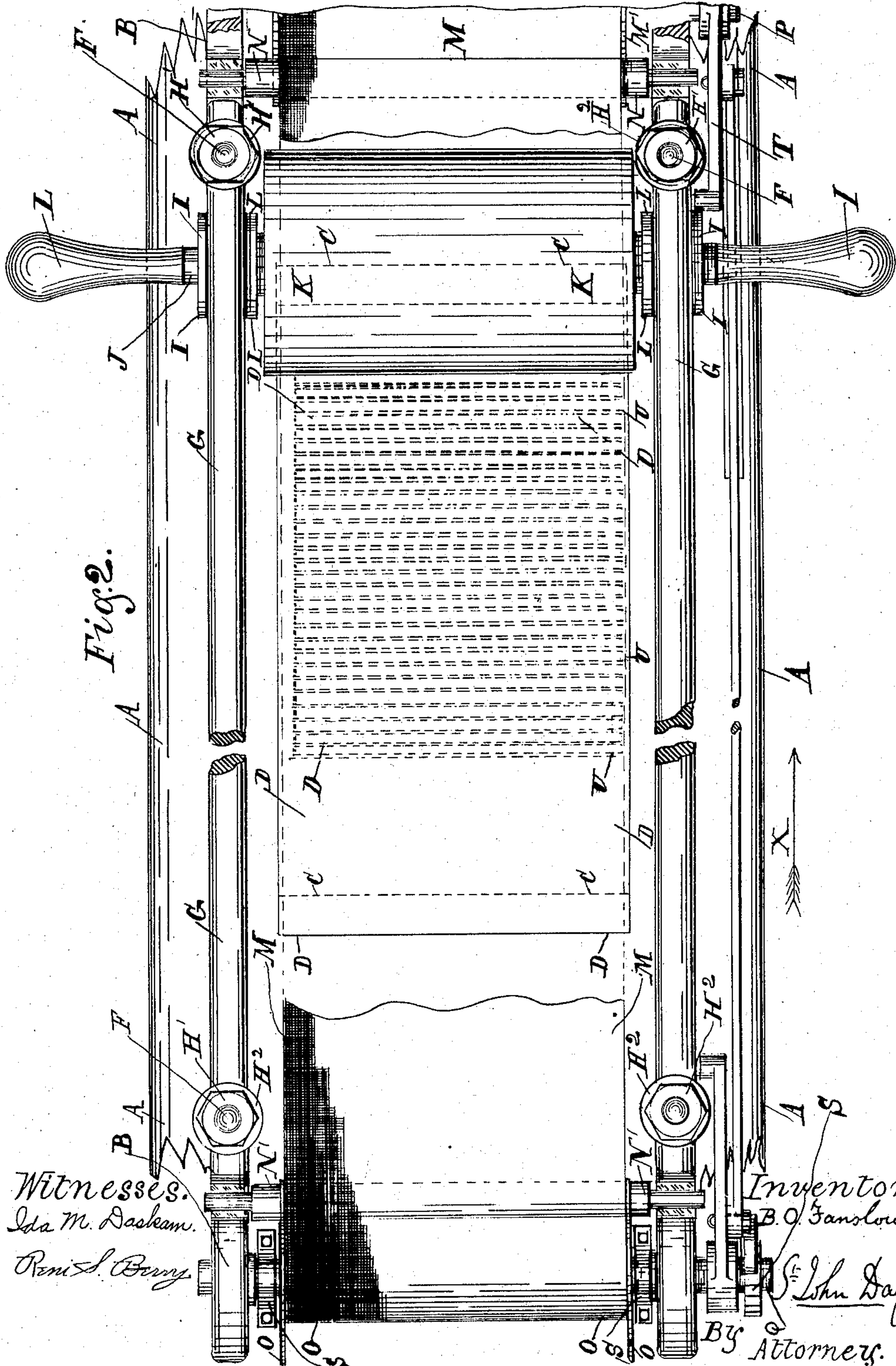


No. 859,442.

PATENTED JULY 9, 1907.

B. O. FANSLOW.
PRINTING MACHINE.
APPLICATION FILED FEB. 14, 1906.

3 SHEETS—SHEET 2.

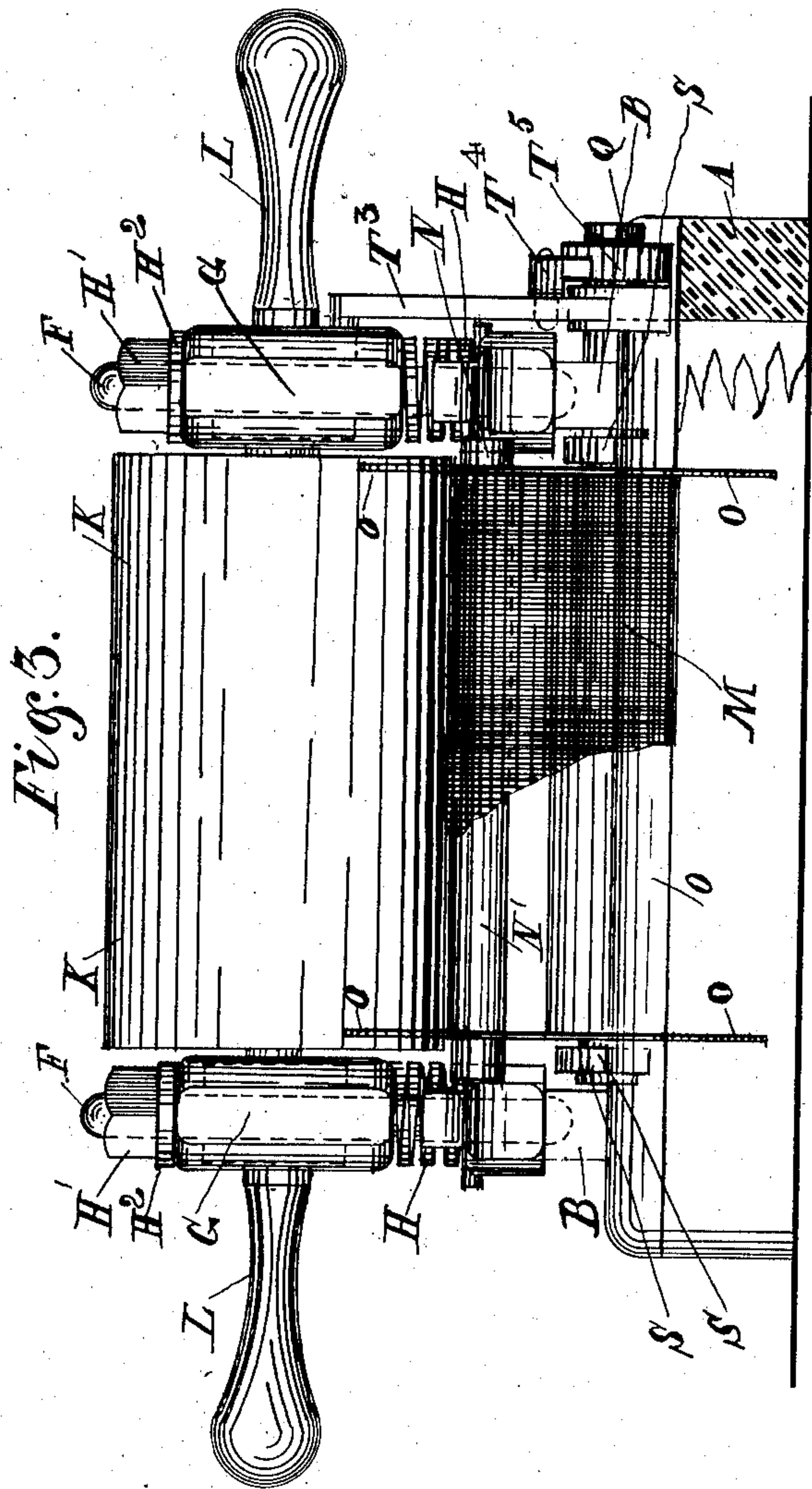


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3 SHEETS—SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

BENJAMIN OTTO FANSLOW, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO WILLIAM HENRY TOWNSEND, OF LOS ANGELES, CALIFORNIA.

PRINTING-MACHINE.

No. 859,442.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed February 14, 1906. Serial No. 301,279.

To all whom it may concern:

Be it known that I, BENJAMIN OTTO FANSLOW, of the city of Los Angeles, in the county of Los Angeles, in the State of California, have invented a new or Improved
5 Printing-Machine, of which the following is a full, clear, and exact description or specification, reference being had to the annexed sheets of drawings and to the letters and figures marked thereon.

My said invention has for its object to produce any
10 required number of copies of letters, bills, accounts or other documents, drawings, portraits, maps and pictorial representations, cheaply and rapidly, and it consists of an apparatus or mechanism as hereinafter described which is easily operated upon an office desk,
15 table, or other convenient support.

Upon the annexed sheet of drawings Figure 1, is a side elevation partly in section, of the mechanism or apparatus constituting my invention. Fig. 2, is a plan of the same corresponding to Fig. 1. Fig. 3, is an
20 end elevation of the said machine.

Upon these drawings the table or platform upon which the machine constituting my invention is carried, is marked A, and upon this table or platform the flat metallic frame B, is mounted as shown. The flat
25 metallic frame B, is formed with a recess therein as shown by the dotted line C, C, in Figs. 1, 2, and 3. In this recess the type holder D, is carried. The face of the type projects above the level of the type holder D, as shown by the dotted line E, E, Fig. 1. Towards the
30 end of the flat framing B, B, vertical studs F, are fixed preferably by being screwed thereinto. Upon these studs the guides G, are carried; there being a hole in the end of each of the guides G, G, which correspond with the position of the studs F, F. The guides G, G,
35 are parallel with the face of the type E, E, for the greater part of their length, and to insure the guides G, G, being elastically carried upon the studs F, F, and also capable of fine adjustment of position a spring H, is placed around each stud F, F, as shown, and a screw
40 nut and washer H', H', respectively is passed over the screwed upper end of each stud F. By tightening the nuts H', the springs H, H, are compressed and adjusted to any required extent to maintain the guides G, G, parallel with the printing surface of the type. In each
45 of the pair of guides G, G, a slide-block I, is carried so as to be capable of sliding backwards and forwards in each of the guides G, G, each slide-block I, has a cylindrical hole therein which constitutes the bearing for the axle J, of the impression roller K, and upon the
50 ends of the axles are the handles L, which the operator lays hold of by his hands to operate the machine by pushing the roller K, backwards and forwards. The printing ribbon indicated in Fig. 1, by the line M, is carried upon the ribbon spool M', and it passes from
55 off the spool M', over the supporting roller N, and

thence beneath the printing roller K, and thence stretching across or over the face of the type E, passing thence over the other carrying roller N', on to the ribbon winding spool O, at the opposite end of the machine. The carrying rollers N, and N', are supported
60 by end axles in bearings at each end of the framing B, as shown, and the spools M', and O, are carried upon two axles P, and Q, respectively, which again are fitted into bearing blocks R, and S, fastened upon the table or platform A. Upon the axle P, of the spool
65 M', there is carried so as to be capable of slight angular or rotatable movement upon the said axle P, the lever T, having a short lever T', projecting from its under part.

In the act of printing, as the attendant pushes or
70 pulls upon the handles L, L, accordingly as he moves the printing roller K, from or towards either end of the mechanical device constituting my invention, and supposing him to be moving the same in the direction of the arrow marked X, in Figs. 1, and 2, of the draw-
75 ings, it results that the slide block I, comes in contact with the upper end of the lever T, when the lever T, is in the position shown in dotted lines in Fig. 1, and that the lever T, continues to be moved around upon or
80 with the axle P, upon which it is carried until the slide blocks I, have attained their final position in their movement, that is to say, have arrived at or near the end of the guides G. The contact of the edge of one of the slide blocks I, forces the lever T, into the position
85 shown in full lines at Fig. 1, and at the same time forces the lever T', into the position also shown in full lines in Fig. 1. To the lever T', there is pivoted one end of the connecting rod T², the opposite end of which rod T², is pivoted to the lever T³, carried upon the axle
90 Q, and so as to be capable of rotating through a small angle thereon. The lever T³, is in the position shown in the dotted lines in Fig. 1, when the slide block I, lever T, and the lever T', are in the positions shown in dotted lines in Fig. 1, then the lever T³, is pushed from
95 its position shown in dotted lines into the position shown in full lines in Fig. 1. Upon the lever T³, there is carried the pawl T⁴, which engages with the teeth of the ratchet pinion T⁵, so that when the sliding block I, has reached the position shown in full lines in Fig. 1, and has moved the levers T, and T', from their position
100 shown in dotted lines, the movement of the lever T', is communicated by the connecting rod T², to the lever T³, which causes the pawl T⁴, to move round the shaft Q, upon which the ratchet pinion T⁵, is carried, and this movement of the ratchet pinion T⁵, which is fas-
105 tened firmly on the axle Q, causes the spool O, to rotate through a short distance and wind to an extent corresponding to that distance, a portion of the ribbon M, from off the spool M', and on to the spool O. When the slide block I, is at the opposite end of the guides G, as
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shown in dotted lines in Fig. 1, then the opposite contacting face of the slide block I, makes contact with the lever T³, when the lever T³, is in the position shown in dotted lines at the left hand end of Fig. 1, and moves the lever T³, to the position also shown at the left hand end in full lines. This movement of the lever T³, from the dotted to the full position, causes the pawl T⁴, to again move through the slight angle of rotation, and to again wind off the corresponding length of the printing ribbon M, from the spool M', on to the spool O. By means of this part of the mechanism it is obvious that by the winding off of a short length of the printing ribbon from the spool M', on to the spool O, that a fresh portion of printing ribbon is presented to the type or printing surface even at every stroke or horizontal printing movement of the roller K. If, however, it is desired that the presentation of a fresh surface of the printing ribbon be presented to the type or other printing surface at every other stroke of the roller K, instead of at every stroke thereof then it is necessary for one only of the levers T, or T³, to be operated, in which case they may be disconnected by taking off the connecting rod T². In operating the machine in this manner the printing ribbon would be moved at every alternate stroke or movement of the printing roller K, instead of at every stroke, at which a fresh surface of the printing ribbon would be presented to the type or other printing surface at every alternating stroke.

It is to be understood that used for holding the types for printing within my new or improved machine a printers galley may be substituted by being placed in the recess which the type holder occupies, such printer's galley, however, constituting no part of the present invention. It is also to be understood that in place of operating the cylindrical roller for pressing the paper to be printed upon the printing ribbon by the hands of an operator, the said cylindrical roller may be moved backwards and forwards in its slides or equivalent guides by means of one or more toothed pinions geared into toothed racks to which the necessary backward and forward movement is imparted by the operator turning a handle as is well understood in operating rollers of various kinds.

Having now described the nature of my said invention I desire to observe in conclusion that what I consider to be novel and original, and therefore claim as the invention to be secured to me by Letters Patent, is as follows:

1. In a printing machine for the reproduction of copies of letters and other documents, drawings and their analogues, the combination consisting of a typeholder, a frame for holding said typeholder and type, a type printing ribbon

situated between the printing surface to be reproduced, and the impression roller, the impression roller, the printing or type surface, the printing ribbon carried upon a spool at one end of the machine or device, passed between the surface to be reproduced and the impression roller, said printing ribbon having its opposite end connected with another spool at the opposite end of the machine and upon which spool the ribbon is wound in successive step like progression, the spools, the ratchet gear, operated alternately from opposite ends of the machine by contact of the slide blocks carrying the impression roller with the levers of the ratchet gear, the slide blocks, the guides wherein said slide blocks operate, the handles for operating the impression roller, all operating substantially as hereinbefore described.

2. In a printing machine for reproducing numerous copies of letters and other documents, drawings and their analogues, the mechanism for operating the spools wherein the printing ribbon is carried, consisting of levers carried upon the axles of the ribbon spools, the pawl on one of said levers engaging with the ratchet wheel on the axis of one of the ribbon spools, the ratchet wheel, the link connecting the lever on the axis of one of the spools with the lever on the axis of the other spool, said levers and mechanism being operated by contact of the sliding blocks constituting the bearings of the impression roller, the sliding blocks making contact with one of the said levers alternately at every operating stroke of the machine, substantially as herein set forth.

3. A reproducing machine consisting of a table or platform upon which the said machine is mounted, said machine consisting of a frame upon and in which all the other parts thereof are carried, said frame having a recess in the central part thereof wherein the printing surface is carried, the parallel guides supported on said frame and of sufficient length to allow of the operation of the impression roller, the impression roller, the studs and springs with screw nuts for elastically carrying and for adjusting the guides for the operation of the slide blocks and impression roller, the handle at each end of the axle of the impression roller for enabling the attendant to move said impression roller, the spools on one of which the printing ribbon is wound and the other of which it is wound upon as the printing or reproducing operations proceed, the carrier rollers at the ends of the machine over which the printing ribbon passes and by which the printing ribbon is maintained at practically constant level, the printing ribbon, the slide blocks in which the axis of the impression roller is carried, the upwardly inclined ends of the guides, the levers carried upon the shafts or axles of the ribbon spools, the pivots in the said levers, the connecting rod carried upon said pivots and coupling said levers, the ratchet wheel and the pawl whereby the winding spool is operated step by step for winding on the printing ribbon, all operating in the manner and for the purposes substantially as herein set forth.

In testimony whereof, I have hereunto set my hand and seal at Los Angeles aforesaid, in the presence of two witnesses.

BENJAMIN OTTO FANSLOW.

Witnesses:

IDA M. DASKAN,
J. D. CORY.