No. 702,783. Patented June 17, 1902.

P. T. DODGE.

LINOTYPE MACHINE.

(Application filed Mar. 24, 1902.)

(No Model.)

Fig. 1.

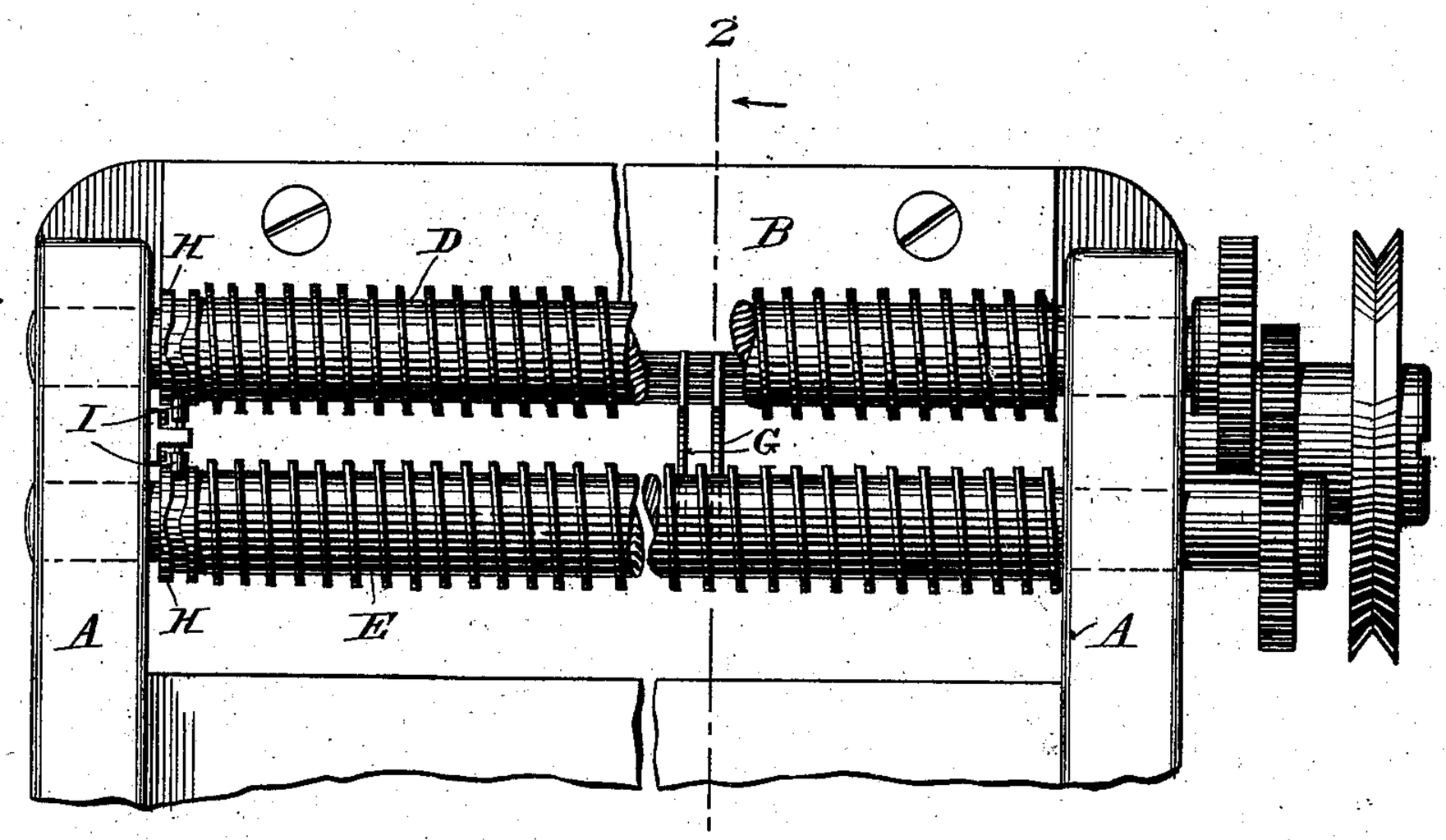


Fig. 3.

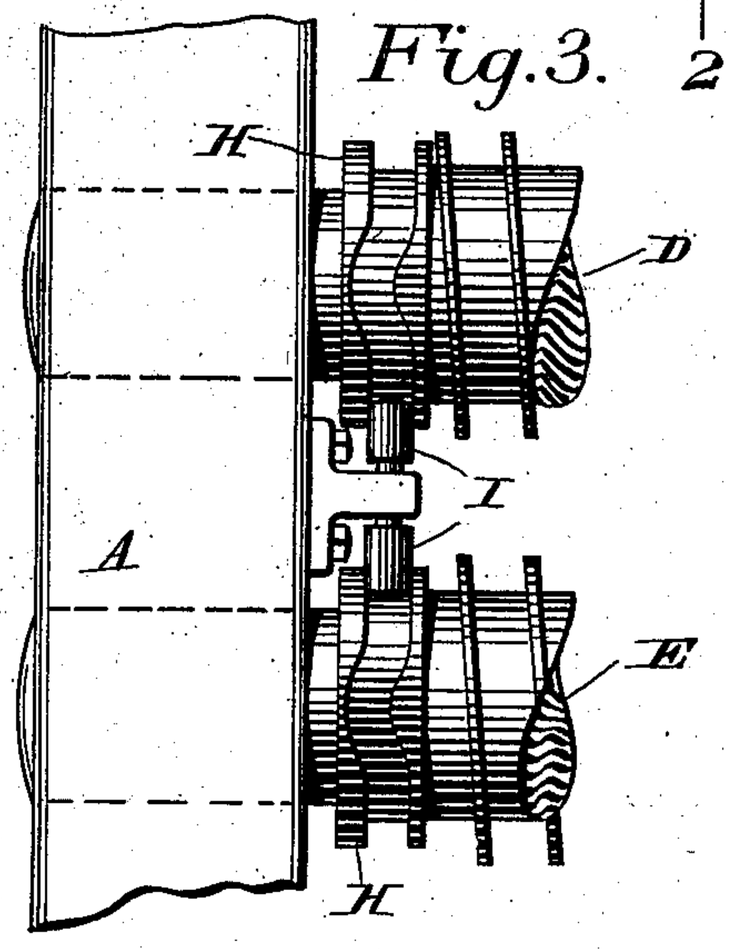
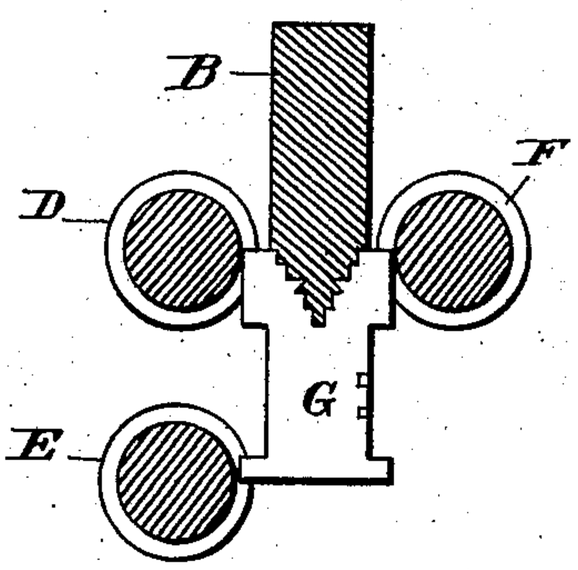


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

PHILIP T. DODGE, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 702,783, dated June 17, 1902.

Application filed March 24, 1902. Serial No. 99,706. (No model.)

To all whom it may concern:

Be it known that I, PHILIP T. DODGE, of Washington, District of Columbia, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

This invention relates to an improvement in matrix-distributing mechanisms, such as are used in the commercial linotype-machines of the present day. In these machines the distributer, as shown in United States Patent No. 436,531, consists of a horizontal bar having its lower edge of a V-section provided on the sides with a series of longitudinal teeth adapted to enter corresponding toothed notches in the upper ends of the matrices, which are thereby held in suspension as they are carried lengthwise of the bar. Matrices bearing different characters differ from each other as to form, and the teeth of the distributer are varied to correspond at different points in its length, so that each matrix is held in suspension until it arrives at a point where it is to enter the magazine, when for the first time it disengages from all the teeth of the bar, so that it may fall therefrom. In the commercial machine the feed-screws are driven continuously and the matrices are advanced without interruption along the distributer-bar. The length of each group or section of teeth on the bar is about a quarter of an inch, and each matrix must disengage and escape from the bar while traveling this distance. In practice it is found that when the machine is running at high speed there is sometimes a tendency on the part of the matrices to overcarry, or, in other words, to pass beyond the point at which they should escape, and to reëngage the bar, which results in their being carried to an improper point in the magazine or in their being carried entirely through the machine.

The object of my invention is to overcome this difficulty by giving a pause or dwell to the matrices at the point of delivery. To this end I engage the feed-screws to reciprocate endwise, moving them backward once in each revolution at a rate corresponding to the forward pitch or trend of the threads, so that for the moment they cease to move the matrices forward. The parts are so timed and arranged that this action occurs while the matrices are in positions between the ends of the teeth, or, in other words, in positions to escape from the distributer-bar. The effect is to permit each matrix to cease its forward travel when it arrives at the proper point to be released, so that it will have ample time to disengage from the bar below the following matrices before the screw again acts to effect the advance. It will be observed that by the arrangement described I am enabled to impart an intermitting advance to the matrices by the employment of continuously-revolving screws.

In the accompanying drawings I have shown only such parts of a linotype-machine as are necessary to an understanding of my invention.

Figure 1 represents a side elevation of a distributer mechanism with my improvement embodied therein. Fig. 2 is a cross-section of the same on the line 2 2. Fig. 3 is a side elevation similar to Fig. 1, showing one end of the screws on a larger scale.

Referring to the drawings, A represents the rigid frame, B the distributer-bar, secured to the frame, and D, E, and F the three parallel feed-screws, mounted in the frame and in such relation to the distributer-bar that their threads will engage the edges of the matrices G, suspended therefrom.

The foregoing parts are of ordinary construction and arrangement except that the screws instead of being mounted as usual are made with longer journals and left free to slide in an axial direction. Each screw is provided near one end with a concentric cam H, having a circumferential groove therein to receive a fixed stud or roller I, so that at each revolution of the screw it is moved endwise to and fro. The groove of the cam is of such form that when the matrices are in position for discharge the cam effects a backward movement of the screw equal or substantially equal to the forward pitch of the thread thereon, the effect being to neutralize the action which the thread would otherwise have on the matrix, so that for the moment the matrix is permitted to stand still. As the rotation of the screw continues it is again moved forward bodily to its original position,

so that it will reëngage the matrices which are not discharged and continue their advance along the bar. During a portion of the revolution the matrices will advance, not only by reason of the pitch of the threads, but also by reason of the entire screw being advanced bodily. In this way the matrices while in motion will be advanced more rapidly than they are by the ordinary screw running at the customary speed.

By means of my improvement I am enabled not only to insure the delivery of the matrices from a distributer-bar having teeth of the ordinary length, but by reason of the dwell of the matrices at the points of delivery I am permitted to reduce the length of the teeth of the distributer-bar with safety, and thus to distribute a greater number of matrices by a bar of given length.

While my rotating and reciprocating feed-screws are intended more particularly for use with a distributer-bar of the specific form shown, it is manifest that they may be used with equal advantage for feeding matrices or type in any other form of distributer.

While I recommend the employment of the cams herein shown as a simple and satisfactory means for reciprocating the screws longitudinally, it will of course be understood that they are not of the essence of my invention, but that any equivalent means may be employed for effecting said movement.

What I claim as my invention is—

1. In a distributing mechanism, a feed-screw and means for imparting thereto an axial reciprocation and a continuous rotation.

2. A feed-screw and means for imparting thereto an axial reciprocation and a rotary motion in one direction.

3. In a distributing mechanism, the combination of a toothed distributer-bar to hold the matrices in suspension, a plurality of feed-screws adjacent thereto, and means for rotating said screws and moving them axially.

4. In a distributer in combination with a distributer-bar, rotary feed-screws lying parallel therewith, cams carried by said screws to effect their longitudinal movement, and fixed studs or rollers engaging said cams.

In testimony whereof I hereunto set my hand, this 20th day of March, 1902, in the presence of two attesting witnesses.

P. T. DODGE.

Witnesses:
JOHN F. GEORGE,
M. A. DRIFFILL.