

No. 697,456.

Patented Apr. 15, 1902.

P. T. DODGE.
LINOTYPE MACHINE.

(Application filed Feb. 17, 1902.)

(No Model.)

Fig. 1.

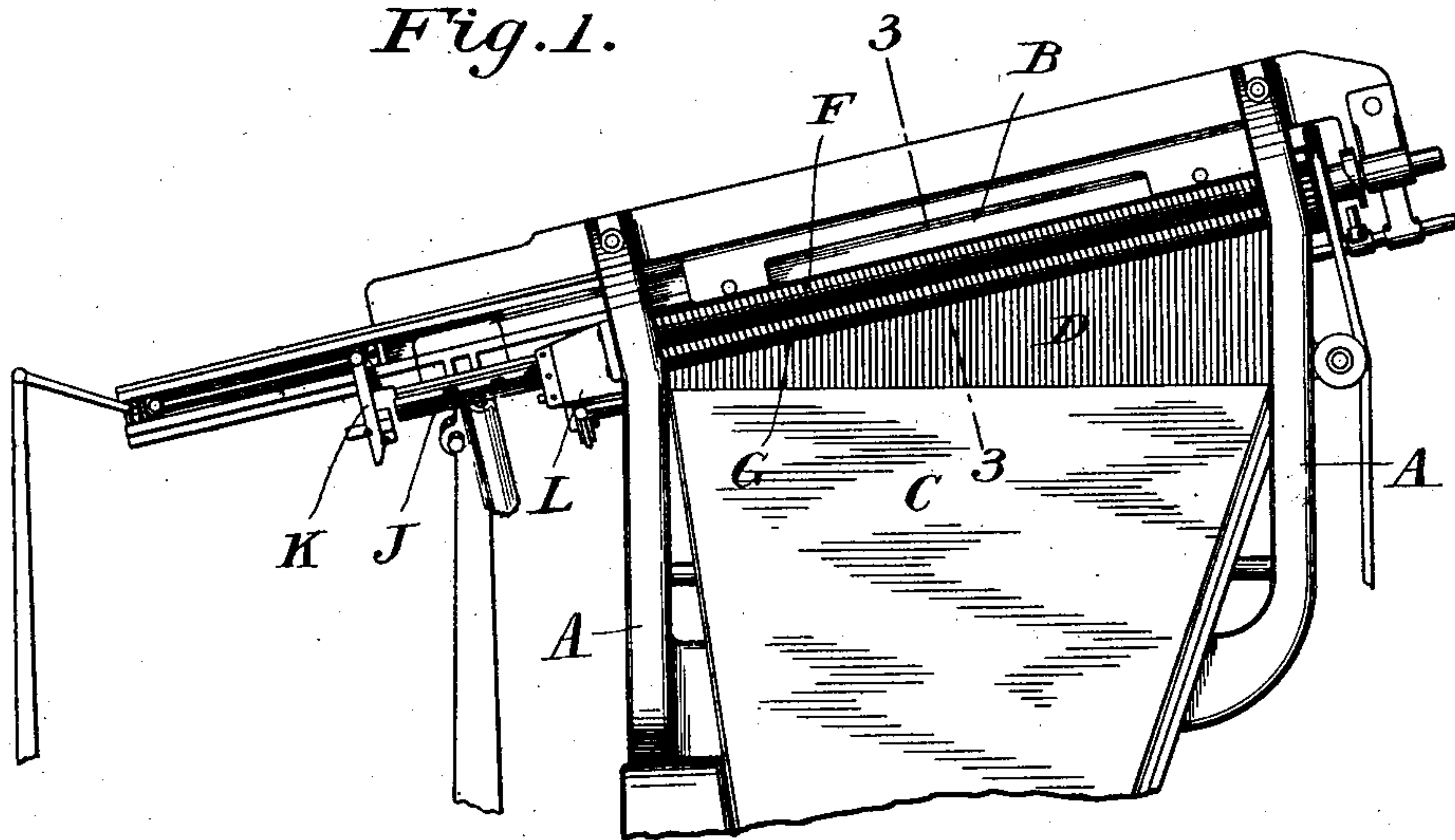


Fig. 2.

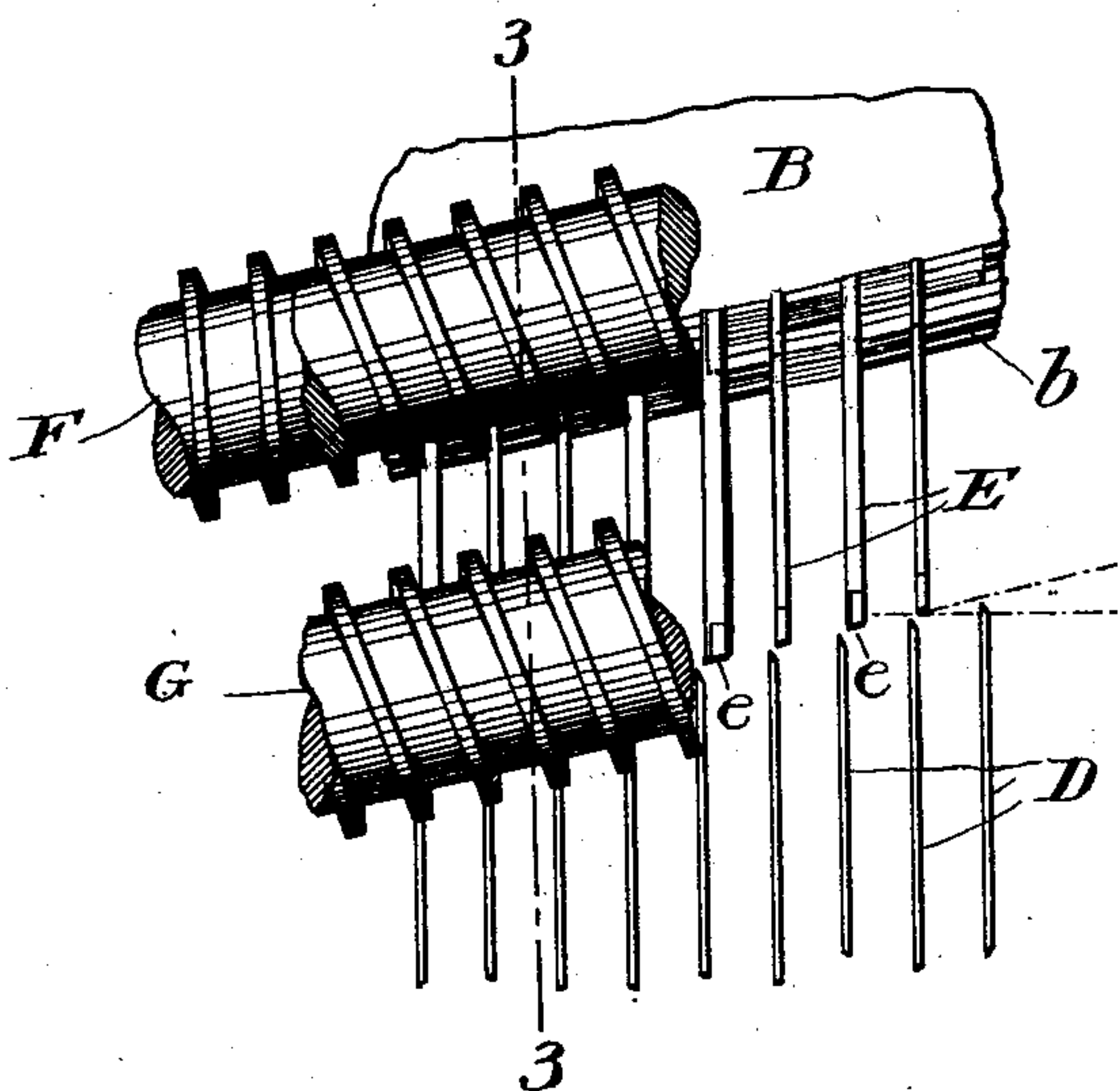


Fig. 3.

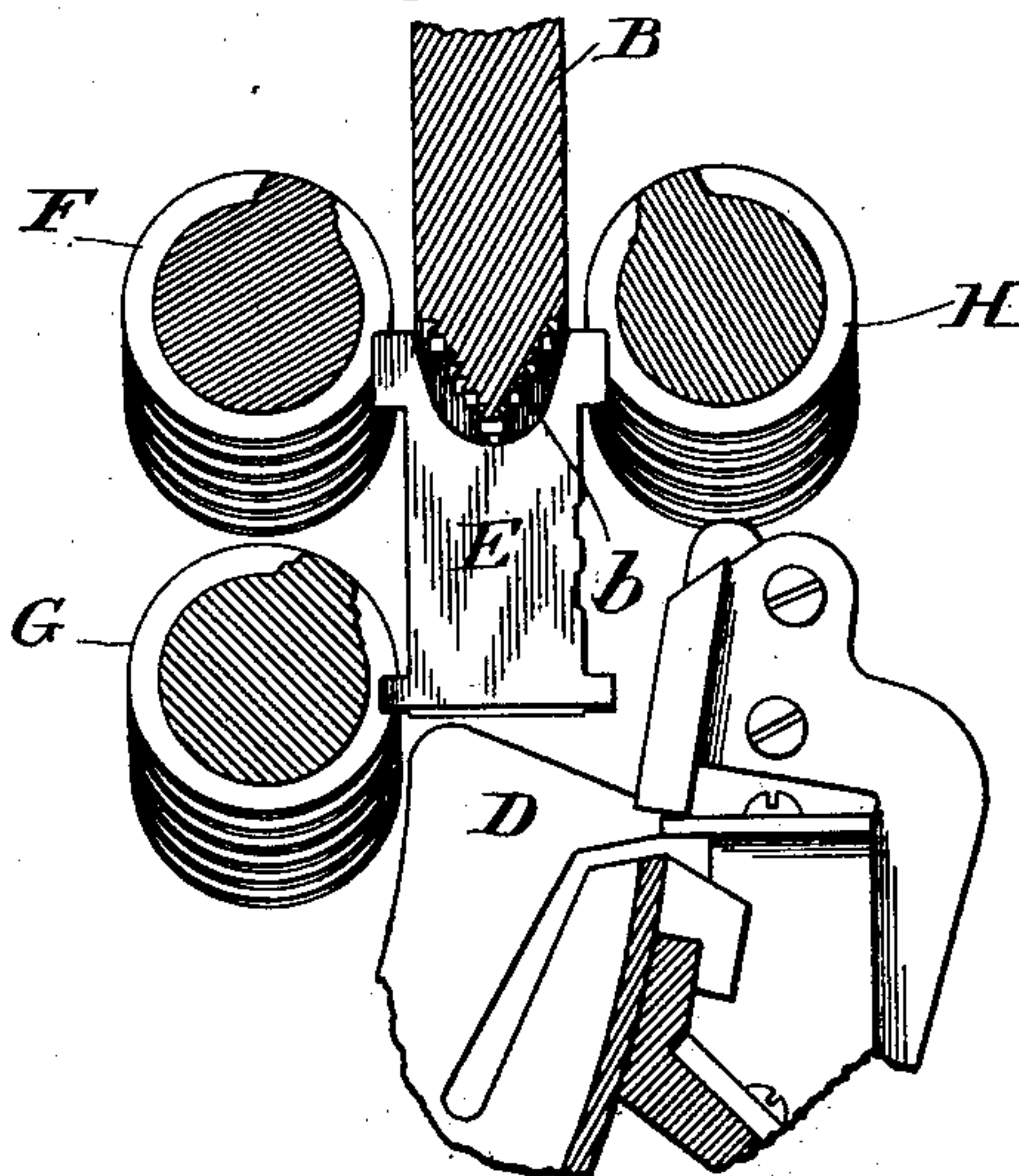
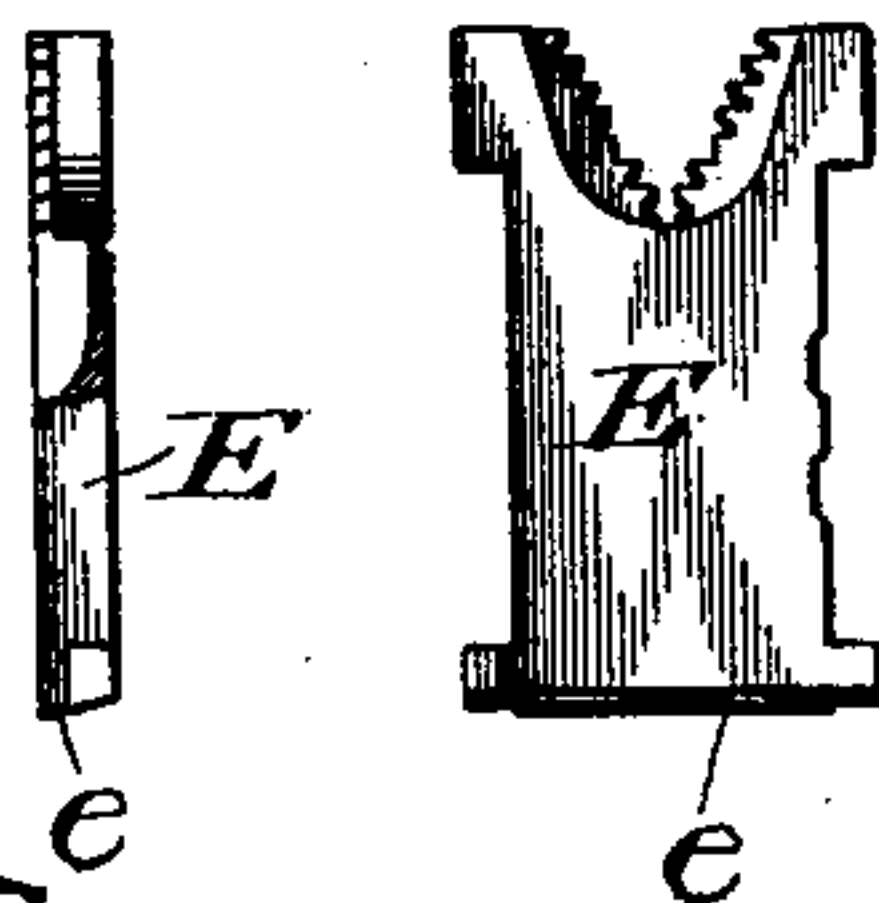


Fig. 5.

Fig. 4.



Witnesses.

M. R. Kamm
J. S. Benson

Inventor.

P. T. Dodge

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. 697,456, dated April 15, 1902.

Application filed February 17, 1902. Serial No. 94,456. (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
5 Linotype-Machines, of which the following is a specification.

This invention relates to a matrix-distributing mechanism of the type represented in United States Patents Nos. 347,629 and
10 557,000. In the Mergenthaler contrivance a fixed horizontal distributor-bar, having a V-shaped lower edge, is provided thereon with a series of longitudinal teeth, varied in number and relative arrangement at different
15 points in the length of the bar. The matrices, having their upper ends notched to straddle the bar and toothed to engage its teeth, are differentiated as to the number and arrangement of their teeth, so that as they
20 are carried along the bar they are held in suspension therefrom until they reach their respective points of delivery, at which points, for the first time in their travel, their teeth are all released by the teeth of the bar, so that the
25 matrices may fall into the magazine below.

In the machine of commerce the matrices are advanced along the horizontal bar by screws lying parallel therewith and engaging the edges of the matrices. As the matrices
30 hang vertically while the threads of the screws stand at an inclination, it follows that the screws bear only at points on the matrices. Owing to this fact and to the horizontal position of the bar, it sometimes happens when
35 the machine is driven at high speed that the matrices will swing or vibrate to and fro in the line of travel, that their lower ends will fall short of or carry past the point at which they should enter the magazine, and that the
40 upper ends of the matrices will sometimes be carried forward by momentum past the proper point of disengagement.

The object of my invention is to overcome this difficulty by presenting a slight resistance to the advance of the matrices by causing the screw-threads to act in lines parallel with the faces of the matrices. To this end I mount the distributor-bar and the feed-screws with an inclination upward in the direction in which the matrices travel, and I
50 give the second elevator or lifting devices by

which the lines of matrices are presented for delivery to the distributor a similar inclination. I also prefer to bevel the lower ends of the matrices, giving them an inclination
55 similar to that of the distributor-bar, so that their lower ends may travel very closely over the partitions in the magazine in order to enter quickly between them when released from the bar.

I have shown my improvements in the form adapted for application to the Mergenthaler machine of commerce, and with the exception of the details illustrated in the drawings the machine may be of the usual or any improved construction.

Figure 1 is a front elevation of the upper end of the magazine, the distributor thereover, and the adjacent parts. Fig. 2 is a side elevation of a portion of the distributor-bar,
60 the adjacent screws, and the mouth of the magazine-entrance, with a series of matrices in the course of distribution. Fig. 3 is a cross-section on the correspondingly-numbered line of the preceding figures. Fig. 4
75 represents an edge view of one of the matrices, the upper end shown in section; and Fig. 5, a face view of the same.

Referring to the drawings, A represents the stationary frame of the machine, and B the
80 stationary distributor-bar fastened thereto, with the delivery end at a higher elevation than the receiving end.

C represents the inclined magazine, in which the matrices are received and stored.

D represents upright entrance channels or guides extending from the upper end of the magazine to a point immediately under the distributor-bar in order to receive the matrices falling from the bar and guide them
90 downward into the upper end of the magazine.

The distributor-bar is constructed, as shown in Figs. 2 and 3, of a V form in cross-section at the lower edge and is provided on the two
95 sides with longitudinal distributor-teeth *b*, varied in form and arrangement in the manner described in the Mergenthaler Patent No. 347,629.

E represents the matrices, each having in
100 the upper end a V-shaped notch with teeth in the two walls thereof, these teeth differing

on the matrices bearing different characters and being so arranged with reference to those on the distributor-bar that a matrix slipped on the lower end of the bar astride of its lower edge will engage its teeth with those of the bar, so that as the matrix is pushed forward along the bar it will be held in suspension until it arrives opposite the point at which it should fall into the magazine, when for the first time its teeth are all released by those of the bar. The form and arrangement of the teeth and the action of the bar are essentially the same as in the Mergenthaler patent, to which reference may be made for further description thereof.

F, G, and H represent three feed-screws, lying parallel with the lower edge of the distributor-bar and adjacent thereto, their ends being mounted to turn in bearings in the frame. The upper screws engage the ears at the upper ends of the matrices, so that when the screws are turned in unison they force the matrices upward along the bar toward the higher end. The lower screw G, acting on the lower end of the matrices, is intended mainly to prevent them from vibrating or swinging in such manner as to disengage short of the proper delivery.

It will be observed that the matrices hanging in vertical lines stand at an angle to the lower edge of the distributor-bar, and that as the axes of the screws are also inclined in relation to the matrices the threads on their inner sides, which engage with the matrices, stand in practically vertical lines, so that the threads have a broader or more extensive bearing on the matrices than under the Mergenthaler arrangement. This reduces the wear on the matrices and by reason of the longer bearing tends to reduce the vibration of the matrices as they are advanced.

The three screws will be geared together and driven by a pulley in the usual manner, as shown in the drawings, or may be driven in any other suitable manner. When the matrices are released, it is desirable that their lower ends should enter the entrance-channels D as quickly as possible, or, in other words, with the shortest possible travel after they are released. To this end I propose to bevel the lower ends of the matrices transversely, as shown at *e*, Figs. 2, 4, and 5, this inclination corresponding with that of the distributor-bar, so that the lower ends of the advancing matrices may be carried very closely over the upper ends of the channels D.

The composed line of matrices is lifted from the mechanism below to the distributor, as

usual, by the second elevator J, which is toothed to engage the upper ends of the matrices and arranged to swing upward and downward. Instead of having this elevator arranged horizontally I give it an inclination corresponding to that of the distributor-bar, as shown in Fig. 1, so that the pusher-slide K, by which the matrices are delivered toward the distributor-bar, is compelled to force the matrix-line slightly upward. This inclination tends to prevent the matrices from racing or slipping ahead prematurely.

Between the elevator J and the distributor-bar I employ the usual lifting device L, by which the matrices are separated one at a time from the composed line and presented to the end of the distributor-bar. This forms no part of my invention and is of the ordinary construction.

It will be observed that the essence of my invention lies in arranging the distributing mechanism for matrices or the like with an upward inclination in the direction in which the matrices travel, so that it is necessary to force them forward against their inclination to slide downward.

Having described my invention, what I claim is—

1. A distributing mechanism having an upward inclination in the direction in which the matrices travel.
2. The distributor-bar inclined upward toward the delivery end, in combination with means for carrying the matrices upward along said bar.
3. The combination of the inclined distributor-bar and adjacent feed-screws, correspondingly inclined.
4. The inclined distributor-bar and the inclined elevator, in combination with means for carrying the matrices upward along the elevator toward the distributor.
5. In a linotype-machine, a distributor inclined upward in the direction of matrix travel, in combination with matrix-receiving channels thereunder and matrices beveled at the lower end as described.
6. The inclined distributor-bar, in combination with an adjacent feed-screw, having its threads vertically disposed on the side adjacent to the bar.

In testimony whereof I have hereunto set my hand, this 8th day of February, 1902, in the presence of two attesting witnesses.

P. T. DODGE.

Witnesses:

JOHN F. GEORGE,
M. A. DRIFFILL.