M. J. DOWNEY.

ATTACHMENT FOR BILLING MACHINES.

APPLICATION FILED JUNE 26, 1919.

1,373,870.

Patented Apr. 5, 1921.

2 SHEETS—SHEET 1.

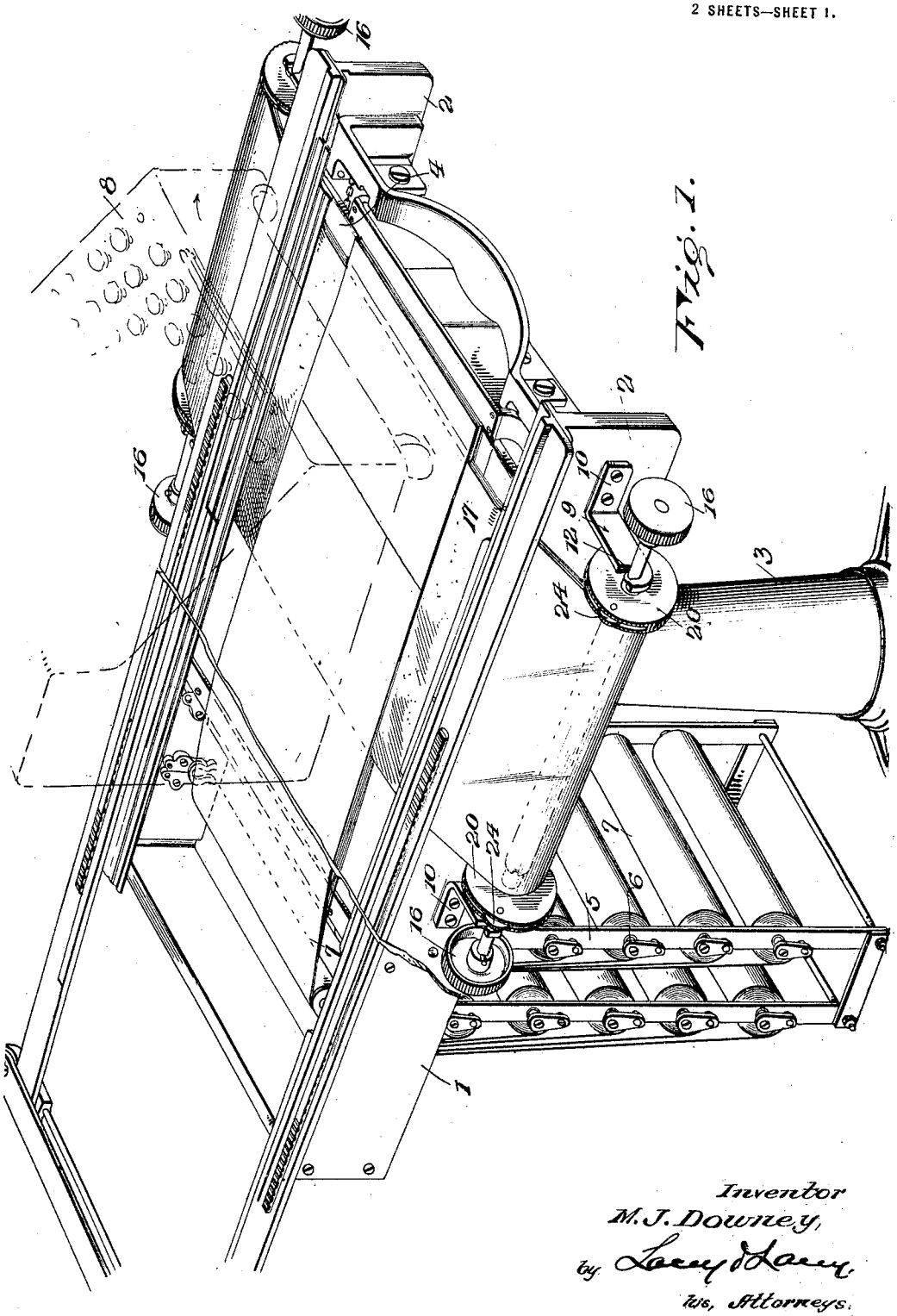


Fig. 1.

Inventor
M. J. Downey,
by Lacey & Lacey,
his Attorneys.

NORRIS PETERS, INC., LITHO., WASHINGTON, D. C.

M. J. DOWNEY.

ATTACHMENT FOR BILLING MACHINES.

APPLICATION FILED JUNE 26, 1919.

1,373,870. **Patented Apr. 5, 1921.**

2 SHEETS—SHEET 2.

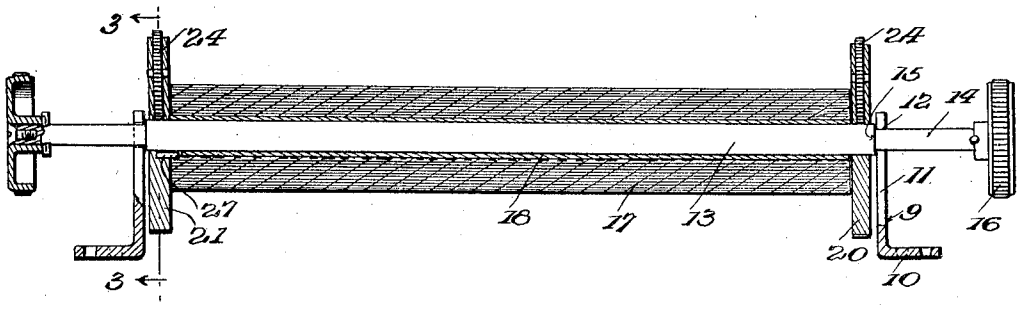


Fig. 2.

Fig. 3.

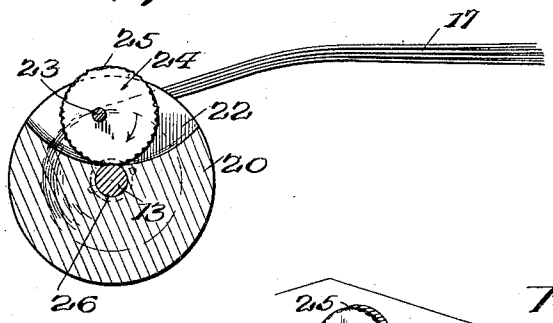
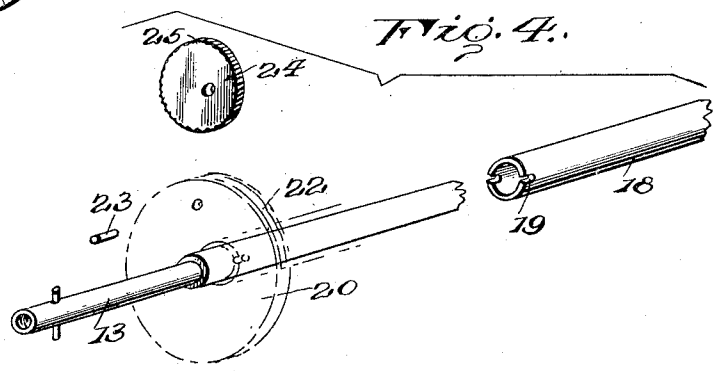


Fig. 4.



Inventor.

M. J. Downey,

by Lacey & Lacey,

his Attorneys.

NORRIS PETERS, INC., LITHO WASHINGTON D C

UNITED STATES PATENT OFFICE.

MILLARD J. DOWNEY, OF CHICAGO, ILLINOIS.

ATTACHMENT FOR BILLING-MACHINES.

1,373,870. Specification of Letters Patent. Patented Apr. 5, 1921.

Application filed June 26, 1919. Serial No. 306,926.

To all whom it may concern:

Be it known that I, MILLARD J. DOWNEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Attachments for Billing-Machines, of which the following is a specification.

This invention relates to improvements in writing machines and more particularly to an improved carbon paper storing and feeding mechanism for what are commonly known as billing machines.

In a standard type of billing machine the bills are printed in strips which are either folded to compact form or wound upon rolls, a number of these strips corresponding to the number of copies of any bill to be made out, being fed forwardly longitudinally over the platen of the machine and beneath the typewriting mechanism thereof. In the use of such a machine it is customary to insert carbon sheets between the several strips so as to produce the desired number of carbon copies of the original bill and then after a bill has been made out the original together with the carbon copies are torn off and the carbon sheets are again inserted between the several strips preparatory to the making out of another bill. This method of procedure is, however, unsatisfactory for several reasons. Considerable time must be lost, for example, in inserting and removing the carbon sheets even though they be provided with holders intended to facilitate this operation. Also it has been found that the greater majority of bills will embrace only a small number of items so that as a result the upper portion of each carbon sheet will become worn before the lower portion of the sheet has had its usefulness materially impaired and, of course, the lower portions of the sheets are a total waste when the sheets are thrown away after their upper portions become so worn as to be incapable of producing clear copies.

In consideration of the foregoing it is one object of the present invention to provide a machine of the type mentioned with an attachment adapting a number of strips or sheets of carbon paper to be stored in roll form and to be transversely fed across the platen of the machine so that the carbon sheets will be at all times in position for writing and will continually extend or lie between the several strips of printed bills. Therefore the invention contemplates the provision of means whereby carbon paper may be supplied for use without the necessity of repeatedly inserting the carbon sheets between the bill strips and repeatedly removing the sheets from between said strips.

Another object of the invention is to so construct the attachment above referred to that when the upper portions of the carbon sheets or strips become worn, the supporting or storage rolls for the sheets or strips may be reversed so as to bring the practically unused lower portions of the sheets or strips into the position previously occupied by the worn portions thereof, thus affecting a great saving in material.

Another advantage possessed by the attachment embodying the invention is that by a judicious adjustment of the attachment, a greater number of entirely legible carbon copies may be produced from a given quantity of carbon paper than would be possible by the old method of use above described.

In the accompanying drawings:

Figure 1 is a perspective view illustrating the application of the invention to a billing machine of a well-known type, the writing mechanism of the machine being indicated only in a general way in dotted lines so as to better illustrate that portion of the machine in connection with which the attachment is directly employed;

Fig. 2 is a vertical longitudinal sectional view through one of the storage rolls for the carbon paper;

Fig. 3 is a vertical transverse sectional view on the line 3—3 of Fig. 2;

Fig. 4 is a group perspective view illustrating the parts at one end of one of the carbon paper storage rolls.

In the drawings the numeral 1 indicates in general a billing machine of a well-known type, the bed-frame of which is indicated by the numeral 2 and is suitably supported as for example upon a pedestal 3, the usual flat and horizontally disposed platen 4 being mounted within the bed-frame, and a suitable structure 5 being provided beneath the rear portion of the frame for supporting a number of storage rolls 6 upon which are wound strips of paper 7 bearing the printed bill forms, the number of rolls employed being equal to the number of copies desired of bills to be made out upon the machine. By reference to Fig. 1 of the drawings it will

be observed that the strips 7 bearing the printed bill forms are led upwardly through the rear portion of the bed-frame of the machine and thence forwardly over the surface of the platen 4, the typewriting mechanism of the machine being indicated by the numeral 8 and being supported upon the bed-frame for proper movement over the platen.

In carrying out the present invention, a pair of brackets 9 is mounted upon the outer face of each side member of the bed-frame 2 and each of these brackets comprises an attaching portion 10 secured to the respective side member of the bed-frame and an outstanding portion or arm 11 formed in its upper edge with a notch 12. The pairs of brackets 9 are designed to support the carbon paper storage rolls by the disposal of the spindles of the said rolls in the notches 12 in the brackets.

Figs. 2, 3 and 4 of the drawings clearly illustrate the construction of one of the rolls and the rolls are of counterpart construction and therefore a description of one will suffice for both. The spindle for the roll is indicated by the numeral 13 and this spindle is reduced at its ends as indicated by the numeral 14, the reduced ends being disposed as above stated within the notches 12 in the brackets of the respective pair so that the spindle is rotatably supported. The reducing of the ends of the spindle provides shoulders 15 which engage the inner faces of the brackets so that longitudinal displacement of the spindle is prevented. Upon each reduced end 14 of the spindle there is suitably fixed a milled hand wheel 16 by means of which rotary motion may be imparted to the spindle. The carbon paper, of which any desired number of sheets may comprise a roll, is indicated in general by the numeral 17 and the required number of sheets of this paper are wound in roll form upon a hollow core 18 which is fitted onto the intermediate or unreduced portion of the spindle 13 as clearly shown in Fig. 2 of the drawings. This core 18 may be of any suitable material and the same is preferably formed in one end with diametrically oppositely located notches 19, as clearly shown in Figs. 2 and 4 of the drawings. In order that the core may be centered upon the spindle and held for rotation therewith, the spindle is provided with spaced heads which may be clutched with the unreduced portion thereof. One of these heads is indicated by the numeral 20 and the other by the numeral 21 and each head is formed in its periphery with a slot 22 in which is rotatably mounted, upon a pin 23, an eccentric clutch disk 24 having a milled or roughened periphery indicated by the numeral 25. The slot 22 communicates with an axial opening 26 formed in the respective head and adapted to receive the unreduced portion of the spindle 13. By reference to Figs. 2 and 3 of the drawings it will be evident that the eccentric clutch disk 24 may be rotated so as to bind at its periphery against the spindle thereby clutching the respective head 20 or 21, as the case may be, with the said spindle for rotation therewith. The head 20 constitutes an abutment for one end of the roll of carbon paper and the head 21 constitutes an abutment for the other end of the said roll. This latter head is, however, provided upon its inner face with spaced laterally projecting pins or studs 27 which are designed to enter the notches 19 in the core 18 so as to positively connect the core for rotation with the said head 21 and consequently with the spindle 13.

Referring now to Fig. 1 of the drawings it will be understood that the hand wheel 16 at one end of the spindles is located in convenient position to be grasped by the operator of the machine for the purpose of rotating either spindle or roll so that a greater or less length of the carbon paper may be wound upon one of the rolls as a fresh supply is unwound from the other roll. Also it will be understood that after the carbon paper has, for example, been nearly completely unwound from one roll through constant use of one of the hand wheels its direction of travel may be reversed by making use of the other hand wheel. It will also be evident that due to the manner in which the carbon paper storage rolls are mounted the rolls may be lifted out and reversed end for end so that when the upper portions of the strips of carbon paper become so worn that they will not produce legible copies, the rolls may be reversed end for end so as to bring into position for use the lower portions of the said strips.

Having thus described the invention, what is claimed as new is:

1. The combination with the platen support of a writing machine, of paper storage rolls mounted at the opposite sides of the said supports, and means supporting the rolls for reversal end for end.

2. The combination with the platen support of a writing machine, of paper storage rolls reversibly mounted at the opposite sides of the said support, and means whereby the rolls may be rotated in either of their positions.

3. The combination with the platen support of a writing machine, of paper storage rolls mounted at the opposite sides of said support and reversible end for end, and means upon each end of each roll whereby the respective roll may be rotated.

4. The combination with the platen support of a writing machine, of a paper storage roll mounted at one side of the said support and reversible end for end.

5. The combination with the platen sup-

port of a writing machine, of a paper storage roll mounted at one side of the said support and reversible end for end, and means at each end of the roll for rotating the same.

6. The combination with the platen support of a writing machine, of pairs of brackets mounted at the opposite sides of the said support, paper storage rolls having spindles rotatably disposed within the brackets, the rolls being reversible end for end, and a hand wheel at each end of each roll.

7. The combination with a writing machine platen, of means delivering alternately interleaved manifolding and transfer webs thereover, said means providing for the end for end reversal of the transfer webs whereby the entire surface thereof is utilized.

8. The combination with a writing machine platen, of means delivering alternately interleaved manifolding and transfer webs thereover at substantially right angles to each other, said means providing for the end for end reversal of the transfer webs whereby the entire surface thereof is utilized.

9. The combination with a writing machine platen, of means delivering several superposed manifolding webs thereover, and means delivering several transfer webs interleaved with the manifolding webs, said last mentioned means being reversible end for end whereby the entire surface of the transfer webs is utilized.

In testimony whereof I affix my signature.

MILLARD J. DOWNEY. [L. S.]