

(No Model.)

L. T. WEISS.
TYPE WRITING MACHINE.

No. 438,665.

Patented Oct. 21, 1890.

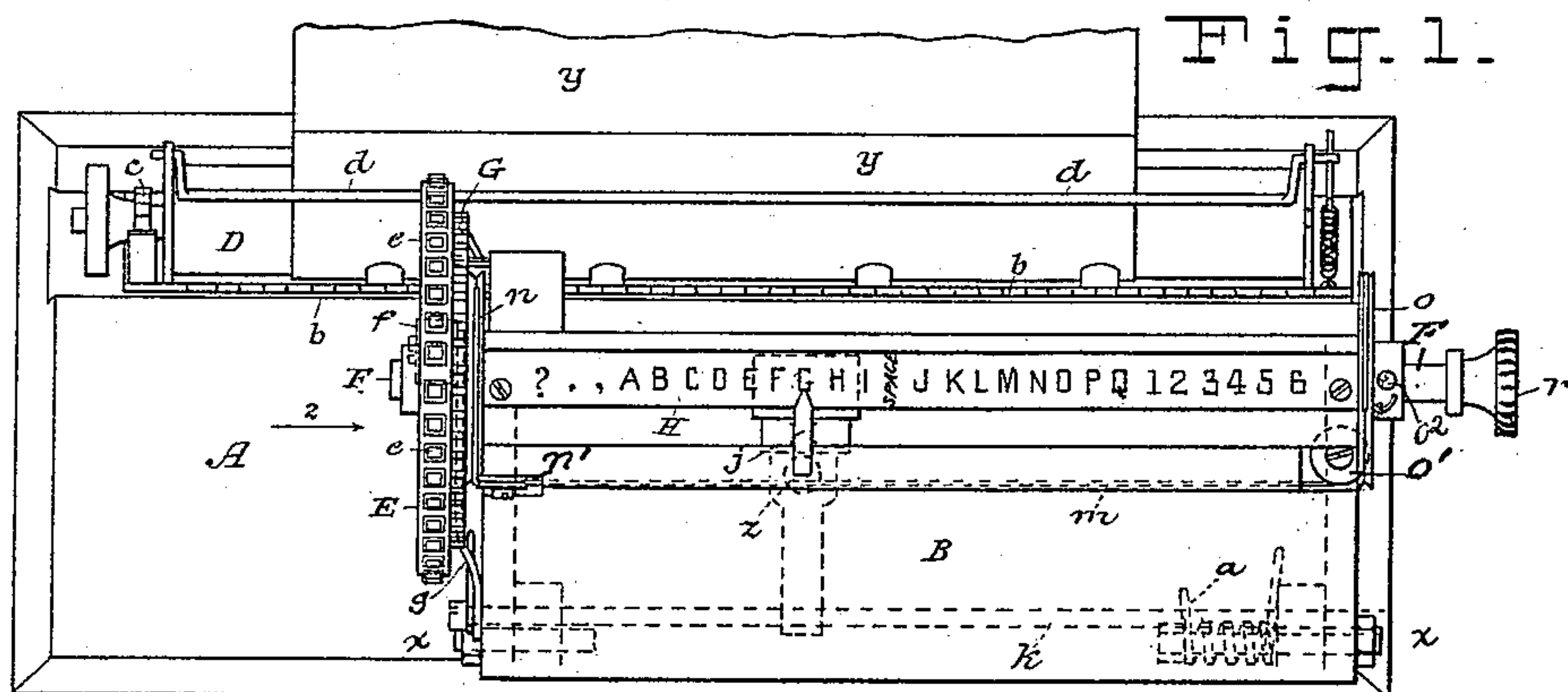


Fig. 2.

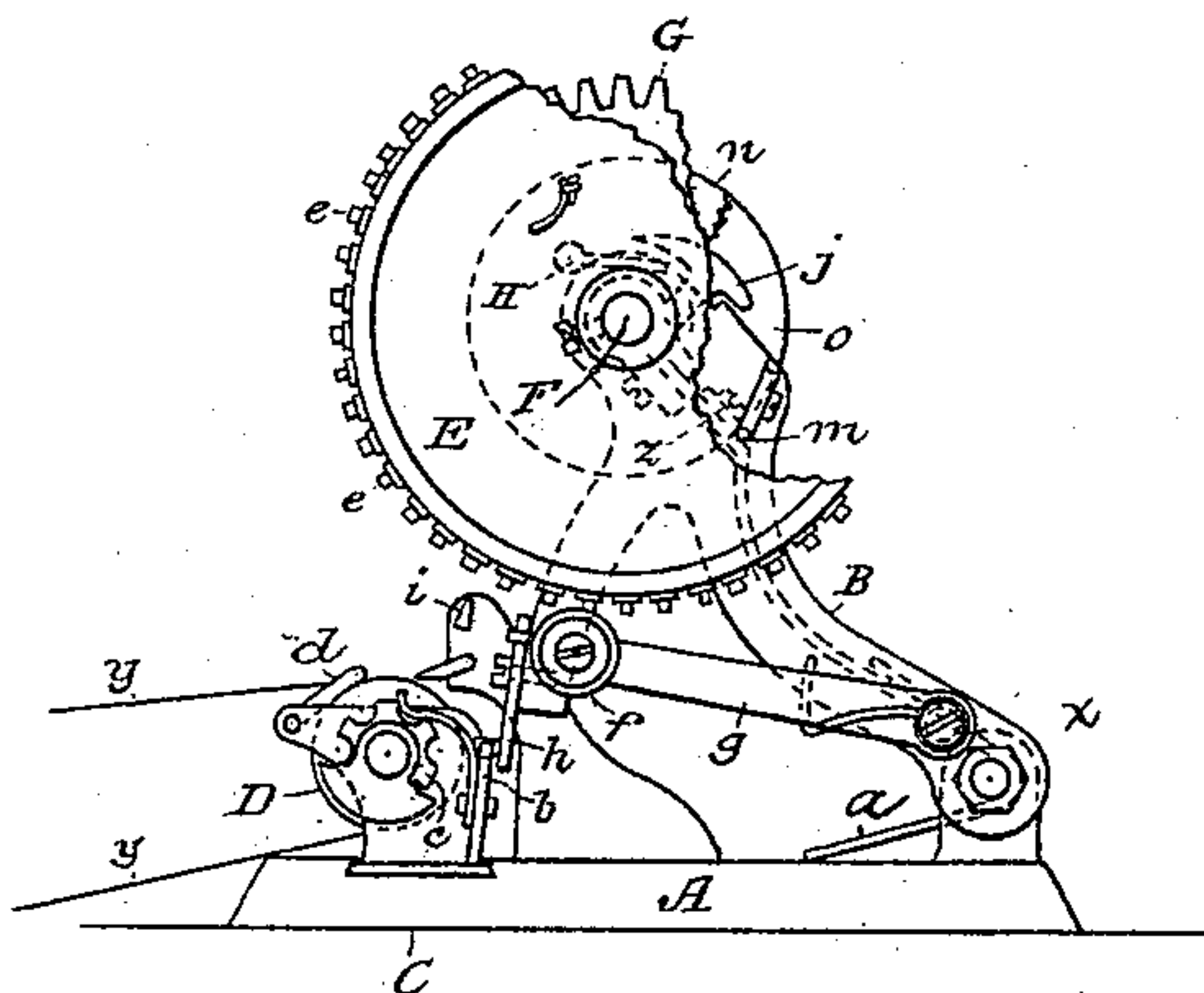


Fig. 4.

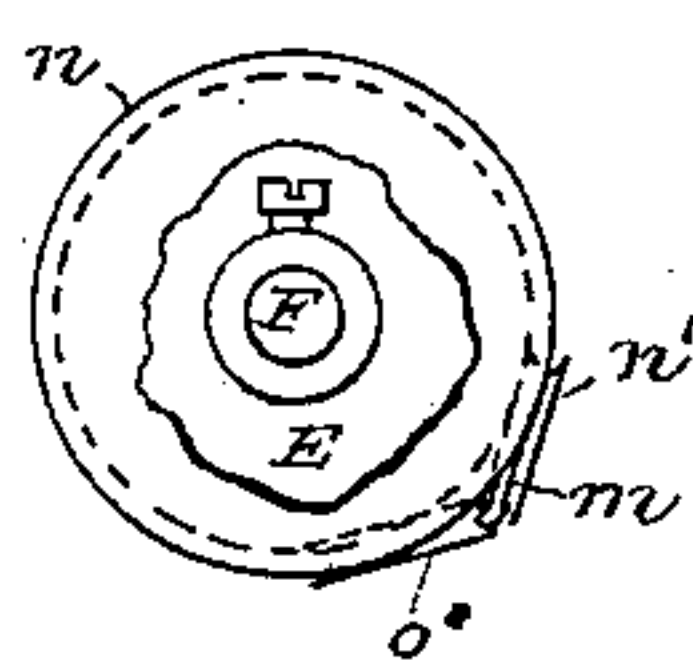
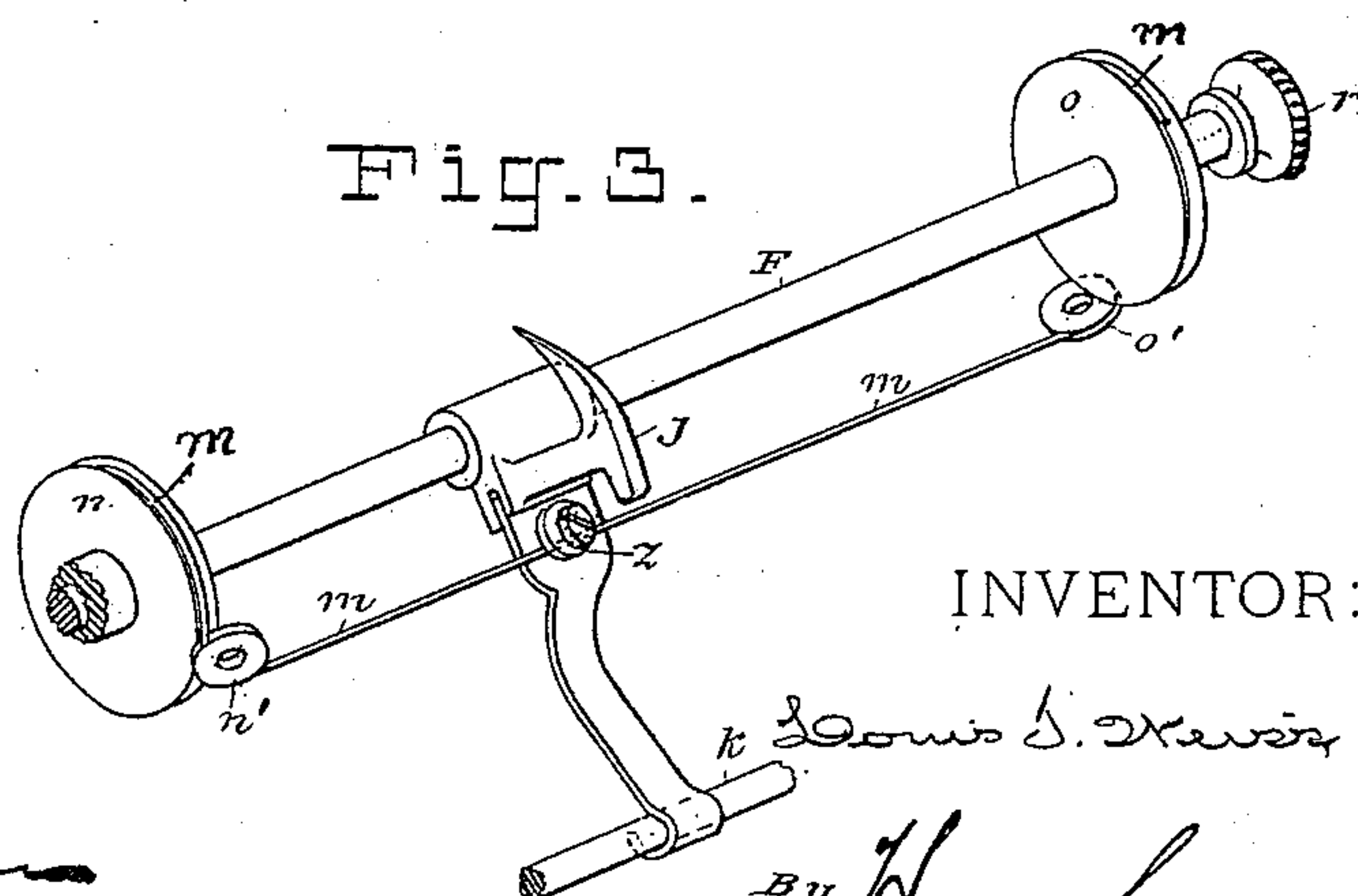


Fig. 3.



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LOUIS T. WEISS, OF BROOKLYN, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 438,665, dated October 21, 1890.

Application filed August 29, 1889. Serial No. 322,362. (No model.)

To all whom it may concern:

Be it known that I, LOUIS T. WEISS, a citizen of the United States, and a resident of the city of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to that class of type-writing machines wherein the type are borne by a wheel and this wheel is rotated to the proper point by the movement of a pointer over an index-plate on which are marked the letters, numerals, and characters used in writing or printing. My improvements relate to the means whereby the motion of this pointer or indicator is imparted to the type-wheel, or, in other words, to the intermediate mechanism, whereby a movement of the pointer imparts the corresponding rotary movement to the type-wheel.

Ordinarily in the class of machines to which my invention belongs the type-wheel can be rotated by the movement of the pointer over the index-plate, but the pointer cannot be moved by rotating the shaft bearing the type-wheel; and the object of my invention is to provide a simple intermediate mechanism, whereby either of these parts may become the prime mover.

One advantage of my construction is that it allows the operator a choice between two ways of operating the machine, and another advantage is that it permits the pointer when not set exactly to the index character to be printed to adjust itself to that character when the registering device comes into action, as will be explained hereinafter.

In the accompanying drawings I have shown my improvements applied to a type-writing machine of a known form, which will not of itself require detailed illustration and description.

Figure 1 in these drawings is a plan of such a machine embodying my improvements; and Fig. 2 is an end view of the same, as seen from arrow 2 in Fig. 1. Fig. 3 is a detached detail view of the part of the machine containing my improvements; and Fig. 4 is a detached detail view that will be hereinafter described.

I will first describe the machine as a whole, in order that my improvements may be the better understood.

A is the bed of the machine, on which is hinged at *a* the frame B, that carries the type-wheel and index-plate. This spring is elastically upheld by a suitable spring *a*.

C is a slide mounted in the bed A, and in this slide is rotatively mounted the impression-roller D. The feed-ratchet *b* is on the slide C, and the impression-roller D is provided with a ratchet device *c* for line-spacing. The sheet to be printed is passed around the roller D, and is held in place by a spring-bar *d*.

E is the type-wheel, which is fixed on a shaft F, rotatively mounted in the hinged frame B. The ink is applied to the types *e* on the type-wheel by means of an ink-roller *f*, carried by an arm *g*, and said roller is kept pressed up elastically to the type-wheel by a suitable spring. The feed is effected by a pawl *h*, carried by the frame B, and arranged to engage the feed-ratchet *b* whenever the frame B is depressed for the purpose of bringing the type on the type-wheel into contact with the sheet *y* on the impression-roller D.

On the same shaft with the type-wheel and fixed to the face thereof, as herein shown, is a toothed register-wheel G, which has one tooth for each type *e* on the type-wheel. When the type-wheel is depressed in printing, a notch between adjacent teeth of this wheel engages a stud *i* on the bed A and serves to prevent accidental rotation of the type-wheel, and also to bring the proper type thereon into exact register.

All of the above-described devices are common or well known in this class of machines, and I have briefly described them in order that my improvements may be the better understood, and also to enable any person skilled in the art to embody them in an operative type-writing machine.

H represents the index-plate of the machine, on which are marked in any suitable manner the characters corresponding to those on the types on the type-wheel, such as the letters of the alphabet, the numerals, and the punctuation-marks. Such index-plates are common in type-writing machines of this class. The type-wheel may be rotated so as to bring any type thereon—as B, for example—into position to print by setting with the thumb and finger a pointer or indicator *j* at B on

the index-plate. As the characters on the index-plate may be of any kind and be arranged in any sequence or order, I have simply shown in Fig. 1 a few of the letters arranged in a row on said plate.

In some well-known machines of this class the shaft which bears the type-wheel has had formed on it a long pitched screw, somewhat like the grooves in a twist-drill, and the pointer has been constructed like a nut and mounted on said screw-shaft. This construction will allow the type-wheel to be rotated by a rectilinear movement of the pointer; but it will not permit of the type-wheel or its shaft becoming the prime mover. Consequently if the operator does not set the indicator exactly to the letter on the index, when the registering apparatus comes into action the type-wheel is forced into the proper position and some part of the machine must yield, as the indicator cannot be moved by the rotation of the type-wheel shaft. It will readily be seen that such a construction is liable to injure the machine, and it will inevitably produce undue strain and wear. I obviate this defect by my construction, which I will now describe with special reference to Figs. 3 and 4.

The shaft F has no screw-thread and serves merely to guide the pointer *j*, which slides thereon. I prefer, also, to fix a rod *k* in the frame B below the shaft F, and to utilize it also as a guide for the pointer; but this latter guide is not essential. Indeed, the manner of guiding the pointer in its movements parallel with the index-plate is not essential to my invention. The pointer is attached at *z* to a flexible connector *m* of catgut or annealed wire, and the ends of this connector are secured, respectively, to two pulleys *n* and *o* of like size on the same shaft with the type-wheel E. The connector is led properly to the respective pulleys *n* and *o* over guide-sheaves *n'* and *o'*, mounted in the frame B, and said connector is wound about the pulley *n* in a direction opposite to that in which it is wound about the pulley *o*, whereby when the shaft F, on which said pulleys are mounted and secured, is rotated the connector will be wound upon one and unwound from the other, the longitudinal movement of the connector being dependent on which way the shaft is rotated. As the pointer is attached to the connector, it will be moved whenever the type-wheel is rotated, and, conversely, when the pointer is moved in either direction the type-wheel will be correspondingly rotated.

On the end of the shaft F is secured a milled knob or button *r*, whereby the pointer *j* may be moved over the index-plate to any point thereon. This construction enables the operator to set the pointer either by taking it between his thumb and finger and moving it to any character on the index-plate or by rotating the shaft F through the medium of the knob *r* and noting when the pointer arrives at the proper point.

Should the operator not set the pointer exactly at the character on the index-plate that he wishes to print, when he depresses the frame B the registering device will rotate the type-wheel to the exact register, and as the pointer is adapted to be moved by the rotation of the type-wheel shaft said pointer will under such conditions adapt itself to the situation and no strain or injury can possibly be sustained by the mechanism of the machine.

I prefer to secure the pulley *n* to the type-wheel or to the register-wheel G; but the other pulley *o*, I prefer to mount adjustably on the shaft F, so that any slack in the connector *m*, due to stretching or the like, may be taken up by loosening said pulley, turning it on the shaft until the connector is properly strained, and then setting it fast on the shaft again. This adjustability of the pulley *o* may be effected or is effected by a set-screw *o'*, driven through the boss of said pulley and bearing on said shaft. This set-screw is seen at the right in Fig. 1.

I also prefer to clamp the pointer to the connector *m*, as seen at *z* in Fig. 3, so that it may be detached therefrom readily. This facilitates the renewal of the connector, and also facilitates the adjustment of the machine. For example, in order to set the pointer accurately, it may be detached from the connector and the frame B depressed. The adjuster then notes what character on the type-wheel is impressed on the paper at the printing-point, sets the pointer to that point or character on the index-plate, and then clamps the pointer to the connector. Of course the parts will be so proportioned that when the pointer is set correctly for one character on the index-plate it will be set correctly for all the characters thereon.

It is quite important in the construction herein shown that the guide-sheaves *n'* and *o'* shall be set as indicated in Fig. 4, so that the straight portion of the connector *m* will always be parallel with the path in which the pointer moves, and that the pulleys *n* and *o* shall be constructed to take up the connector on one of them to the same extent that it is unwound from the other. Care on these points will prevent any undue variation in the tension of the connector.

In order to better illustrate the construction, I have represented the frame B in Fig. 1 having apertures to disclose the guide-sheaves *n'* and *o'*; also, in Fig. 2 I have broken away parts of the type-wheel E, register-wheel G, and pulley *n*, in order to show certain parts obscured thereby. In Fig. 4 the type-wheel is partly broken away. In this view the pulley *o* is behind the pulley *n*, and consequently is hidden thereby.

If desired, in order to facilitate the setting of the pointer *j* to the respective characters on the index-plate, a series of slight notches may be formed in the margin of the slot in frame B, along which the pointer plays—one notch for each character—and the pointer may

be held up to this notched margin by a light spring. Such a device would aid in defining the position of the pointer; but it would make the machine noisy in its operation. Therefore
5 I have not shown it.

The connector *m* should be of some durable material; but any suitable material may be employed in its construction.

10 Having thus described my invention, I claim—

1. In a type-writing machine, the combination, with the type-wheel and its shaft, the index-plate, and the guided pointer adapted to move along said plate, of a guided flexible
15 connector, to which said pointer is attached, and two like pulleys on opposite ends of the type-wheel shaft, to which the respective ends of said connector are attached, said connector
20 being wound in opposite directions on the respective pulleys, whereby it winds up on one when it unwinds from the other, substantially as set forth.

2. In a type-writing machine, the combination, with the type-wheel and its shaft, the
25 index-plate, and the guided pointer adapted to move along said index-plate, of the guided flexible connector, to which said pointer is

adjustably secured, and two like pulleys on the type-wheel shaft, to which the respective ends of the connector are attached, as set
30 forth, one of said pulleys being secured adjustably on the shaft, substantially as and for the purposes set forth.

3. In a type-writing machine, the combination, with the type-wheel and its shaft, the
35 index-plate, and the guided pointer adapted to move along said plate, of a guided flexible connector, to which said pointer is attached, and two like pulleys on the type-wheel shaft, to which the respective ends of the connector
40 are attached, said connector being wound in opposite directions on the respective pulleys, and the guides or sheaves for said connector, said guides being arranged with their axes at
45 right angles to the axis of the pulleys on the type-wheel shaft, substantially as and for the purposes set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LOUIS T. WEISS.

Witnesses:

HENRY CONNETT,
J. D. CAPLINGER.