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METHOD AND MEANS FOR OPERATING BOOKKEEPING MACHINES

Filed April 7, 1930

2 Sheets-Sheet 1

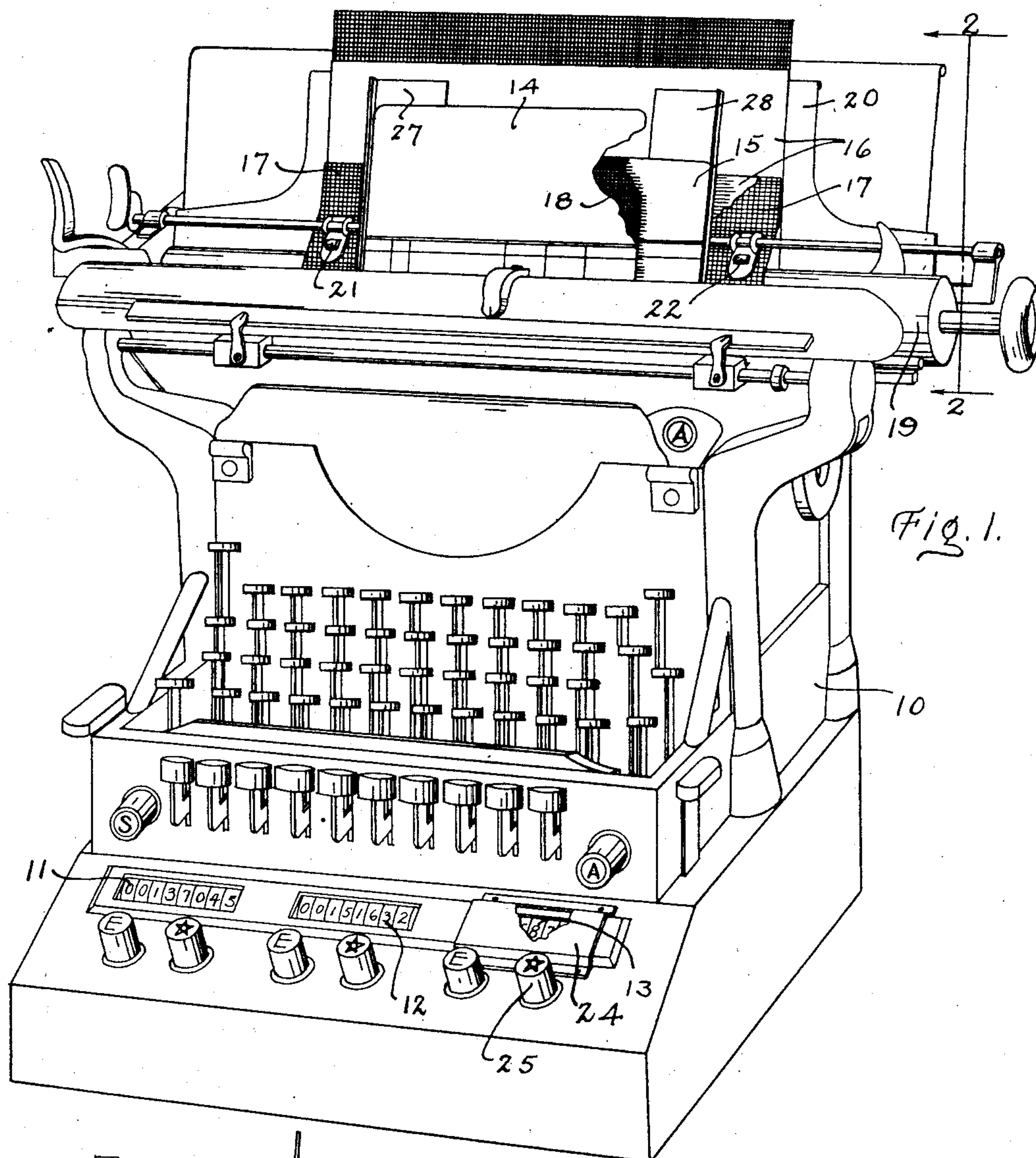


Fig. 1.

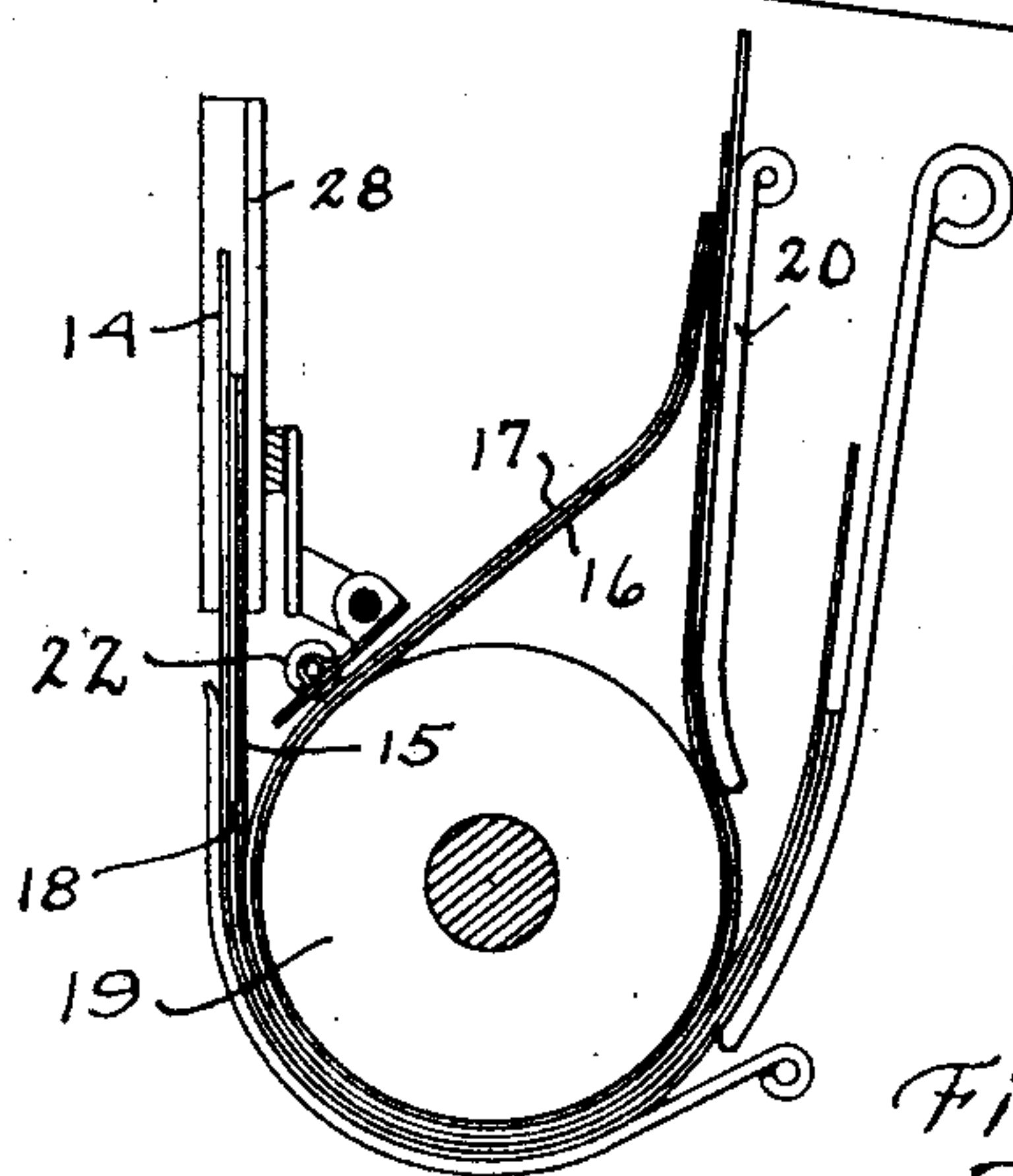


Fig. 2.

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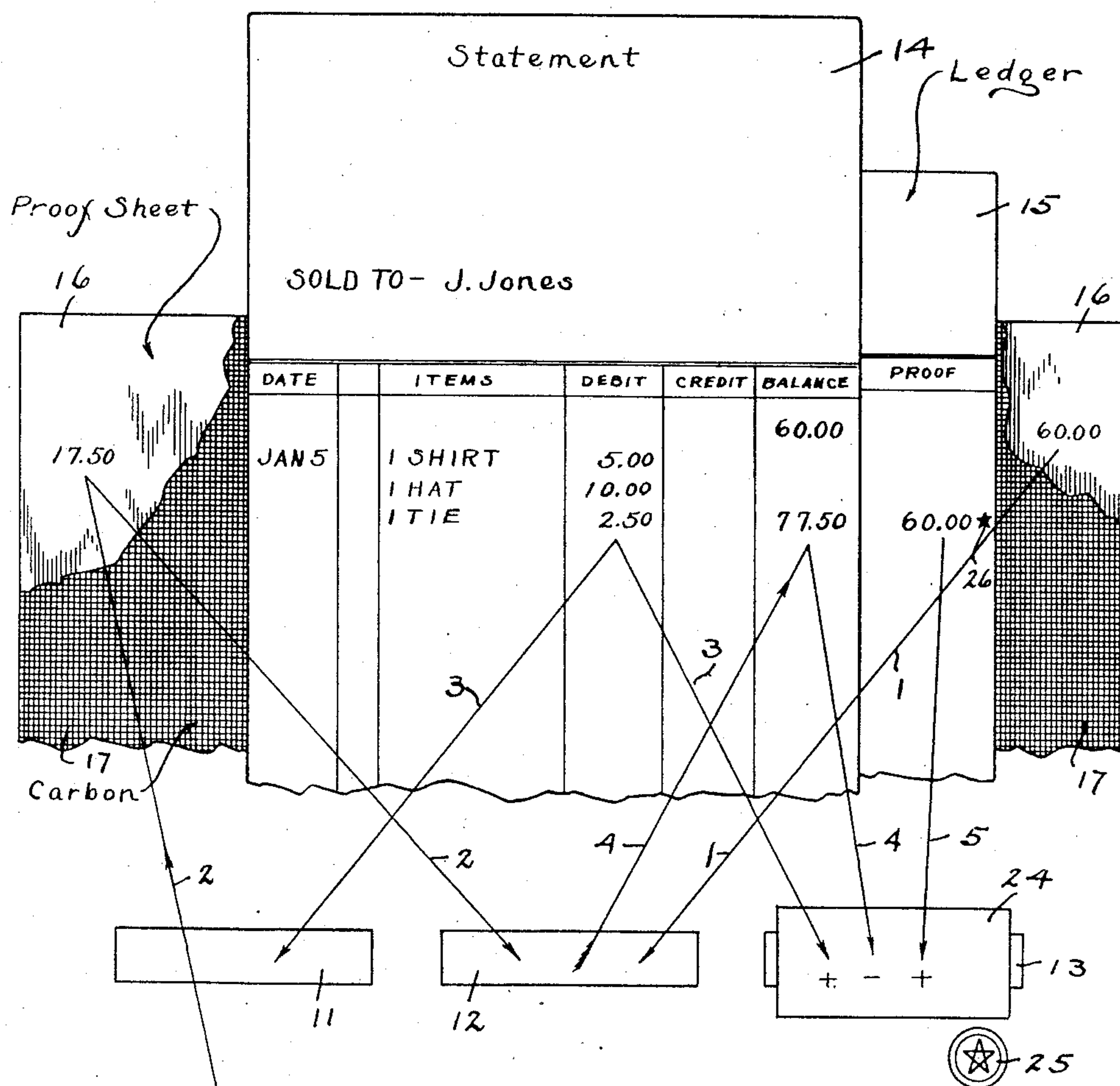
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2 Sheets-Sheet 2



Sales Ticket

J. Jones Jan 5

1	Shirt	5.00
1	Hat	10.00
1	Tie	2.50
		17.50

Fig. 3.

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# UNITED STATES PATENT OFFICE

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## METHOD AND MEANS FOR OPERATING BOOKKEEPING MACHINES

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This invention relates to the art of book-keeping machines and particularly to the method of their operation. It is a primary purpose of the invention to provide a method of operation whereby the posting and creating of new balances is checked with one hundred per cent accuracy. Another primary purpose is to provide means whereby parts of the printing and of the registry of figures on the machine are concealed from the operator's observation in order that certain figures previously written may not be copied in later operations.

These and other objects will become apparent to those versed in the art in the following description of the invention as illustrated by the accompanying drawings, in which

Fig. 1, is a front perspective view of a bookkeeping machine by means of which my invention is accomplished;

Fig. 2, a vertical section on the line 2—2 in Fig. 1; and

Fig. 3, a diagrammatic view of the operations involved in the invention.

Like characters of reference indicate like parts in the two figures of the drawings.

I employ a bookkeeping machine 10 of the well known type now in use which consists essentially of a combined typewriter and adding machine, having the three registry windows, namely, the window 11 through which the total of debits and credits appears, the window 12, through which a registered balance appears, commonly termed the cross-footer, and the window 13, known as the proving register or totalizer.

In addition to the usual statement 14 and ledger sheet 15, I employ a proof sheet 16 which is sufficiently wider than the ledger sheet 15 to provide for a projection of the proof sheet from under the ledger sheet on the left hand side as well as on the right hand side. I employ a sheet of carbon paper 17 of the same width as that of the proof

sheet 16 so as to completely cover over and conceal the proof sheet from view. The usual carbon sheet 18 is placed between the statement 14 and ledger sheet 15.

Referring to Fig. 2, the proof sheet 16 and the carbon paper 17 are placed around the platen 19 on the forward side of the divider 20 to have the proof sheet 16 next to the platen and the carbon paper on the outside of the sheet with the coated side of the paper next to the sheet. The forward ends of the sheet 16 and paper 17 are brought around under the presser rollers 21 and 22 and are thereby directed rearwardly and upwardly toward the divider 20. The ledger sheet 15 and statement 14 with the carbon paper 18 therebetween are passed down behind the divider 20 under the platen 19 and back up in front to project vertically upwardly. The ledger sheet 15 is spaced over the proof sheet 16 and carbon paper 17, as indicated in Figs. 1 and 3 to be approximately centered thereover, and the statement 14 is aligned along the left hand edge of the ledger sheet 15 so that there is the usual right hand column appearing uncovered on the ledger sheet, the statement being narrower than the ledger sheet for the purpose.

Referring now to Fig. 3 principally, to illustrate one particular embodiment of the invention, the case of accounts in a department store will be taken as an example.

Clerks throughout the store, in making sales, write the itemized sales on a sales ticket in duplicate, the original going to the customer, and the carbon or duplicate copy to the auditing and bookkeeping department. It frequently occurs, in the rush of making sales, that the clerk will make an error in totaling the sales amount. While in most cases this duplicate sales ticket is audited before reaching the bookkeeper, mistakes frequently slip past the auditors.

The bookkeeper receives the sales ticket, here designated by the numeral 23, notes the



customer's name, selects the ledger sheet 15 carrying the customer's account, takes a blank statement sheet 14, places the old balance shown by the ledger sheet in the proper column on the statement, takes a proof sheet 16, and arranges them with the carbon papers in the machine 10 as above described.

The operator then manipulates the machine 10 and types the old balance, here indicated as \$60.00 on the proof sheet 16 on the right hand projecting portion, the figures being impressed on the sheet 16 through the carbon paper 17, and, the back or visible side of the carbon paper 17 being black, no figures so impressed are visible to the operator. The side of the carbon paper 17 toward the operator is purposely made to prevent the reading of any figures thereon as may be impressed therethrough onto the proof sheet 16. At the same time this balance, \$60.00, is placed on the proof sheet 16, the machine 10 operates to cause that amount to be indicated in the crossfooter window 12, the arrows on the drawings being numbered to show the sequence of operations.

The operator then takes the sales ticket 23 and places the total, here shown as \$17.50, on the proof sheet 16 on the left hand projecting side, the \$17.50 of course being there imprinted through the carbon paper 17 and invisible to the operator. This total of \$17.50 at the same time goes into the crossfooter mechanism and is added to the \$60.00 first appearing in the window 12 to show a new total therein of \$77.50. The operator, having placed those balances on the proof sheet, proceeds to transfer the individual items on the sales ticket to the statement 14, and the machine 10 adds up the individual amounts to show a total thereof in both windows 11 and 13, that total of \$17.50 going into the totalizer column above the window 13 as a positive number. The window 13 is covered by a shield 24 to conceal the totals appearing in the window 13. This shield 24 may take any form, here shown as a metal plate and may be secured over the window subject to removal only by a supervisor or the like.

As the fourth operation, the total of \$77.50 appearing in the crossfooter window 12 is placed as the new balance on the statement 14 (also simultaneously being impressed on the ledger sheet 15 through the carbon paper 18 as were the separate items from the sales ticket 23) and at the same time is transferred to the totalizer column as a negative number. As the fifth and last operation, the old balance of \$60.00 taken from the statement is written on the projecting part of the ledger sheet 15 and added into the totalizer column as a positive number.

Now if the total on the sales ticket 23 is the correct sum of the individual items; if the individual items have been correctly

transferred to the statement 14 and thereby to the ledger sheet 15; and if the correct old balance has been added thereto and the machine has been properly operated, the balance in the window 13 should be zero and the machine should clear upon pressing the button 25. If the balance is not zero, the button 25 cannot be pushed to clear the machine to cause the customary star or asterisk 26 to be printed indicating that the button has been operated, the mechanism controlling the button 25 not forming a part of my invention since it is incorporated in the machine 10 in the usual manner well known to those versed in the art. This mechanism is shown by the U. S. patent to Hart, Number 1,190,287, issued July 11, 1916.

If the machine can not be cleared, the operator goes over the figures again to locate the error, and if no error is found, or an error is found and corrected and the machine still can not be cleared, the head bookkeeper or supervisor may be called to uncover the window 13 to determine what number must be added to clear the machine, and to aid in locating the error in the account or failure of the machine itself. Otherwise, the operator of the machine can not arbitrarily alter some item to effect a balance that would permit the machine to clear. While I have referred to but one sales ticket 23, it is obvious that most accounts will have a number of such tickets to be posted on the statement and ledger sheet and that a new balance will not be obtained until after many more items have been posted than I have shown, thereby introducing a greater chance for error than is apparent in the example shown. The machine 10 is in the customary manner provided with adjustably located stops (not shown) to intercept movement of the platen carriage to cause the various amounts to be added or subtracted in one of the three totals corresponding to the three windows as above indicated.

The carbon paper effectively conceals from the operator the total of each sales ticket as placed on the proof sheet and also the old balance placed thereon. Even though the operator discovered after posting a number of sales tickets and attempting to show a new balance, that an error had been made and then attempted to turn the carbon paper 17 back to read either the right or the left hand column of figures appearing on the proof sheet 16, she would not be able to determine wherein the mistake occurred without considerable computation. Furthermore, the guide plates 27 and 28 employed to align the statement and ledger sheet prevent ready access to the proof sheet.

By employing the method above outlined, the accuracy of the work is checked before the account is removed from the machine. The method checks the old balance as placed



on the statement by concealing it by carbon paper on the proof sheet and throwing it into the crossfooter. The sales ticket balance is proved mechanically and automatically as the entire account is checked. By the term ledger sheet, I include any type of record sheet employed in keeping accounts.

While I have herein described and shown my invention in the one best form as now known to me, it is obvious that deviations may be made from that form without departing from the spirit of the invention, and I, therefore do not desire to be limited to that precise form, nor any more than may be required by the following claims.

I claim:

1. In combination with a bookkeeping machine having a proving register, a cover completely concealing the register from observation, means for securing the cover against removal by an operator of the machine, a record sheet, a proof sheet wider than the record sheet, and a carbon transfer sheet covering the proof sheet beyond the record sheet, said transfer sheet having a back rendering typed impressions thereon non-readable.

2. In a writing and computing machine, having a shiftable platen, a crossfooter register, and a proving register, the combination of a blind normally concealing the proving register, a proof sheet passed around the platen, a carbon sheet covering the proof sheet and having a surface rendering characters impressed thereon non-readable, a bookkeeping record sheet over the carbon sheet having less width than that of the proof and carbon sheets, whereby certain totals may be impressed through the carbon sheet onto that part of the proof sheet extending beyond the record sheet to be concealed by the carbon sheet, and other figures making up said total placed on the ledger sheet in plain view and automatically checked through said machine through said concealed proving register.

3. In combination with a combined typewriter and computing machine having a platen shiftable past a fixed station through which all of the characters and figures of said machine strike against the platen, a proving register, and a blind normally covering over the register to prevent reading thereof, of a predetermined group of sheets passed around the platen, said group comprising a relatively wide proof sheet, a carbon sheet over the proof sheet, said carbon sheet being provided with a back surface preventing reading of characters impressed thereon, a bookkeeping record sheet having less width than that of the carbon sheet, and a statement sheet less in width than that of the record sheet with a transfer medium thereunder, said sheets being arranged to have the left hand edges of the statement and record sheets aligned to have a width of the record sheet extending from under the

statement in plain view, and both of said statement and record sheets being spaced to leave a width of the carbon sheet exposed with the proof sheet extending thereunder.

4. In a combined typewriting and computing machine having a proving register, a plurality of superposed sheets comprising a relatively wide proof sheet, a carbon sheet completely covering the proof sheet, said carbon sheet having a non-readable back surface, a record sheet over the carbon sheet less in width than that of the proof sheet and arranged thereover to have a width of the proof sheet extending laterally from both sides of the record sheet, and a blind for fixing in a normally stationary position over the said proving register.

5. In a combined typewriting and computing machine having a proving register, a plurality of superposed sheets comprising a relatively wide proof sheet, a carbon sheet completely covering the proof sheet, said carbon sheet having a non-readable back surface, a record sheet over the carbon sheet less in width than that of the proof sheet and arranged thereover to have a width of the proof sheet extending laterally from both sides of the record sheet, and a blind for fixing in a normally stationary position over the said proving register, and a statement sheet placed over the record sheet with a transfer medium therebetween, said statement sheet being less in width than that of the record sheet and being arranged to have one of its side edges aligned with a side edge of the record sheet to have a portion of the record sheet to extend laterally beyond the statement sheet.

6. For checking the accuracy of totals of individual items on sales tickets simultaneously with the posting of accounts and new balances on record sheets in a combined typewriting and computing machine having a readable crossfooter register and blind proving register, a shiftable carriage, a proof sheet, a non-readable back transfer sheet over the proof sheet, a record sheet over and less in width than the transfer sheet, means for printing an old balance through the transfer sheet on the proof sheet beyond the record sheet and placing the old balance in said readable register, means operative upon shifting said carriage to a second position over the extending portion of said transfer sheet for printing the total of a sales ticket on said proof sheet independently of said old balance and simultaneously adding said total to said balance to cause a new balance to appear in said readable register, means operative upon shifting said carriage to a third position for printing in columnar form on said record sheet the individual items taken from said sales ticket and simultaneously adding said items to give a total thereof in said blind register, means operative upon shifting said carriage to a fourth position for printing in a



new balance column on said record sheet the  
amount appearing in said readable register  
and simultaneously placing said amount in  
said blind register as a negative number,  
5 means operative upon shifting said carriage  
to a fifth position to print in a proof column  
on said record sheet said old balance and si-  
multaneously place that old balance as a posi-  
tive number in said blind register whereby  
10 said blind register may return to a normal  
zero position, and a star key rendered oper-  
ative upon said zero position being obtained.

In testimony whereof I affix my signature.

CRAWFORD J. WALKER.

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