

M. Umstadter

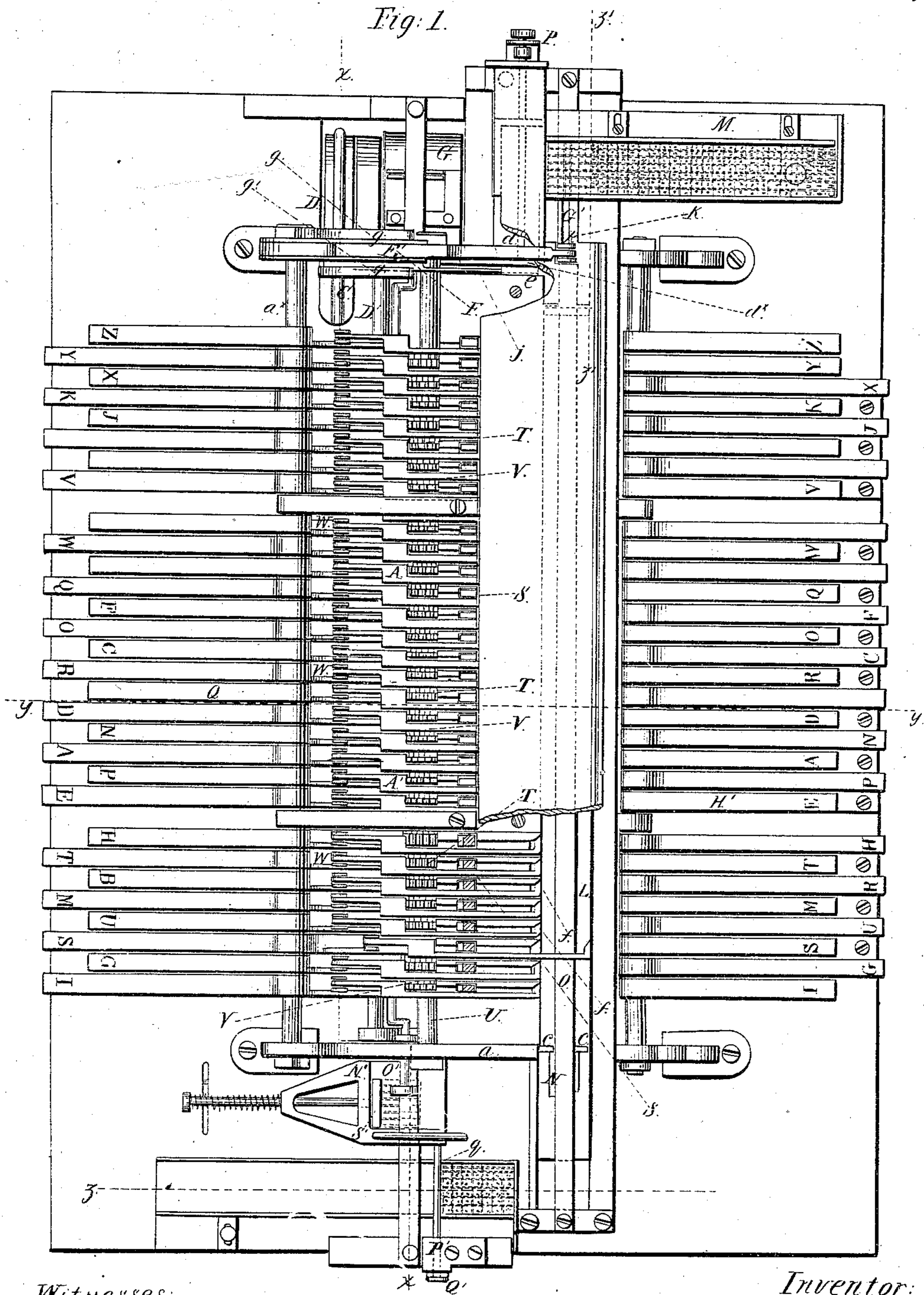
Sheet 1-4 Sheets.

*Type Setting & Distributing Mach.*

N<sup>o</sup> 91988.

*Patented Jun. 29. 1869.*

*Fig: 1.*



Witnesses:

Gustave Dienerich  
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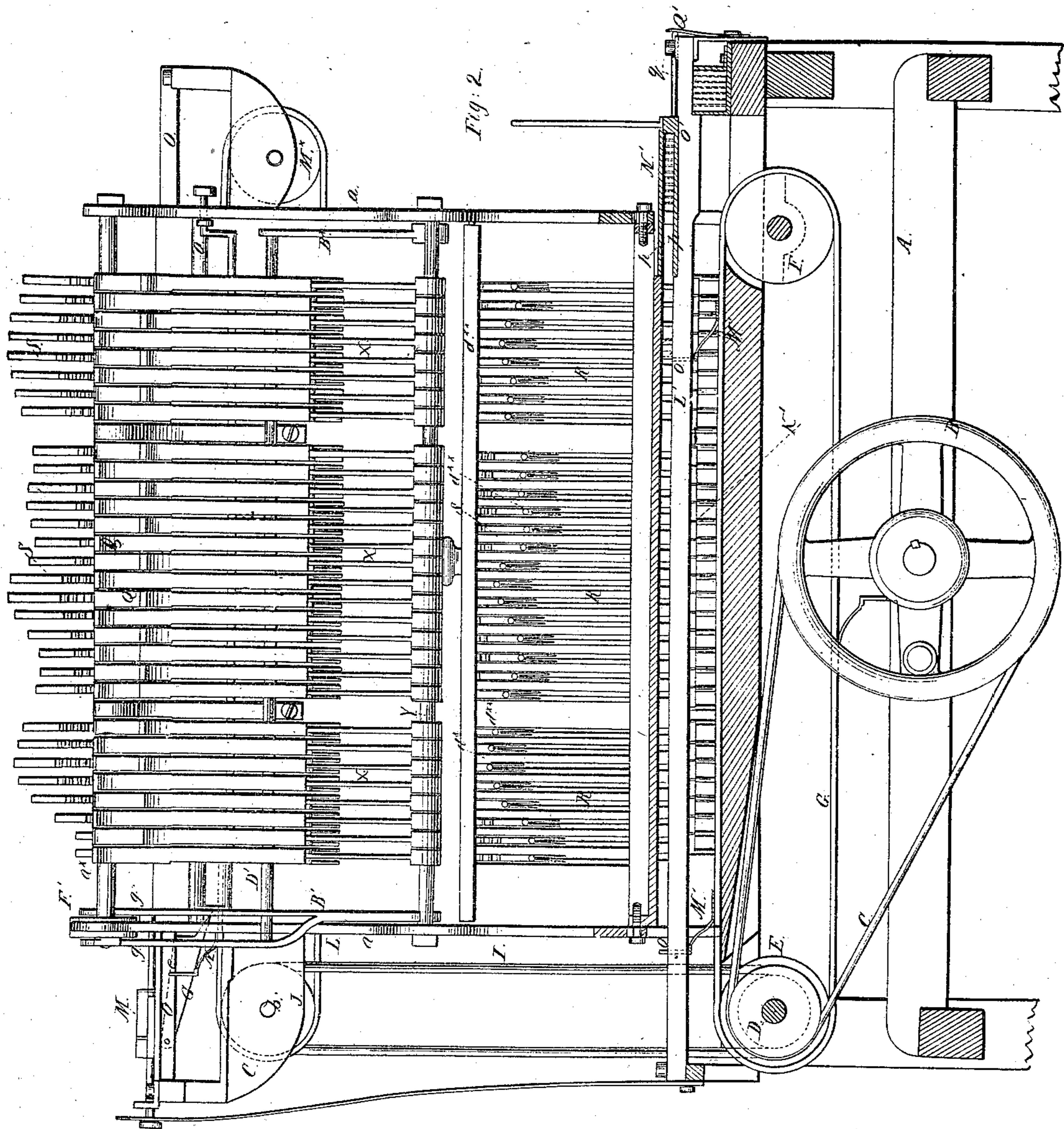
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Sheet 2-4 Sheets

*Nº 91988.*

*Patented Jun. 29. 1869.*



Witnesses:  
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Sheet 3. of 5 Sheets.

Type Setting & Distributing Mach.

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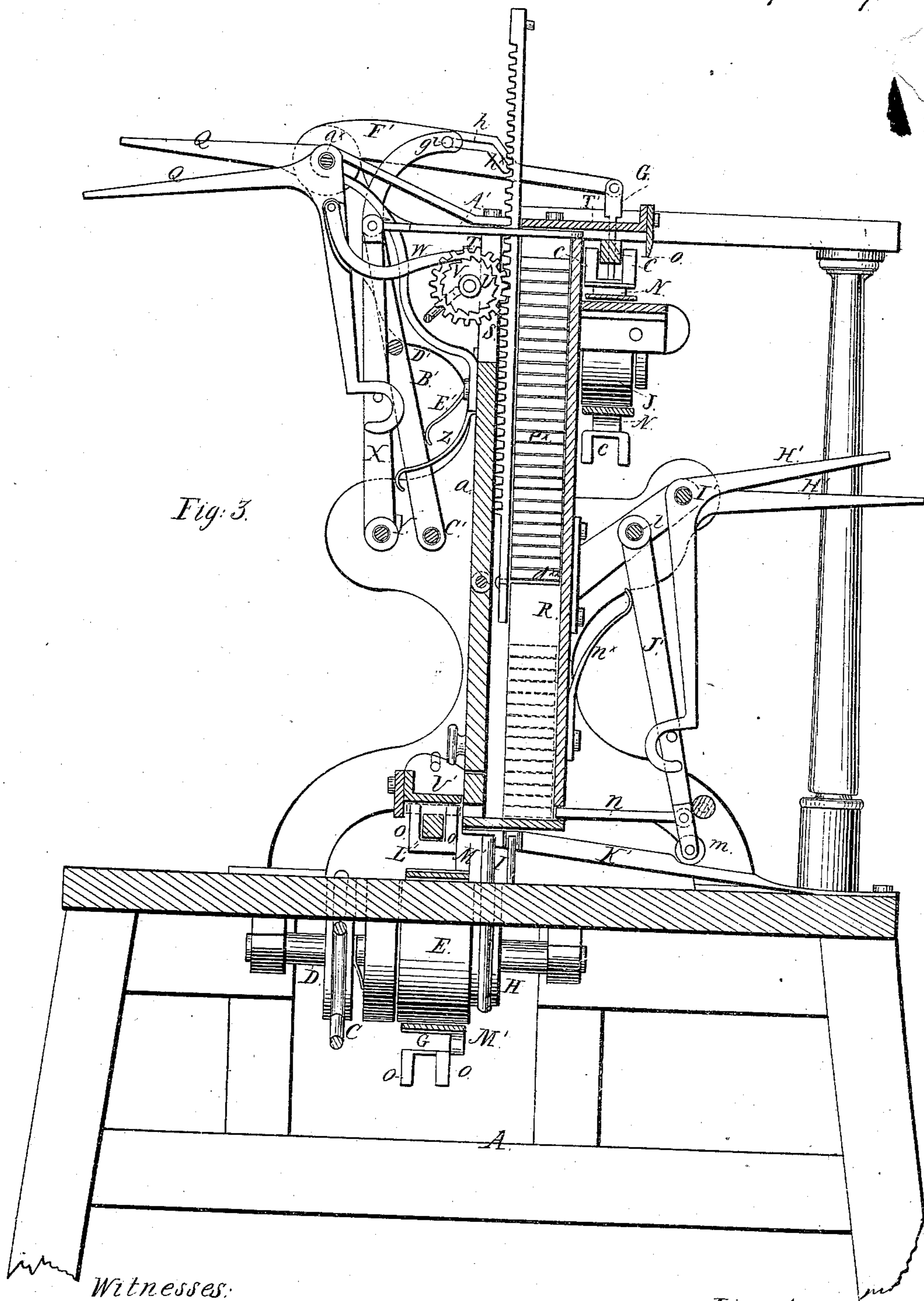


Fig. 3.

Witnesses:

Gustave Dieterich  
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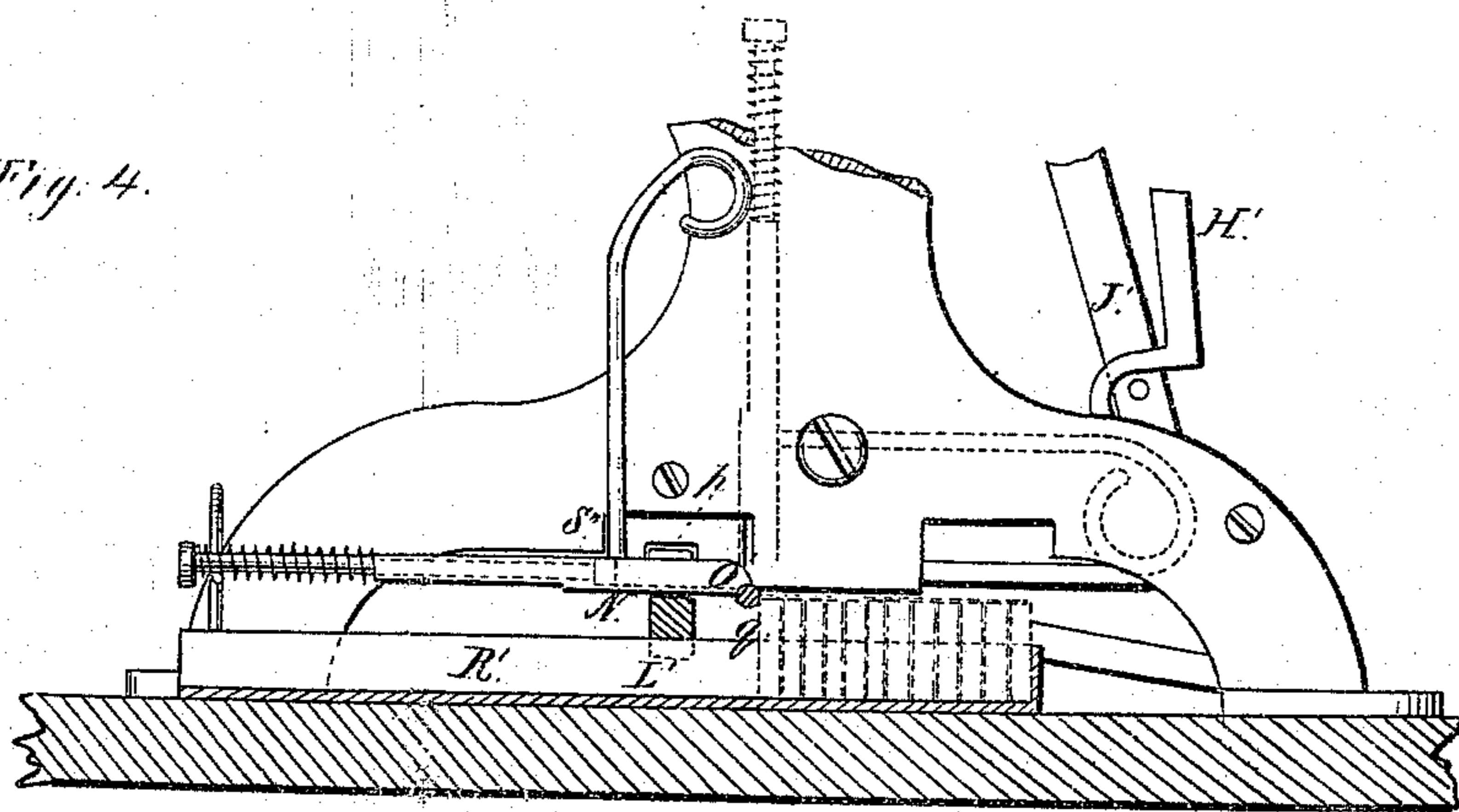
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M. Umstadter  
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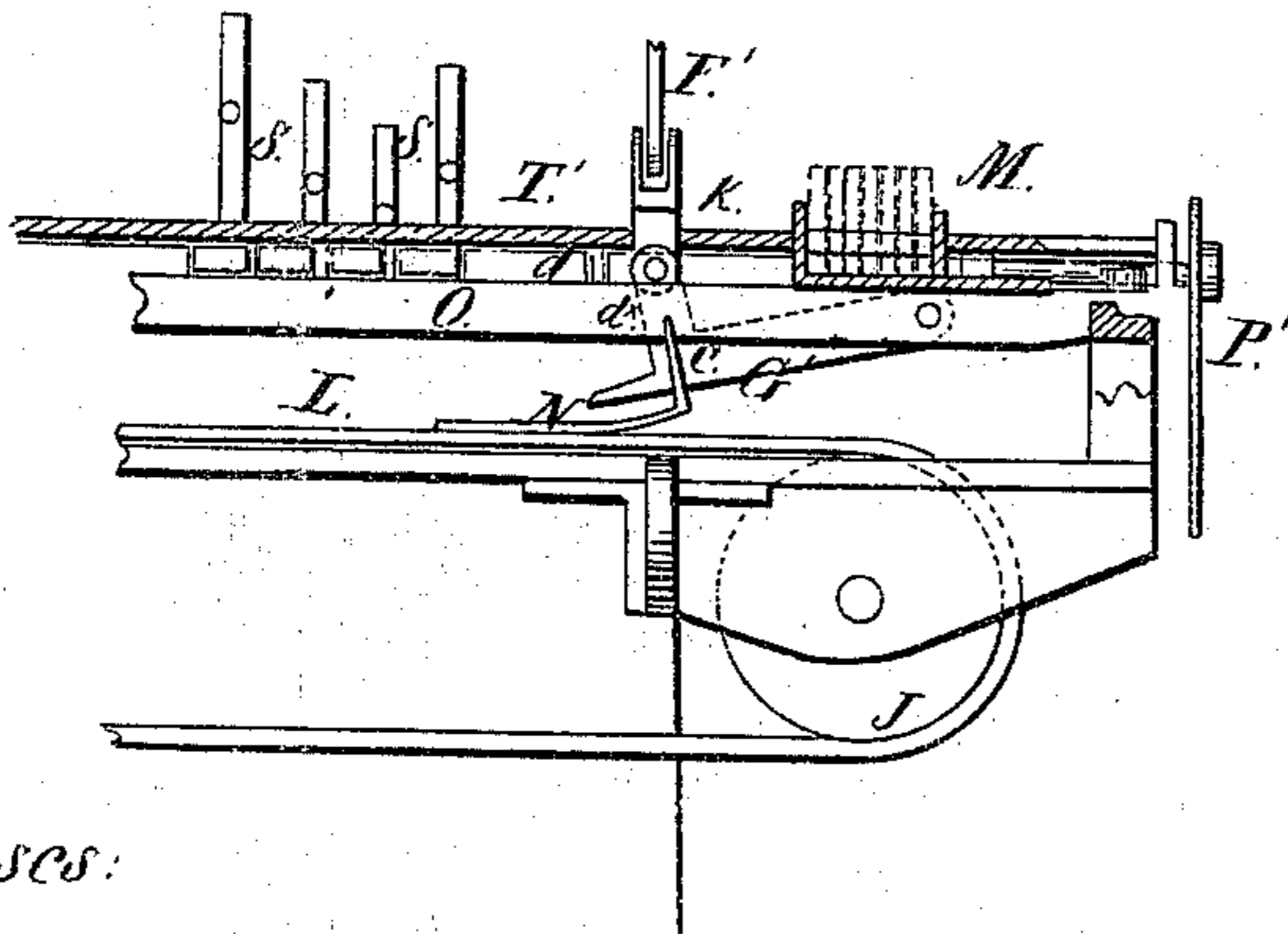
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*Type Setting & Distributing Mach.  
Nº 91988. Patented Jun. 29. 1869.*

*Fig. 4.*



*Fig. 5.*



*Witnesses:*

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# UNITED STATES PATENT OFFICE.

M. UMSTADTER, OF NORFOLK, VIRGINIA.

## IMPROVEMENT IN TYPE SETTING AND DISTRIBUTING MACHINES.

Specification forming part of Letters Patent No. 91,988, dated June 29, 1869.

*To all whom it may concern:*

Be it known that I, M. UMSTADTER, of Norfolk, in the county of Norfolk and State of Virginia, have invented a new and Improved Machine for Distributing and Setting Type; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved machine for distributing and setting type; and it consists in a novel means employed for carrying the type to be distributed from the stick in which they are deposited to a series of chambers, from which they are taken to be set up.

The invention also relates to certain means for adjusting or placing the type in proper position to be conveyed to the chambers above specified, and also in certain means for depositing the type in said chambers.

The invention further relates to certain means for discharging the type from the type-chambers upon a carrying device, which conveys them to the receptacle, from which they are adjusted in a proper stick. This part of the invention includes the "setting up," as it is technically termed.

The construction and operation of the several parts and details connected therewith are hereinafter fully shown and described.

In the accompanying drawings, Figure 1, Sheet No. 1, is a plan or top view of my invention; Fig. 2, Sheet No. 2, an elevation of the same, partly in section, as indicated by the line *x x*; Fig. 3, Sheet No. 3, a transverse vertical section of the same, taken in the line *y y*, Fig. 1; Fig. 4, Sheet No. 4, a section of a portion of the same, taken in the line *z z*, Fig. 1; Fig. 5, a section of a portion of the same, taken in the line *z' z'*, Fig. 1.

Similar letters of reference indicate the same parts in all the figures.

A represents a framing, which may be constructed in any suitable manner to support the machine and the principal part of its driving mechanism.

The frame proper of the machine consists of two parallel side plates, *a a*, connected by

cross-rods, the greater portion of which serve as supports or bearings for different working parts of the machine.

B, Fig. 2, represents a driving-wheel placed in the framing A, and by means of a belt, C, communicating motion to a shaft, D, at one side of the upper part of the framing A, said shaft D having a pulley, E, upon it, around which and a similar pulley, F, at the opposite side of the framing A, an endless belt, G, is fitted.

On the shaft D there is keyed a pulley, H, around which a belt, I, passes, said belt extending upward and passing around a pulley on a shaft, *b*, which has its bearings in plates *c*, the latter projecting horizontally from one of the side plates *a* of the machine. On this shaft *b* there is keyed a pulley, J, around which an endless belt, L, passes, said belt also passing around a similar pulley, M<sup>\*</sup>, at the opposite side of the machine, and having its shaft supported in a similar manner. By this arrangement a continuous movement is given the two belts G L from one and the same driving-wheel B.

To the belt L there are attached, at suitable intervals, elastic plates N, having prongs *c* at their outer ends at such a distance apart that a fixed bar, O, may fit between them, and allow said prongs, during the working or moving of the belt L, to pass freely along, one at each side of said bar, which is firmly bolted in position on the frame of the machine, and extends the whole width of the same, as shown in Figs. 1 and 2.

M is a stick placed at one side of the machine, and into which the type (shown in red) to be distributed is placed. This stick has a position at right angles with the bar O, and is at one end of the same, and extends a short distance behind said bar to a plate or bed, *d*, on which the lines of type, one line at a time, are thrown down flatwise and pressed by a plunger, *d*<sup>\*</sup>, against a plate or abutment, *e*, said plunger being acted upon by a spring, P. (Shown more particularly in Fig. 2.) When these lines of type are thrown down their faces are visible to the operator who works the keys Q, and each line of type is distributed as it is read by the operator, a key, Q, being actuated for each type, and each type

conveyed to its proper chamber. These chambers, which are designated by R, are all arranged side by side between the side plates *a*, and correspond in width and length to the type which they are designed to receive, there being a sufficient number of chambers to receive all the letters of the alphabet and the necessary quads, spaces, and other characters used in printing.

In each chamber R there is fitted a vertical rack, S, into which pinions T gear. These pinions are all placed loosely on one and the same shaft U, and each pinion has a ratchet, V, at one side of it, into which a pawl, W, catches. These pawls W are attached to bent or right-angular levers or keys Q on a shaft, *a*<sup>x</sup>, and are depressed by the fingers of the operator, and each time a key, Q, is depressed the pawl W, connected with it, moves the ratchet with which the pawl is engaged the distance of one tooth, the adjoining pinion T being moved in a corresponding degree, and the rack S, into which said pinion gears, is moved downward in its chamber R a corresponding distance. Through the lower ends of the racks S pins *d*<sup>x</sup> pass horizontally, and the type are supported by these pins in the chambers, as shown clearly in Fig. 3, *e*<sup>x</sup> representing the type; and each time a rack, S, is lowered by the pressing down of a key, Q, room is made in the chamber to receive another type, *e*<sup>x</sup>.

X represents a series of arms, the lower ends of which are all fitted loosely on a shaft, Y. There is an arm, X, for each key Q, the lower end of each key bearing against an arm. Each arm X has a spring, Z, bearing against it, and these springs have a tendency to throw the keys Q upward as they are relieved of the pressure of the fingers of the operator. To the upper end of each arm X there is connected, by a pivot, a horizontal bar, A'. These bars extend across the upper ends of the type-chambers R, and the front parts of the bars are made in the form of hooks *f*, as shown in Fig. 1. B' B<sup>x</sup> are two arms, the lower ends of which are attached to a shaft, C'. These arms, which have a position one at each side of the machine, are connected by a rod, D', against which all the arms X bear, the rod D' being kept in contact with said arms by means of a spring, E', Fig. 3.

The arm B' extends up higher than the arm B<sup>x</sup>, and the former is forked at its upper part, the prongs *g* *g* being at opposite sides of a bar, F', which works on the shaft *a*<sup>x</sup>, and has a slot made in it, one part, *h*, of which is straight, and has a longitudinal position in the bar, while the other part, *h*<sup>x</sup>, has an oblique position; and a pin, *i*, which passes through the prongs *g* *g*, also passes through this slot in the bar F'.

The arm B' has a rod, *j*, Fig. 1, pivoted to it, and this rod is in line with the inner end of the bed *d* and with the innermost type thereon. This rod *j*, each time a key, Q, is pressed down, is shoved across the bed *d*, and

moves the type, which is directly in front of it, across the bar O, and the bar A' of the arm X, which is operated by the depressed key Q, is also moved across the bar O; and the prongs *c* of a spring-plate, N, on the belt L, the first one that comes along, catches the type, and carries it along to the projecting bar A', which retains it, the prongs *c* *c* yielding or being thrown back, on account of the elasticity of the spring-plate N, so as to pass the bar A'.

When the finger of the operator is removed from the depressed key, the latter, together with the arm X and bar A', is moved back to its original position by a spring, Z, and the type is drawn back by the hook *f* of the bar A' over a chamber, R, and the type drops into said chamber, the rack S in the chamber being, as previously explained, moved down the distance of a type by the pawl-and-ratchet arrangement.

In order to prevent a type being thrown in contact with the prongs *c* of a spring-plate, N, if the latter should chance to be passing the type at the instant a key, Q, is depressed, I have a plate, G', pivoted at one end to the under side of the bar O, and the opposite end of this plate is connected by a link, *k*, with the bar F'. When a key, Q, is not depressed, the plate G', Fig. 5, is kept in an inclined position, so as to cause each spring-plate N of the belt L to be forced down, and the prongs *c* *c* to pass below the type. When, however, a key, Q, is depressed, the arm B' is moved simultaneously, in consequence of the arm X of said key coming in contact with the rod D', and the pin *i* of B' moves forward in the part *h* of the slot in bar F' without moving the latter; but when said pin reaches the oblique part *h*<sup>x</sup> the bar F' is raised, and with it the plate G', and the prongs *c* can then catch the type on bar O, and carry or shove it along to the bar A', which is in a position to arrest its movement, and draw it into its proper chamber R.

I will now proceed to describe the type-setting mechanism:

H' represents keys which are constructed precisely similar to the keys Q, and are also fitted loosely on a shaft, I', at the side of the machine which is opposite to the side where the keys Q are placed. These keys H', at their lower ends, act against pendent arms J', fitted loosely on a shaft, *l*, the arms J' having rollers *m* at their lower ends, which are directly over spring-bars K' attached to the bed-piece on which the machine rests. Each arm J' has a spring, *n*<sup>x</sup>, and a rod, *n*, pivoted to it near its lower end, and these rods work through the lower parts of the type-chambers R.

Each time a key, H', is pressed down and its arm J' shoved forward the rod *n* of said arm forces a type out from the bottom of the chamber R, through which it passes upon the bar L', under which the belt G works, the type thus shoved out being carried by the prongs *o* *o* of a number of springs M', attached to said belt, to a stick, N. (See Figs. 1, 2, and 4.)

