

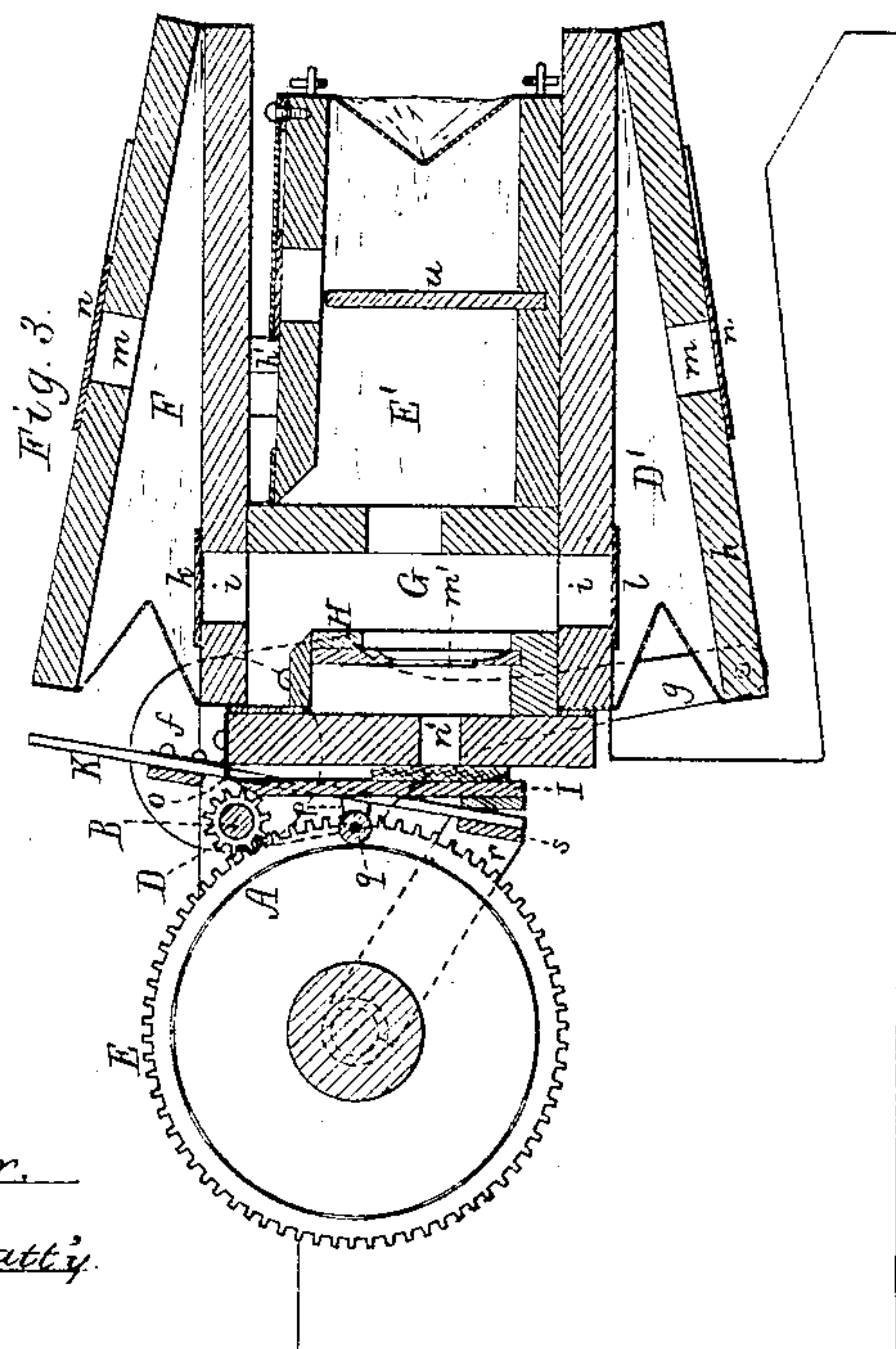
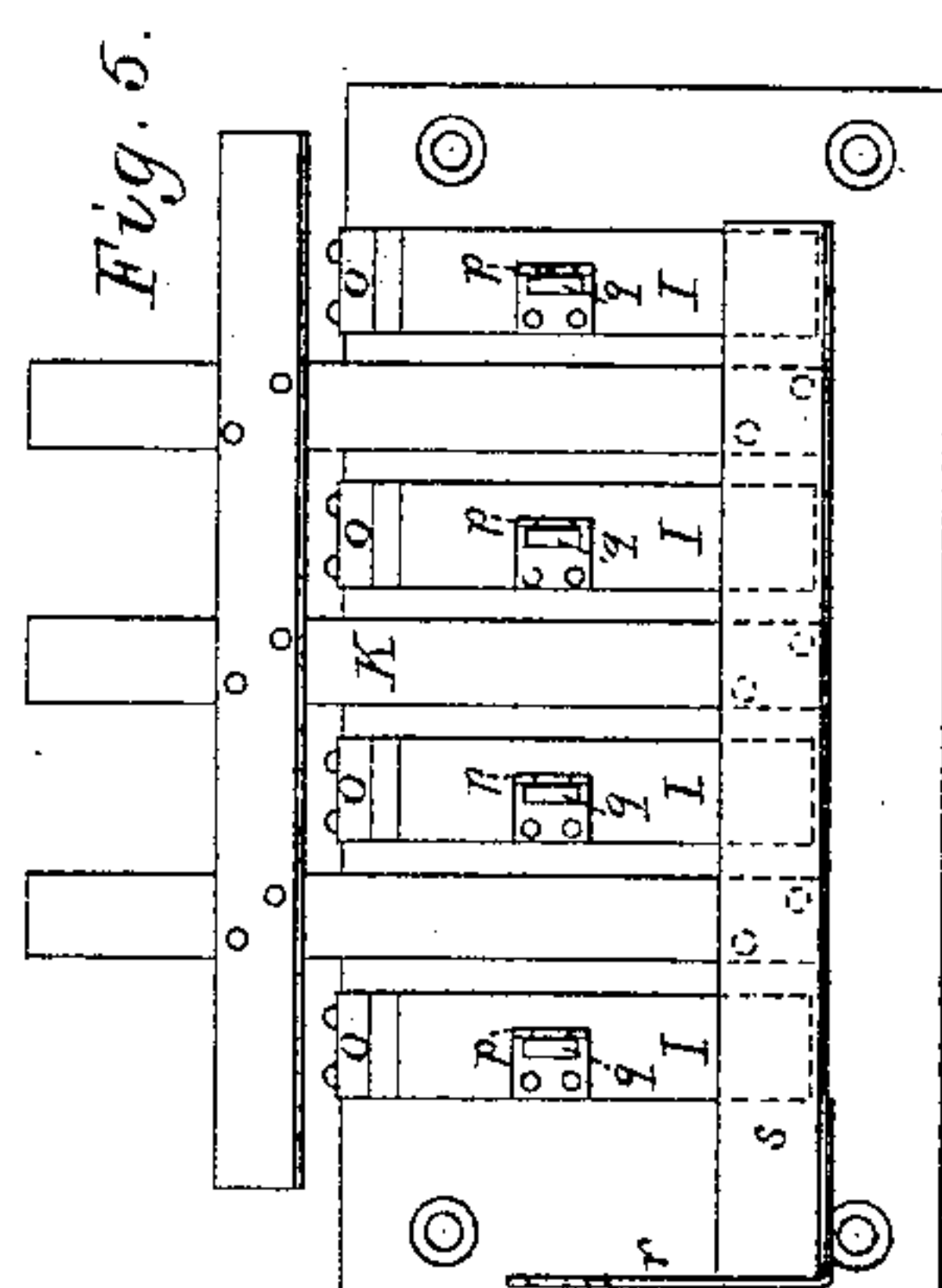
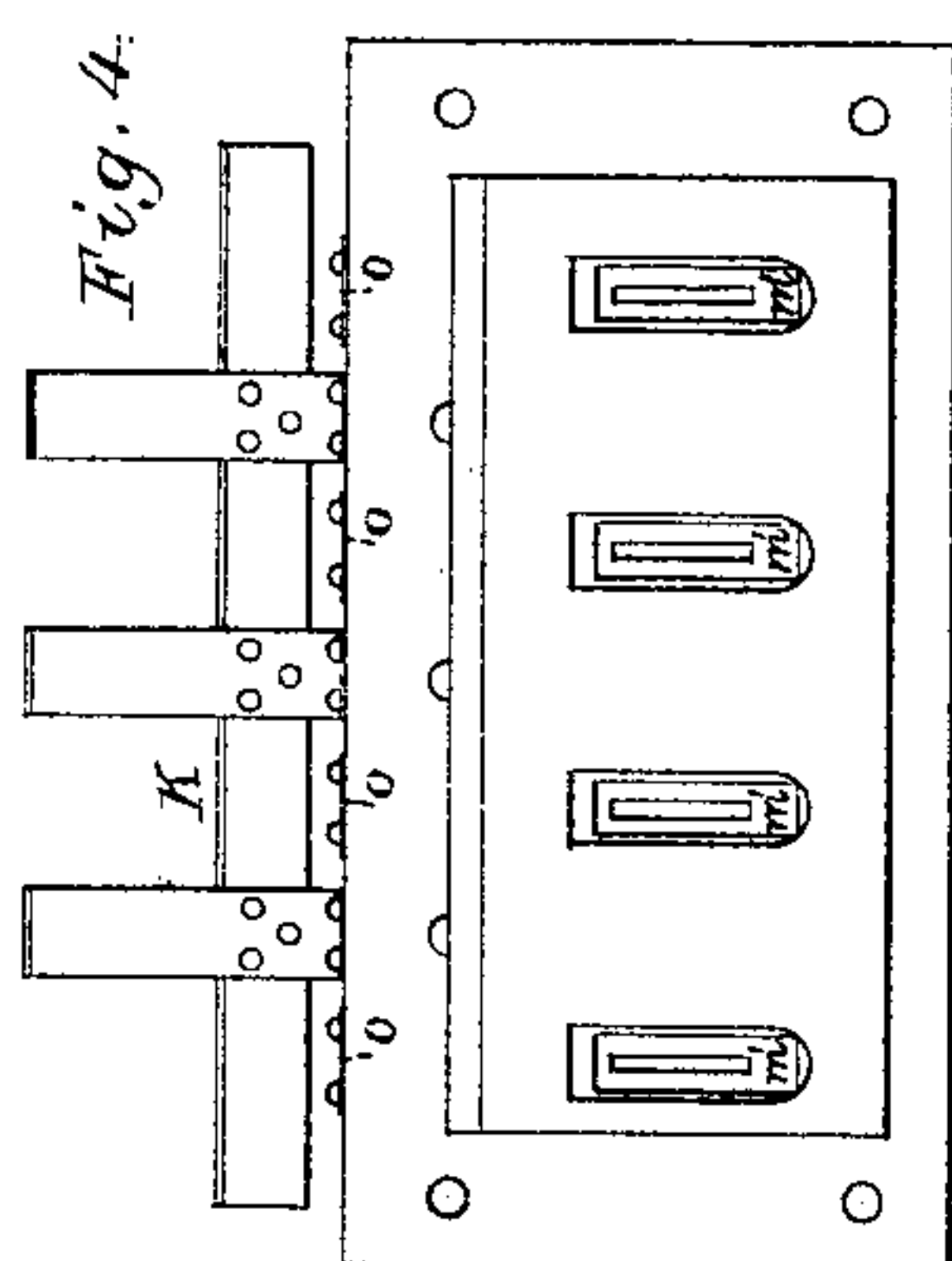
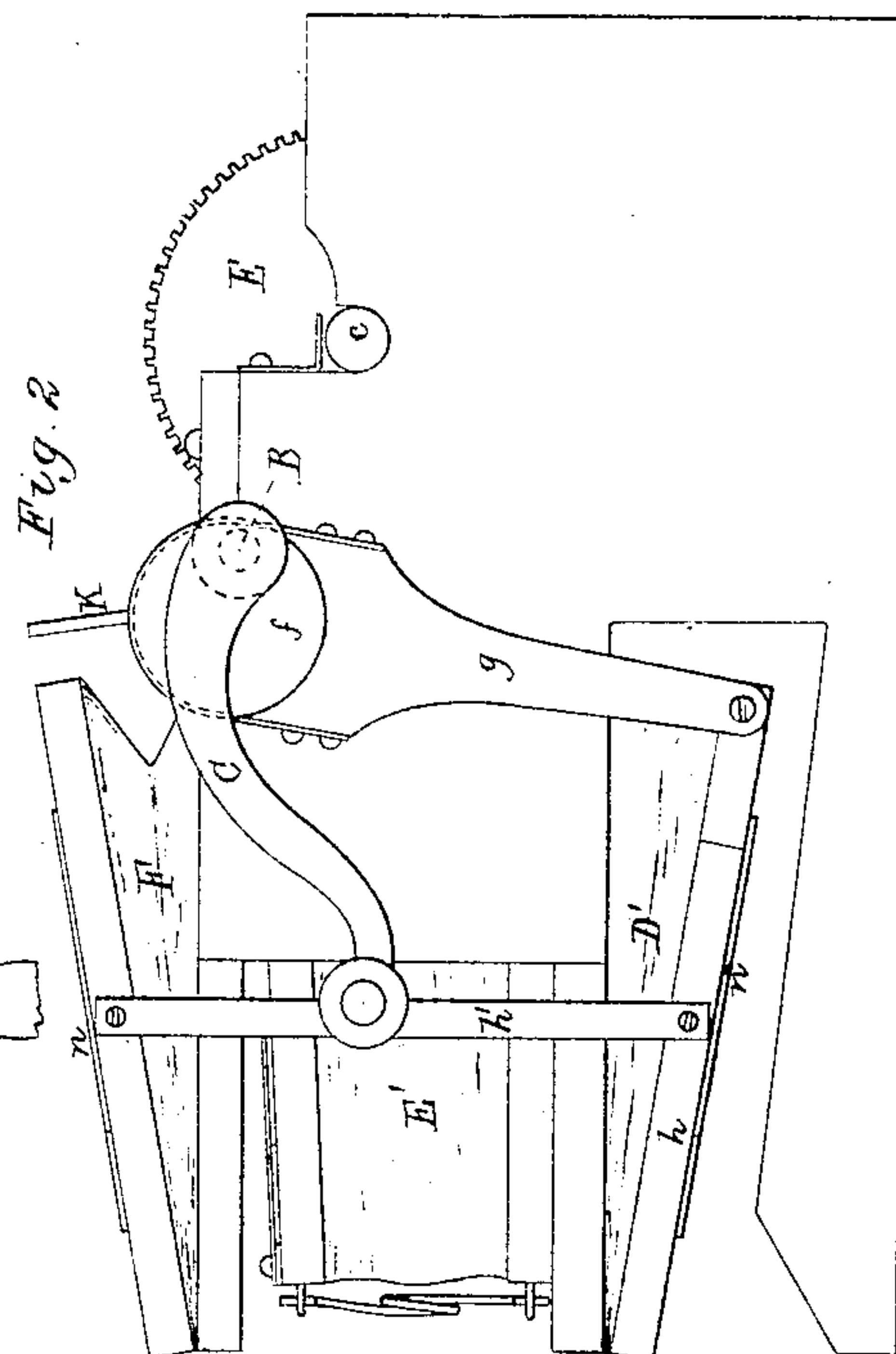
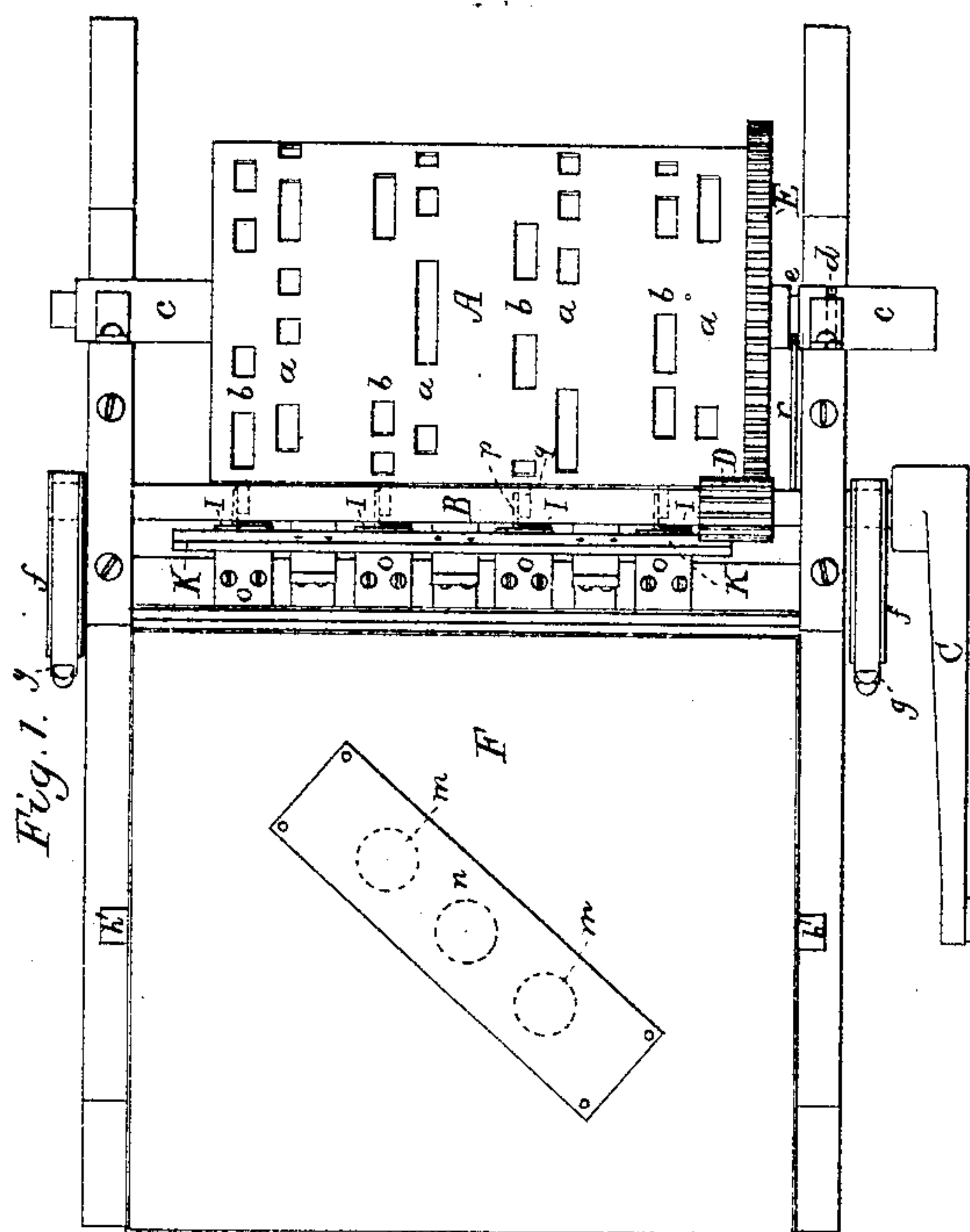
(No Model.)

J. METZGER.

MECHANICAL MUSICAL INSTRUMENT.

No. 270.686.

Patented Jan. 16, 1883.



Witnesses
S. N. Piper
E. B. Pratt

Inventor.
Joseph Metzger.
by R. H. Sddy atty.

UNITED STATES PATENT OFFICE.

JOSEPH METZGER, OF EAST CAMBRIDGE, MASSACHUSETTS.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 270,686, dated January 16, 1883.

Application filed May 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH METZGER, of East Cambridge, in the county of Middlesex, of the State of Massachusetts, have invented a new and useful Improvement in Reed-Organ; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a side elevation, and Fig. 3 a vertical and longitudinal section, of a reed-organ containing my invention, the nature of which is defined in the claims hereinafter presented. Fig. 4 is a rear view of the reed-board; and Fig. 5 is a front view of it and its valves and the mechanism for closing all of them at once, to enable the perforated drum to be moved endwise for the playing by the instrument of a different tune when such drum may be next revolved.

In the drawings, A denotes a drum whose periphery is perforated with two series of rectangular openings, *a b*, those marked *a* being for the performance of a different tune from those marked *b*. This drum has its shaft *c* supported in suitable bearings, and capable of sliding endwise as well as revolving therein, and, besides, the shaft has two grooves, *d e*, in and around it, as shown.

A driving-shaft, B, arranged as represented, is provided with a crank, C, and also with a pinion, D, the latter engaging with a gear, E, fixed on the shaft of the drum. On revolving the shaft B by manual power applied to the crank the drum will be revolved.

There are fixed on the shaft B two eccentrics, *f*, each of which, by means of an arm, *g*, adapted to it, as shown, connects with the movable board *h* of the lowest of three bellows, D', E', and F, arranged as represented. The upper board of the uppermost bellows is connected with the lower board of the lowermost bellows by a rod, *h'*, pivoted to them. On revolving the driving-shaft such board will be moved simultaneously first upward and next downward.

In front of the middle bellows, E', and between the two bellows D' and F, is a wind chamber or chest, G, on whose front is fixed the reed-board H. The middle bellows opens directly into the wind-chest. Such is also the case with the two bellows D' and F, to whose

openings *i* of communication with the said chamber there are valves *k l*. There is also in each movable board of each bellows one or more openings, *m*, provided with valves *n*, and there extends upward from the bottom board of the middle bellows a post, *u*, which is to open the valve of such bellows on its movable board being drawn downward sufficiently. The said middle bellows is for maintaining the sound of a reed or reeds under the operation of the two auxiliary or working bellows. In reed-organs it has been customary to use with the wind-chest two exhausting-bellows and one sound-steadying bellows; but they have been differently arranged with each other and the wind-chest from what they are in my improvement, in which the intermediate bellows is in rear of the wind-chest and between the two working bellows, and of these latter one extends over and the other underneath the said wind-chest.

The reeds of the reed-board are shown at *m'*, there being an opening, *n'*, through the front of each reed-chamber, such opening having to it and in the front of the reed-board one of a series of valves, I. Each of such valves is connected with the wind-chest by a spring, *o*, to act as a hinge to the valve and also to force it off its seat, as may be required, for the sounding of the reed of such valve. From each valve a stud, *p*, carrying a friction-roller, *q*, projects, the roller being to bear against the circumference of the tune-board. Furthermore, there is arranged in front of the valves a frame, K, which, hinged to the reed-board, has a projection, *r*, to enter one of the grooves *d e*, hereinbefore mentioned. When the projection is in one of the grooves the drum-openings for playing one tune are in their proper relations with the valves. So, when the projection is in the other groove, the drum-openings for playing the other tune are in their proper relations to the valves for the tune to be played while the drum may be in revolution. The lower bar, *s*, of the frame K extends across all the valves, so that when the frame is moved to press the said bar against the valves and force them backward they will all be thrown out of action with the drum, and the projection *r* will at the same time be drawn out of the groove of the drum-shaft, such being to enable the drum to be moved endwise in order to carry

the drum-openings of another tune into their proper relations with the valves for such tune to be played when the drum may next be revolved. While each valve is off its seat and
5 the bellows are in operation the reed of such valve will be sounded; but on the valve being closed upon its seat by the drum the sound of the reed will cease.

What I claim as my invention is as follows,
10 viz:

1. The wind-chest G, arranged between the two exhaust-bellows D' F, and provided with openings *i i* and their valves *k l*, in combination with the separate sound-steadying bellows
15 arranged between the two exhaust-bellows D' F, and in rear of and to open into the wind-

chest, as set forth, the reed-board being in front of the wind-chest, as shown.

2. The combination of the frame K with the reed-board and its valves, the tune-drum, the
20 wind-chest, the two exhaust-bellows, and the sound-steadying bellows, all being arranged and to operate substantially as set forth.

3. The combination of the frame K and its projection *r* with the reed-board and its valves,
25 and with the tune-drum, as described, provided with the grooves *d e*, to operate with such projection, as set forth.

JOS. METZGER.

Witnesses:

R. H. EDDY,
S. N. PIPER.