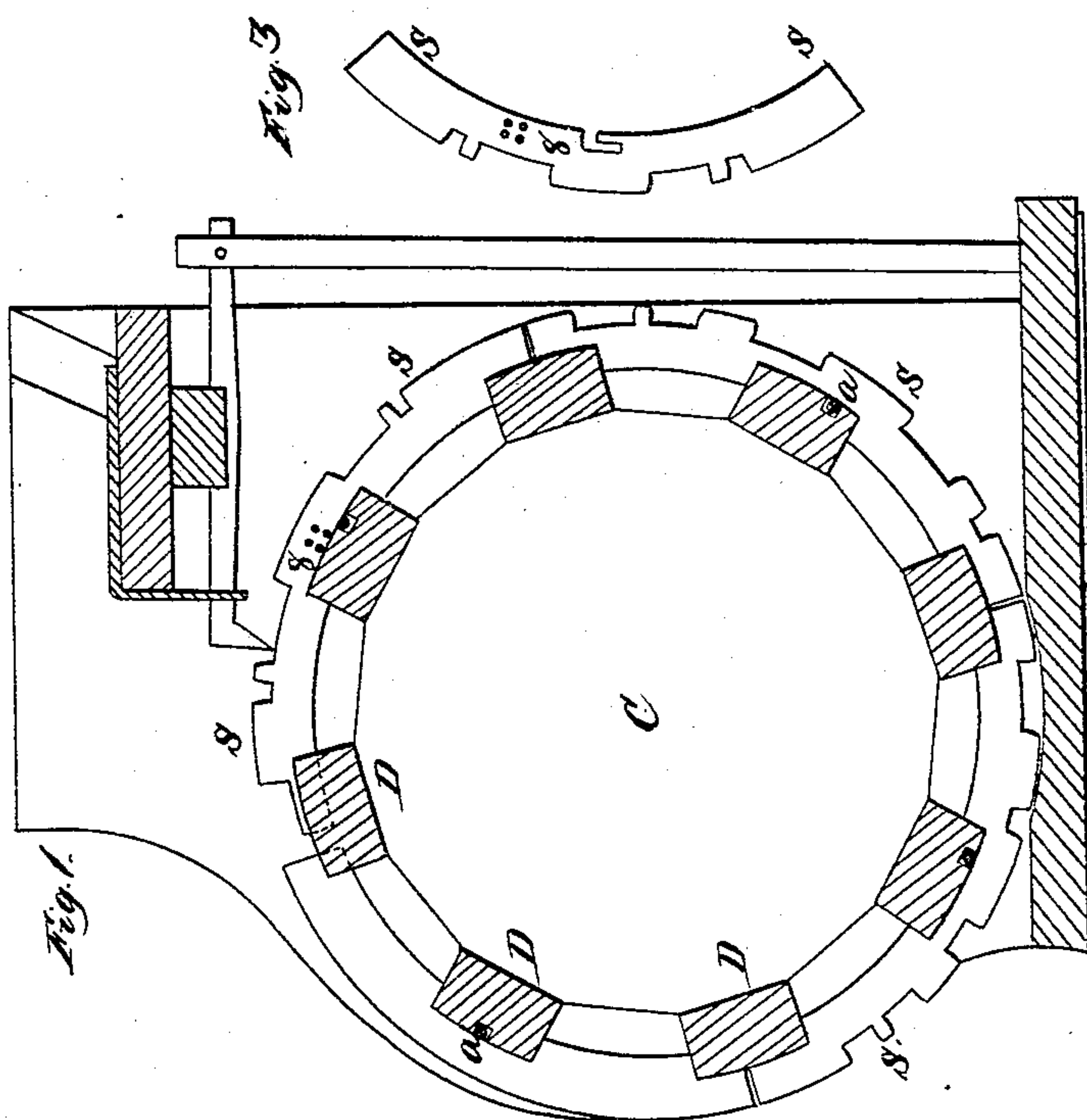
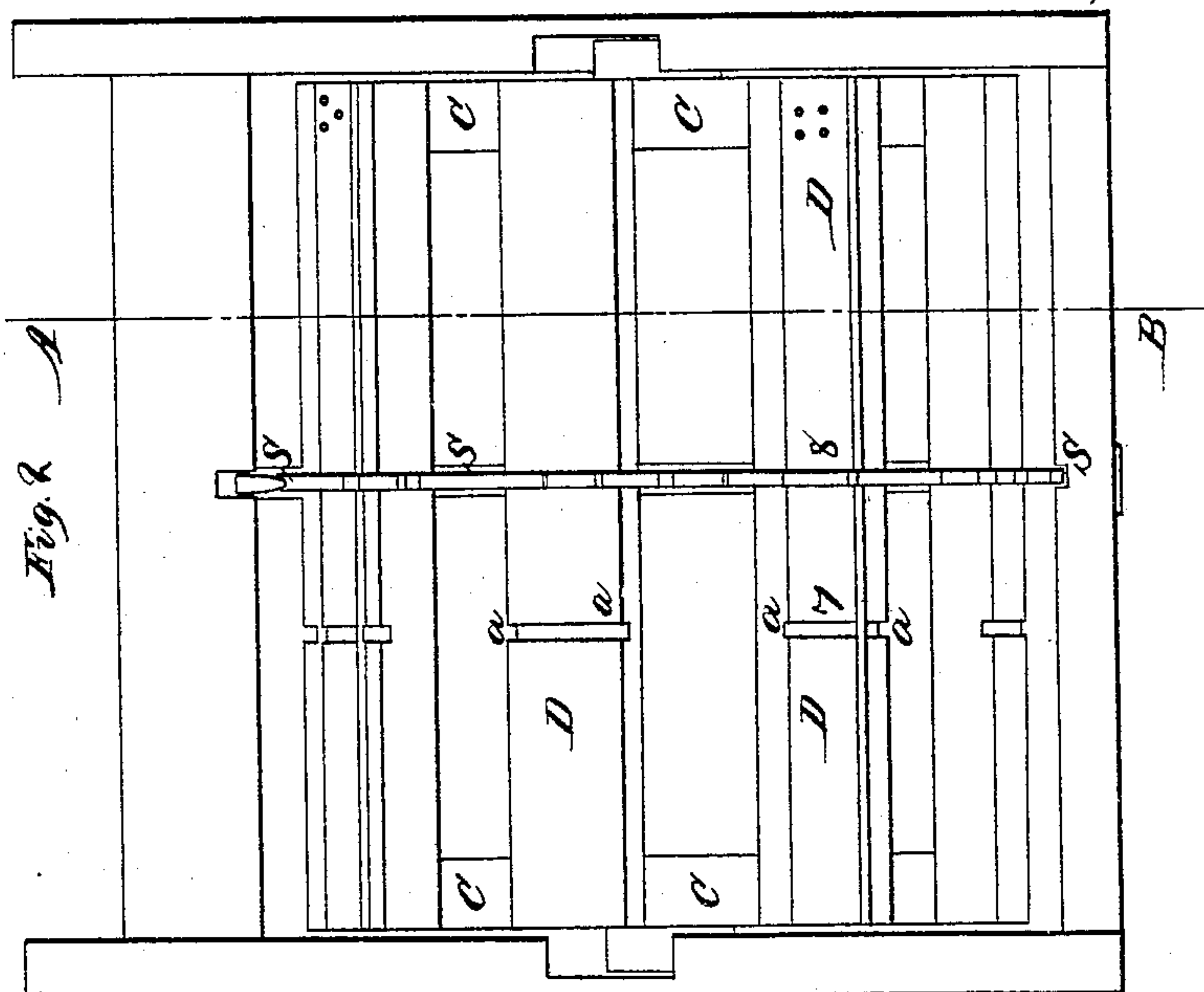


H. Groves.

Pipe Organ,

N^o 16,009.

Patented Nov. 4, 1856.



UNITED STATES PATENT OFFICE.

HIRAM GROVES, OF NEW YORK, N. Y.

AUTOMATIC MUSICAL INSTRUMENT.

Specification of Letters Patent No. 16,009, dated November 4, 1856.

To all whom it may concern:

Be it known that I, HIRAM GROVES, of the city of New York, in the county of New York and State of New York, have invented
5 certain new and useful Improvements in Automatic Musical Instruments; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification.

A great number of musical instruments and more particularly organs and pianos require the skill and the action of the fingers of man to play on finger keys acting directly or indirectly upon pipes or cords for
15 the purpose of producing musical sounds of a duration and intensity of a height and depth varying at pleasure. The performance of the finger may however be substituted by certain mechanical contrivances, which cause the instrument to play with mechanical precision such tunes, as they are arranged for. The barrel organ, for instance, contains the parts of ordinary finger
20 organs, with the addition of a cylindrical roller called the barrel, revolving on pivots, instead of the keyboard. The tunes to be played are set on the surface of the barrel by means of wires, pegs and staples. These
25 by the equable revolution of the barrel act upon levers and valves and give admission to the wind from the bellows to the pipes.

My improvement relates to the latter part of the self playing instrument and consists
35 in a new mode of making the barrel and the projections of tunes thereon. The usual method consists in pinning the tunes on the barrel or on a solid block, which is done by thin wire flattened and cut into small staples to suit the intended size of the note as
40 to time. The tune thus becomes a fixture and any new piece of music requires a new barrel. In my newly invented method of constructing the barrel and tunes I succeeded in obviating this inconvenience by
45 making the tunes easily adjustable and transposable.

To enable others to use and to construct my improved attachment to automatic musical instruments, I now proceed to describe
50 its construction.

Figure 1 is a section through A B of Fig. 2, which represents a front elevation of my improved barrel with its new self playing
55 and transposable attachment, C being the barrel revolving upon a horizontal and cen-

tral axis and consisting of two or more polygonal disks, which in the present instance have 16 sides and which I consider the best proportion for organs of ordinary
60 size. These disks are placed parallel with each other and form the stays of the staves or bars D D. These are made of square wooden rails, running longitudinally from disk to disk and perform the office of supporting and securing the tunes by means of
65 segmental notches *a*, *a* cut across their length and a wire sunk and secured in the rail in such a manner that it will be flush with the outer surface and in the direction
70 of the generating lines of the cylinder. The wire thus forms the eye of the corresponding hooks of the tune segments. The latter shown at S S are described as quarter segmental disks cut out of metallic sheets, having
75 on the outer periphery projections intended for the speaking part and the notches for the silent notes of a piece of music and on the inner periphery a hook for attaching
80 the same to the eye, above described, or for the occasional detaching. For matter of convenience the segmental tune plates are registered upon one side by a number of
85 dots, indicating the rail or bar they are to be attached to in order to complete the ring, the bars furnished with the wire having
85 corresponding dots. Each of the notches of the bars that are traversed by a wire is also numbered from 1 upward. The segmental
90 tune plates having a corresponding number will indicate the series of rings it belongs to. The barrel with its adjustable tunes being
95 now placed in an organ it will act precisely as any other barrel, the projections on the segmental tune plates will act like ordinary
95 pegs, while the notches act like blanks, which when placed in due order and under the proper levers will by turning the cylinder make the proper pipes speak at their
100 right times.

When pieces of music are to be set on a barrel longer than one revolution could afford space for, the end of the axle of the cylinder is formed into a screw, which works
105 on a fixed pin and consequently draws the barrel horizontally while turning around its axis. The pegs are then disposed in spiral lines around the surface, so that those of the first revolution are clear of the levers
110 when those of the second come to them.

The advantages derived from my improvements are apparent: the tightness of

the barrel, without injuring its solidity, its preservation for an indefinite time, as to its adaptability to any piece of music that may be selected, the extreme facility of setting
5 new tunes, which enables any one to dispense of persons skilled in the peculiar art. To illustrate this assertion by facts, supposing that a person has in possession an organ, with a barrel of my construction. It is evi-
10 dent that he may change his pieces of music by applying for a new set of segmental tune plates, which he can secure to the barrel himself. This is of paramount convenience when the applicant lives at a great distance
15 from the place of manufacture.

Having more fully described my improvement in self playing instruments what I claim and desire to secure by Letters Patent is—

1. Constructing the barrel of automatic 20 musical instruments of a prismatical form and by leaving spaces between the bars or rails covering it, substantially as described.

2. Notching the rails or bars of an organ barrel and securing in the said rails a wire, 25 in the manner specified and for the purposes set forth.

3. Constructing the tunes of automatic musical instruments of metallic segmental plates in the manner and for the purpose 30 described.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

HIRAM GROVES.

Witnesses:

THOS. HOOK,
S. V. MOODY.