

D. S. KENNEDY.
 ESCAPEMENT OPERATING MECHANISM FOR LINOTYPE MACHINES, &c.
 APPLICATION FILED JULY 1, 1910.

1,010,435.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.

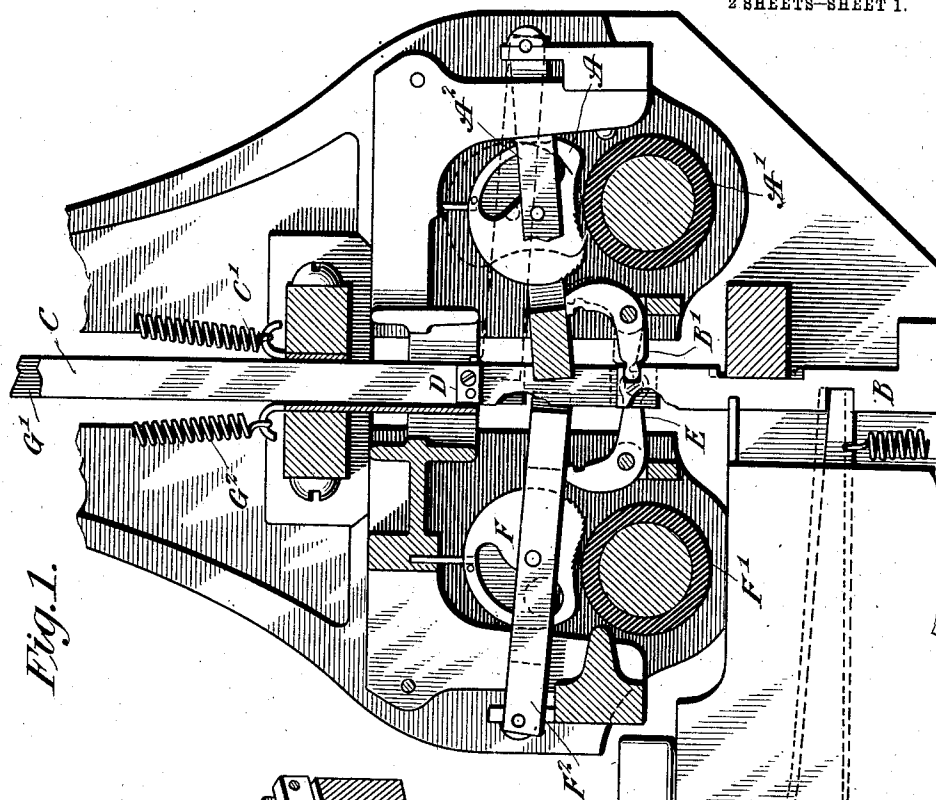


Fig. 1.

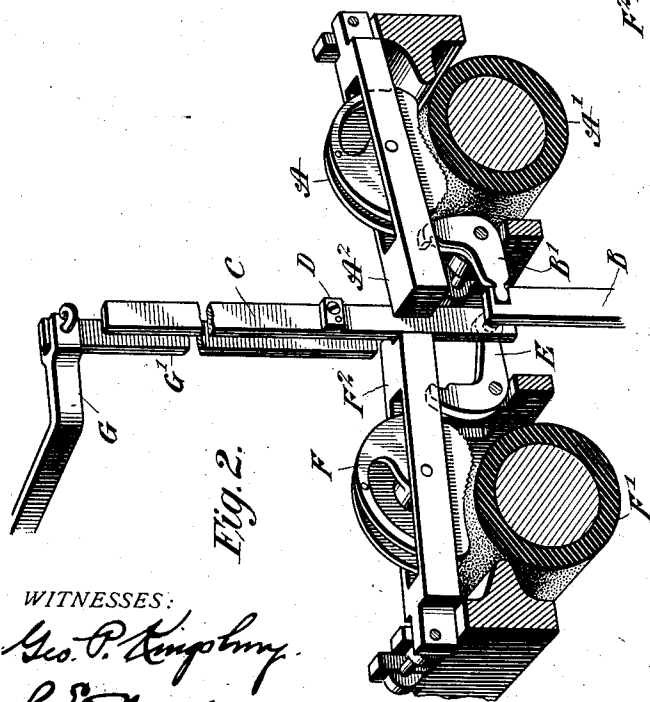


Fig. 2.

WITNESSES:
Geo. P. Humphrey
L. C. Morrison

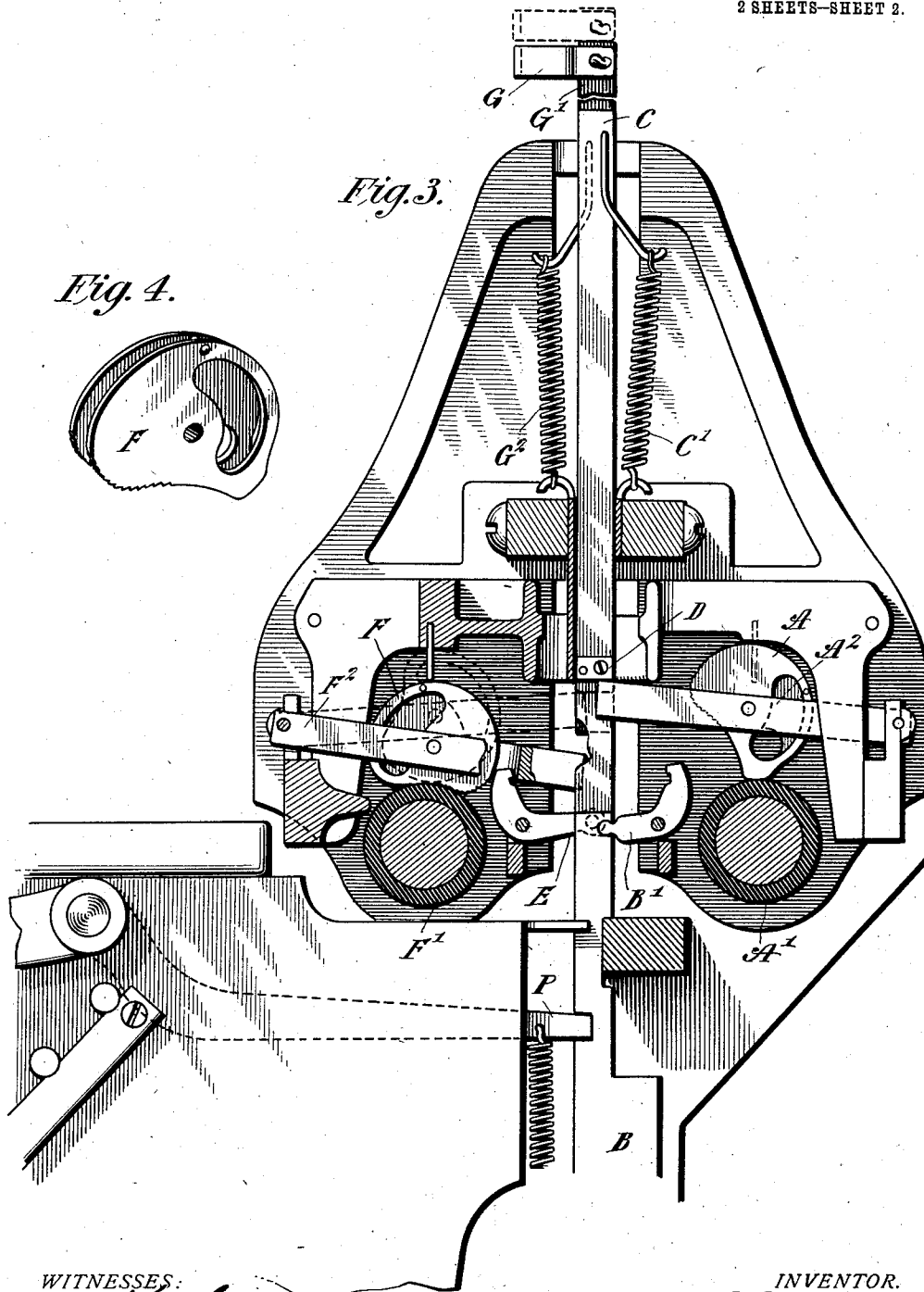
INVENTOR.
 D. S. KENNEDY.
 BY *O. T. Dodge*
 ATTORNEY.

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 ATTORNEY.

UNITED STATES PATENT OFFICE.

DAVID SHERWOOD KENNEDY, OF BROOKLYN, NEW YORK, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

ESCAPEMENT-OPERATING MECHANISM FOR LINOTYPE-MACHINES, &c.

1,010,435.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed July 1, 1910. Serial No. 569,920.

To all whom it may concern:

Be it known that I, DAVID SHERWOOD KENNEDY, of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Escapement-Operating Mechanism for Linotype-Machines, &c., of which the following is a specification.

My invention relates to escapement-operating mechanism for typographical machines, and the like, and is more particularly shown and described as applied to the space-band delivery devices of the well-known linotype machine, such as are presented, for instance, in U. S. Letters Patent to Ottmar Mergenthaler No. 436,532, and No. 527,702. Obviously, however, the same principles may be adapted to other uses and to other machines, and I desire it to be understood that I do not limit myself to any specific form or embodiment except in so far as such limitations are specified in the claims.

One of the chief objects involved in my invention is to secure greater certainty in the operation of the escapement so as to insure its actuation, no matter how fast or in what rapid succession the keys may be touched. This and other ends I attain, broadly speaking, by the employment of a plurality of distinct and separately actuated operating elements which are interconnected in such manner that their cycles of actuation are non-synchronous, and more specifically, are so arranged that one of the said elements is first partially actuated and then acts to initiate the actuation of the other element. These parts, as shown in the drawings and by way of example, consist of a plurality of the well-known cams and connected members, such as are now in common use upon the linotype machine, and as substantially illustrated and described in U. S. Letters Patent No. 530,931, to Philip T. Dodge, and No. 531,266, to Ottmar Mergenthaler. In the present instance, however, the cams, etc., are so arranged and interconnected that one of them is thrown into engagement with its actuating means by a finger-key, and after it is partially actuated thereby it causes the engagement of the other cam with its actuating means so as to operate the escapement. By this construction the cycles of actuation of the

interconnected cams are non-synchronous and thereby is insured a speedy and certain operation of the escapement, as will subsequently appear herein.

In the ordinary mechanism for operating the space-band escapement in linotype machines, and particularly because of the large size of the cam employed, it sometimes happens that in the hands of a very fast operator, he is liable to miss the space-band after a very short word. For instance, assuming that he is setting the article "a," he first strikes the space-band key, then the "a" key, and then the space-band key again. It thus becomes possible to touch the three keys before the cam has completed its rotation, and in this event he will miss the second space-band. This difficulty is, however, obviated by the construction above referred to, wherein in place of the single large cam two smaller interconnected cams are employed. These cams complete their individual cycles with considerably greater rapidity, and, as above stated, the first cam passes through a considerable portion of its rotation before the actuation of the second cam is begun. Shortly after this the first cam comes to rest and the second cam is free and has time to complete its rotation. If the space-band key be now struck a second time, the first cam will begin its cycle again, thus allowing the delivery cam to complete its cycle and to be in condition to be started again by the other cam when the latter reaches the tripping point, as before described.

Referring now to the drawings: Figure 1 is a partial transverse section of the keyboard taken in proximity to the space-band key at the right-hand side of the machine; Fig. 2 is a detached view of the two cams, illustrating more clearly their connection to each other and to the other parts; Fig. 3 is a view somewhat similar to Fig. 1, but showing the first cam in the act of tripping the second cam; and Fig. 4 is a perspective view of one of the cams.

As previously stated, the several cams and their connected parts are substantially the same as those presented in the Mergenthaler Patent No. 531,266, and the Dodge Patent No. 530,931, and hence it is unnecessary to describe their general arrangement and mode

of operation. One of these cams is shown detached in Fig. 4. In the present instance, however, instead of a single cam, two cams A and F are employed, which are arranged
 5 and connected in the manner now to be described. The cam F is provided with the customary arm F², which actuates the rod G¹, which in turn operates the space-band-
 10 escapement lever G. The cam F is actuated by the customary roll F¹, being normally held out of engagement therewith by one end of the pivoted trigger E. The other end of the trigger E is connected to the lower end of the rod C, provided with the projecting
 15 piece D, which is acted upon by the cam arm A², in the manner subsequently to be described. The connecting rods G¹ and C are normally held in their lowermost position by the springs G² and C¹, but which yield in
 20 the customary manner when the cams F and A are rotated. The cam A is arranged in proximity to the operating roll A¹ and is normally held out of engagement therewith by the pivoted trigger B¹, one end of which
 25 engages under the cam arm A², and the other end of which is connected to the key-bar B. The key-bar B is connected to the space-band key P in the usual manner, so that when the latter is depressed, the trigger B¹
 30 is disengaged from the cam arm A², thus permitting the cam A to engage its actuating roll A¹. The cam A then begins its cycle of operation, and when it reaches the position shown in Fig. 3, the arm A² contacts with
 35 the projecting piece D, thus elevating the rod C and tripping the trigger E connected thereto. The release of the arm F² effected by the tripping of the trigger E permits the operating cam F to engage with its actuating
 40 roll F¹, after which its rotation causes the elevation of the connecting rod G¹ and the operation of the space-band-escapement lever G in the customary manner.

It will be noted that at the time the trigger
 45 E is tripped, the cam A has passed through a considerable portion of its rotation and that it then returns to normal position some time before the cam F has completed its cycle. In other words, before the operating
 50 cam F has finished its rotation, the cam A is in position to be started by a second touch upon the space-band lever P; and after the second engagement of the cam A with its actuating roll A¹, there will be a considerable
 55 period permitted for the cam F to complete its cycle before the cam A reaches the position where it trips the cam F a second time. In other words, by giving the two interconnected cams non-synchronous
 60 cycles of actuation, it becomes possible to begin a second operation before the completion of the first one, and thus to obviate the difficulty arising in missing the delivery of a second space-band, which sometimes hap-
 65 pens when a single cam is employed.

As previously stated, the form herein described and illustrated is shown simply as a preferred embodiment, and obviously many changes and variations may be made therein without departing from the spirit of my invention. 70

Having thus described my invention, its construction and mode of operation, what I claim and desire to secure by Letters Patent of the United States is as follows: 75

1. An escapement operating mechanism comprising a plurality of distinct operating elements, actuating means therefor, and connections between the said elements to effect their non-synchronous actuation, together
 80 with selecting means for one of the elements and connections from another of the elements to the escapement.

2. An escapement operating mechanism comprising a plurality of operating elements arranged for distinct actuation, actuating means therefor, and connections between the said elements whereby the partial
 85 actuation of one of them initiates the actuation of another, together with selecting means for the former element and connections from another of the elements to the escapement. 90

3. An escapement operating mechanism comprising a plurality of distinct operating elements, actuating means therefor, and connections between the said elements whereby the partial actuation of one of them initiates the actuation of another and so that their
 95 cycles of actuation are non-synchronous, together with selecting means for one of the elements and connections from another of the elements to the escapement. 100

4. An escapement-operating mechanism comprising an operating device and automatic actuating means therefor, and a second device and automatic actuating means therefor, and means to engage it therewith,
 105 and connections whereby the actuation of the second device causes the engagement of the first device with its actuating means, together with connections from the first device to the escapement. 110

5. An escapement-operating mechanism comprising an operating cam and suitable actuating means therefor, with a second cam and suitable actuating means therefor and means to engage it therewith, together with
 115 connections whereby the actuation of the second cam causes the engagement of the first cam with its actuating means together with connections from the operating cam to the escapement. 120

6. An escapement-operating mechanism comprising the cam F and suitable actuating means therefor, the cam A and suitable actuating means therefor and means to cause its engagement therewith, together
 125 with connections whereby the actuation of the cam A causes the engagement of the 130

cam F with its actuating means together with connections from the cam F to the escapement.

7. An escapement-operating mechanism
5 comprising the cam F and connections to the escapement, and an actuating roll for the said cam; the cam A, an actuating roll therefor, and keyboard connections to effect its engagement therewith; together with
10 connections from the cam A to the cam F, whereby the latter is caused to engage its

actuating roll and thus to operate the escapement when the cam A has been partially actuated.

In testimony whereof I hereunto set my 15 hand this twenty eight day of June, 1910, in the presence of two attesting witnesses.

DAVID SHERWOOD KENNEDY.

Witnesses:

JOHN R. ROGERS,
LUCY E. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."