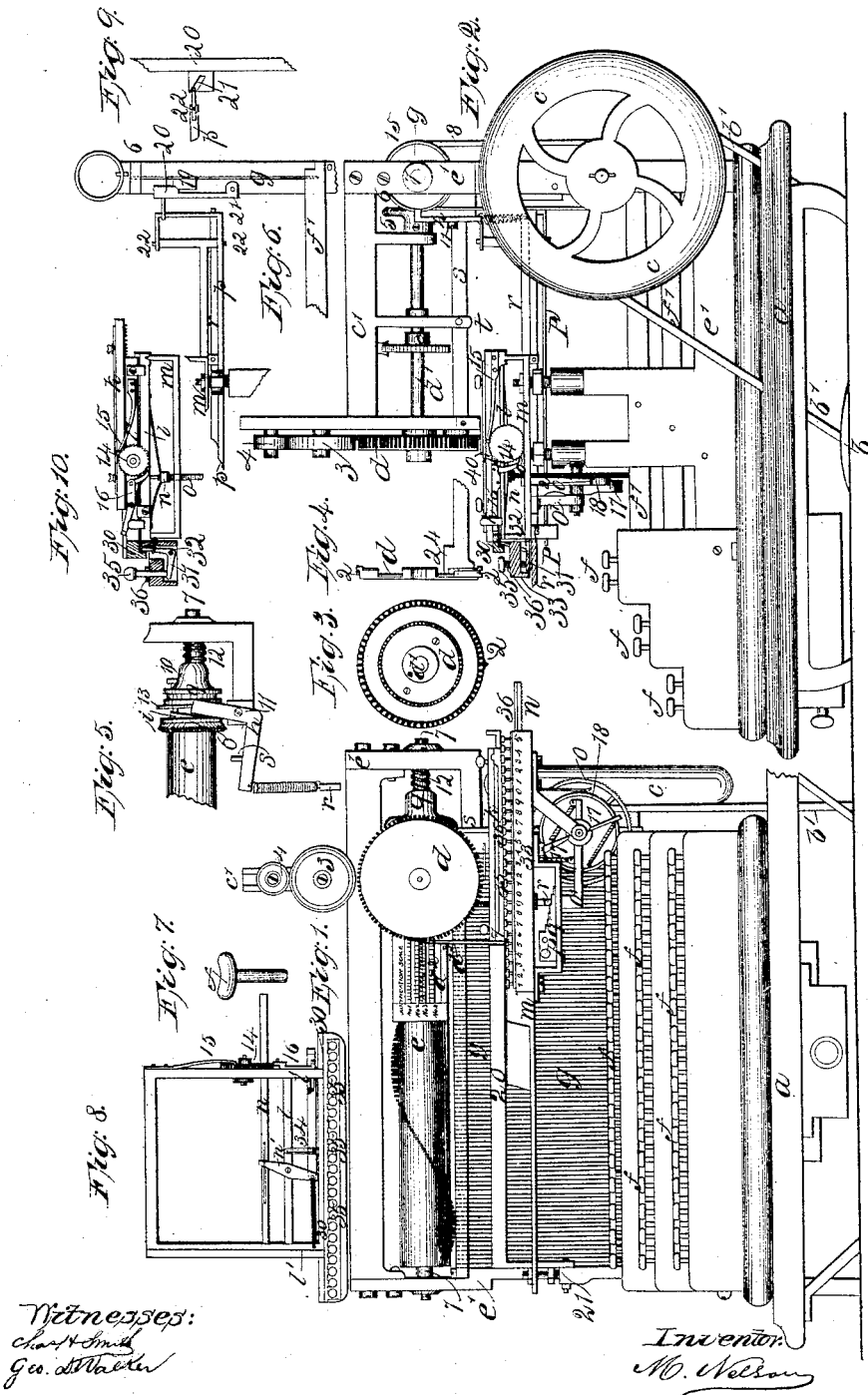


M. NELSON.

FORMING MOLDS FOR STEREOTYPE AND OTHER PLATES.

No. 65,501.

Patented June 4, 1867.



Witnesses:
Chas. Smith
Geo. Walker

Inventor:
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United States Patent Office.

MORTIMER NELSON, OF NEW YORK, N. Y.

Letters Patent No. 65,501, dated June 4, 1867.

MACHINERY FOR FORMING MOULDS FOR STEREOTYPE OR ELECTROTYPE PLATES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, MORTIMER NELSON, of the city and State of New York, have invented and made a certain new and useful improvement in Machinery for Making Impressions or Forming Moulds for Stereotype or Electrotype Plates; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a front elevation of the machine.

Figure 2 is a side view of the same.

Figure 3 is a view of the rear side of the type-wheel.

Figure 4 is a section of said type-wheel and part of the actuating lever.

Figure 5 is a view of the end of the key-barrel and actuating mechanism.

Figure 6 is a section through the key-barrel and spacing mechanism.

Figure 7 is one of the keys detached; and

Figure 8 is a plan of the frame of the impression-bed.

Similar marks of reference denote the same parts.

The object of my invention is to make a mould for stereotyping or electrotyping by the impression of types into a surface of soft material, such as clay or wax, said types being controlled by mechanism, and presented and impressed successively, in accordance with keys struck by the compositor. The surface of soft material is moved progressively and to the extent required for the reception of each particular type as impressed.

The first part of the machine employed consists in the wheel carrying the types.

The second part consists in a means for rotating said type-wheel, and stopping it by pressing on the required key, so that the corresponding type is brought into position to be impressed.

The third part consists in mechanism for moving the surface of soft material the necessary distance to receive the impress of the type, and leave the necessary space between the respective impressions.

The fourth part consists in mechanism for giving the impression of the type in the soft surface.

In the drawing, *a* represents a table of any desired character. I prefer and use a table similar to that of a sewing machine, with a fly-wheel, part of which is shown at *b*, and belt *b'* to the fly-wheel *c* of my machine. *c'* is a frame carrying the type-wheel *d*, which is the first part of my machine. This type-wheel is of any desired size; I, however, prefer that it be made about five inches in diameter. I have a number of these type-wheels having in them corresponding alphabets, signs, characters, designs for borders, musical types, or any other kind of types that may be desired, according to the character of matter to be composed. And I here remark that the number of types or characters in any one of these type-wheels may be varied, the other parts of the machine being adapted to working in harmony therewith; and the keys that control the movements of the type-wheel, as hereafter described, may have several set of characters marked upon them, so as to correspond with the types in the type-wheels, when one of said type-wheels is taken off and another one put on in its place. Each of the type-wheels is made with a central hole fitting accurately upon the projecting end of its actuating shaft *d'*, and in order that it may be held in its proper position, a feather on said shaft, or a pin projecting from a hub on said shaft, and entering a hole in said type-wheel, is to be employed. All the type-wheels being of the same general character, and only one at a time being used in the machine, I shall speak only of the type-wheel in use in the machine, and describe its construction.

The type-wheel *d* is made as a thin metallic disk, with a central hub and a circular flange or ring near its edge, as seen sectionally in fig. 4. This ring of the type-wheel is grooved radially, each groove being parallel sided, and of a size to receive the shank or body of the type, the character or letter being at the end of the type-shank. A metallic ring, placed upon the surface of aforesaid grooved flange, retains the shanks of the types, but allows of their being moved endwise or radially to the wheel. A notch is formed in the body of the type, or near its end, into which is passed a contractile band of India rubber or similar material, so that by it the types will all be drawn in towards the centre of the wheel *d*, but any one type may be pressed outwardly, as seen in fig. 3, in order that the surface of soft material may be impressed by said type. In figs. 3 and 4 this contractile rubber band is shown at 2 2. The types, as the wheel *d* is revolved, in the machine, are kept oiled or greased so as not to adhere to the moistened soft surface of clay or other material in which the impression

I remark that the grooves in the type-wheel being all uniform, the bodies of the types must be all the same size to fit said grooves, and the left side of the type, as impressed, is to be on line with the left side of the body, and with wide types the letter-head will project to the right, being wider than the body.

In order to aid the compositor in justifying his work, I provide the scale d^2 , affixed upon a plate that extends from the frame c' behind the type-wheel d , and an index or pointer, d^3 , is attached to the left side of the carriage l . Upon this justifying-scale are divisions adapted to the different sizes of types, the left side of the said scale indicating by the pointer d^3 the right side of the column of matter impressed in the surface of soft material, so that the compositor may be guided in justifying said matter as it is impressed, according to the space that remains for introducing a word or syllable, the lever r enabling him to produce more or less space between words or letters.

My present improvements are particularly adapted to the printing of music. For this purpose the type-wheel d is to contain type to form the lines, bars, whole notes, half notes, quarters, &c., and the dots, rests, and other signs required. In the use of this type-wheel I first repeat the impression of the type having the lines, until the whole musical line is produced, then I divide it up with the bars and other signs if desired. In order, however, to print the desired note upon the proper line or space, I provide for moving the bed k backwards or forwards, so as to bring the proper line or space beneath the note or sign to be impressed. This movement is allowed for by making the bed l in two parts, as seen in Figure 10, the upper or auxiliary part l' carrying the wheel 14, pawl 16, and spring-stop 15, so that the bed k and surface of soft material are kept in place on the carriage l' , and can be moved forward upon the lower part l of said carriage, which remains in place upon the bed m .

The front part of the auxiliary bed l' is formed with a lip, 30, coming down in front of the upper ends of the bent levers 31, that are set on fulcra 32, upon the front flange and key-board 33 of the bed l . A contractile spring 34 (see fig. 8) draws the lip 30 constantly back into contact with the levers 31.

The keys 35 are formed all of corresponding lengths, and pass through the key-board and rest upon the front and lower ends of the bent levers 31. A movable inclined scale-board, 36, is applied beneath the heads of the keys 35, and is made of the proper thickness, so that the depression of one end-key will move the auxiliary bed l' only one space to bring the first space or line under the type, and at the other end the key having a complete movement, draws the bed forward sufficient to bring the upper line or space of the scale under the type to be impressed. This row of keys 35, and inclined scale-board 36, may extend over two or more octaves so as to reach any ordinary spaces above or below the line. By this construction the type-wheel only has to be provided with musical characters and signs, and those can be impressed in any part of the scale desired by the forward and backward movements aforesaid.

Many of the parts herein set forth correspond substantially with those contained in an application for a patent heretofore made by me. They are not claimed; but in consequence of the arrangement and details of operation varying somewhat, the operation of the whole machine is described, to more clearly set forth the present improvement.

I provide a small metal plate, 40, attached to the bottom of the standard c' , and coming, in the form of a finger, around in front of the type-wheel, the end of which plate is on the line of the edge of the type to be impressed, so as to facilitate the adjustment of the surface of soft material, by enabling the operator to tell the position where the next type will be impressed, and move said surface accordingly.

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

1. Communicating motion to the lever that impresses the types, by an end motion of the pulley 9 when the cylinder e is stopped, substantially as set forth.
2. I claim the lever h , incline i , and sliding pulley 9, in combination with the key-barrel l , substantially set forth.
3. I claim the projection 19, swinging-frame 20, with diagonal cam 21, actuating the lever p , in combination with the spacing block q , the parts being arranged and acting substantially as set forth.
4. I claim the auxiliary carriage l' , in combination with the beds k and l , and levers 31, and table m , substantially as and for the purposes set forth.
5. I claim the scale-boards 36, keys 35, and levers 31, in combination with the auxiliary carriage l' , as and for the purposes set forth.

In witness whereof I have hereunto set my signature this twenty-first day of March, A. D. 1867.

M. NELSON.

Witnesses:

CHAS. H. SMITH,
GEO. D. WALKER