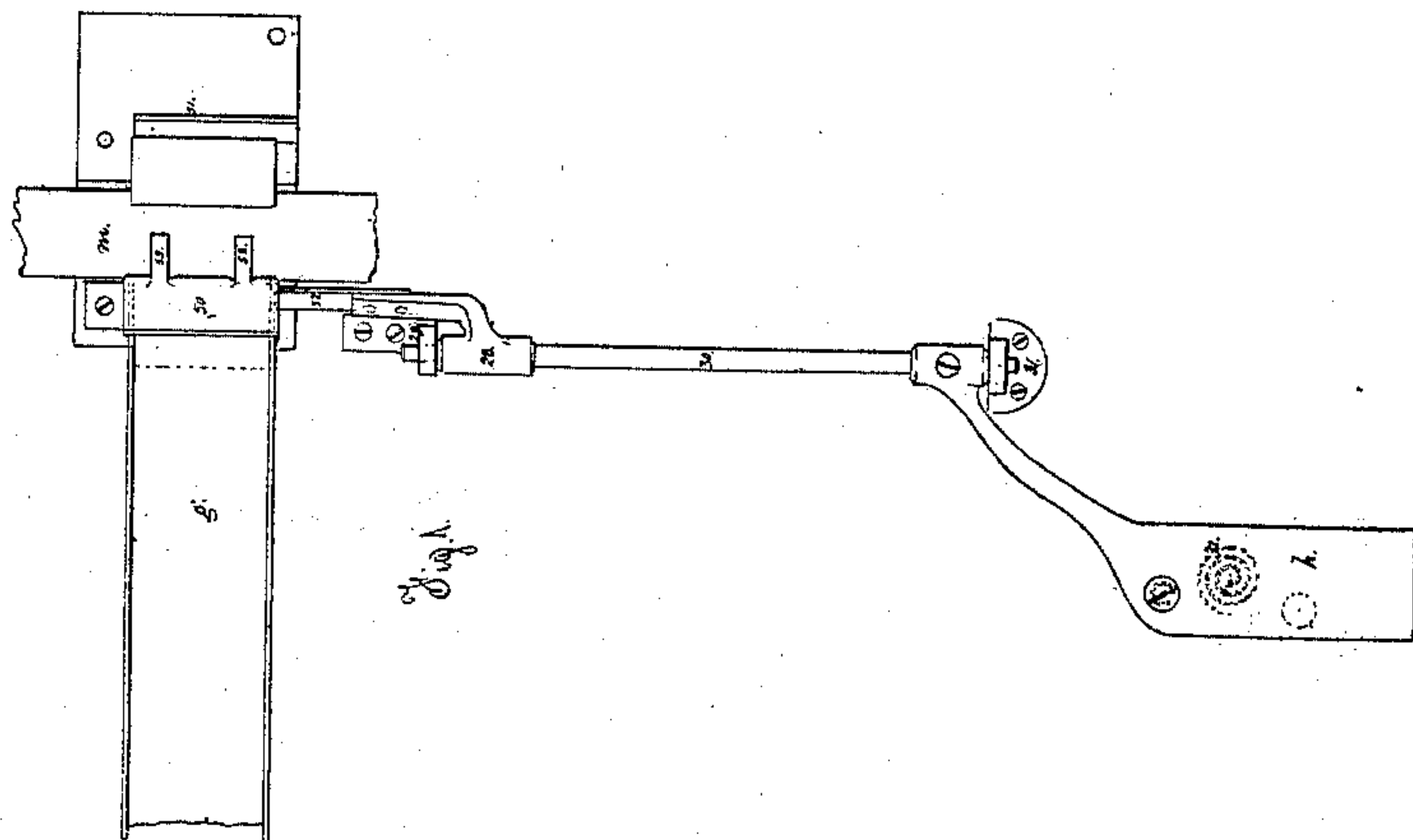
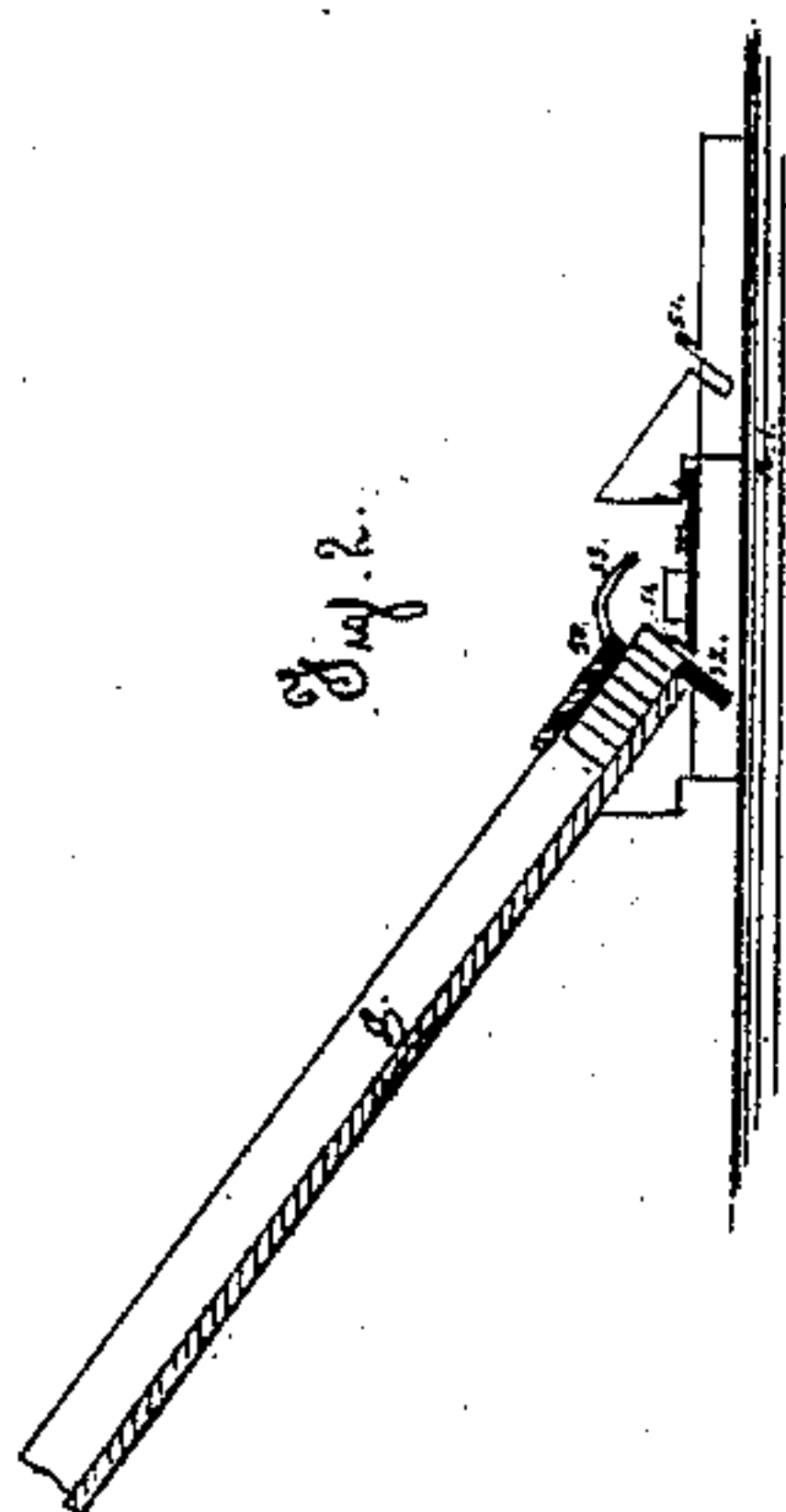
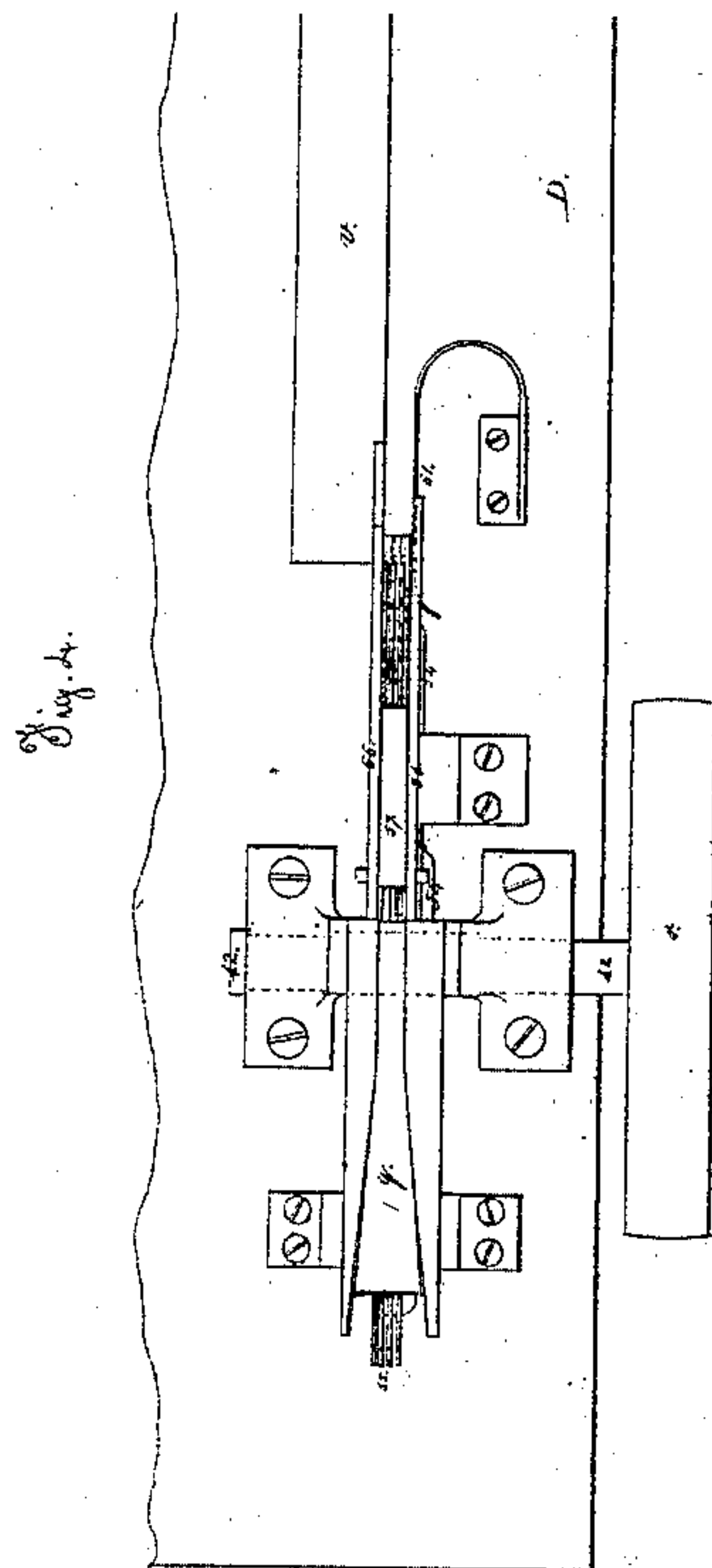
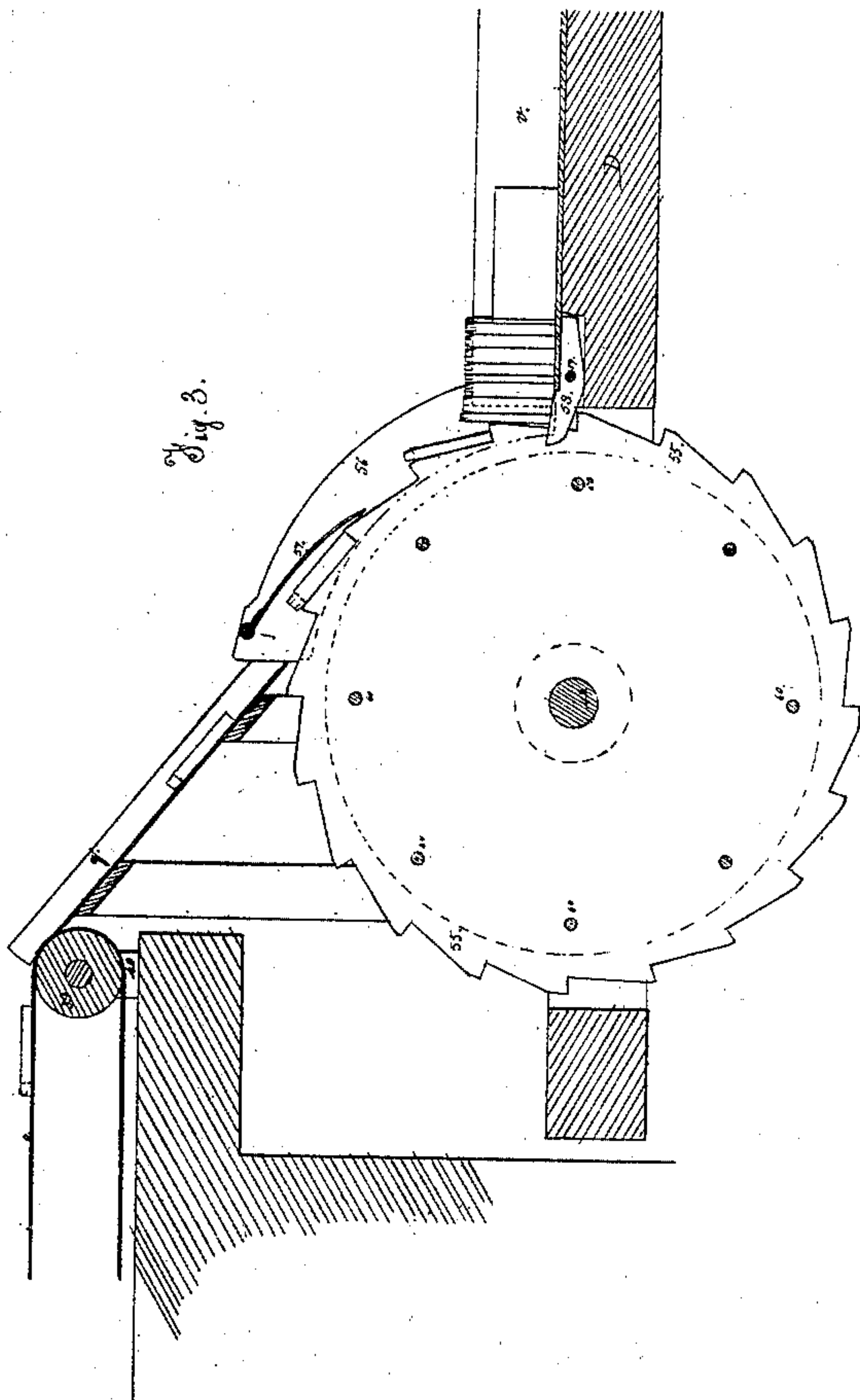


W. H. MITCHEL
MACHINE FOR COMPOSING TYPE.

No. 10,929.

Patented May 16, 1854.



Witnesses

Samuel W. Smith.
Thomas G. Harold.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

New York City 24th February 1854.

William H. Mitchel

UNITED STATES PATENT OFFICE.

WILLIAM H. MITCHEL, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINERY FOR COMPOSING TYPE.

Specification forming part of Letters Patent No. 10,929, dated May 16, 1854.

To all whom it may concern:

Be it known that I, WILLIAM H. MITCHEL, of Brooklyn, in the county of Kings and State of New York, have invented and made certain new and useful Improvements in Machinery for Composing Type for Printing; 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 one of the finger-keys detached. Fig. 2 is an end view of the parts for dropping one type at a time. Fig. 3 is a sectional elevation, and Fig. 4 is a plan of the composing-wheel.

The like marks of reference denote the same parts.

My invention consists in improvements in the composing apparatus shown in my patent issued August 30, 1853, for improvements in means for composing and distributing type, and applies to the parts for dropping the type from the conductors *g* therein shown onto the belts *m*, which convey the type to the diagonal belt *o*, that carries the type to the composing apparatus.

I have also invented an improved wheel for setting up or composing the type in line. The marks of reference that correspond with those in the before-mentioned patent apply to the same parts, and for a description of the operation of such parts I refer to said patent.

h is the finger-key, kept up by the spring 32.

30 is the shaft set in bearings 29 and 31, to which shaft a partial rotary motion is communicated by the operator depressing the finger-key, which partial rotation lifts the bar 52, that is attached to the boss 28 on the shaft 30. This bar 52 lies in a recess at the lower end of the conductor *g*, next to a lip 51, against which the bottom type in the conductor *g* lies. On striking the finger-key the bar 52 is raised up so as to lift the bottom type up over the lip 51 and allow the same to drop on the belt *m* of the series of belts set forth in before-mentioned patent.

50 is a bar lying across the lower end of the conductor at such a distance from the lip 51 that the bottom type only can be raised up, the bar 50 keeping down the next type in the conductor, and as the bar 52 is returned below the bottom of the conductor by the spring

32 raising the finger-key the type slide down against the lip 50, ready for the bottom one to be again lifted and dropped on the belt.

53 are curved fingers which prevent the type from being thrown too far by the sudden motion of the bar 52 and cause the type to fall properly on the belt.

In the construction of the composing-wheel, which sets the type up in line, I dispense with the wheel *s* shown in the before-mentioned patent and use a larger wheel in place of the wheel 43. In case any thin type should be passed by accident into the teeth of the wheel 43 edgewise, and the thickness thereof was less than the thickness of the composing-wheel, its lower edges would not be taken by the bed *D*, but the type would pass on with the wheel and get clogged. Hence to avoid the possibility of such a difficulty I have constructed my composing-wheel of a series of thin circular plates similar to circular saws, and on the teeth of these plates the type rest and are carried around until they are nearly vertical, when the lower ends are taken by thin plates passing between the circular plates, which thin plates are slightly inclined and pass the type to the groove, in which they are divided into lines, justified, and set up into columns or pages, as set forth in the before-mentioned patent.

o is the diagonal belt before mentioned, conveying the type from the series of belts *m* to the inclined conductor *q*, that conveys them to the teeth in the plates 55, that are circular and attached to a plate 54, that is connected to the shaft 42, and the plates 55 are kept slightly apart by a disk of thick paper or sheet metal inserted between each below the bottoms of the teeth in said circular plates, (see dotted line, Fig. 3,) the plates all being secured to the disk 54 on the shaft by screws 60.

56 are curved sides between which the composing-wheel travels, and 57 is a slight tongue or plate between the sides, that lies on the teeth of the composing-wheel to prevent the type from jumping over the teeth of the wheel as they slide down the conductor *q*, and, the upper end of this tongue being merely sustained by a pin, the lower end will drop onto the teeth and type as they pass beneath it.

58 are thin plates passing between the circular plates 55 of the composing-wheel. These are set on a small rod 59, which retains them

in place, but allows of a sliding motion on the rod if the plates of the composing-wheel do not run quite true. These, as before mentioned, take the bottom of each type as it is brought down into place and set it up in the groove against the bar *v*, and the plates are so thin that the interstices left between them are so small that no type can pass into them, whether it be received in the proper position for being set up or otherwise; and in order to prevent the possibility of clogging I use a spring 61, that has a broad end sitting against the side of the composing-wheel, which causes the type to be set up vertically, but which gives room for any type to clear itself and pass along should it be presented in such a manner that it would stick in a solid groove.

It will be evident that the bar 50 might be attached by slots and screws, so as to be adjustable to different widths of type; or it might be attached to a bar running along by the side of the conductors, so as to adjust the whole of them at once.

What I desire to secure by Letters Patent is—

1. The combination of the lip 51 with the

lifting-bar 52 and with the bar 50, as specified, the said lip 51 acting as a stopper, against which the line of type lies in the inclined conductor, and over which the bar 52 lifts the bottom type, so that it falls on the belt *m*, as specified, and the said bar 50 being so adjusted as only to admit of one type at a time being lifted, as specified.

2. Constructing the composing-wheel of thin circular plates with teeth therein, so as to receive the type from the conductor *q*, in combination with the plates 58, which pass between the circular plates and receive the type, preventing their further descent and passing them in line into the groove, as specified.

3. The tongue 57, to prevent the type jumping over the teeth in the composing-wheel as they pass down the inclined conductor, as specified.

In testimony whereof I have hereunto set my signature this 21st day of February, 1854.

WILLIAM H. MITCHEL.

Witnesses:

LEMUEL W. SERRELL.

THOMAS G. HAROLDS.