

No. 889,400.

PATENTED JUNE 2, 1908.

J. R. ROGERS.
LINOTYPE MACHINE.

APPLICATION FILED FEB. 21, 1908.

2 SHEETS--SHEET 1.

Fig. 1.

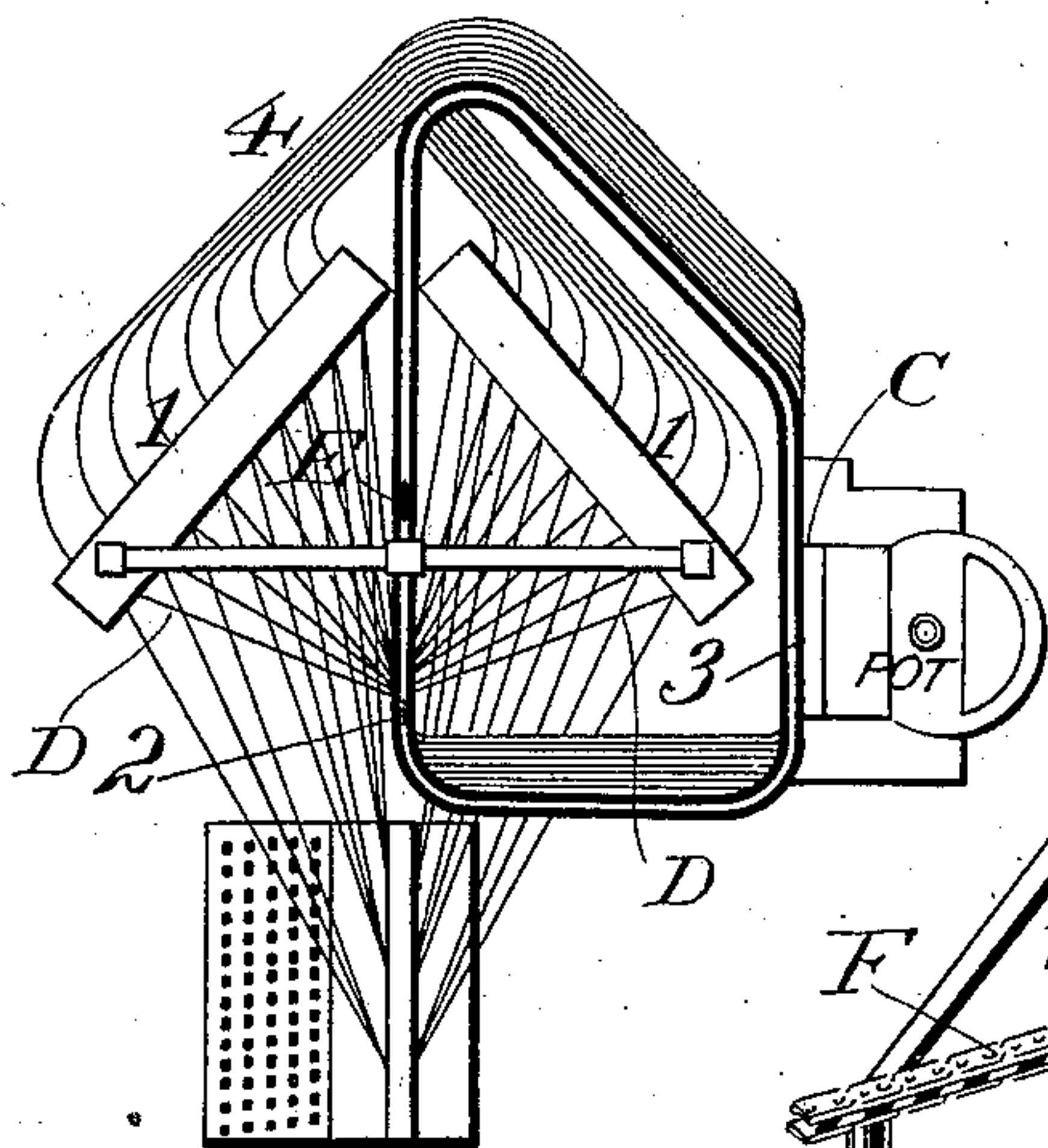
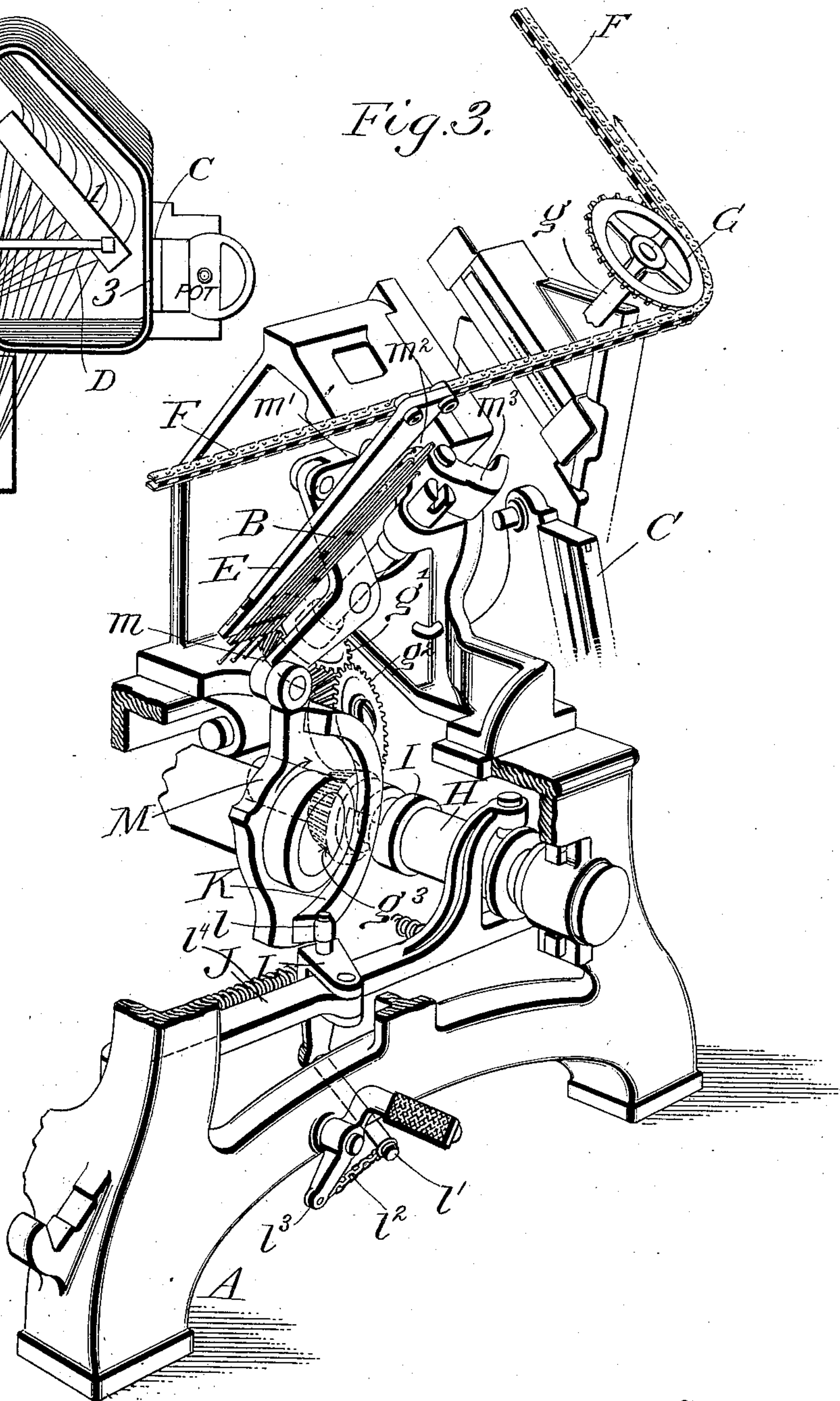


Fig. 3.



Witnesses:
W. B. Bunsen
L. E. Morrison

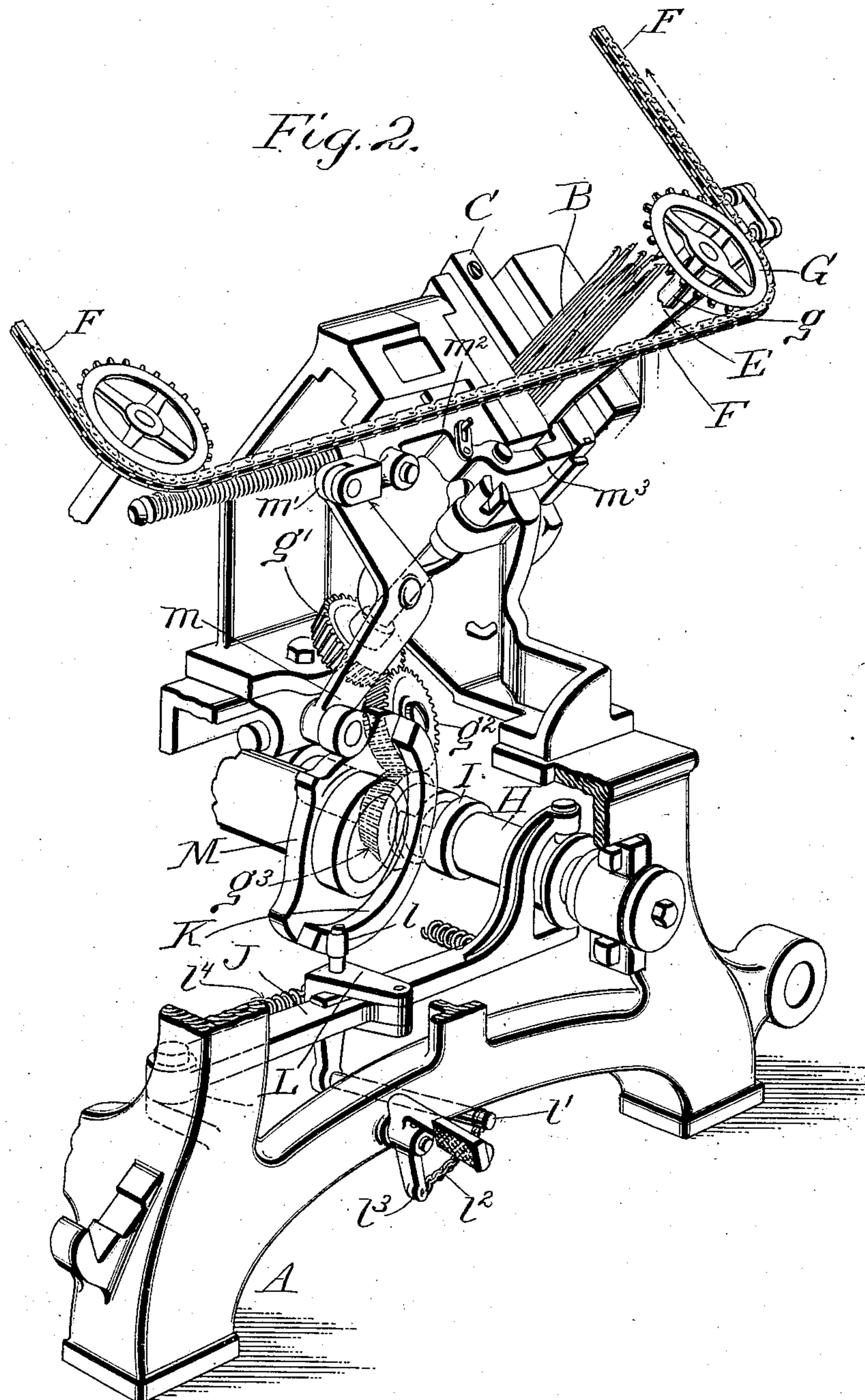
Inventor
J. R. Rogers
By his Attorney
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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

LINOTYPE-MACHINE.

No. 889,400.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed February 21, 1908. Serial No. 417,098.

To all whom it may concern:

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

This invention relates to linotype machines of the character represented in Letters Patent of the United States 679,481, the object
10 of the invention being to permit the distribution of overset or imperfectly composed lines of matrices without the casting of slugs therefrom.

In the machine referred to there are a
15 series of endless inclined wires or guides on which matrices bearing the respective characters travel. These guides converge at one point in their length in order to bring the selected matrices into line. They then continue in parallel lines to the casting point, and
20 thence upward to the rear end of the machine, so that the composed line may be carried forward to the casting mechanism and thence rearward to the distributing point. After
25 reaching the rear end of the machine the wires diverge to the points from which the matrices are released—this to effect the distribution of the individual matrices to the groups from which they are delivered. The
30 movement of the composed line from the composing to the casting point, and thence to the distributing point, is effected by a pusher finger attached to an endless chain. This finger-carrying chain was operated in-
35 termittingly in such manner that each line was arrested at the casting position and a slug cast therefrom. This resulted in various difficulties unnecessary to detail. I
40 overcome these difficulties by providing means for independently arresting the motion of the line-carrying devices before the line reaches the casting position so that while the line is at rest the other mechanisms perform their movements without casting a slug,
45 after which the composed line will be permitted to pass forward for distribution.

The essence of the invention lies in means for controlling the movement of the line independently of the movements of the other
50 parts.

In the accompanying drawings I have represented only those parts of the machine which are immediately associated with my invention, and it is to be understood that as
55 to all other parts the construction repre-

sented in the patent above named, or any similar construction, may be employed.

Referring to the drawings, Figure 1 is a diagram illustrating the general arrangement of the guide wires and line-carrying devices
60 in relation to the casting mechanism. Fig. 2 is a perspective view of the casting mechanism and the line-carrying devices in their normal positions. Fig. 3 is a similar view with the parts in position to arrest the matrix line
65 before it reaches the casting position.

The guide wires for the matrices are omitted in Figs. 2 and 3 in order that the other parts may be exposed to view, and portions of the main frame are broken away for the
70 same purpose.

Referring to the drawings, A represents the main frame; B the composed line of matrices; C the mold in which the slug is cast against the line of matrices in a manner
75 well understood in the art, when the parts are in the relation shown in Fig. 2.

D, D, Fig. 1, are the fixed, inclined guide wires on which the matrices travel from the storage points 1, 1, in converging paths, to
80 the assembling point, 2, thence to the casting point, 3, and finally to the distributing point, 4, where the wires again diverge.

E represents the line-carrying finger acting behind the composed line of matrices to
85 advance the same to the successive positions named. F is the endless chain by which this finger is carried. It follows the course indicated by the heavy black line in Fig. 1 and by the full lines in Figs. 2 and 3, receiving
90 intermitting movement from the driving wheel G, carried by the shaft *g*, which receives motion through gears *g*¹, *g*², and *g*³. The last named gear, *g*³, is mounted loosely on the shaft, H, and receives motion through
95 a clutch, I, controlled by a lever, J, which in turn receives motion from a face cam, K, through a stud or roller, *l*, on the swinging arm, L, pivoted to the lever. Whenever the face cam acts on this roller it shifts the lever,
100 J, disconnects the clutch, I, and permits the line carrying chain to stop, so that the matrix line remains at rest. The shaft H is continuously driven and imparts motion to all the operative members of the machine
105 in the manner explained in Patent No. 679,481, in which, however, this shaft is designated by the letter M.

The arm L and its stud, *l*, stand normally in the position shown in Fig. 2 in relation to
110

the lever, J, and the face cam, K, is so shaped and timed that the chain is automatically arrested for a limited time when it has presented the matrix line, B, in the casting position, as shown in Fig. 2.

After the casting action, the cam permits the clutch to reengage, the chain continues its motion, and the finger will advance the matrix line from the casting to the distributing point.

In order to enable the operator to arrest the movement of the chain and the line carrying finger before the line has arrived at the casting position—to the end that the casting devices may pass idly through their movements, and the line then be advanced past the casting mechanism directly to the distributing position—I provide the arm, L, with an extension, l' , connected by a chain, l^2 , to one end of a lever, l^3 , in position to be conveniently actuated by the foot of the machine operator.

Spring l^4 tends to hold the arm L and its stud, l , in the normal position shown in Fig. 2. When, however, the foot lever is actuated, the arm L is swung forward and its stud, l , advanced to such position that it will be acted upon by the cam K before the line carrying finger reaches the casting point, as shown in Fig. 3, the effect being to arrest the line in the position shown. The cam will continue its action, and in due time, after the casting devices have completed their movements, the arm and lever will be released and the clutch I permitted to reengage, in order to advance the chain and the line.

It will be observed that the essence of the invention lies in the provision of devices controllable at the will of the operator to effect the stoppage of the line-carrying devices independently of the assembling and casting mechanism and other moving parts; and it is manifest to the skilled mechanic that the parts may be widely varied in form and arrangement without passing beyond the scope of the invention.

I believe it to be wholly new in a machine of the present type to provide means by which the line carrying devices may be arrested at will without stopping the other parts of the mechanism, and also wholly new to provide means by which the clutch for advancing the line will be automatically thrown out of and into action at an earlier or a later period at the will of the operator.

The line controlling cam K is formed, it will be observed, on the side face of a second cam, M, actuating a lever, m , which is connected, as heretofore, through a link, m' , and a slide, m^2 , with the swinging jaw, m^3 , which closes behind, and supports, the line-carrying finger while the latter supports the line in the casting position, as shown in Fig. 2.

Owing to the fact that the line-controlling cam, K, and the jaw closing cam, M, are connected and turn in unison, it follows that the jaw is held open whenever a line is prematurely arrested, and until the line is carried past it. This is necessary in order to prevent the jaw from closing in advance of the matrix line in such manner as to prevent its passage.

It will be observed that the line advancing mechanism is arrested, and the advance of the line retarded, and that the line confining jaw is caused to remain open without arresting the movements of the other parts of the machine. In other words, the line is stopped in advance of the casting position, and the line confining jaw is permitted to remain open, while all the other parts of the machine are permitted to continue their movements. The assembling of the next line may continue and the members of the casting mechanism may complete their various movements in the absence of the line without producing a cast.

Of course it will be understood that the action of the pump, and the delivery of the metal thereby will be prevented by the ordinary pump stop devices used in all these machines—which act whenever the matrix line is absent.

In considering the operation of my mechanism, it is to be noted that the line-carrying devices are arrested automatically at a predetermined point, and that the devices controllable by the operator cause these automatic devices to actuate at an earlier and definite point. It is therefore possible for the operator to apply his foot to the controlling lever at any time, and while continuing the pressure on the lever, to proceed with the composition of the next line, knowing that the preceding line will be automatically arrested at the proper time. In other words, the mechanism renders it unnecessary for the operator to suspend the composition of the second line while awaiting the stoppage of the preceding line, although it may be stopped in advance of the casting position.

Having described my invention, what I claim is:

1. In a line-casting machine of the class described, means for advancing the composed line to and beyond the casting position, means for automatically arresting the movement of said parts when the line is in the casting position, and means controllable by the operator at will for arresting the action of the line-advancing devices before the line reaches the casting position without arresting the action of the assembling and casting mechanisms.

2. In a line-casting machine, an endless chain provided with a line-carrying finger, means for driving the chain, means for throwing its driving devices out of action inde-

pendently of the other parts when the line reaches the casting position, and means controllable by the operator at will to cause an earlier action of the automatic devices; 5 whereby said devices may be caused to arrest the line sooner or later, as required.

3. In a line casting machine, the endless chain, F, and the line carrying finger carried thereby, in combination with the chain actuating mechanism, including a driving 10 clutch, a cam whereby the line is normally arrested in the casting position during the casting operation, and controllable means for advancing the action of the cam, whereby the 15 line may be arrested and held in advance of the casting position, and during the movements of the casting parts, and thereafter advanced for distribution.

4. In a line casting machine, the endless 20 chain, the line-carrying finger, and the line-confining jaw, in combination with the cam and connections for actuating the jaw, the cam and clutch connections for driving the chain, and the clutch-controlling lever provided with a member movable at will to en- 25 gage the cam; whereby the line may be arrested and the jaw left open until after the casting operation, and thus the line distributed without having a cast taken therefrom.

30 5. In a machine of the class described, the

line carrying finger, its actuating chain, the clutch and intermediate mechanism for driving the chain, the clutch controlling lever, the cam to actuate said lever, the swinging 35 arm, L, mounted on the lever to cooperate with the cam, and the foot lever, i^3 , connected with said arm.

6. In a line casting machine, and in combination with the casting mechanism, means for advancing the composed line to and be- 40 yond said mechanism, means for confining the line in the casting position, means for automatically arresting the line in the casting position and actuating the confining devices, and means for retarding at will the ac- 45 tion of the line advancing and confining devices without arresting the other parts; whereby the casting mechanism is permitted to pass idly through its movements in the absence of the matrix line, and the latter 50 thereafter advanced for the purpose of distribution.

In testimony whereof I hereunto set my hand this seventh day of February, 1908, in the presence of two attesting witnesses.

JOHN R. ROGERS.

Witnesses:

DAVID S. KENNEDY,
JESSIE I. SMITH.