

(Model.)

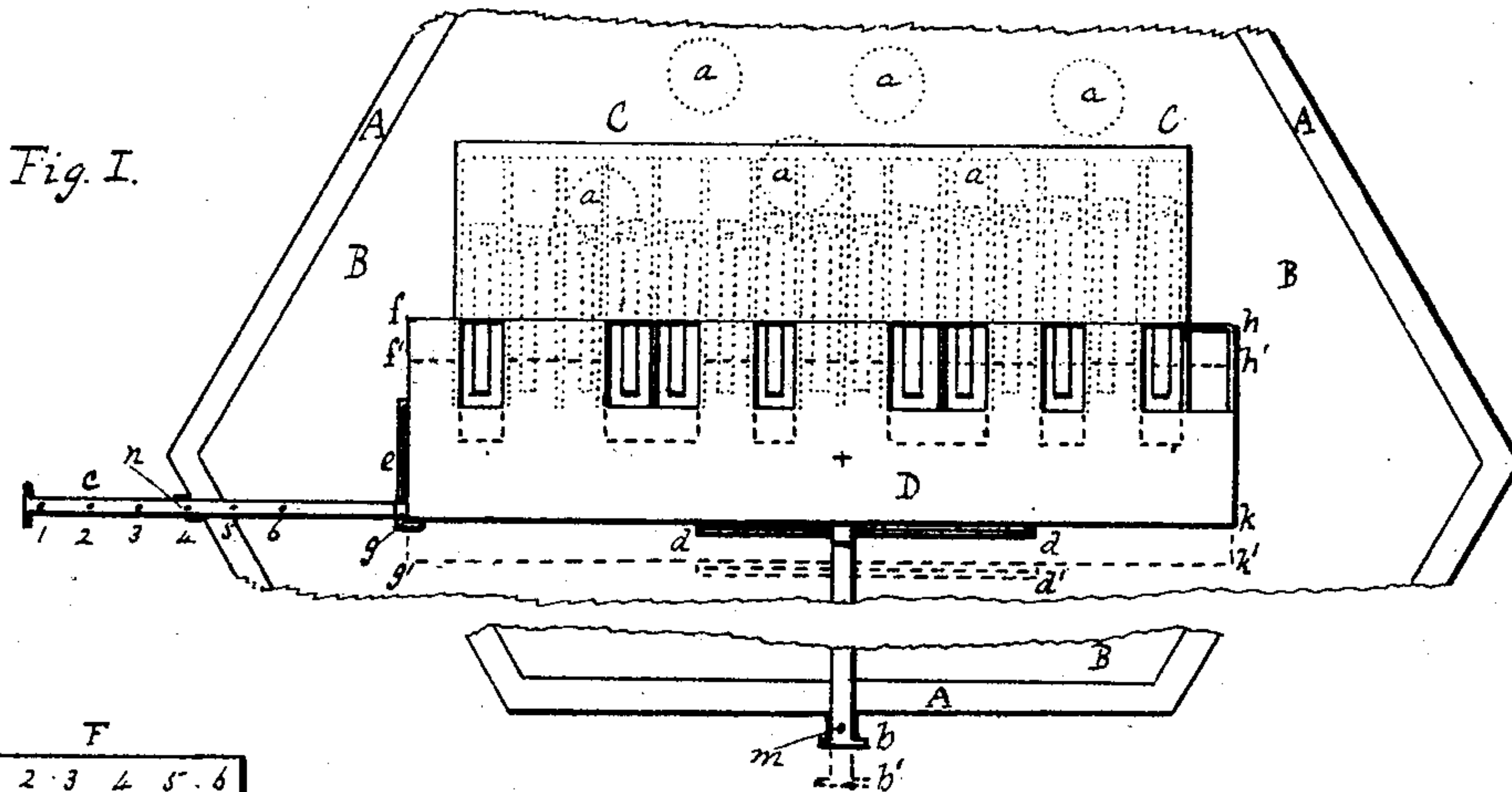
2 Sheets—Sheet 1.

B. BERRY.

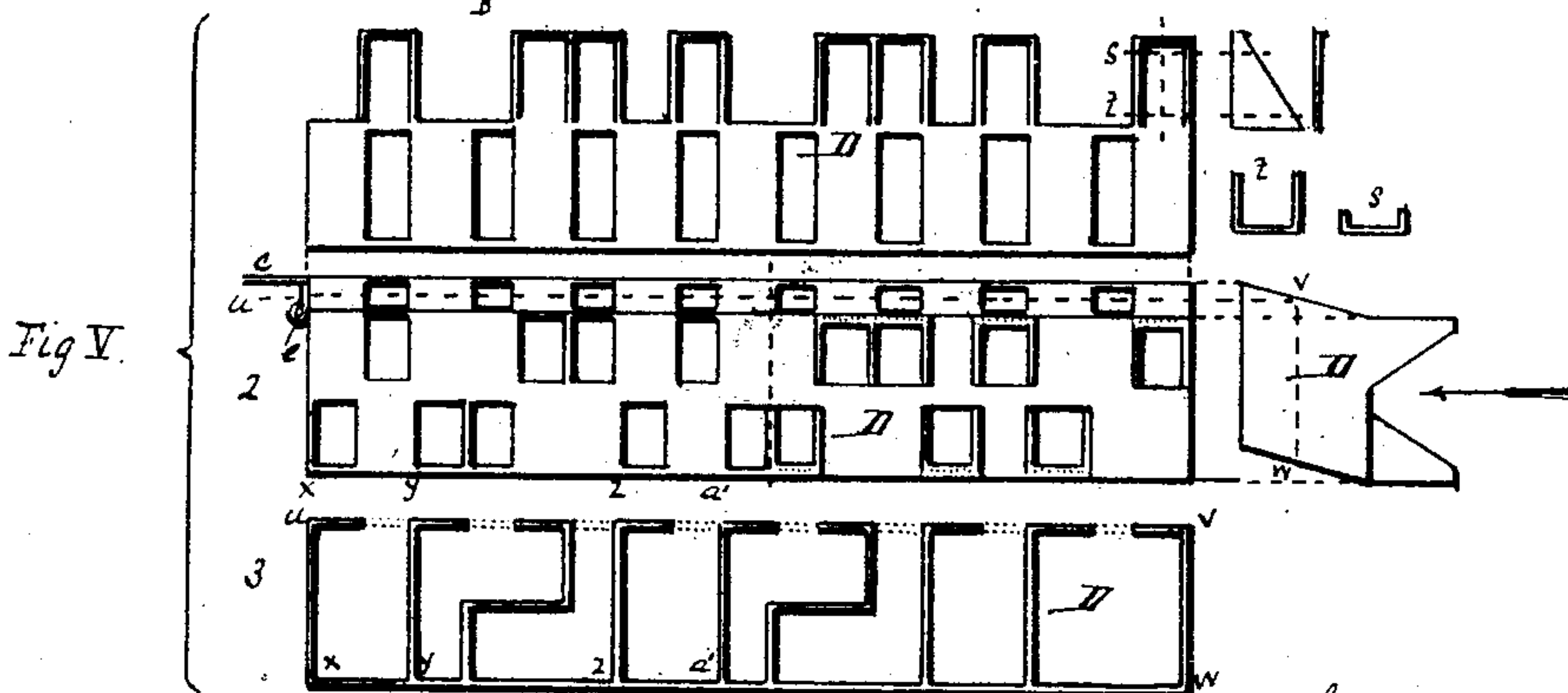
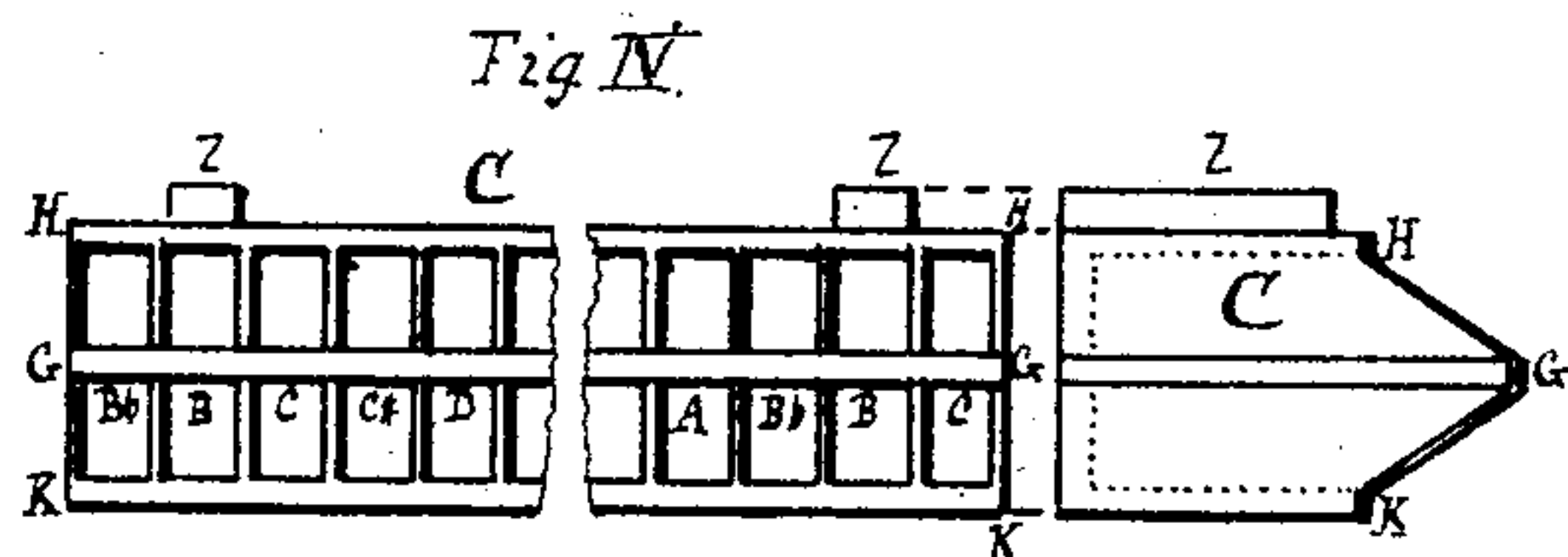
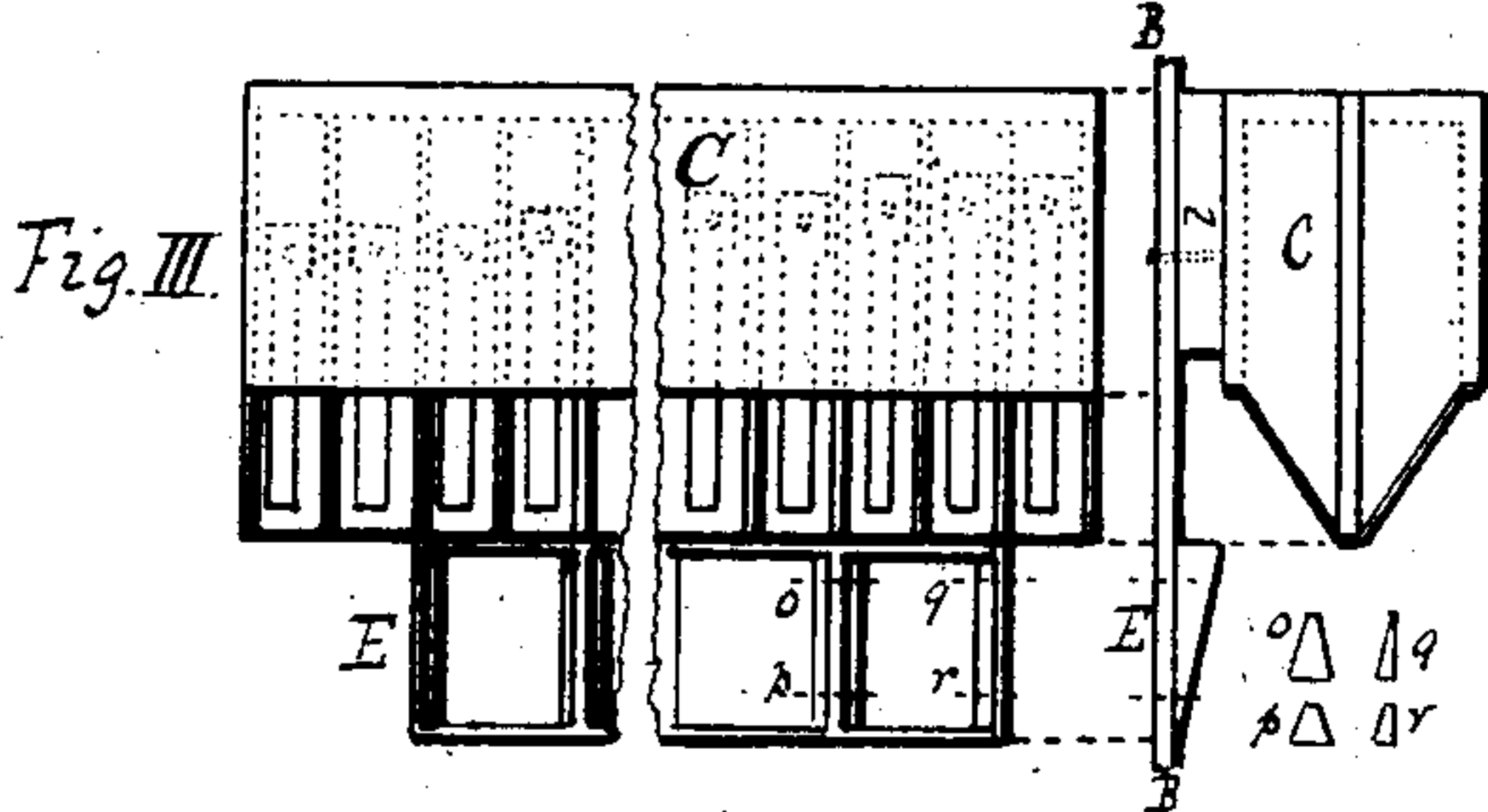
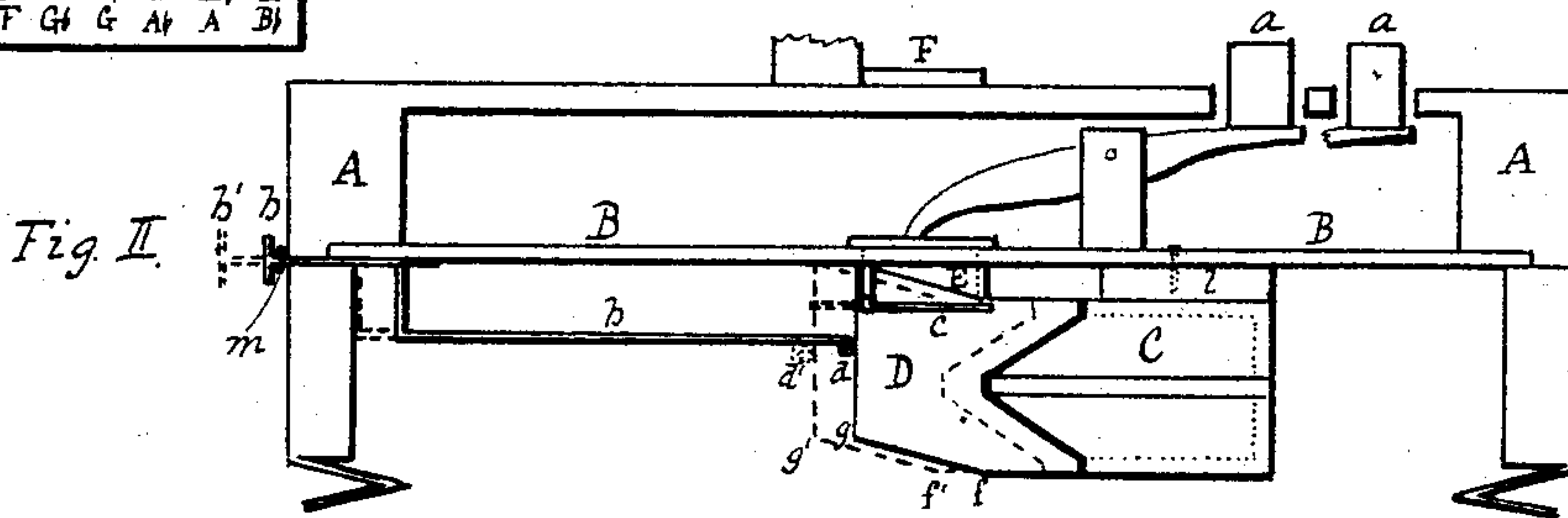
ACCORDION.

No. 274,705.

Patented Mar. 27, 1883.



F					
1	2	3	4	5	6
B	C	D	E	F	G
F	G	H	I	J	K



Witnesses:

Charles Raper.  
David L. Jones.

Inventor.  
Boswell Berry

(Model.)

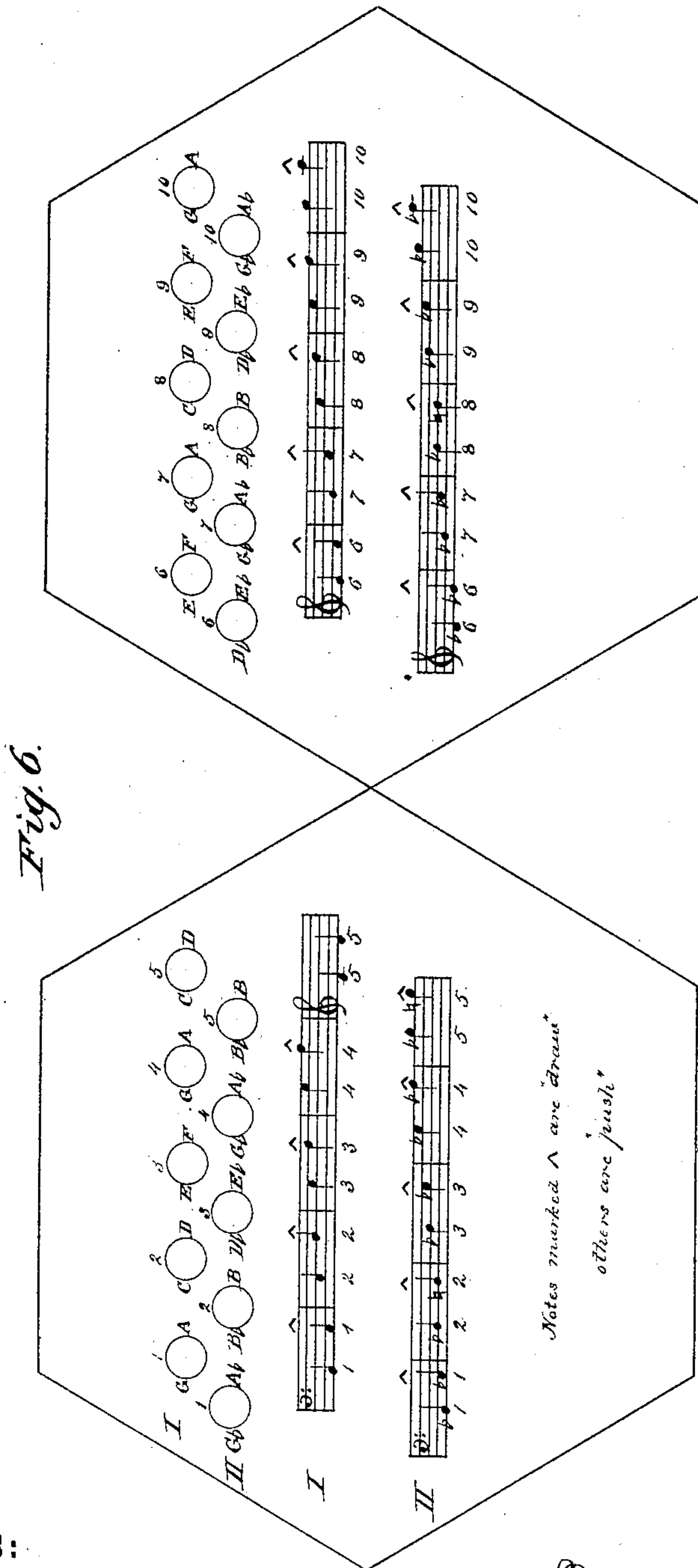
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ACCORDION.

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**WITNESSES :**

W. W. Hollingsworth  
Edw. U. Ryan.

INVENTOR:

Roswell Berry

BY

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

BOSWELL BERRY, OF GOSFORTH, NEWCASTLE-ON-TYNE, ENGLAND.

## ACCORDION.

SPECIFICATION forming part of Letters Patent No. 274,705, dated March 27, 1883.

Application filed August 18, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, BOSWELL BERRY, a subject of the Queen of Great Britain, residing at 18 Hawthorn Road, Gosforth, Newcastle-on-Tyne, England, have invented a new and useful Improvement in Concertinas; and I do hereby declare that the following is a full, clear, and exact description of the same.

The principle on which my invention proceeds is this: that any musical scale is so related to another whose key-note is three full tones distant from the key-note of the former that the first six natural notes of the former scale are identical with the five accidentals of the latter, together with the seventh natural note of the latter scale. I propose to apply this to concertinas and similar instruments, thus:

First. By a change of tuning I give the improved instrument command of two perfect chromatic scales—such as C and G $\flat$ —instead of the two imperfect scales C and G now in use. For this purpose I tune the reeds under one row of keys, thus: C D, E F, G A, C D, and so on, and the reeds under the other row, C $\sharp$  D $\sharp$ , G $\flat$  A $\flat$ , B $\flat$  B, C $\sharp$  D $\sharp$ , and so on to any range of notes. Each pair of reeds is, as usual, in connection with one button or key, and the first of each pair sounds to the “push” and the second to the “draw” movement.

Second. By the use of a stop capable of being placed in six different positions I give the instrument command of all the chromatic scales, so that the melody of any tune can be played in the key in which it is written, and that in all the scales the first, third, fifth, (as in the common instruments,) together with the sharp first, fourth, and sixth, shall be sounded by the push, and the second, fourth, sixth, and seventh, with the sharp second, and fifth shall be sounded by the draw movement.

Figures I and II show in their relative positions in a top and sectional view the essential parts of the improved instrument as constructed with twelve keys to give the two treble octaves. One octave only is shown, the other being identical, except the difference of pitch. The unbroken lines and unaccented letters show the position of the parts when the stop is in proper position for playing, the broken lines

and accented letters the same when the stop is free to move into a new position. A is the key-board, with the keys as at *a a a*, &c. B is the board on which the valves from the key-levers press. C is the reed-chest, rigidly fixed at a certain distance under B. D is the stop, fitting air-tight against reed-chest C and projection E, and moved from the outside by stop-draws *b* and *c*. The cross, Fig. I, marks the center of B.

Fig. III shows in top and end view the reed-chest in its relation to B and projection E, the stop being removed. *o p q r* are sections through projection E, as marked.

Fig. IV shows a front and end elevation of reed-chest. G G is the reed-plate, on which are fifteen reeds for each hand, rising by semitones from B $\flat$  above the bass to C in the third space of the treble for the left hand, and from B $\flat$  on the third line of the treble to C on second ledger-line above the treble for the right hand. These reeds are arranged at equal distances apart on the side toward K, with valves above, as usual. Along G G, H H, K K, and also along H G, G K, &c., a stuffing is placed. Pieces *l l*, fixed to reed-chest C, keep it at a proper distance from board B.

Fig. V shows different views of the stop D, Figs. I, II. 1 is the plan of the top, with sections *t s* of the coverings over the openings in the reed-chest. 2 is a side and end view of the stop, the side view represented as looking in the direction of the arrow; and 3 is the internal longitudinal section through *u v w*.

Fig. VI is a diagram view of the bass and treble faces of the concertina, showing the key-board and its notes.

The rod *b*, Figs. I, II, moving freely along the wire *d*, draws the stop D back free from contact with C and E, while the wire or rod *c*, moving freely along *e*, puts the stop in any one of the six positions marked 1—6, giving the scales corresponding to the number, as indicated on index F. The pin *n* fixes *c* and the pin *m* fixes *b*, so that the stop shall press air-tight against C and E.

For an instrument with more than twelve keys there must be a corresponding addition to the number of reeds and to the length of the stop, provision being made to allow of the

stop passing to its full distance under B. For sixteen keys (eight on each key-board) nineteen reeds would be needed in each reed-chest, and the stop would consist of three times  $xz$ ,  
 5 Fig. V, with  $z a'$ . For an instrument of the accordion shape the reeds would be three more than double the number of keys, with stop lengthened to correspond. Thus for twenty-one keys there would be forty-five reeds from  
 10 D below bass to B $\flat$  above treble staff, and the stop would consist of seven times  $ya'$ , with  $yz$ .

The size of the parts may vary in different instruments, and so may the method of fixing and moving the stop.

15 I am aware of the English Patents No. 1,976 of 1862, No. 2,184 of 1868, and United States Patent No. 11,062, granted June 13, 1854, and I do not claim anything shown therein.

What I claim is—

20 1. In a concertina or other similarly-keyed instrument, the combination of two rows or sets of keys, one set being connected with reeds which give the first six natural tones of

the diatonic scale in each octave, and the other set connected with reeds which give the acci- 25 dentals and the seventh natural note of the scale in each octave, the relative position of the keys of the two sets being the same throughout the key-board, as described.

2. The combination of the board B, having 30 key-levers and projections E, the reed-chest O, fixed to board B, and having wedge-shaped side, and the adjustable stop D, having one side fitted to the wedge-shaped side of reed-chest and its top side fitted to the projection 35 E, the said stop being provided with wind-passages, arranged as described, to effect by its adjustment a transposition of the scales, as set forth.

BOSWELL BERRY.

Witnesses:

CHARLES ROPER,  
 OWEN DANIEL JONES,  
 EVAN R. JONES,

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