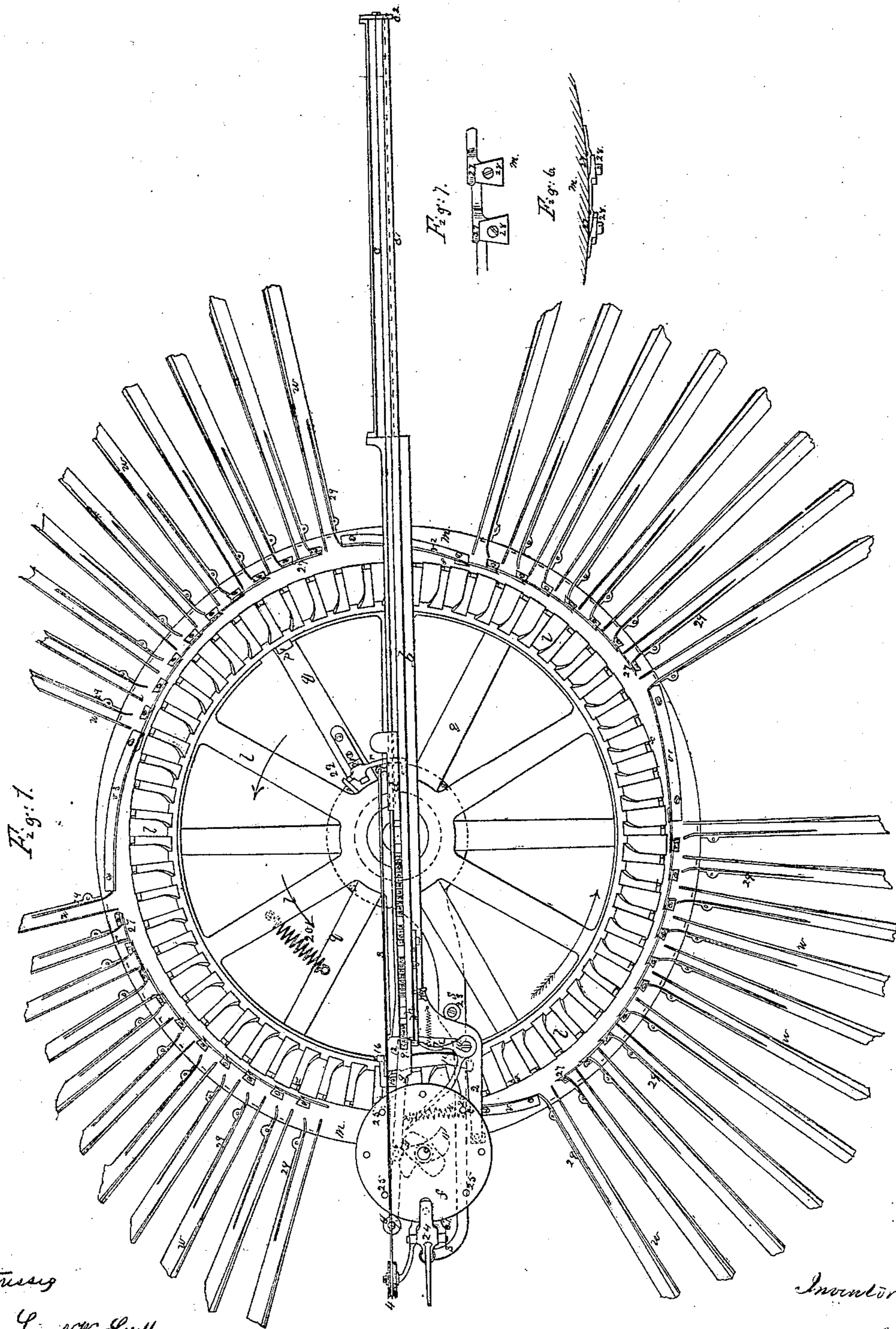


W. H. Mitchel *Sheet 1. 2 Sheets*
Type Distributing Mach.
N^o 18264. Patented Sept 22. 1857



Witness

Samuel W. Lunt.

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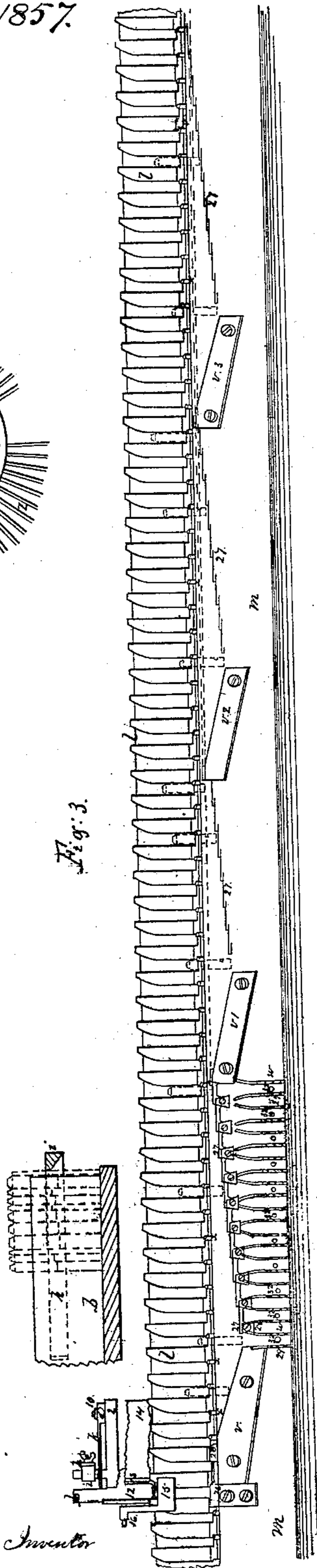
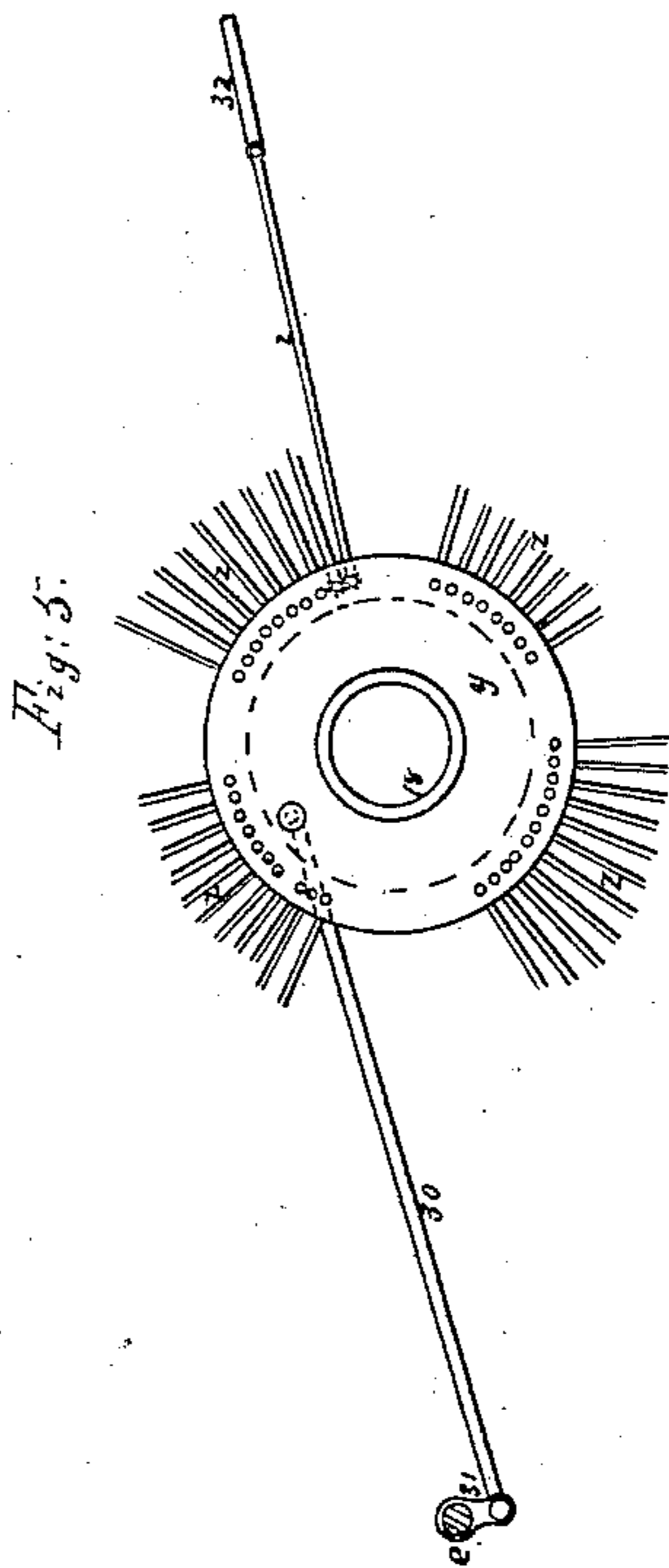
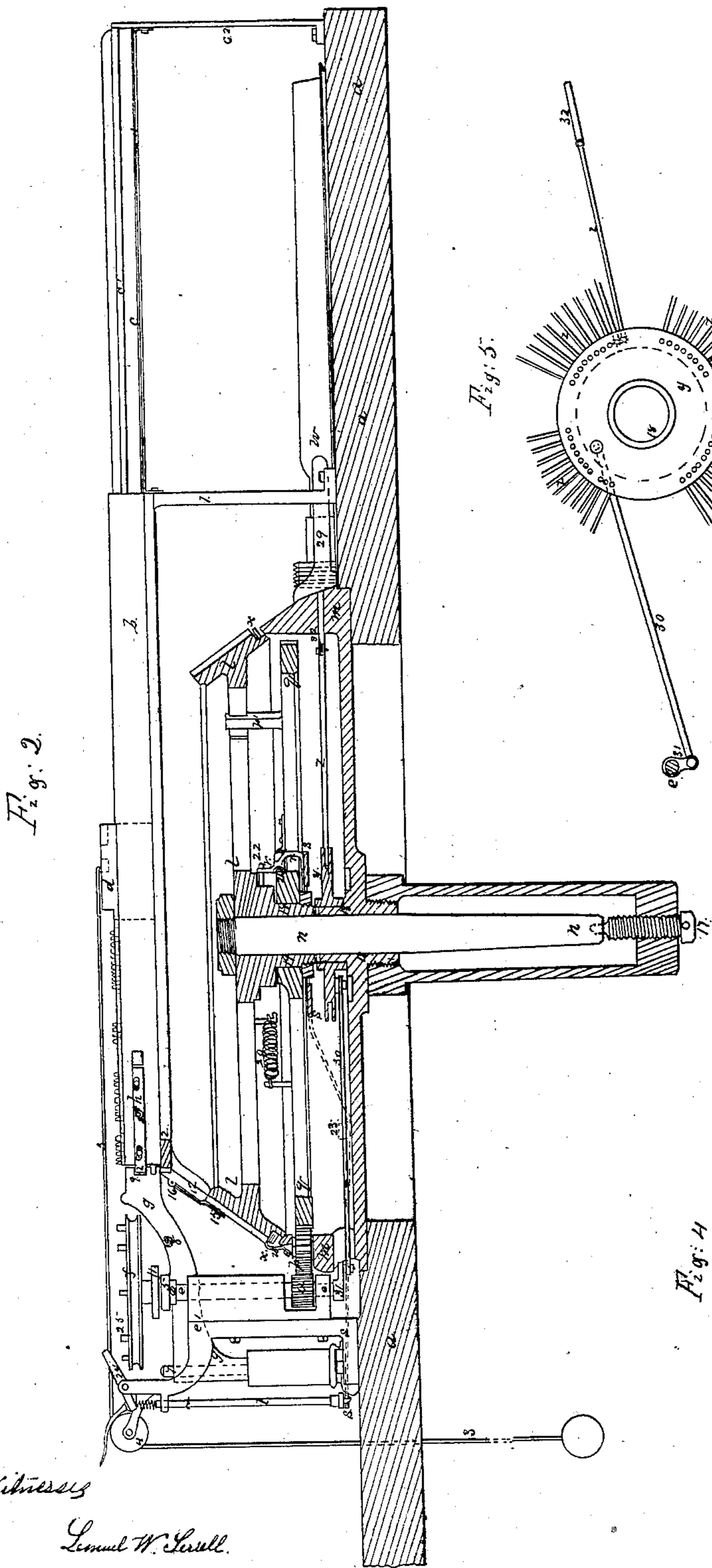
Inventor

W. H. Mitchel.

Sheet 2.2 Sheets.

Type Distributing Mach.

Patented, Sept. 22. 1857.



Samuel W. Gerrell.

Inventor

Wm H. Mitchell

UNITED STATES PATENT OFFICE.

WILLIAM H. MITCHEL, OF BROOKLYN, NEW YORK.

MACHINE FOR DISTRIBUTING TYPE.

Specification forming part of Letters Patent No. 18,264, dated September 22, 1857.

To all whom it may concern:

Be it known that I, WILLIAM HASLETT MITCHEL, of Brooklyn, in the county of Kings and State of New York, have invented, made, and applied to use certain new and useful Improvements in Machinery for Distributing Types; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a plan of my said distributing-machine. Fig. 2 is an elevation of the same, showing the center distributing-wheel in section. Fig. 3 is a representation of the manner of dropping the types into the respective grooves in the distributing-wheel, as though on a straight line, for the purpose of illustration. Fig. 4 is a side view of the inclined check-block that acts to regulate the position of the end type, so as to be correctly separated from the other types in the line and dropped into the distributing-wheel. The other figures are separately referred to, and similar marks of reference denote corresponding parts.

The nature of my said invention consists in an inclined check-block acting in connection with notches in the types proportioned to the width of said types, and a vibrating separator, whereby one type at a time, and no more, is separated from the line of types irrespective of its thickness. My invention also relates to suspending types on pins or similar projections that revolve in a uniform plane by variously-placed notches in the sides of said types, so that the bottoms of said types are at different distances from the said suspending pins and by their position determine the receptacle or point at which the said types are disconnected or dropped from said suspending pins, whereby the types are assorted by being deposited in the receptacle allotted for the respective types.

In the drawings, *a* is a suitable table or bed carrying the machine.

1 is a standard carrying a groove or slide *b*, supported at the other end by an arm 2.

c is a slide formed of sheet metal attached to the standard 1 and to another standard *c*², so that said slide can be turned into an inclined position to receive a line of types, and then be turned up with the types against a

bar *c'* and the types be slid into the groove *b* by means of a feeding-block *d*, that is drawn along and presses the line of types into the machine by means of a cord 3 over a pulley 4, with a weight at its end.

e is a vertical shaft sustained on a standard *e'* and rotated by means of a pulley *f* and cord or band. 5 is a cam on said shaft *e*, taking a roller 6 on the vibrating separator *g*, that moves on a vertical shaft 7.

8 is a contractile spring keeping the separator *g* toward the arm 2 when not acted on by the cam 5. 9 is a jaw on the end of said separator, receiving the first type only of the line of types, irrespective of its thickness, each vibration of which separates said type and deposits it on a conductor 12 to pass into the machine, as hereinafter designated.

The distance to which the first type projects from the groove is determined by a notch or nick cut in the said type of a width proportioned to the thickness of the type, and which acts in the following manner: On the side of the slide *b* is a bar *h*, attached by slots and a set-screw, and on the end of said bar is a projection *i*, that passes through a slot in the separating-jaw *g* and projects about one-fortieth of an inch past the side of the slide *b*. As the types are therefore pressed along in said slide *b* by the feeding-block *d*, the end type would stop against said block *i*, which I therefore term the "check-block," and the distance between this check-block and the end of the slide *b*, I make equal to the thickness of the three-em space of the font, (see first type, Fig. 4,) and in order to allow the thicker types to project beyond the end of the slide *b* a distance equal to their thickness, I form in the bottom or top side of the body of the type a notch, proportioned to the width of type, so that said notch permits the type to pass over the check-block *i* till the lower side of the notch is arrested by the inclined surface of the said check-block, which determines correctly the extent of the forward motion of the first type in the line of types, so that said type only shall be taken from the line by the jaw 9. The distance from the end of this groove *b* to the check-block *i* may be greater or less than described; but in all cases any type the thickness of which is greater than that distance will require to be notched, while in those of

less the notch is dispensed with. As the vibrator *g* carries off the end type of the line, the jaw 9, coming against the end of the line of types, prevents the same moving forward, and as the said separator comes back to receive another type, a bent relieving-lever *k*, kept to the type by a slight spring and working in a notch in the jaw 9, comes into action. Said spring is overcome by the feeding slide *d*, and the lever *k* simply acts to relieve the type and gradually allow the end type to pass into the jaw 9 as the end of said lever *k* is relieved by the motion of a cam 11, (see dotted lines Fig. 1,) thereby preventing the type coming forward suddenly or with a jerk.

It will be apparent that one side of the slide *b* might be adjustable to suit different fonts of type.

l is a wheel with an inclined or conical rim, revolving above a circular bed *m*, having an inclined or conical rim around its edge adapted to the wheel *l*. This wheel *l* is on a vertical shaft *n*, set in the journal 18 and supported on a set-screw 17, by which the wheel *l* is adjusted to revolve in the desired proximity to the rim of the bed *m*. The wheel *l* is driven from the pinion *o* on the shaft *e* through an intermediate pinion *p* and wheel *q*, which wheel *q* sets free on the hub 19 of the wheel *l*, and has a stud *p'* passing into a notch in the inner part of the wheel *l*, (see Figs. 1 and 2,) and 20 is a helical spring from an arm on the wheel *q* to an arm on the wheel *l*, tending to keep the stud *p'* to the end of the slot, as represented in Fig. 1. The wheel *l* carries the types, as hereinafter detailed, and moves in the direction of the arrow, and if any type catches or other accident occurs to arrest the motion of the wheel *l*, the power continuing to move the wheel *q* extends the spring 20, (the stud *p'* moving in its slot,) and gives a motion between the two wheels that causes a bent lever *r* on a fulcrum 21 on the wheel *q* to press against a stud 22 on the wheel *l*, and gives a downward motion to a ring on the end of a lever *s*, which ring surrounds the journal of the wheel *q*, and the lever *s* is set on a fulcrum 23 and extends to near the shaft *e*, where a small rod *t* acts on a balance-pawl 24 to throw the same between pins 25 on the pulley *f* and stop the motion of the machine, the belt or cord around said pulley *f* slipping. By this means the machine is not injured by any misplaced type, and when the obstruction is removed the pawl 24 is raised and the parts assume their usual position and operation. A small spring may be used on the end of the rod *t* to yield and allow a pin beneath the pawl to pass clear thereof.

The wheel *l* is formed with grooves in its inclined or conical face, adapted in size to the peculiar font of types, or may be adjusted to different fonts by being formed as two rings, one side of the grooves being on one ring and the other side on the other ring, so as to regulate thereby the width of groove,

and the lower edge of this wheel *l* is turned off smaller to set within the rim of the base *m* and to receive pins *x*, that are just within the line of one side of the grooves and revolve on a uniform plane nearly in contact with the upper edge of said rim *m*, and the ends of said pins project slightly beyond the line of the bottom of the grooves and the inclined edge of the rim. On these pins the types are suspended by notches variously placed in their sides, so that the bases of the respective types hang at various distances below the plane of motion of the pins *x*, and by their position come in contact with series of stationary disengagers placed at successive heights, so that all the types of one letter hanging in the same position relatively with the plane of motion of the pins *x* come in contact with the proper disengager and are dropped into the receptacle allotted for them.

The conductor 12 is on the line of the bottoms of the grooves in the wheel *l*, so that as the types are dropped on said conductor, as before mentioned, they slide into the grooves in the wheel *l* as said wheel revolves below the conductor, and slide down against a stop *u*, formed of a thin stationary plate of metal passing between the pins *x* and the lower ends of the grooves, so that said pins are relieved from the concussion of the falling type. The conductor 12 is formed with a small rise at 13 (see Fig. 3) to guide the type; but should one type be in the groove that presents itself for the falling type the said falling type is moved along by the wheel *l* over said rise and thrown out by the plate 14 that curves forward, and, falling, attracts the attendant's attention.

The type in the groove of wheel *l* is carried off the stop *u* and allowed to slide down against the pin *x*, over which the base of the type is lifted as it progresses by a stationary incline 26, connected to the stop *u*, and slides down, its base resting upon the stationary inclines *v*, and if there be no notch in the type to catch the pin *x* said type is deposited in the first radial receiving-slide *w*. If, however, it be suspended by the notch of the type dropping over said pin, the type travels until it comes to an incline or disengager 27, adapted to its position, which disengages the type from the pin *x*, allowing its base to rest momentarily on the block 28 until the further motion drops it into the allotted radial receiving-slide. If the position of the type be such as not to be taken by the first series of disengagers, it comes in contact with either the second, third, fourth, or other incline *v'*, *v*², *v*³, or *v*⁴, and being disconnected, slides down said incline as the wheel progresses into the first of the radial receiving-slides *w* of the respective series, provided the type has but one notch in its side; but if two notches are placed in said type it is caught on the pin *x* while sliding down the incline *v'*, *v*², *v*³, or *v*⁴, and distributed to the allotted radial receiving-slide *w* of the given series, the same as in

the first instance. Thereby a very great variety can be distributed by the use of two notches, and a still greater variety could be distributed by the use of three notches, in all cases the position of the type in relation to the plane of motion of the pins x designating the receptacle into which the disengager drops the type.

The notches last spoken of as designating the receptacles into which the types are distributed are independent of those notches which act in the separation of the types from the line of types, as these latter notches are entirely above the former, or might be on the other side of the type, so that they do not affect the distribution of types in the manner just described.

The inclines 27 and pieces 28 (shown in full size in Figs. 4 and 7) may be separate pieces screwed onto the base m , or said base may be formed so as to be filed away, leaving said inclines thereon, if desired. In this case the size of the base m must be such as to allow sufficient offset to lift the type off the pins.

The radial receiving-slides w are to be formed of thin sheet metal bent into an angle, and having a twist or wind, so that as the line of type is forced outward in said receiving-slide it inclines over sidewise into the angle, to prevent falling out of the slide. 29 is a piece of metal forming the other side of the groove or receiving slide, near the base m , to steady the type in dropping into said slide, and the type are to be removed from each slide, when full, onto a thin piece of metal bent in an angular form and placed at the end of the receiving-slide, into which the types are slid by the finger, and in all cases a block or quad is to be used at the end of the line to prevent the types falling over.

As the types are dropped into the receptacles or radial receiving-slides, the whole line of types is pushed along the thickness of the type added, so as to give room for the next type by means of pushers 32 passing through holes in the base m on the line of the respective radial receiving-slides, which pushers have a vibrating motion given from the oscillating ring y around the journal 18 by

means of connecting-rods z , and said ring y is given an oscillating motion by the crank 31 on the end of the shaft e and connecting-rod 30, so that twice in every revolution of the shaft e the pushers 32 are projected and give motion endwise to such lines of type as have had a type added from the distributing-wheel.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The inclined check-block i , in combination with notches in the sides of the types, so placed that the notch of the first type comes in contact with the said inclined check-block when the type is projected its thickness beyond the end of the slide containing the line of types, so that only one type at a time is separated from the line of types, as specified.

2. The use of studs or pins uniformly placed to take notches variously placed in the types, thereby sustaining the types in various positions to be dropped or distributed when said types reach receptacles adapted to the peculiar position of said types.

3. The method herein described of distributing types by the revolving wheel l , with its grooves and pins x , when combined with the stationary inclines or offsets, substantially as specified.

4. Distributing types from uniformly-placed and moving pins or their equivalents by the use of a second notch in the type, combined with suitable offsets or inclines to disengage the first notch of the type and then allow the type to be suspended by the second notch for distribution, substantially in the manner specified, thereby providing for distributing greater varieties of types without requiring extreme accuracy in the position of the notches, as specified.

5. The oscillating ring y and connecting-rods z , in combination with the pushers 32, for the purposes and as specified.

In witness whereof I have hereunto set my signature this 25th day of April, 1857.

WM. H. MITCHEL.

Witnesses:

LEMUEL W. SERRELL,
P. T. KNUDSEN.