

J. A. CARTER.
Mechanical Musical Instrument.

No. 226,714.

Patented April 20, 1880.

Fig: 1.

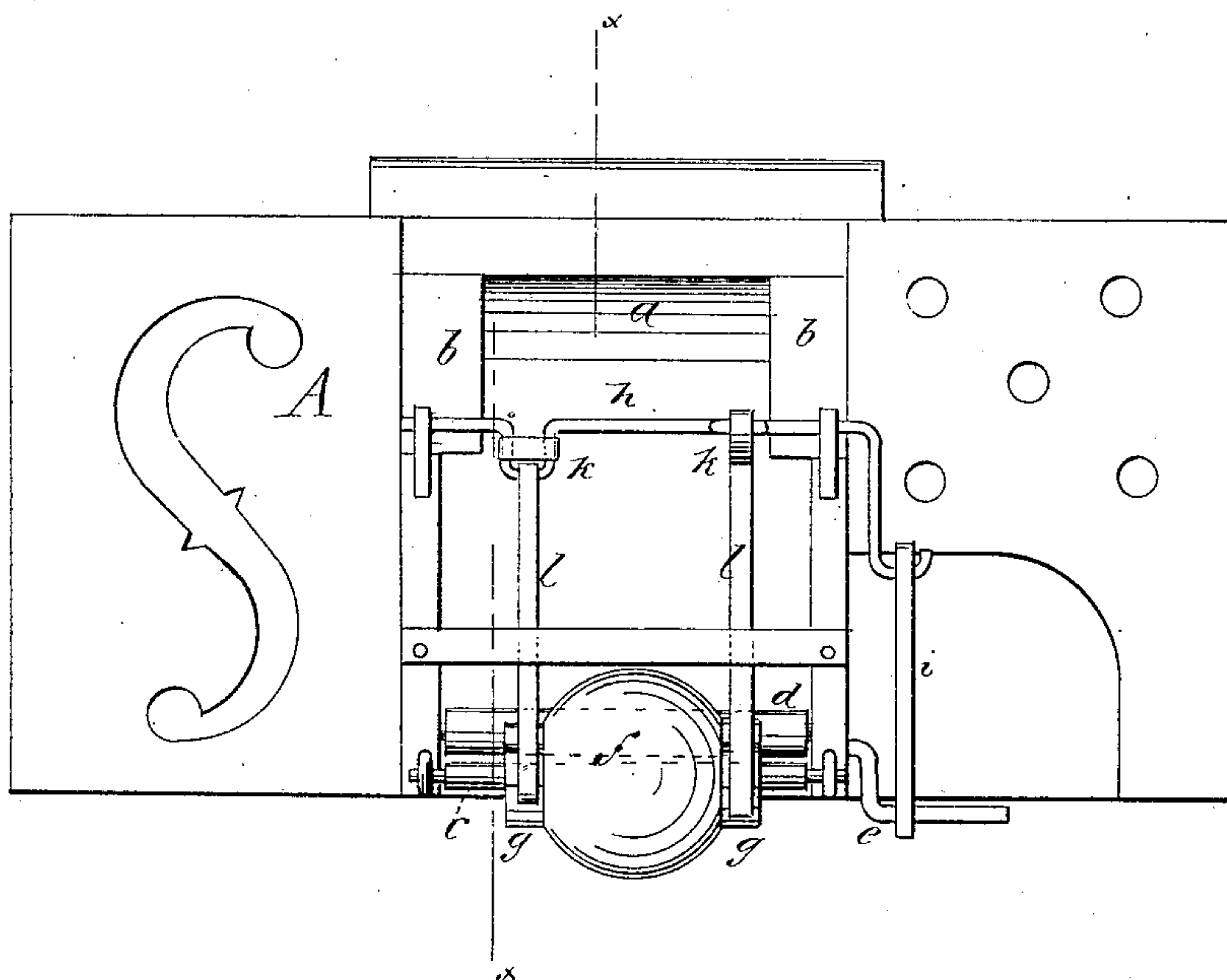


Fig: 2.

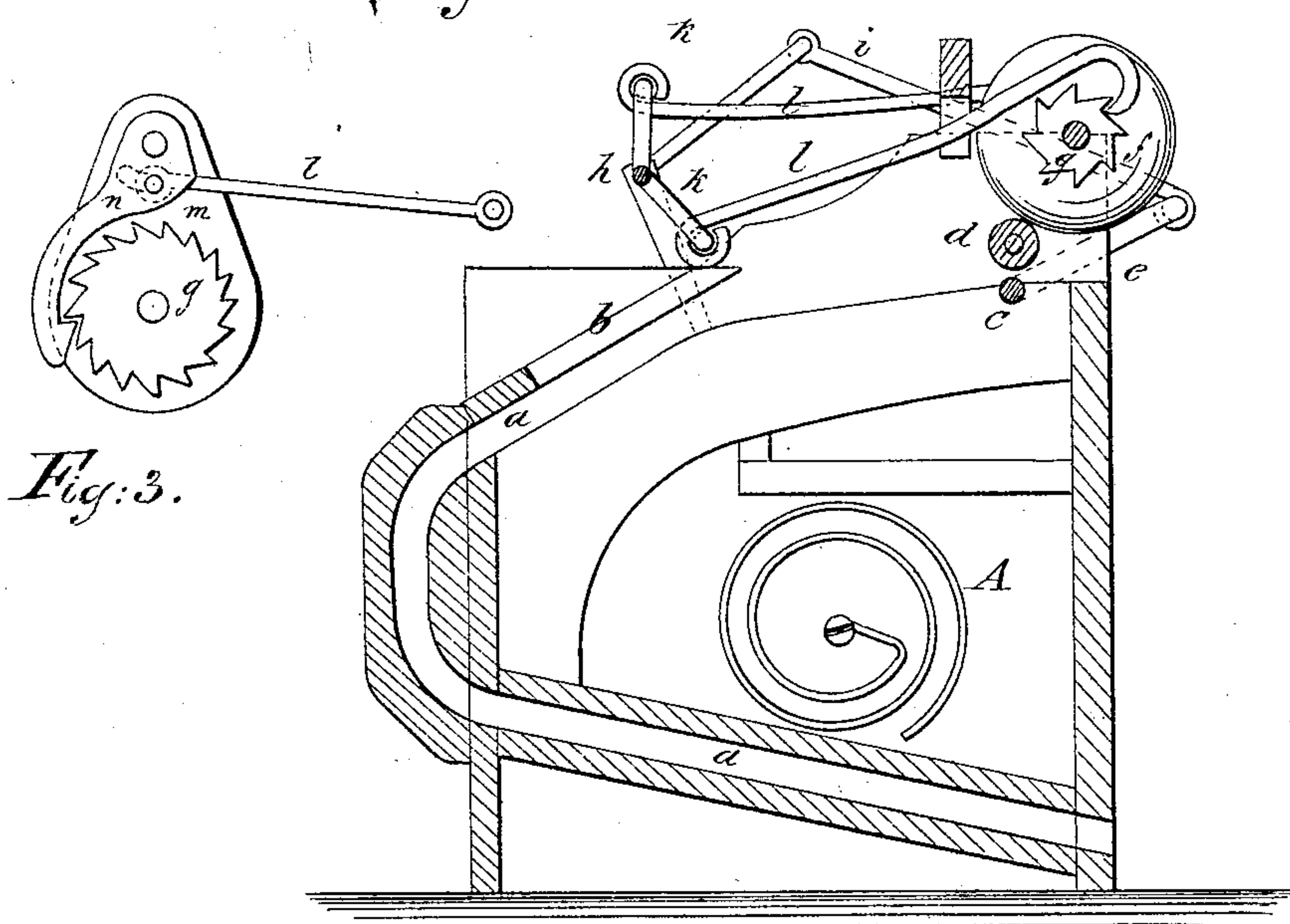


Fig: 3.

WITNESSES:

Chas. Nida.
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UNITED STATES PATENT OFFICE.

JOHN A. CARTER, OF ROSE BUD, ILLINOIS.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 226,714, dated April 20, 1880.

Application filed December 10, 1879.

To all whom it may concern:

Be it known that I, JOHN A. CARTER, of Rose Bud, in the county of Pope and State of Illinois, have invented a new and useful
5 Improvement in Mechanical Musical Instruments, of which the following is a specification.

My improvements relate to the class of musical instruments wherein hammers are employed to strike upon wires or other resonant material arranged in any usual manner and the movement of the hammers obtained by a perforated music-sheet that is fed by a crank, such as shown in the Letters Patent granted
15 to O. H. Arno, January 1, 1878.

The object of my invention is to improve the tone of the instrument and feed the music-sheets with ease and regularity, and avoid jumps and stops in the movement; and the
20 invention consists in the use of a sounding-box and in a counter-pressure roller and ratchet-wheels and pawls, which are combined with the crank and sheet-guides in a manner to attain the objects named.

25 The construction and operation will be more particularly described with reference to the accompanying drawings, wherein—

Figure 1 is a plan view of the instrument. Fig. 2 is a vertical transverse section on line
30 *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is the sounding-box, which is to contain the resonant wires or strips, and will be fitted
35 with the hammers, that operate in the usual manner. They being well known are not shown and do not need description. *a* is the passage for the music-sheet, formed in the box A, the sheet entering at the top beneath guides *b* and
40 coming out at the bottom. *c* is the lower roller, and *d* the upper roller, between which the sheet enters. The roller *c* is on a shaft fitted with a crank, *e*, by which the sheet is fed forward.

45 *f* is the counter press-roller, fitted on a shaft above roller *d*, which shaft is sustained in suitable bearings and carries ratchet-wheels *g g* at opposite ends of roller *f*. *h* is a rock-shaft, fitted in bearings at the rear of roller *f*, and
50 provided with a crank that is connected by a rod or pitman, *i*, with the crank *e*. The shaft

h is also formed with cranks *k k* at its opposite sides, to which crank the pawls *l l* are connected and extend to the ratchet-wheels *g g*, upon which the pawls rest. 55

The pressure-roller *f* is, by preference, made in the rounded form shown, and bears upon the upper roller, *d*, so as to give rotation to *d* and cause the same to bear on the music-sheet with more or less pressure. This pressure 60 may be regulated by any suitable devices, as a screw and nut.

In operation the music-sheet will be entered between the rolls *c d* and fed forward by turning the crank *e*. The motion given to the
65 rock-shaft *h* by its connection to crank *e* will cause a back and forward movement of the pawls *l*, and the pawls, by engagement with the ratchet-wheels *g*, will rotate the rollers *f* and *d*. The pawls *l* being at opposite sides of
70 the rock-shaft, one moves forward while the other moves back, so that a continuous motion is given to the roller *f*. By these means the music-sheet will be carried forward at a uniform speed without stops or jerks. 75

The entrance and exit of the passage *a* may be fitted with friction-rollers for the sheet to pass over, so as to facilitate its movement.

The sound-box A may be made of any desired form or size and mounted on legs to give
80 the instrument the appearance of a piano. The volume and sweetness of tone are greatly increased by the use of the sound-box and there is room for the addition of coiled springs for a sub-bass. 85

In Fig. 3 is shown a modification of the pawl, whereby I obtain a noiseless movement. *g* is the ratchet. *m* is a rocking fulcrum having its bearings on the shaft of counter-press roller *f*. *n* is a fly-hook, hung at its up-
90 per end by a bolt to the rocking piece *m*, and its lower end engaging the ratchet *g*. The arm *l* is connected with hook *n* by a bolt entering a slot in piece *m*. As arm *l* moves backward it lifts hook *n* and moves *m*. On the re-
95 turn the arm *l* draws hook *n*, which engages ratchet *g*, turns roller *f*, and returns piece *m*. This movement is noiseless.

Having thus described my invention, I claim as new and desire to secure by Letters
100 Patent—

1. In a mechanical musical instrument, the

sounding-box *A*, for containing the action, formed with the passage *a*, for the music-sheet, and provided with feeding mechanism, all combined and arranged to operate substantially as described and shown.

2. In a mechanical musical instrument, the feeding mechanism for the music-sheets, consisting of the revolving rollers *c f* and intermediate roller, *d*, that is in contact with roller
10 *f*, combined and arranged to operate substantially as and for the purposes set forth.

3. In feed mechanism for mechanical musical instruments, the pressure-roller *f*, ratchets *g*, rock-shaft *h*, pawls *l*, and pitman *i*, combined with the crank *e* and rollers *c d*, substantially
15 as and for the purposes specified.

JOHN ARMSTRONG CARTER.

Witnesses;

BRISON LEWIS,
A. W. WALKER.