality of sheets or writing surfaces.

It is well known that transcribing by hand or by typewriter accountant's records, bookings or items of any kind from an original record, booking or item, on other sheets or accounts or memoranda, or carrying records, bookings or items in bookkeeping with double entry from a journal to the debit-side or credit-side of the ledger, either a plurality of operations, or a number of persons is required, involving loss of time and possibility of errors of transcription.

The object of my present invention is to provide a simple apparatus for avoiding these drawbacks, so that all the said operations will be effected simultaneously by a single operator.

A form of my new apparatus is given by way of illustrative, not limitative example in the annexed drawings in which

Fig. 1 is a plan view,

Fig. 2 a view of the lower edge of apparatus,

Fig. 3 a side view and

Fig. 4 is a perspective view of the apparatus showing arrangement of carbon paper between journal sheet and bill forms, A being the journal sheet, B the doubleface carbon paper, C the singleface carbon sheet, D the bill form in which the amount is to be written in the credit column, and E the bill form in which the amount is to be written in the debit column.

My new apparatus is substantially a clamping or sheet holding frame on a preferably rectangular base-plate 1—2—3—4 of wood, metal, cardboard or any suitable material, on which is printed or otherwise marked the exact lines and columns of a journal sheet corresponding in turn to the lines and columns of a ledger sheet.

On the said base 1—2—3—4 is hinged on a spindle or pivot 5 a frame 6 comprising upper struts or tie-rods 7 and 8. Over rod 7 the upper edge of a detached transparent journal sheet is to be folded in order to keep it in place so as to allow of superposing, by transparency or points of reference, its lines and columns corresponding exactly to the journal sheet and columns of the base-plate 1—2—3—4, and over rod 8 the upper end of a sheet of a double face carbon paper or colouring paper is folded. Both the carbon paper and the journal sheet are kept in place on rods 8 and 7 by small U-shaped bows or hoops 9, 10 and 11, 12 respectively.

As is seen, my clamping or sheet holding frame swings on its upper horizontal spindle 5, but it is quite conceivable that it may also swing, as a modification, on a lateral vertical spindle, so as to permit of inserting the undetached sheets of a book.

Above the inner or empty recording square of the frame a solid plate of metal, wood or other suitable material 42 is provided as a bearing support for the hand of the operator when writing or tracing.

13 is a bottom rod of the frame around which the ends of the detached journal sheet and of the double face carbon paper are folded, and secured thereon by small U-shaped bows or hoops 14 and 15 hinged in turn on rod 13 by bolts 16.

Another sheet of simple carbon paper is secured on a clamping rod 17 at the top of the base-plate, the said clamping rod 17 being hinged at one end to the base-plate, as at 18, whilst its other end 19, is held down on the base-plate by a tooth 20. Other sheets may be secured along grooves provided in the base-plate and held by clamping devices at the bottom of the base-plate.

Parallel to the vertical sides of the frame are guiding ridges 21, 22 against which the lateral edges of the paper sheets or forms are abutting, when gliding up or down under the hand of the operator, so as to be capable of registering with the lines and columns of the base-plate and journal sheet. The said guiding ridges 21, 22 which are hinged to the base-plate 1—2—3—4 in order to be capable of securing other sheets of

forms and carbon paper, are spaced from each other so that upon placing the right or left hand edges of a bill form or account sheet adjacent them, the credit and debit columns of the latter will perfectly register with the credit and debit columns of the journal sheet.

For holding the bill forms to the base-plate after their items have been brought to register, integral with the base-plate, two lever members 23 and 24 are keyed to shafts 29 and 30 which lever members keep the papers in place. These paper holding lever members or plates have their ends 25 interposed between the vertical sides of frame 6 and guides 21, 22. The said ends 25 will be preferably of rounded shape at the bottom part, whilst in the upper part marks will be provided corresponding to the ruling printed on, or engraved in the base-plate. In the said lever plates 23, 24 vertical slots 26 are provided in which glide line indicating or reference slides 27 for indicating the lines of the ruling of the journal sheet, bill forms and base-plate. The said lever members or plates 23, 24 have laterally extending spring controlled wings 28 pressed down temporarily by the operator's elbow or fore-arm, so as to keep his hands free for shifting the bill forms in order to have their ruling, credit and debit column divisions register with those of the underlying base-plate. When the down pressure on the said wings ceases they are restored to their sheet clamping position by springs fixed to shafts 29, 30 to which the said sheet clamping lever plates 23, 24 are keyed. In order to prevent the wings 28 from being pressed down and the lever members or plates 23, 24 from being lifted when the operator is writing, bridge rods 31, 32 are provided above wings 28.

Frame 6, as said, is hinged to its rotation spindle 5 by bushings or sleeves 33, 34.

When frame 6 is to be raised the operator pulls the slidable pin 35 connected to tie-rod 36 connected in turn to arm 37 which operates a pawl 38 engaging the teeth 39 of a toothed segment 40 secured on the spindle 5. The said segment 40 stops and locks frame 6 in any desired angular position. 41 is a resting device for the thumb of the operator when raising the said frame 6, and also facilitates operation of pin 35.

An example of operation of my new tracing or manifolding frame for making a multiple tracing of a record, booking or item is the following:

(*a*) The frame 6 to which the detached transparent journal sheet and the carbon paper are fixed is raised above the base-plate 1—2—3—4.

(*b*) The bill form or other sheet on which the item to be booked in the debit side of the account is to be reproduced, is laid with its side edge along the left hand guide 21, or, vice versa, according to the disposition of the debit and credit columns, and is shifted along the guide so as to aline the line on which is to be written with the underlying line of the base-plate corresponding to the line of the journal sheet to be filled in, and is then stopped by the sheet clamping lever plates 23, 24;

(*c*) Thereupon the other bill form on which the said item or booking is to be reproduced in the credit side of the account instead of the debit-side is placed against the right hand guiding ridge 22, or vice versa, according to the disposition of the debit and credit columns, and is shifted alongside of the said guiding ridge 22 so as to be alined to the first free line of the bill form indicated in the preceding paragraph, and then locked in position by the sheet clamping lever plate 24;

(*d*) Between the said two forms the carbon paper sheet is interposed and secured on the clamping rod 17, or the sheets held by the hinged guides on the base-plate, as said above;

(*e*) The frame 6 is then lowered, and the writing is done on the detached journal sheet, care being taken to write the item both in the debit and credit columns, whereupon the journal sheet is removed from the frame 6 on which the underlying double face carbon sheet has left the recorded item in reversed writing or mirror-script; the lines and columns of the said journal sheet are superposed, in exact register, to the line and columns of the ledger and the reversed written item or items are printed in normal writing on the sheet of the ledger by passing a hot roller up and down the detached journal sheet.

In case frame 6 is not needed for writing on the bill forms and then copying on the journal, then the placing of the forms with the interposed carbon paper sheets will be the same as above described, with the exception that the forms in this case are to be alined with the sheet of the underlying journal, and the repetition of the items in this case is to be effected by inscribing them in the debit column of the form placed alongside the left hand guide 21, and in the credit column of the form placed along-side the right hand guide 22.

Owing to the writing pressure and copying effect, the item will as a result be recorded in normal writing on the upper face of the journal sheet, and in reversed writing or mirror-script on its back face by the double face carbon paper and also on the bill form on which the item is to appear in the debit side of the account, as well as on the bill form on which the item is to figure in the credit side of the account.

The above described form of copying ap-

paratus is only given as an illustration and modifications and changes may be made in the structural details of the same without departing from the scope of the invention as outlined by the following claims.

Having now particularly described and ascertained the nature of my invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Tracing and manifolding frame for the simultaneous multiple reproduction of bookings, records and items, comprising a base-plate (1—2—3—4) having lines and columns corresponding to a commercial book, a frame (6) hinged to the said base-plate by means of a spindle (5) and provided with tie-rods (7, 8 and 13) on which the ends of a detached journal sheet and a double face carbon paper sheet may be removably secured, U-shaped clamping bows (9, 10, 11, 12, 14, 15) for temporarily holding the said detached journal sheet and carbon paper, a hinged clamping rod (17) adapted to be held down on the base-plate, guides (21, 22) projecting from the base-plate, spring controlled lever members (23, 24), axes (29, 30) upon which said members are fulcrumed for holding the paper in place and having their ends (25) interposed between the sides of the frame (6) and the guides (21, 22), the said lever members (23, 24) being provided at their upper part with marks corresponding to the lines of the ruling of the base-plate, and also provided with a vertical slot (26) in which a line indicating slide (27) is adapted to glide, the said sheet clamping lever members (23, 24) having lateral wing extensions (28) adapted to be pressed down by the operator's arm when shifting the sheets, and bridges (31, 32) for supporting the arm of the operator when writing.

2. Tracing and manifolding frame as described in claim 1, comprising a device for stopping in angular position the frame when raised above the base-plate, consisting of a sliding pin (35), a pawl (38) and a tie-rod (36) and an arm (37) adapted to connect said pawl (38) to the sliding pin, said pawl engaging the teeth (39) of a toothed segment (40) rigid with said frame spindle (5).

PROSPERO MECUCCI.