

(No Model.)

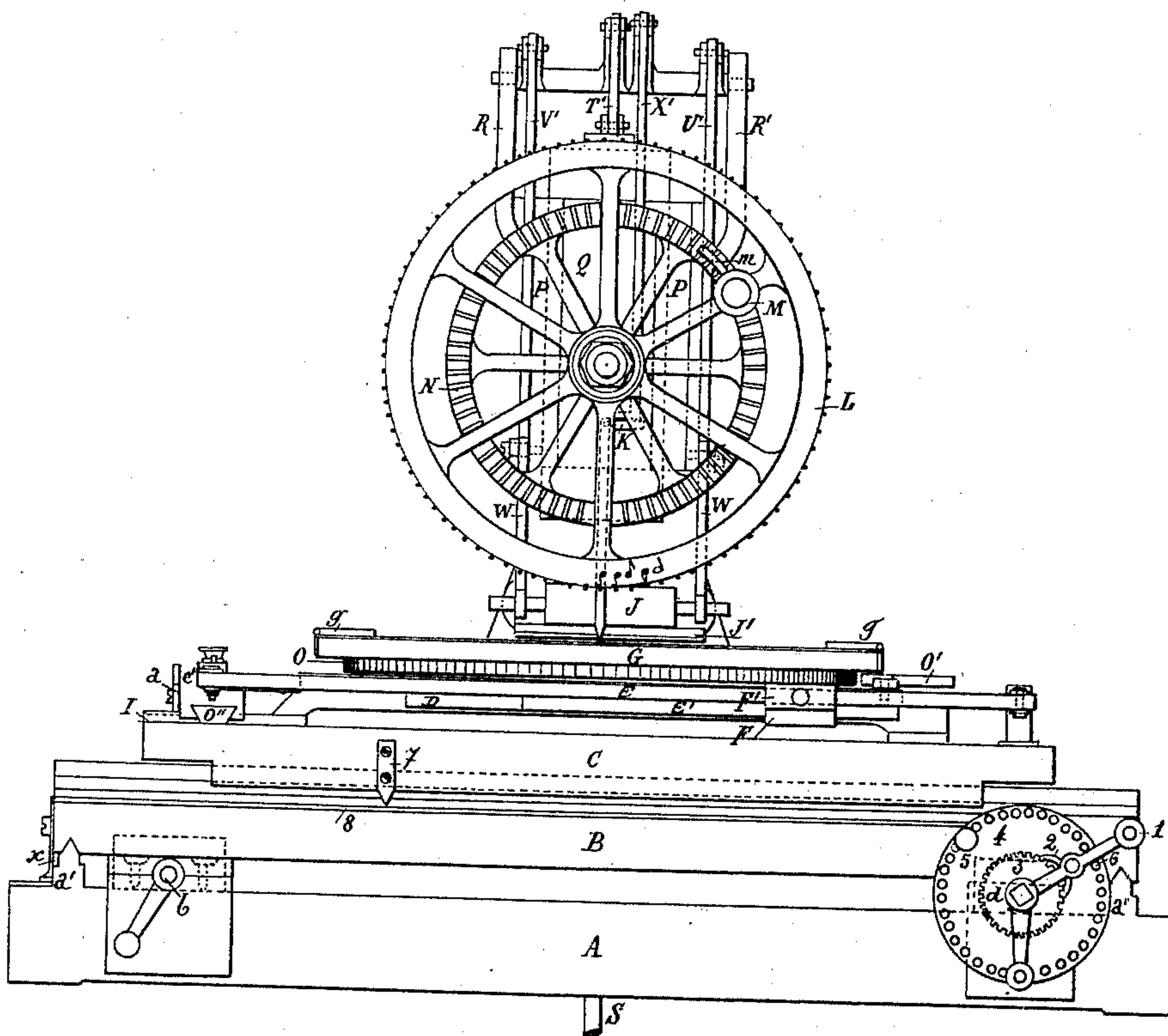
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L. DURDILLY.
MACHINE FOR PRINTING MUSIC.

No. 482,728.

Patented Sept. 20, 1892.

FIG. 1.



Witnesses
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(No Model.)

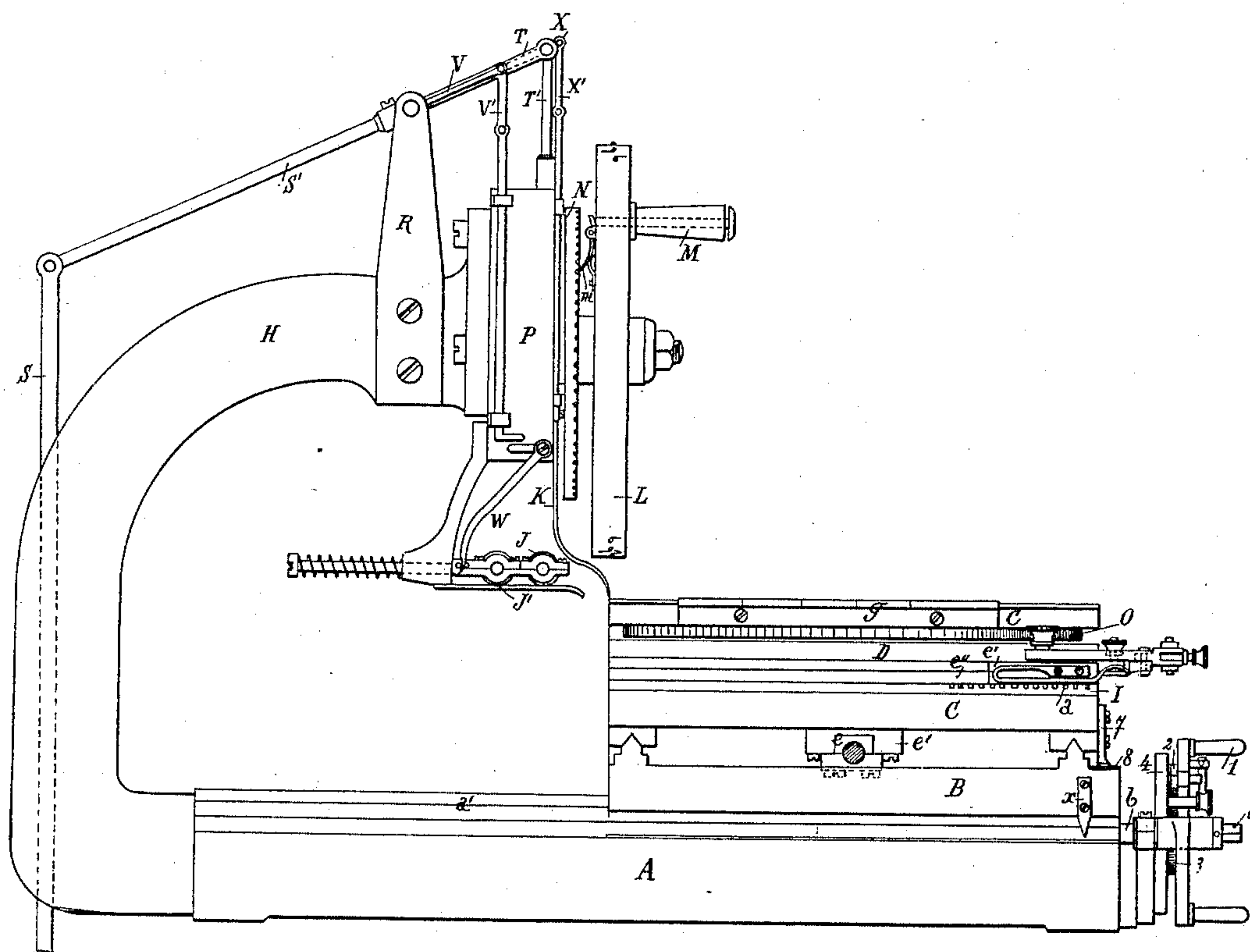
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FIG. 2.



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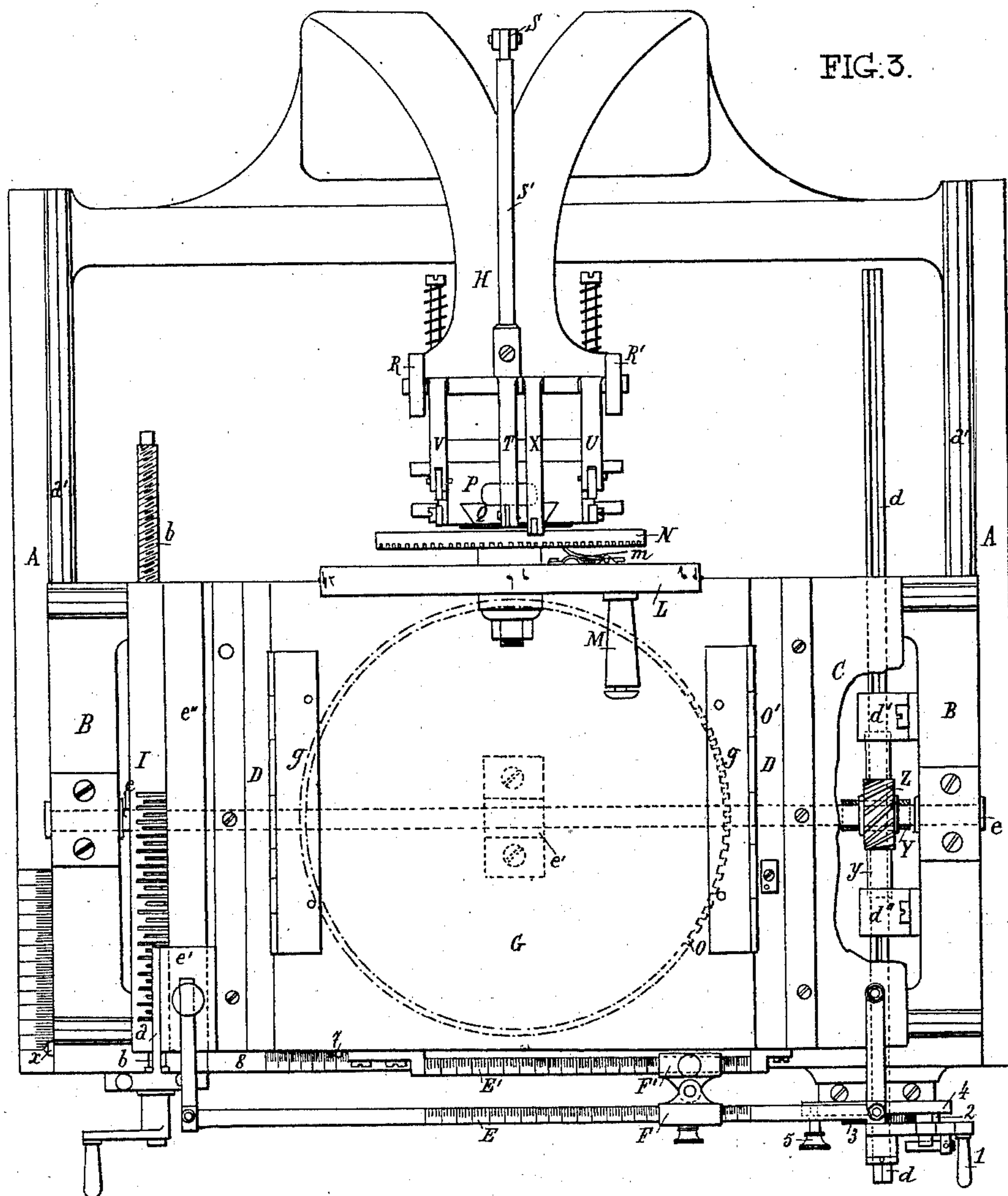
(No Model.)

3 Sheets—Sheet 3.

L. DURDILLY.
MACHINE FOR PRINTING MUSIC.

No. 482,728.

Patented Sept. 20, 1892.



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UNITED STATES PATENT OFFICE.

LOUIS DURDILLY, OF PARIS, FRANCE.

MACHINE FOR PRINTING MUSIC.

SPECIFICATION forming part of Letters Patent No. 482,728, dated September 20, 1892.

Application filed April 22, 1892. Serial No. 430,205. (No model.) Patented in France September 26, 1891, No. 216,373, and in England March 25, 1892, No. 5,896.

To all whom it may concern:

Be it known that I, LOUIS DURDILLY, a citizen of the French Republic, residing at Paris, France, have invented certain new and useful Improvements in Machines for Printing Music; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has been patented in England, No. 5,896, dated March 25, 1892, and in France, No. 216,373, dated September 26, 1891.

The object of the present invention is the peculiar construction and combination of devices for the printing of music, as more fully set forth and described hereinafter, and consisting, mainly, of a machine by means of which notes and the different signs of music can be printed on autographic paper on which the staff has been traced previously, said paper being afterward utilized in the usual manner for printing by being pressed on stone, zinc, or the like.

In the accompanying drawings, Figure 1 is a front elevation of the machine. Fig. 2 is a side elevation; and Fig. 3 is a plan view, part C being broken away to show the carriage-feeding devices.

This machine is composed of a cast-iron frame A, provided with two guides a' , on which a first carriage B can be displaced horizontally forward and backward by means of a screw-spindle b . In turning the same by hand the value of the displacement is indicated by an index x , fastened to the carriage B, where it is placed above a graded ruler fixed to the frame A. The carriage B carries a second carriage C, which can move from right to left on guides of the first carriage in order to operate the displacements necessary for spacing conveniently along the staff the notes and signs which are generally employed in using. This motion is very accurately effected by means of a lever 1, which at the desired moment and by means of a pawl 2 is made to engage with a toothed wheel 3, keyed upon the shaft d . This shaft being grooved on its whole length and being supported in bearings d'' and d''' , fastened to the carriage, is provided with the sleeve y , which can slide

longitudinally on it, but which is obliged to follow its revolutions. This sleeve y is cast in one piece with a helicoidal pinion Y , which gears into a second similar pinion Z . This latter is keyed on the screw-spindle e , passing through a nut e' , fixed to the under side of the carriage C. From this disposition results that by turning the wheel 2 by means of the lever 1 the screw e will turn at the same time and will move the carriage C to the right or to the left. In order to have this forward movement always exact, a plate 4 is provided, with holes in the same, into which pins 5 and 6 are placed, forming a stop to the lever 1.

For controlling the transverse displacements of the carriage C the same is provided with an index 7, running on a graded ruler 8, fixed to the carriage B.

On the second carriage C is placed a third carriage D, sliding forward and backward for the purpose of placing on the staff the notes at the desired height. This is effected by the following means: On the carriage C is fixed a guide e'' , on which a slide-block e' is adjusted, and which is connected by a short link to the left-hand end of a graded ruler E, the right-hand extremity of which is attached by another similar short link to the carriage C. The carriage D carries besides a second graded ruler E' , and on these two rulers E and E' two runners F and F' can be displaced, which are hinged to one another. Moreover, the carriage C is provided with a plate I, into which grooves are cut pretty deeply, which represent the staff and the ledger lines below and above. A spring-actuated finger a , fixed to the slide-block e' , engages with these grooves. It is sufficient to lift up the finger and push by hand the slide-block e' , and with it the carriage D, so that the finger a falls into the corresponding groove of the desired note. By displacing the runners F and F' on the graded rulers E and E' the width of motion forward and backward of the carriage D can be varied according to the wider or narrower staff. The carriage B has above it a turning-plate G, forming one piece with the cog-wheel O, and a pawl O' , fixed to the carriage D, engages in the same, so as to keep the plate G in whatever position that may have been given to it. This plate G, covered

with a thin sheet of rubber to make the impression softer, carries the sheet of autographic paper on which the notes are to be printed. This sheet is perforated at the right
5 and the left by two pins fixed to the plate, and is maintained in place by the hinges *g*, which may be turned on it.

Having now described the mechanism of the displacement of the paper, I shall pass to
10 the description of the printing mechanism. At the rear part of the frame A an arm H is extending upward, supporting this latter mechanism, the principal organ of which is a wheel L, having on its circumference *g* en-
15 graved in relief the musical signs, which are repeated on the flat side of the rim to guide the operator. The wheel is turned by means of the handle M, so as to bring the desired note perpendicularly in line of the
20 motion of a slide-block Q, which carries the axle of the wheel L. The position of the latter is secured by means of a pawl *m*, secured to the handle M, which falls into the notches of a crown-wheel N, fixed to the slide-
25 block Q. This slide-block is vertically guided in a case P, secured to the arm H. A pedal placed under the machine and connected to the lever S', fulcrumed in supports R R', is used to move the slide-block down by placing
30 the foot on the said pedal, and when the pedal is released a counter-weight lifts the slide-block up again. The supports R R', carrying the axle of the lever S', support four arms V, T, X, and U, opposite to the lever S' and fast-
35 ened to the same axle. On the free ends of these branches are hinged the vertical rods V', T', X', and U', which act in the following manner: When the pedal is pressed down and the lever S', as well as the four branches
40 V, T, X, and U, turned, the rod X acts the first, and in its descent throws the index K down, which serves to indicate the place where the impression will be made. Soon after this the rods V' U' act on the heel-
45 pieces of the angles W, which throw the inking-cylinders J forward under the wheel L to ink in the character which is placed the lowest. Then the rods V' and U' in passing beyond the heel-pieces of the angles W, the rollers J,
50 under the influence of springs, fly rapidly back on the inking-table J'. Meanwhile the rod T' is pushing the slide-block Q downward, so that the wheel L finally prints a sign on the sheet of paper placed on the plate V.
55 The operation is now easily understood. The attendant takes a sheet of paper on which he has previously traced with autographic ink the staves, and he places it on a plate G. He then turns down on it the hinges *g*, and hav-
60 ing disengaged the pawl O', he regulates the

position of the plate G, so that the staves are perfectly parallel to the transversal motion of the said plate. Then he pushes the carriages under the wheel L, and he turns the screw-spindle D, so as to bring the index K exactly
65 on the spot of the paper where the impression should commence, which will then be effected by a pressing on the pedal, as it has been explained. He turns then the lever 1 in order to displace transversely the paper. He pushes
70 the slide-block *e'* so that the finger *a* falls into the groove of the plate I corresponding to the desired note. He presses then on the pedal to print the second note, and continues
75 so on.

Having thus described my invention, what I desire to secure by Letters Patent is—

1. In a machine for printing music, the combination of a frame A, with two sliding carriages B and C placed thereon, a hand screw-
80 spindle D for effecting the forward and rearward displacement thereof, an index X, a transverse screw-spindle *e*, effecting the displacement from right to left, an index Z for the same, gears from the shaft *d* to actuate
85 spindle *e*, and a crank 1, which can be displaced between stops 5 and 6, inserted in a plate 4, so as to limit this motion, substantially as set forth.

2. In a machine for printing music, a re-
90 volving plate G, rubber sheet placed thereon, pins and hinges *g* for fixing the paper, carriage D, upon which said plate is mounted, graded rollers E E' for displacing said carriage, runners F F' adjustable thereon, slide-
95 blocks *e'* for causing said adjustment, and the spring-actuated finger of said block, substantially as set forth.

3. In a machine for printing music, a wheel
100 L, a slide-block Q, upon which said wheel is mounted, a fixed crown N, and musical signs or type engraved on the circumference of said wheel L and repeated on the side of the rim to guide the operator, substantially as set
105 forth.

4. In a machine for printing music, a system of levers S', branches V, T, X, and U, a rod T', moved thereby, a slide-block Q, actuated by said rod in order to bring the sign
110 on the wheel down to the paper, a rod X', an index K, guided thereby, rods V', U, and W, and inking-rollers J, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS DURDILLY.

Witnesses:

ROBT. M. HOOPER,

GUILLUAME ANTHONIS, Jr.