

E. W. MYERS.
MUSIC PERFORATING MACHINE.
APPLICATION FILED APR. 27, 1912.

1,046,322.

Patented Dec. 3, 1912.

2 SHEETS-SHEET 1.

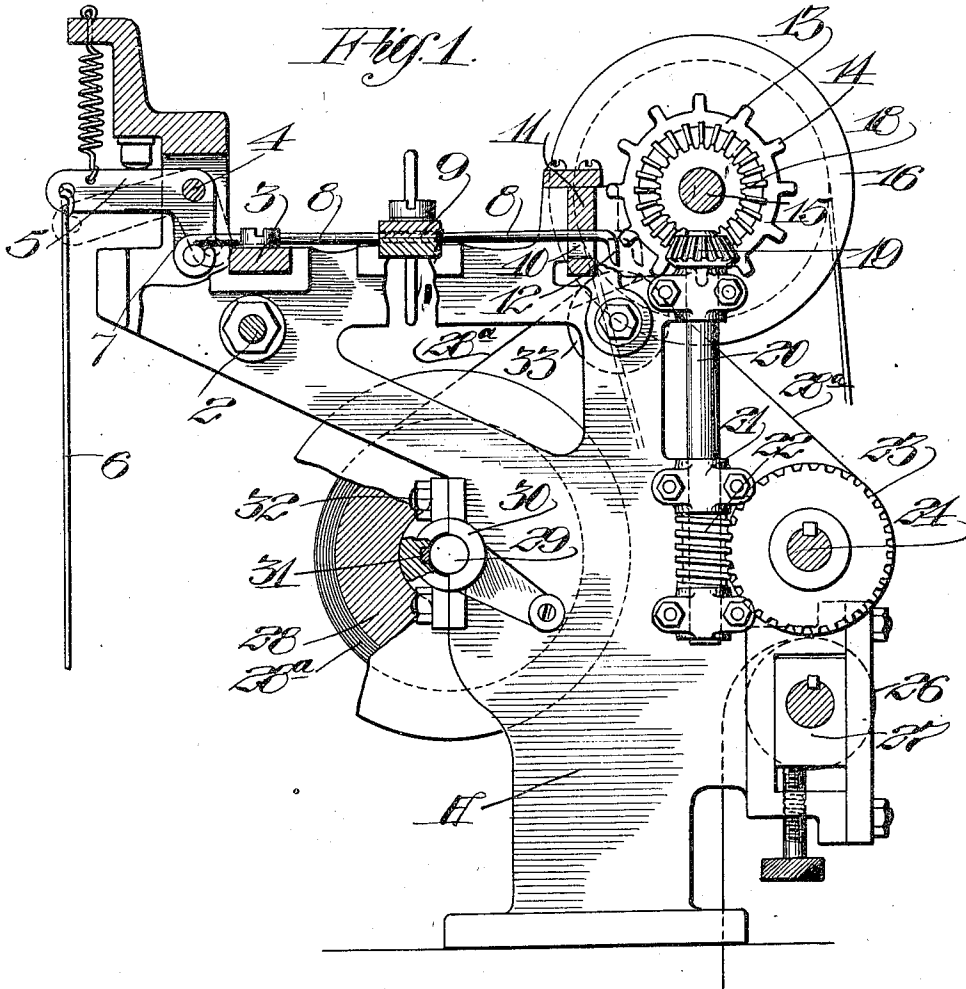
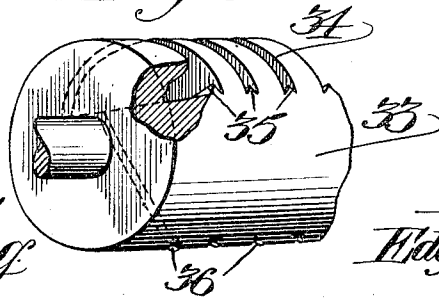


Fig. 2.



Witnesses:
Chas. Lashberg
Charles Pickles

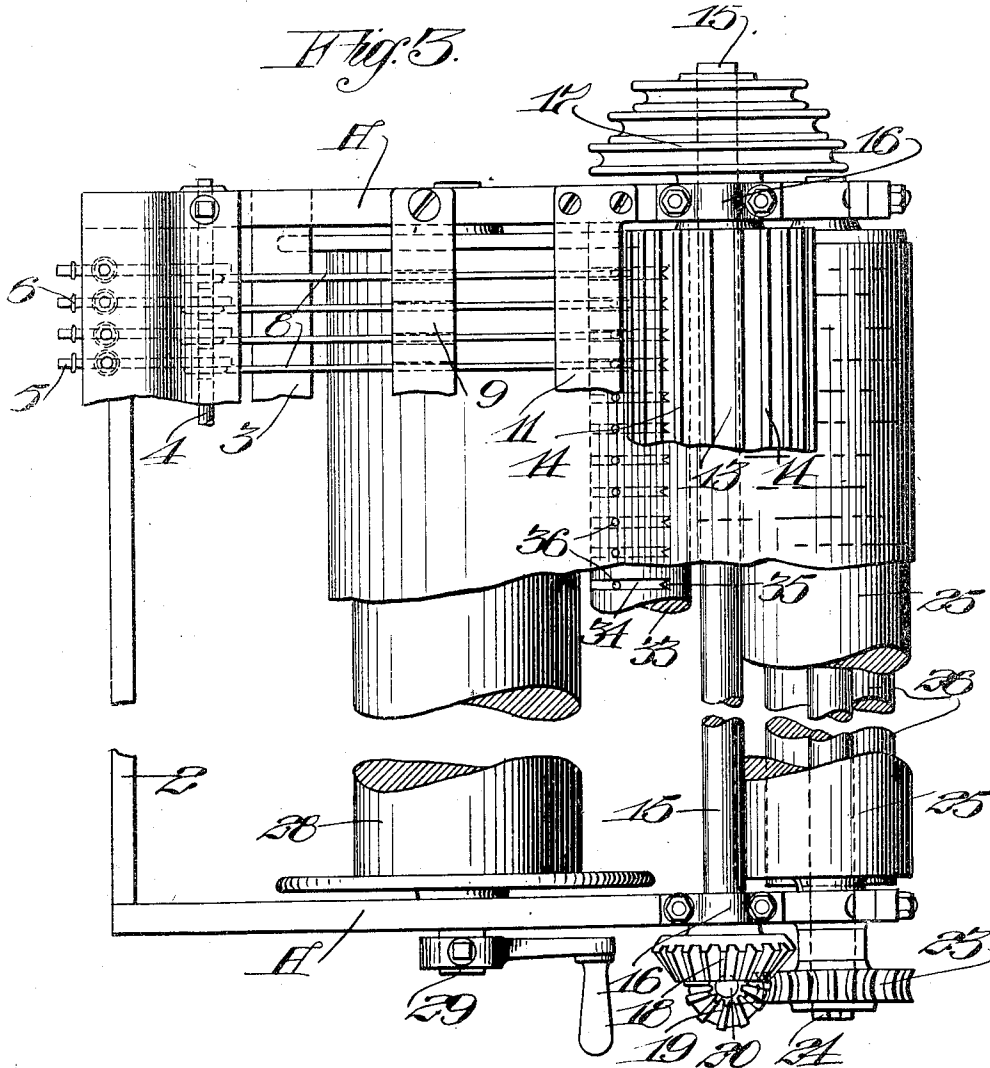
Inventor:
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by G. H. Strong
Attorney

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Chas. Kautzberg
Charles Pickles

Inventor:
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UNITED STATES PATENT OFFICE.

EDGAR W. MYERS, OF SAN JOSE, CALIFORNIA, ASSIGNOR TO MASTER ROLL MUSIC
DUPLICATING COMPANY, OF SAN JOSE, CALIFORNIA, A CORPORATION OF
CALIFORNIA.

MUSIC-PERFORATING MACHINE.

1,046,322.

Specification of Letters Patent.

Patented Dec. 3, 1912.

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To all whom it may concern:

Be it known that I, EDGAR W. MYERS, a citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented new and useful Improvements in Music-Perforating Machines, of which the following is a specification.

This invention relates to paper perforating machines and in particular to that class known as music perforating machines.

It is the object of the invention to produce a perforating machine which may be directly connected with the key action of a piano in such a manner that the perforating mechanism will be actuated by the piano key action and produce a series of perforations on a traveling recording sheet, known as a master sheet, which can later be used for duplicating purposes in a duplicating machine.

The invention consists in the parts and construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a vertical section through the machine. Fig. 2 is a perspective view partly broken away showing the stationary cylinder 35. Fig. 3 is a plan view partly broken away.

In the accompanying drawings A indicates a suitable frame consisting of two end sections tied together and braced by rods 2 and 3. Extending across and connecting the two end frames is a stationary shaft 4 on which is pivotally mounted a series of bell crank levers 5, the number of levers 5 corresponding with the number of keys on the piano. The bell crank levers 5 are connected with the key action of the piano at any convenient point by any suitable connection, as 6, and may be connected with the key action where the movement of the action will be sufficient to rock the bell cranks. The other ends 7 of the cranks are connected with slidable wheel spring rods 8 mounted in the bearings 9, which extend across the machine. The opposite ends of the rods are guided in slots 10 in the frame 11 and are provided with downwardly turned perforating points 12.

13 indicates a cylinder provided with a number of longitudinally extended ribs 14. This cylinder is mounted on the main drive

shaft 15 journaled in suitable bearings 16 on the frame A and is provided at one end with a number of reducing pulleys 17 by which the shaft may be driven at different speeds according to the time of the music being played. This shaft may be driven from any suitable source not here shown. Mounted on the opposite end of the drive shaft is a beveled gear 18, which intermeshes with the pinion 19 mounted on the vertical shaft 20 which is journaled in bearings 21 on the side of the main frame A. This is provided with a worm pinion 22 which intermeshes with the worm gear 23 keyed to a shaft 24, which is journaled in the end frames. Mounted on this shaft is a feed drum 25 which engages with a cylinder 26 mounted in a set of adjustable bearings 27.

The paper to be perforated is carried by a supply drum 28 mounted on a shaft 29, journaled in bearings 30, which are provided with a friction producing strip 31 of any suitable material, which may be adjusted to create more or less friction on the paper carrying supply drum by the bolts 32. This will give the paper when passing over the different rolls and perforating mechanism a certain tension. From the supply drum the paper is passed over a stationary cylinder 33, clamped between the two end frames, and is perforated while drawn over this drum. From here it passes down between the friction feed rolls 25 and 26 which will hold the paper over the face of the stationary cylinder 33 and which rolls will deliver the paper to a receiving roll or similar device not here shown. The stationary cylinder 33 is provided with a series of slots 34, which register with the perforating points of the perforating mechanism. Each slot in the cylinder is formed to hold a small projecting point or plow 35 which will enter the perforations made by the perforating points in the paper. This will have a tendency to remove any rough edges and insure a clean smooth perforation.

The operation of the mechanism will be, as follows: When it is desired to record the music played on the piano the perforating machine is set in motion at a suitable speed determined by the time of the music. The recording sheet will then travel forward from the stationary cylinder 33 by the feed rolls 25 and 26, driven by the gear connections already described, from the main drive

shaft. The moment one or more keys are depressed by the operator a corresponding number of bell cranks will be rocked by reason of the connections 6 between the key action and the bell crank lever. This will project one or several of the spring wheel rods 8 forward into a position shown by dotted lines in Fig. 1. This position is shown as being directly below the rib cylinder 13 or directly in the path of the longitudinal ribs, which will come into contact with the perforating point and vibrate the perforating point, which will pass through the paper being fed over the stationary cylinder 33 and perforate this. The perforating points are insured against coming into contact with the face of the cylinder 33 as they register with the slots in the cylinder. The moment a perforation of the paper takes place, and as the paper leaves the cylinder, it will be acted on by the upper point 36 in the end of the slot 34, which will remove any ragged edges and insure a clean and smooth perforation in the paper. The operation continues as long as it is desired to record the music being played by the operator. It will be understood that one or more of the perforating points can operate at the same time as they will all be projected in the path of the projecting ribs of the cylinder 13 and will be vibrated or depressed a sufficient distance by the ribs to perforate the paper passing over the stationary cylinder 33.

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

1. In a perforating machine, the combination of a stationary female die, a feeding mechanism adapted to feed a recording sheet over said die, means including a horizontally shiftable perforating point adapted to be connected with a piano action, whereby said point may be projected into line with the female die, and rotatable means for depressing the perforating point.

2. In a perforating machine, a stationary cylindrical female die provided with a series of slots, a series of perforating points registering with said slots, a feeding mechanism adapted to feed a recording sheet over said die, means adapted to be connected with a piano action to project the perforating points above the slots in the die, and means for depressing the perforating points.

3. In a perforating machine, a stationary cylindrical female die provided with a series of slots, a series of perforating points registering with said slots, a feeding mechanism adapted to feed a recording sheet over said die, means adapted to be connected with a piano action to project the perforating points above the slots in the die, and means

for depressing the perforating points, a series of steel spring rods provided at one end with downwardly turned perforating points registering with said slots, a feeding mechanism adapted to feed a recording sheet over said die, means adapted to be connected with a piano action to project the steel spring rods provided with the perforating points above the slots in the die, and means for depressing the steel spring rods.

4. In a perforating machine, a stationary cylindrical female die provided with a series of slots, a series of perforating points registering with said slots, a feeding mechanism adapted to feed a recording sheet over said die, means adapted to be connected with a piano action to project the perforating points above the slots in the die, means for depressing the perforating points, a series of steel spring rods provided at one end with downwardly turned perforating points registering with said slots, a feeding mechanism adapted to feed a recording sheet over said die, means adapted to be connected with a piano action to project the steel spring rods provided with the perforating points above the slots in the die, means for depressing the steel spring rods and being connected at their opposite ends with a series of bell crank levers which are adapted to be connected with a piano action, a feeding mechanism adapted to feed a recording sheet over the female die, means for adjusting the tension of said recording sheet, and means for depressing the steel spring rods to perforate the recording sheet.

5. In a perforating machine, a stationary cylindrical female die provided with a series of slots, each slot having a projecting point or plow, a series of steel spring rods provided at one end with downwardly turned perforating points registering with said slots and being connected at their opposite ends with a series of bell crank levers which are adapted to be connected to a piano action, a feeding mechanism adapted to feed a recording sheet over the female die, means for adjusting the tension of said recording sheet, and means for depressing the steel spring perforating points to perforate the recording sheet, said means consisting of a revolvable cylinder provided with a plurality of longitudinal ribs which will contact with the perforating spring arms.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDGAR W. MYERS.

Witnesses:

W. J. PUP,
JOHN H. FULLER.