No. 779,969. PATENTED JAN. 10, 1905.

J. R. ROGERS.

LINOTYPE MACHINE.

APPLICATION FILED OCT. 26, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

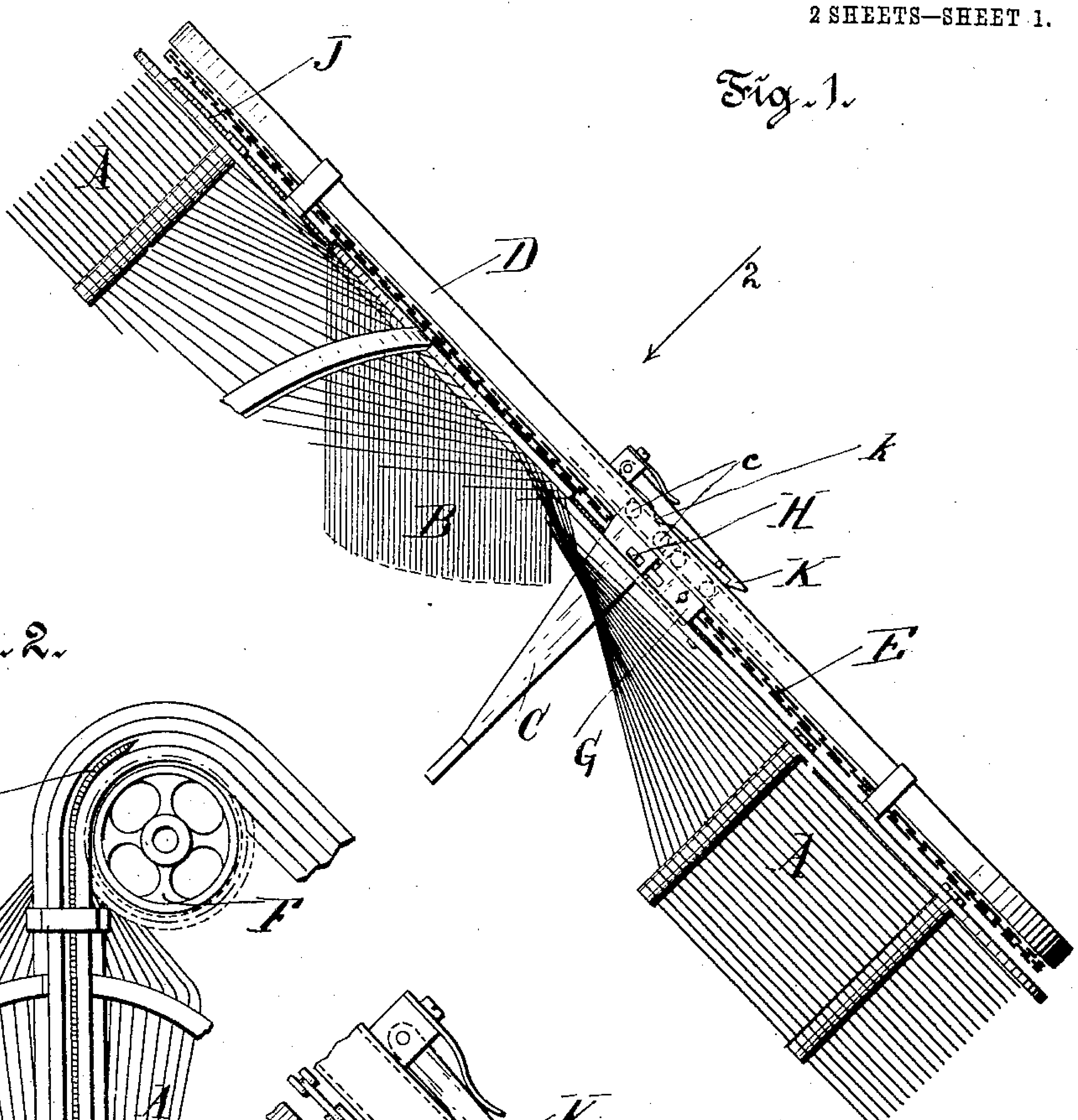


Fig. 2.

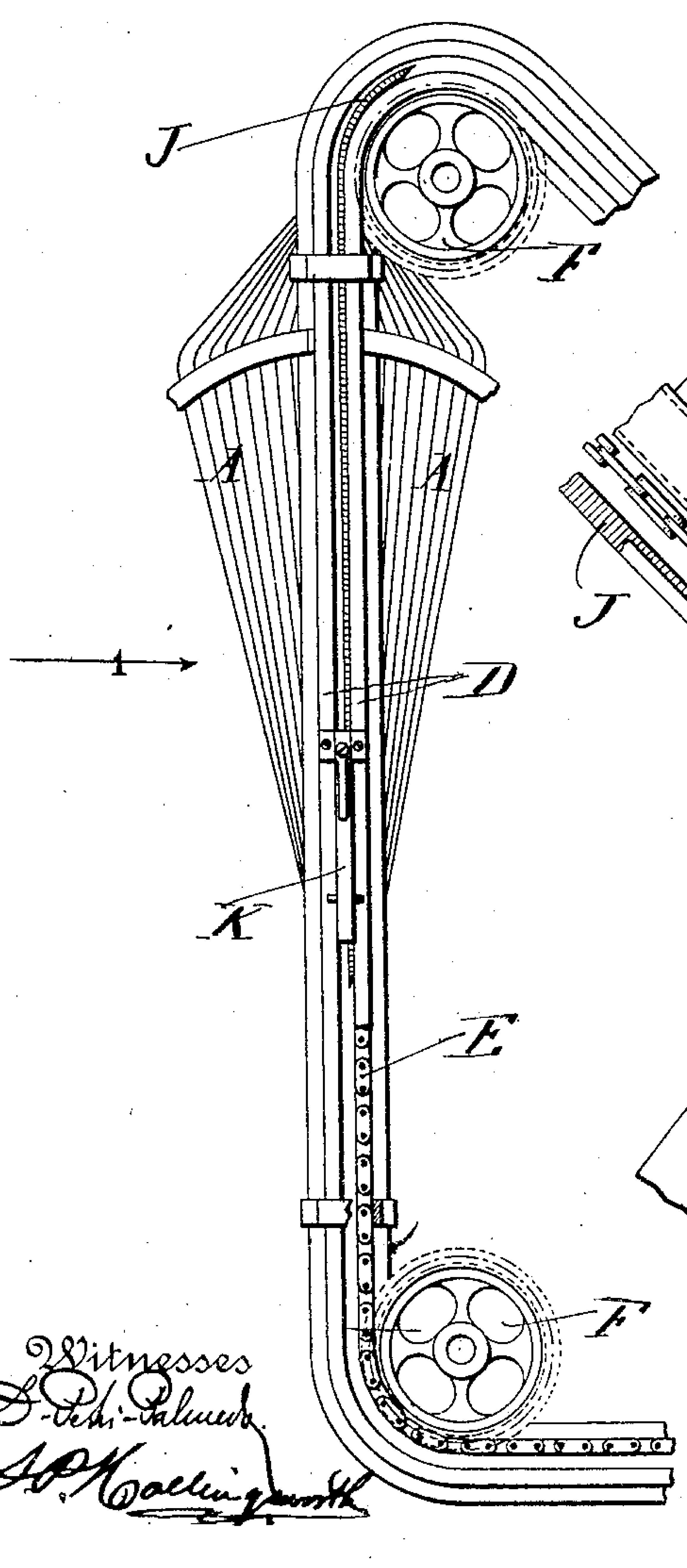
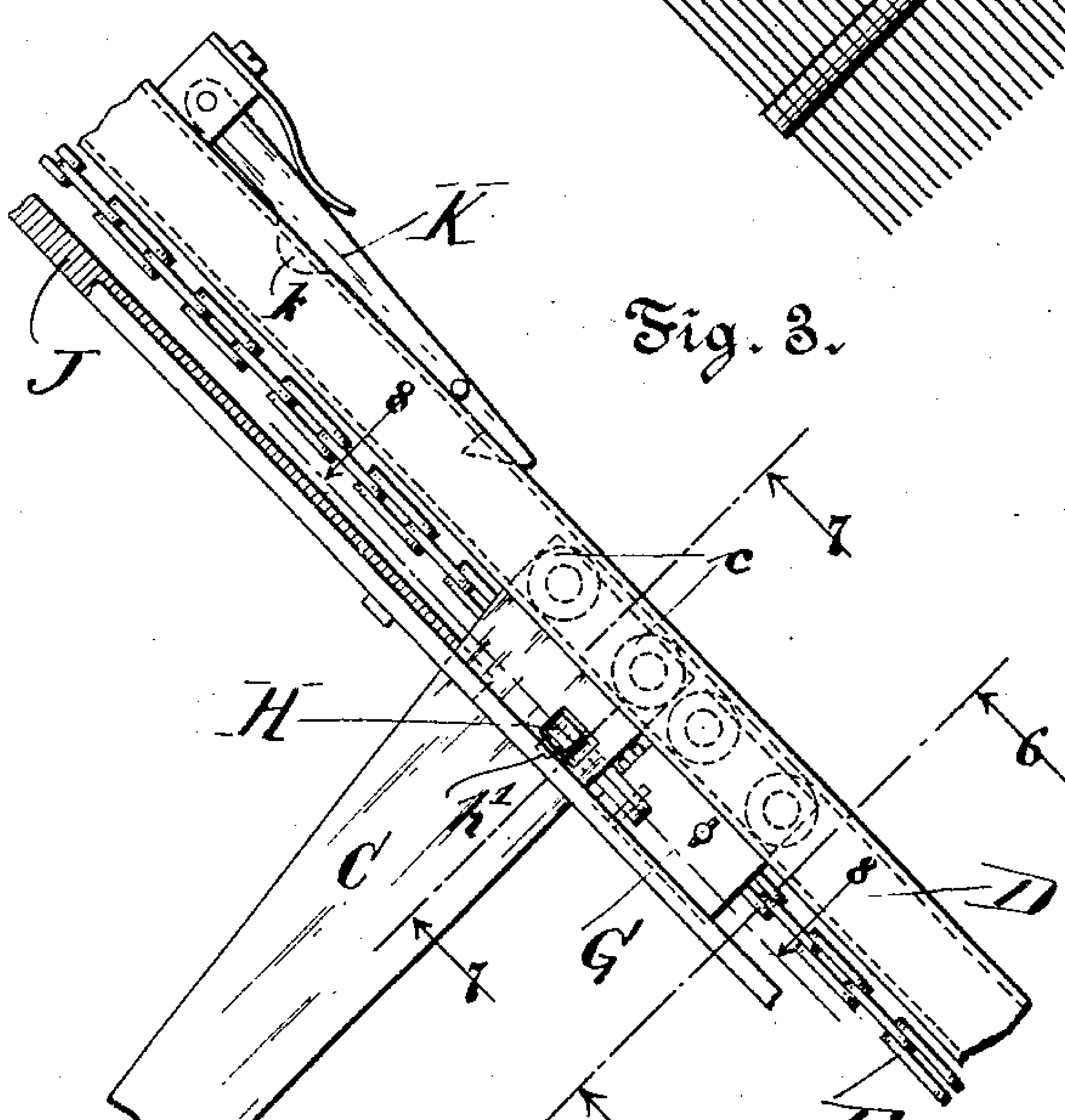


Fig. 3.



Witnesses

Inventor

J. R. Rogers

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2 SHEETS—SHEET 2.

Fig. 4.

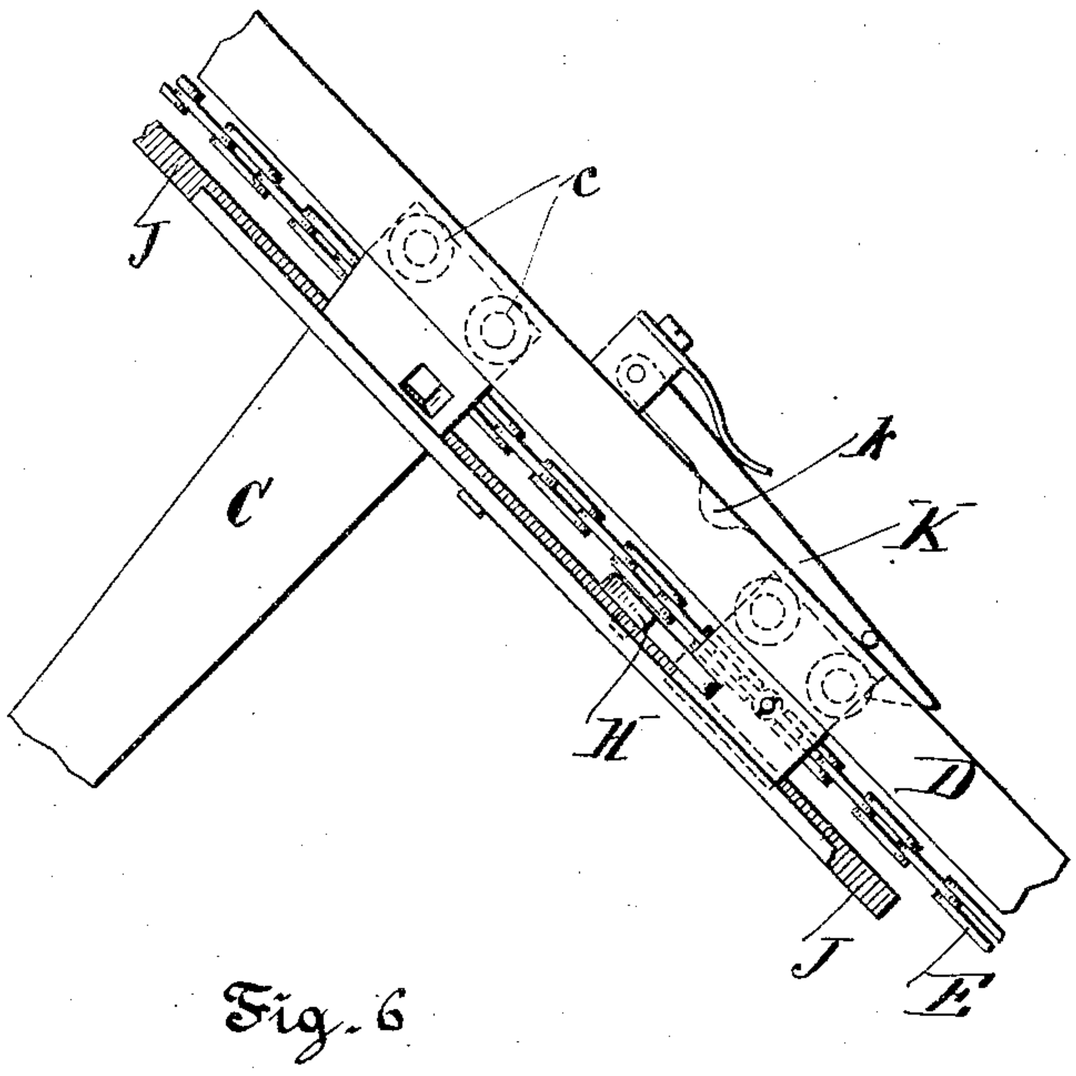


Fig. 5.

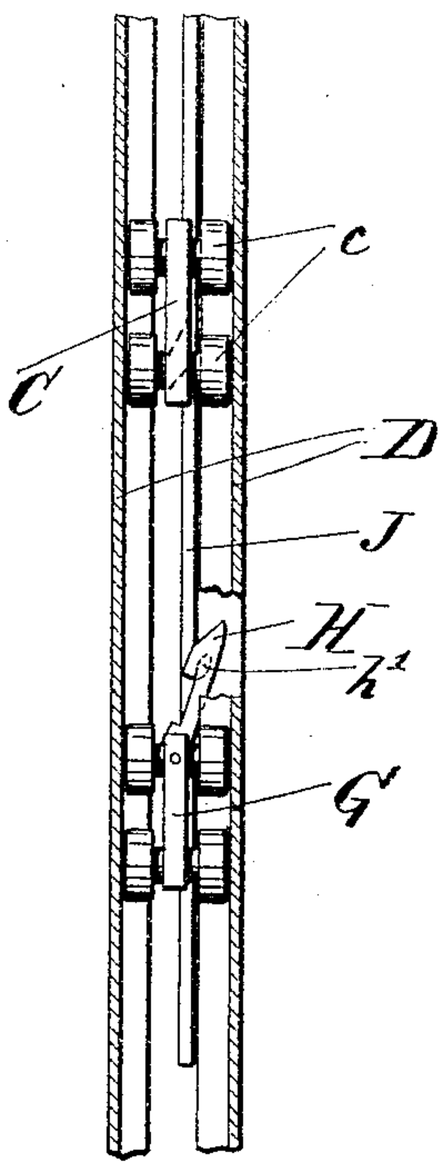


Fig. 6

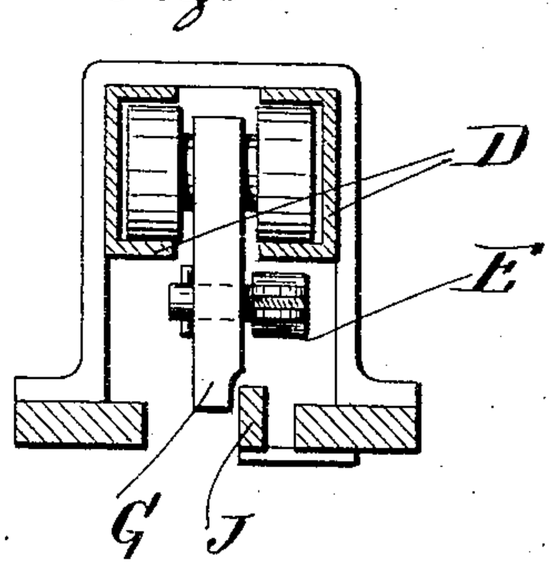


Fig. 7.

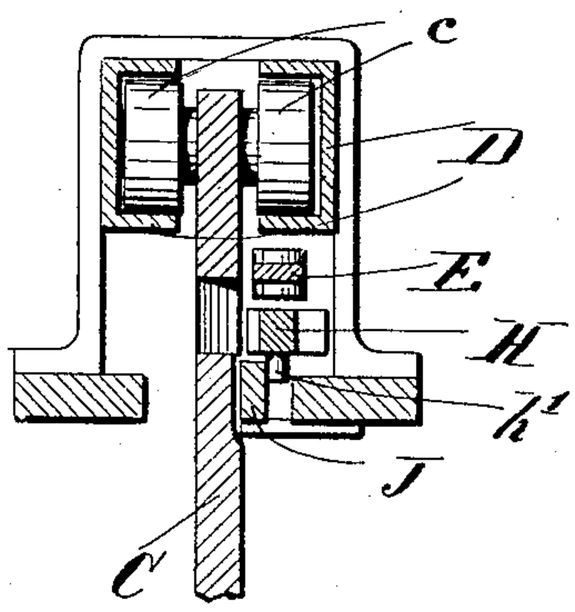
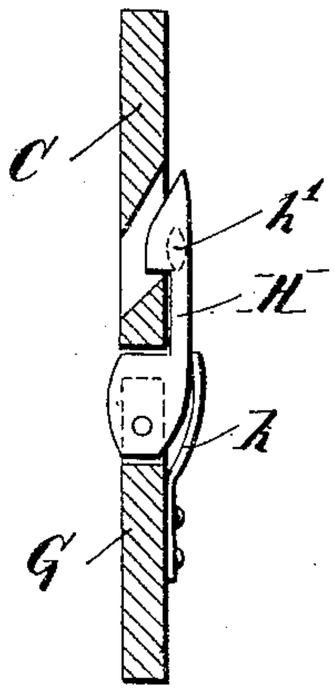


Fig. 8.



Witnesses
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By his Attorney
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No. 779,969. Patented January 10, 1905.

UNITED STATES PATENT OFFICE.

JOHN R. ROGERS, OF BROOKLYN, NEW YORK, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 779,969, dated January 10, 1905.

Application filed October 26, 1904. Serial No. 230,135.

To all whom it may concern:

Be it known that I, JOHN R. ROGERS, of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

This invention has reference to improvements in the machine for which Letters Patent of the United States No. 679,481 were issued to me on the 30th day of July, 1901.

In the machine referred to single-letter matrices are suspended from and arranged to travel around endless inclined guides or wires, one for each letter or character represented in the keyboard. These guides are arranged in converging lines for a portion of their length for the purpose of bringing the selected and released matrices together in line at the composing-point. Beyond this point the guides are continued in parallel lines to the casting mechanism and thence upward to the rear end of the machine, whence they are extended in a forward direction in diverging lines in order to distribute the individual matrices to the groups from which they were released.

In practice it is found that the matrices will occasionally bind or become entangled just as they reach the diverging distributing portions of the guides, and that the carrier-finger, acting forcibly behind them, will cause them to grip the guides, prevent their proper advance, and in some cases endanger the parts.

The aim of my invention is to overcome this difficulty; and to this end it consists, essentially, in mounting the movable finger to travel on a stationary guide and connecting it with the driving-chain by devices which permit its automatic disengagement therefrom at or about the time that it begins to follow the matrices downward. In this manner the finger is set free, so that it descends by gravity and so that it is prevented from acting forcibly behind the matrices.

In the accompanying drawings I have represented my improvement in the form in which it is commercially used, the drawings being limited to those parts of the machine which are necessary to an understanding of the invention.

Figure 1 is a side elevation of the carrier-finger, the actuating and guiding devices, and adjacent parts of the machine, the finger being disengaged from its operating devices. Fig. 2 is a top plan view of the same parts. Figs. 3 and 4 are side elevations, on a larger scale, showing, respectively, the finger engaged with and disengaged from the carrying devices. Fig. 5 is a top plan view of the parts shown in the two preceding figures, the top portion of the channeled guide being broken away to expose the parts therein. Figs. 6 and 7 are cross-sections on the correspondingly-numbered lines of Fig. 3. Fig. 8 is a section on the line 8 8 of Fig. 3.

Referring to the drawings, A represents the inclined endless guides from which the matrices B are suspended.

C represents the traveling finger for carrying the composed lines of matrices from the assembling-point to the mold and thence forward along the guides to the distributing-point. It is provided at the upper end with supporting-rolls *c*.

D is the endless stationary track or guide for the finger C, overlying the matrix-guides and consisting of two parallel channel-bars having their channeled faces opposed in order to admit the rollers *c*, attached to the upper end of the finger, this arrangement permitting the finger to travel easily along the guide.

E is the endless driving-chain carried, as usual, parallel with the guide D around supporting-wheels F, from one of which it receives motion, as heretofore. To this chain is secured a block G, provided, as shown more particularly in Figs. 1, 4, 5, and 8, with a pivoted horizontally-swinging hook or latch H, acted upon by a spring *h* and standing normally in engagement with the finger C, as shown in Figs. 3 and 8, so that as the block G is carried forward by the chain the finger is drawn along behind it by the hook or latch.

At the upper rear end of the machine, where the matrix-guides A begin their divergence for the purpose of distributing the matrices, the latch H is automatically disengaged from the

finger, so that if the finger meets with resistance from the matrices it may stop, while the block G and latch H continue their movement. This disengagement is effected, as shown in Figs. 1 and 2, by a fixed longitudinal bar or rail J, lying parallel with the guide D and extending from the upper end to a point near the forward end, where the line of matrices is composed or assembled. As the chain and its carrier-block move forward a lip *h'* on the end of the latch H rides to the right of the rail J, so that the latch is drawn out of engagement with the finger and held out of engagement until it reaches the assembling-point, when it escapes from the rail J and is permitted to engage the finger if the latter has descended behind the matrix-line in the normal manner.

If the matrices, owing to their entanglement or for other reasons, come to a rest at the upper end of the guide, the finger rests behind them until the matrices are released by the operator and descend to their places, whereupon the finger will travel down the guide until it overtakes the block G and is reengaged by the latch.

In order that the finger may be reëngaged in advance of the composed line and in order to insure the forward delivery of the latter, as usual, I provide on top of the track or guide D a stop hook or latch K, pivoted to rise and fall and having at the forward end a lip adapted to engage over the block G and arrest its forward movement, as shown in Fig. 3, when it is traveling independently of the finger.

The chain-driving wheel receives motion, as usual, through a friction-coupling or equivalent friction device, so that when the stop-hook K engages the block G the latter and the chain are held at rest. On the under side of the stop-hook K there is a projection *k* in the path of the finger C. When the hook advances in the normal manner with the carrier-block G, it acts on the projection *k* and lifts the hook K, as shown in Fig. 1, so that the block and finger will not be stopped. In the event of the finger being arrested and of the block being stopped by the hook, as shown in Fig. 4, the finger will upon descending and overtaking the block lift the stop-hook K out of engagement, so that the block will be set free and permitted to move forward the instant that the finger is reëngaged therewith.

The essence of my invention resides in combining with the chain or equivalent driving device and the matrix-carrying finger means by which the finger is automatically disengaged at the upper ends of the matrix-guides and automatically reëngaged at their lower ends.

It will be manifest to the skilled mechanic that the details may be widely modified without changing essentially the mode of action or passing beyond the scope of my invention.

What I claim as my invention is—

1. In a linotype-machine and in combination with inclined guides and matrices suspended therefrom, a matrix-carrying finger, an endless inclined guide whereon it travels, means for causing the travel of the finger along the guide, and means for releasing the finger from the carrying devices during its downward travel.

2. In a linotype-machine, the inclined guides and matrices suspended therefrom, in combination with the matrix-carrying finger, an endless inclined guide whereon it travels, an endless chain or carrier provided with means for advancing the finger, and means for automatically disconnecting the finger during its downward travel.

3. In a linotype-machine of the class described, the matrix-carrying finger C, an endless guide D whereon it travels, an endless driving-chain, connecting devices between the chain and finger, and means for automatically engaging and disengaging said connecting devices.

4. In a linotype-machine of the class described, the matrix-carrying finger C, an endless guide therefor, an endless driving-chain provided with a carrier-block G, a latch connecting the block and the finger, and a stationary rail to disengage the latch.

5. In a machine of the class described, the matrix-carrying finger, the endless inclined track whereon it travels, the endless chain provided with a carrier-block and latch, means for automatically disengaging the latch, and means for stopping the carrier-block after the finger has been released therefrom.

6. In a machine of the class described, a matrix-carrier, arranged to descend by gravity behind the matrices, in combination with means for positively returning the finger to the starting-point.

In testimony whereof I hereunto set my hand, this 18th day of October, 1904, in the presence of two attesting witnesses.

JOHN R. ROGERS.

Witnesses:
DAVID S. KENNEDY,
JOHN PAULSEN.