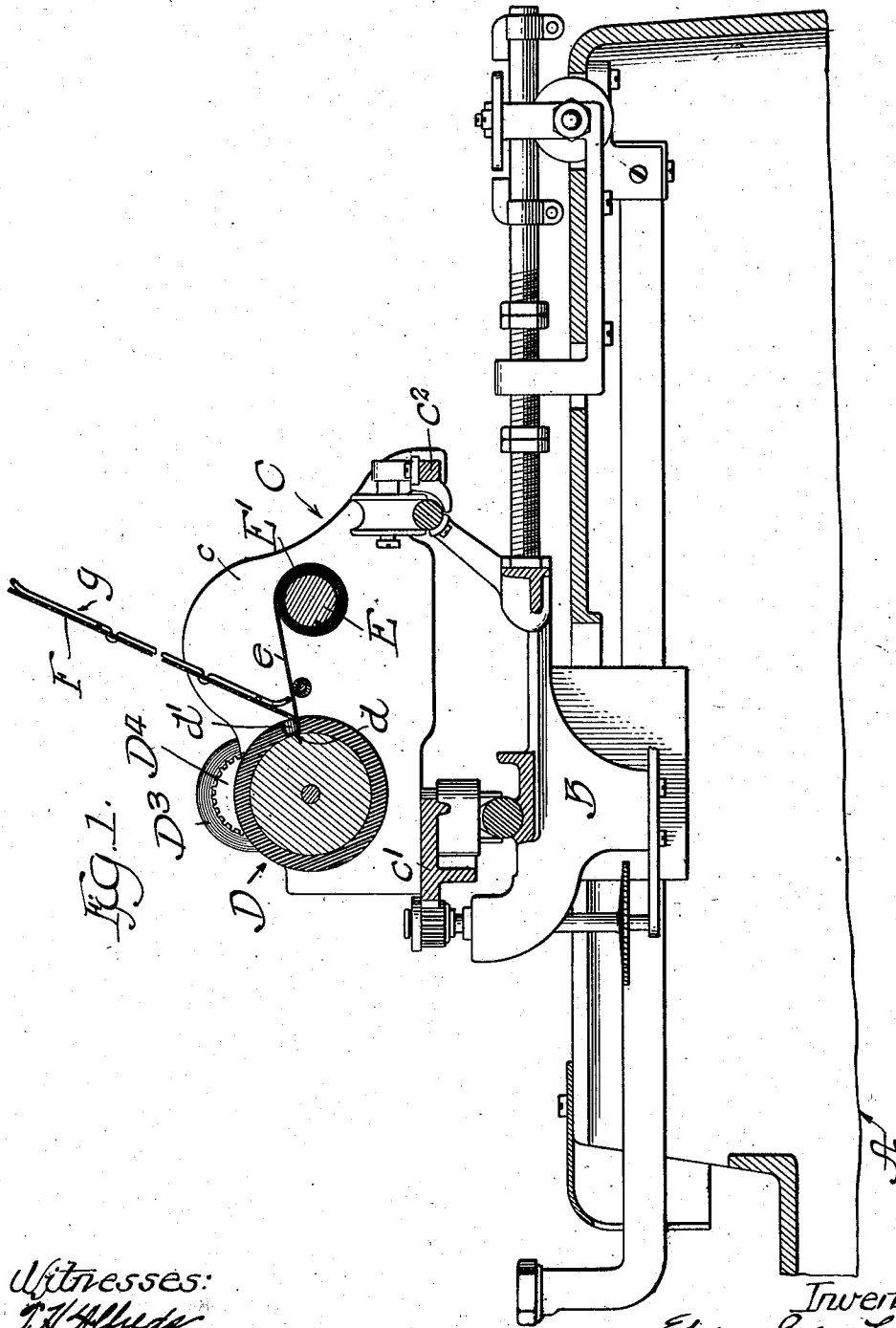


E. Z. LEWIS.
MANIFOLDING PLATEN FOR TYPE WRITING MACHINES.
APPLICATION FILED MAY 26, 1909.

937,374.

Patented Oct. 19, 1909.
3 SHEETS—SHEET 1.



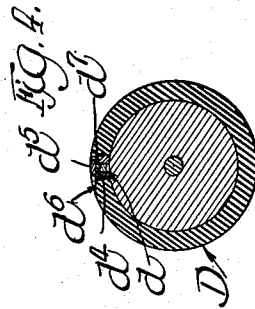
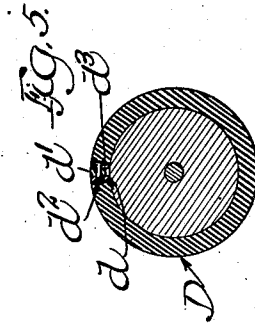
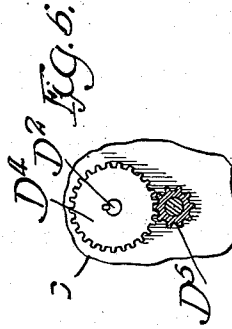
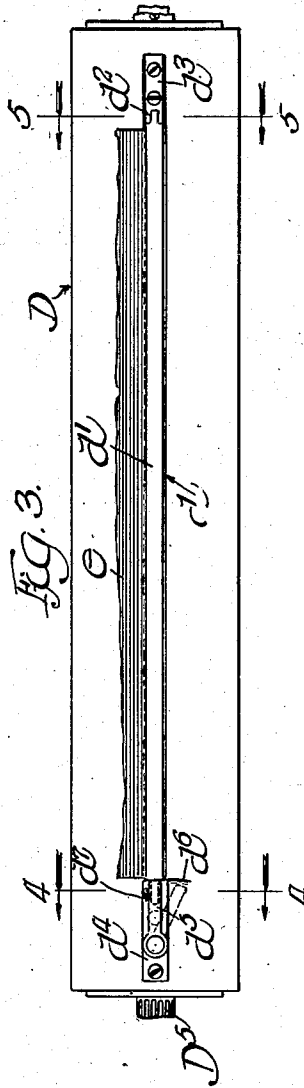
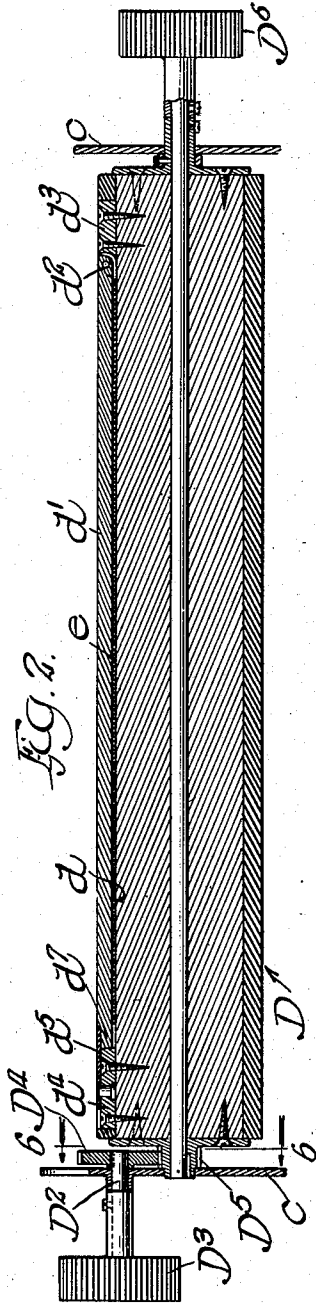
Witnesses:
J. H. Alfede
J. M. Daggett.

Inventor
Edward Z. Lewis
by
Pool & Brown
Attys

E. Z. LEWIS.
MANIFOLDING PLATEN FOR TYPE WRITING MACHINES.
APPLICATION FILED MAY 26, 1909.

937,374.

Patented Oct. 19, 1909.
3 SHEETS—SHEET 2.



Witnesses:
J. H. Alfede
J. H. Duggitt

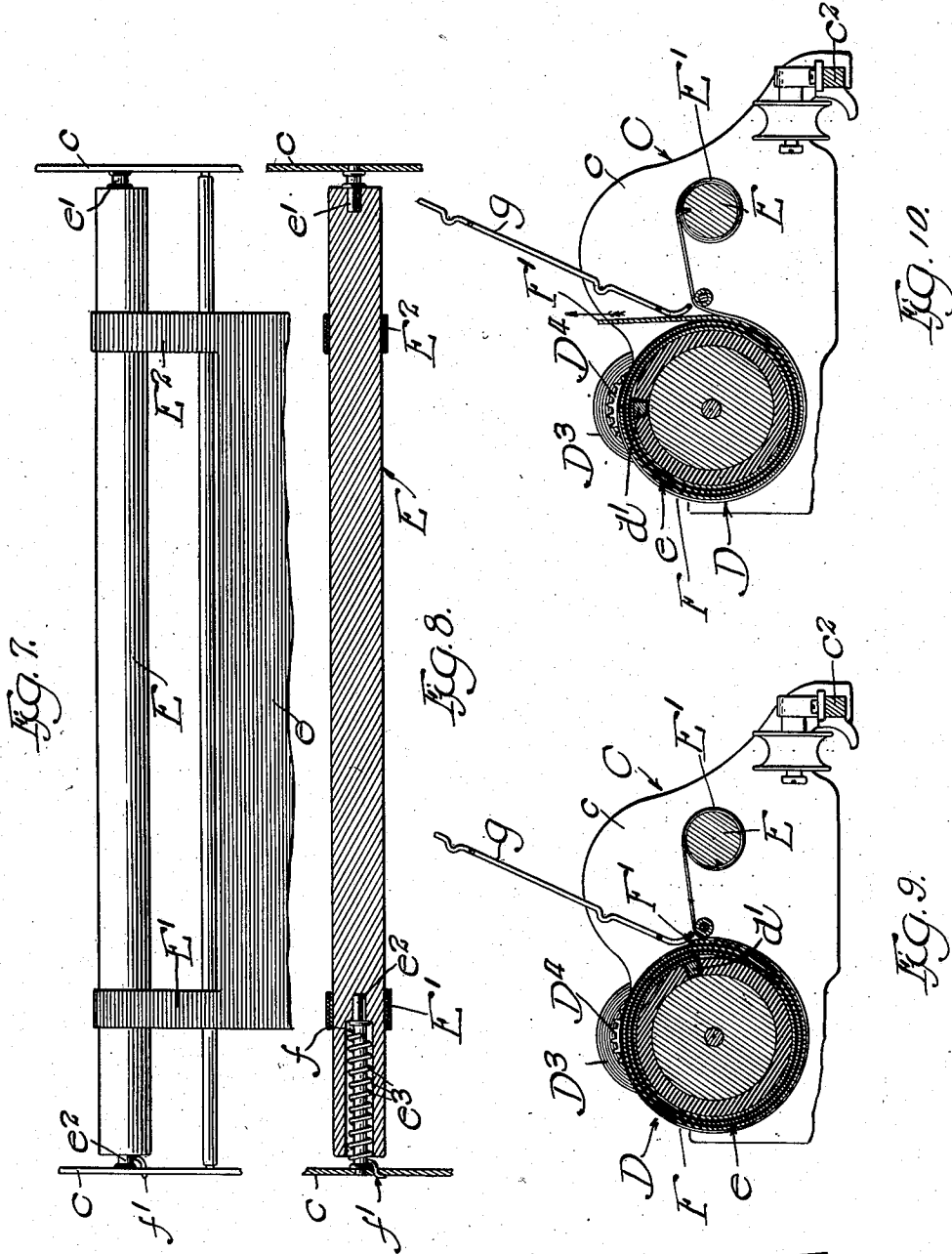
Inventor:
Edward Z. Lewis
by Pool & Brown
Attys

E. Z. LEWIS.
 MANIFOLDING PLATEN FOR TYPE WRITING MACHINES.
 APPLICATION FILED MAY 26, 1909.

937,374.

Patented Oct. 19, 1909.

3 SHEETS—SHEET 3.



Witnesses:
 J. H. Alfude
 J. M. Daggett.

Inventor:
 Edwin Z. Lewis
 by Poole & Brown
 Attys

UNITED STATES PATENT OFFICE.

EDWARD Z. LEWIS, OF CHICAGO, ILLINOIS.

MANIFOLDING-PLATEN FOR TYPE-WRITING MACHINES.

937,374.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed May 26, 1909. Serial No. 498,565.

To all whom it may concern:

Be it known that I, EDWARD Z. LEWIS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Manifolding-Platens for Type-Writing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an attachment for typewriters to be used in winding a sheet, such, for example, as a billing sheet, together with a carbon paper or ribbon upon the platen of the machine in order to make manifold copies. It is particularly adaptable for use in writing upon a multiform billing sheet, such as that described in an application filed by me on May 19th, 1909, Serial Number 496,999, entitled multiform billing sheet in which the sheet has all the forms printed on one side, with the first form of a height equal to the length of the circumference of the platen and the successive forms progressively increased in vertical dimensions both as to height and as to vertical spacing. The carbon paper or ribbon is wound on top of said sheet with its copying surface against the printed face of the same. The original typewritten matter is produced on the bottom form of the billing sheet, which will form the outermost roll about the platen.

In carrying out the invention I provide means for attaching the end of the carbon paper or ribbon to the periphery of the platen, and also preferably provide means for maintaining the carbon paper or ribbon in tension during the time of winding it, together with the billing sheet, upon the platen. The various advantages of my invention will appear as I proceed with my specification.

In the drawings:—Figure 1 is a vertical section through an ordinary type-writer, such, for example, as one of the "Oliver" type, showing my improved attachment in place thereon. Fig. 2 is a vertical longitudinal section through the platen with the hinged bar hereinafter described shown at the top of the same. Fig. 3 is a partial top plan view of Fig. 2. Fig. 4 is a transverse section through Fig. 3 on the line 4—4 thereof. Fig. 5 is a similar section of the same

figure on the line 5—5 thereof. Fig. 6 is a transverse section of Fig. 2 on the line 6—6 thereof. Fig. 7 is a top plan view of the tension roller on which the carbon ribbon or paper is wound. Fig. 8 is a longitudinal section of the same. Figs. 9 and 10 represent transverse sections through the platen, showing different stages in the winding of the paper and carbon ribbon or sheet thereon.

A represents the base of the machine; B the shift-frame; C the paper-carriage having end plates c , c and front and rear bars c^1 , c^2 , and D the platen. The platen D is provided on its outer surface with a groove d running in the direction of its length. At one end of the groove is hinged a bar d^1 which, when closed in the groove d , has its outer face flush with the periphery of the platen. This construction is for the purpose of attaching the forward end of the carbon paper or ribbon to the periphery of the platen. The bar d^1 , in Figs. 2 and 3, is shown hinged at d^2 to a block d^3 which is located at one end of the groove d and secured therein by screws or in any other convenient manner. At the other end of the groove is a block d^4 on which is pivotally mounted a catch d^5 adapted to engage the notched end of the bar d^1 and hold the same in closed position. The surface of the platen is cut away at d^6 (Fig. 4) to permit the catch to be pushed to one side when the bar is to be swung into open position. To more rigidly secure the bar d^1 in place, when it is in closed position, the inner end of the block d^4 is bifurcated to receive a projecting tongue d^7 located at the end of said bar.

A spring controlled roller E is located on the paper-carriage at the rear of the platen D with its axis parallel thereto. On this roller is normally wound the carbon sheet or ribbon e . The purpose of this roller is to put tension upon the carbon ribbon or paper, so as to cause it to wind smoothly upon the platen. Said roller E is mounted on stub shafts e^1 , e^2 , which are journaled loosely in the end plates c , c of the paper-carriage. One of said shafts e^2 is provided with a torsional spring e^3 having one end attached to the shaft and the other end attached to the end plate c of the paper-carriage, as seen respectively at f , f^1 (Figs. 7 and 8). The carbon ribbon or sheet e is provided at one end with marginal tapes E^1 , E^2 which are attached to the roller E. The tendency of the spring e^3

is to rotate the roller E in a direction opposite to that in which the platen D is rotated when the billing sheet or other paper, together with the carbon paper or ribbon, is being wound thereon. The carbon ribbon or paper is thus always held taut and is caused to wind smoothly on the platen.

I preferably provide the platen D with suitable gearing, whereby it may be caused to rotate about two and one-half times for one turn of the knob or handle which causes it to rotate. Any suitable or usual gearing may be used for this purpose as, for example, that shown in Figs. 2, 3 and 6. A stub shaft D² is journaled in the left hand end plate c and has at its outer end a handle or knob D³, and at its inner end, between the plate c and the end of the platen D, a pinion D⁴ which is keyed to it. Said pinion D⁴ engages a smaller pinion D⁵ which is formed on the end plate of the platen D concentric with its axis. These pinions are so proportioned that one rotation of the knob will cause from two to three complete rotations of the platen D. The usual operating handle or knob D⁶ is also provided at the right hand side of the platen.

In Fig. 1 is shown a sheet of paper F such, for example, as the multiform billing sheet hereinbefore referred to, with its forward edge in engagement with the platen D at the angle made with the platen by the carbon paper or ribbon e. The paper may be directed into this position and temporarily supported therein by any suitable guide as g. It is apparent from the above description that upon the rotation of the handle or knob D³ both the sheet and the carbon paper or ribbon will be wound together upon the platen, with the carbon side of the paper or ribbon in contact with the top or printed surface of the sheet upon which the manifold copies are to be made.

In Fig. 9 is illustrated that stage in the winding of the carbon and billing sheet upon the platen, where the operation is almost complete, the end of the sheet being indicated by F¹. It will be noted that one complete roll of the billing sheet, that is to say, the outermost roll, is not covered by the carbon sheet or ribbon but by the marginal tapes E¹, E² which are still wound upon the roller E, thus maintaining the tension in the carbon ribbon or paper. In Fig. 10 the platen D is shown in the angular position which it assumes after the writing upon it has been completed and it has been rotated in a reverse direction to remove the paper from the platen. The projecting end of the paper is grasped by the fingers and pulled from the platen in the usual way, the tension in the spring-controlled roller E causing the marginal tapes E¹, E² first and then the carbon ribbon or paper e to be rewound thereupon. The attachment is then in condition to make

manifold copies and an original upon another sheet.

While I have illustrated and described in this application certain mechanical details by means of which my invention may be carried out, at the same time, I do not intend to limit myself to the specific construction shown, as it is manifest that this may be changed or altered without in any way departing from the spirit of my invention. The carbon to be used with my improved attachment may be made either of paper or of cloth, but I prefer the latter for the reason that it is less likely to tear. In the claims, the term is to be understood as applying to either.

I claim as my invention:—

1. In a typewriting machine, a platen, a carbon ribbon having one end attached to the periphery of said platen, said carbon ribbon being inked on one side and being adapted to be wound about said platen with the inked side toward the platen.

2. In a typewriting machine, a platen, a carbon ribbon having one end attached to the periphery of said platen, said carbon ribbon being inked on one side and being adapted to be wound about the platen a plurality of times with the inked side toward the platen.

3. In a typewriter, a platen, a carbon ribbon, said carbon ribbon having one end attached to the periphery of the platen in a line parallel to the axis of the platen, said carbon ribbon being inked on one side and being adapted to be wound about the platen with its inked side toward the platen, and mechanism adapted to produce tension in said carbon ribbon.

4. In a typewriter, a platen, a carbon ribbon attached to the periphery of said platen, a spring controlled roller, and marginal tapes at the end of said carbon ribbon by means of which the same is attached to said spring controlled roller.

5. In a typewriting machine, a platen, a carbon ribbon attached at one end to the periphery of said platen, marginal tapes at the other end of said carbon ribbon, and a spring controlled roller upon which said marginal tapes and carbon ribbon are wound.

6. In a typewriting machine, a platen, a groove formed in the face of said platen parallel to its axis, a bar adapted to close said groove with means for locking it in place, a carbon ribbon having one end attached to said platen by means of said bar and groove, and provided at the other with marginal tapes, and a spring controlled roller upon which said carbon ribbon is normally wound.

7. In a typewriting machine, a platen, a groove formed in the face of said platen parallel to its axis, a hinged bar adapted to close said groove with means for locking it in place, a spring controlled roller at the

rear of said platen, and a carbon ribbon provided at its rear end with marginal tapes wound about said spring controlled roller and having its forward end secured to said
5 platen by means of said hinged arm.

In testimony that I claim the foregoing as my invention I affix my signature in the

presence of two witnesses, this 19th day of May A. D. 1909.

EDWARD Z. LEWIS.

Witnesses:

TAYLOR E. BROWNE,
CLARENCE E. MEHLHOPE.