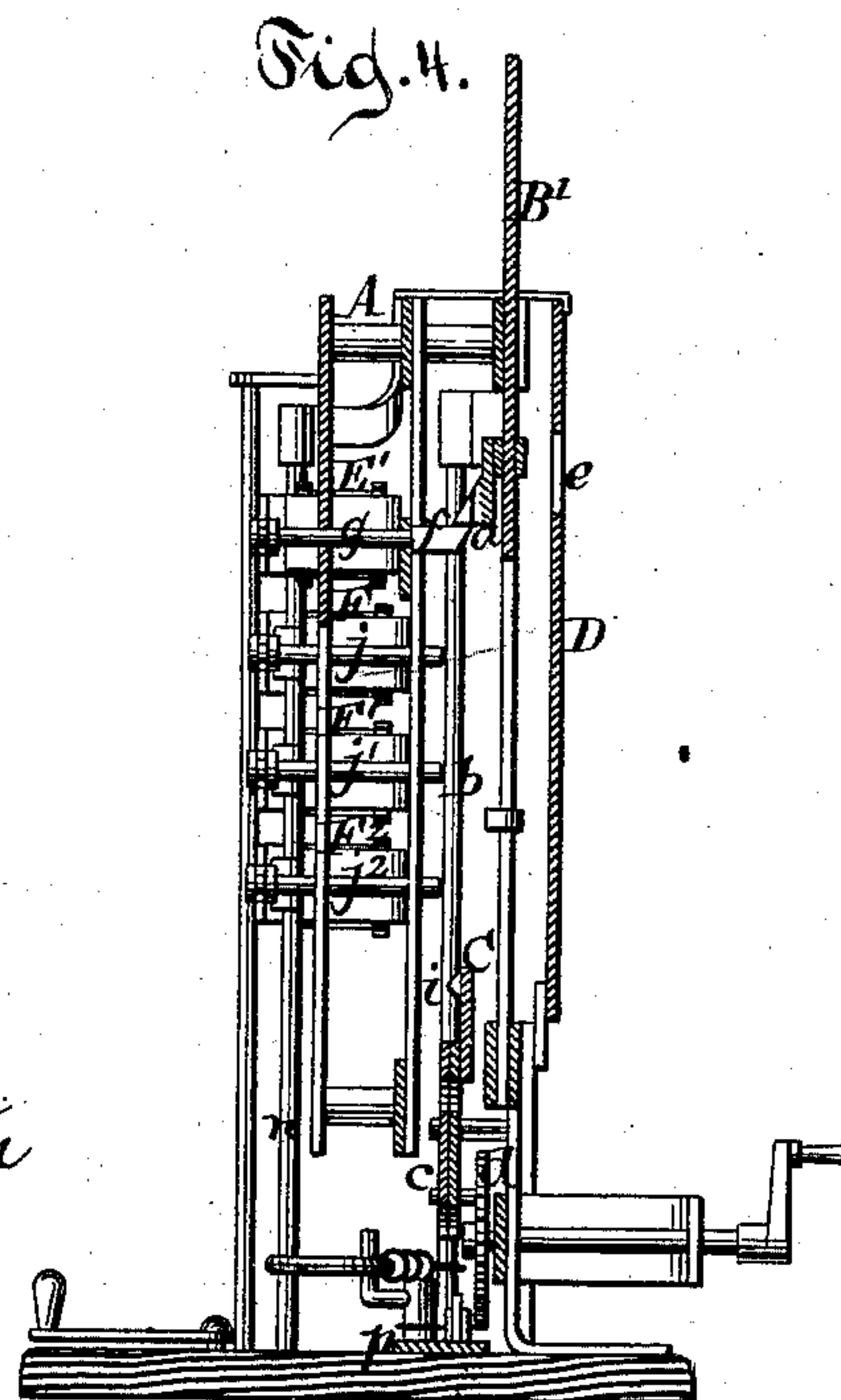
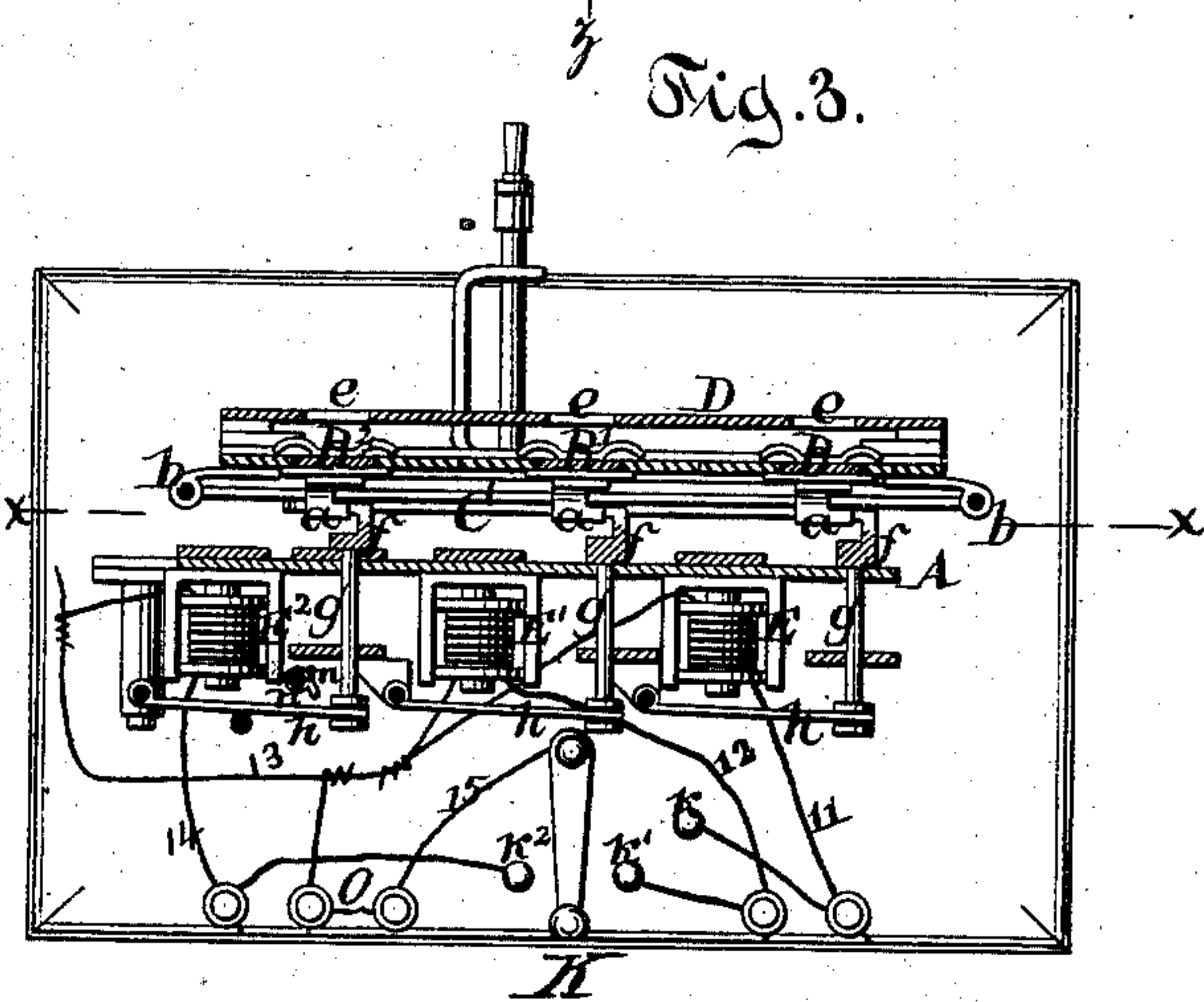
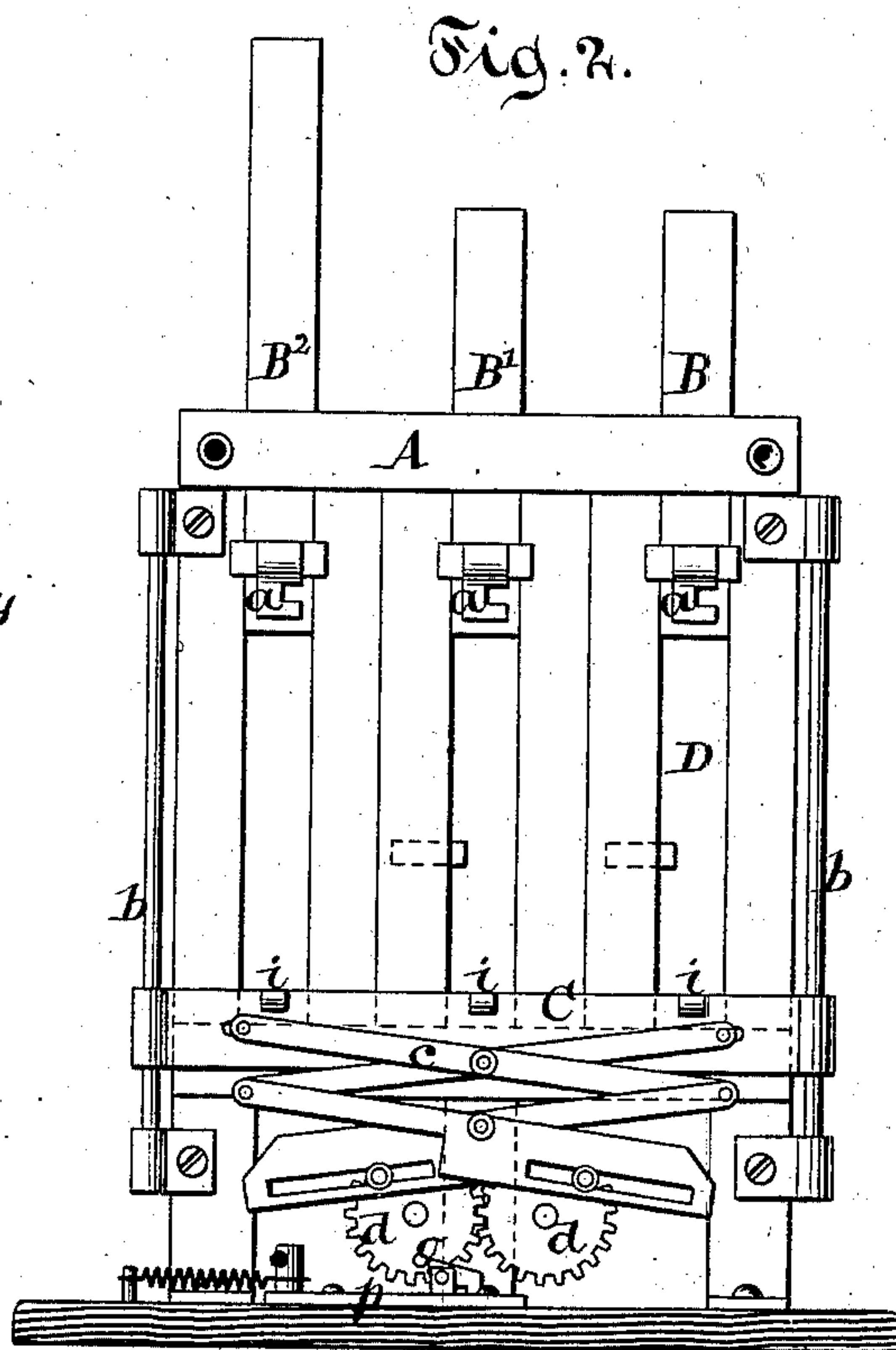
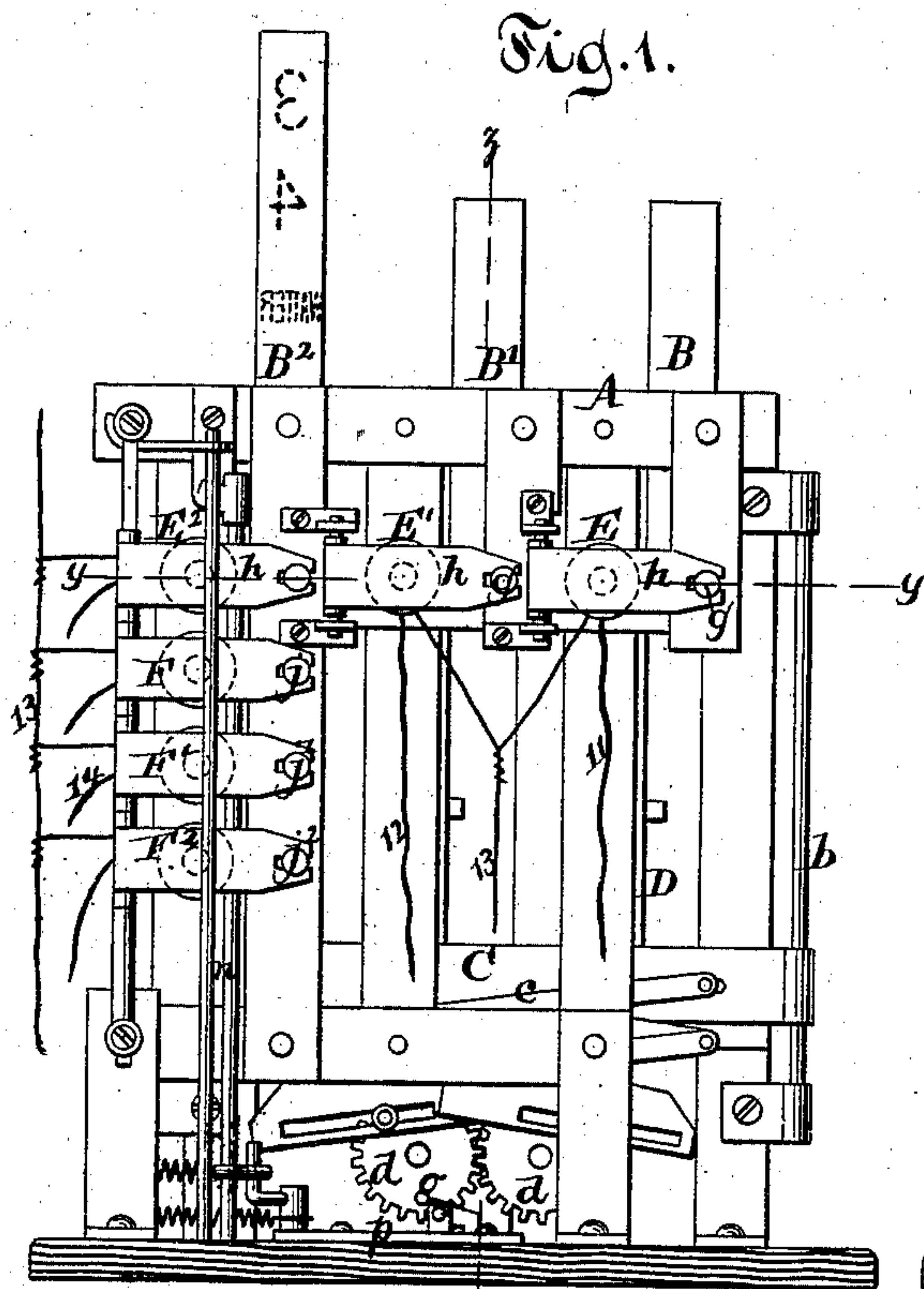


J. W. NORTON.
Electro Magnetic Hotel Annunciator.

No. 237,201.

Patented Feb. 1, 1881.



Witnesses.
Chas. Wahlers.

Otto Hupland

Inventor.
John W. Norton
by his attys

Van Gantvoord & Hauff

UNITED STATES PATENT OFFICE.

JOHN W. NORTON, OF PLAINFIELD, NEW JERSEY.

ELECTRO-MAGNETIC HOTEL-ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 237,201, dated February 1, 1881.

Application filed May 3, 1878.

To all whom it may concern:

Be it known that I, JOHN W. NORTON, of Plainfield, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Electric Hotel-Annunciators, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a rear view. Fig. 2 is a vertical section in the plane xx , Fig. 3. Fig. 3 is horizontal section in the plane yy , Fig. 1. Fig. 4 is a vertical section in the plane zz , Fig. 1.

Similar letters indicate corresponding parts.

This invention relates to certain improvements in a hotel-annunciator which contains a series of gravitating dials, each bearing two or more figures, words, or characters, a recovering mechanism common to all the dials, a releasing electro-magnet for each dial, and a series of retaining electro-magnets, one or more for each dial, so that by passing electric currents through said electro-magnets the dials can be set to indicate the number of any room in the circuit, and also the article called for from said room.

In the drawings, the letter A designates a frame, in which are mounted a series of gravitating dials, $B B' B^2$, &c. The dials shown in the drawings are formed of slides, which move up and down in vertical guideways; but revolving dials may be used, which are carried back automatically to their position of rest by a weight or spring. To the back of each of the dials is secured a dog, a , and a slide, C, serves to raise all the dials to the positions which the same occupy in Figs. 1, 2, and 4. Said slide moves on guide-rods b , and it is raised by a lazy-tongs connection, c , and cog-wheels d , or by any other suitable mechanism. As the slide moves upward it strikes against the dogs a of those dials which have been previously dropped, and said dials are brought back to their elevated positions. All the dials are situated behind the face-plate D, which is provided with a series of openings, e , one for each of the dials, and on the face of each dial are marked one or more figures, characters, or words, the figures serving to indicate the number of the rooms and the characters or words the articles called for. When the dials are in

their elevated positions neither of the figures, characters, or words are visible through the openings e in the face-plate, and they are retained in these elevated positions by stops f , which catch beneath the dogs a . These stops are secured to the front ends of pins g , the rear ends of which are connected to the armatures h of electro-magnets $E E' E^2$, &c., and said stops are so formed that they are forced forward by the action of the dogs when the dials are raised; but as soon as the dogs have passed above the stops said stops are forced back by the action of tappets i , secured to the lifting-slide C, so that when the lifting-slide is lowered the dials are retained in their elevated positions by the dogs and stops. If the electro-magnet of one of the dials is vitalized and its armature is attracted, the dog of said dial is released by the armature-stop, and the dial drops down, so that the figure, character, or word marked on its face nearest to its top becomes visible through the corresponding opening e in the face-plate D.

In order to exhibit the figures, characters, or words marked on the lower portions of one of the dials, additional magnets, $F F' F^2$, are provided, which are situated beneath the releasing-magnet E^2 of the dial B^2 . In the example shown in the drawings this dial has marked on it the figures "3" "4" and the words "Waiter" and "Fire." The armature of each of the electro-magnets $F F' F^2$ carries a stop, j, j' , or j^2 , and if one of these armatures is attracted by its electro-magnet the corresponding stop is moved forward, so that its front end comes in the path of the dog a of the dial B^2 , and when this dial is released it drops down until its dog strikes said stop, thereby arresting the dial in a position to exhibit the figure, character, or word corresponding to said stop. For instance, if it is desired to exhibit the word "Waiter," the electro-magnet F' is vitalized and the stop j' is moved forward. At the same moment the releasing electro-magnet E^2 of the dial B^2 is also vitalized, and as the dial drops it is retained by the stop j' , so as to exhibit the word "Waiter." When the lifting-slide C is raised the stops $j j' j^2$ are forced back by the action of cams m , Fig. 3, secured to a rock-shaft, n , to which an oscillating motion is imparted by means of a pin, o , secured in one of the cog-wheels, d , Figs.

1 and 2, and acting on a slide, *p*. A similar rock-shaft will be applied for recovering the stops of the sustaining-magnets of either of the dials when such are applied.

5 The operation of my annunciator is as follows: Each room in the circuit is provided with a key, *K*, and with a series of buttons, *k k' k''*, &c. The button *k* connects, by a wire, 11, with one end of the helix of the releasing-magnet *E* of the first dial *B*; the button *k'* connects, by a wire, 12, with one end of the helix of the releasing-magnet *E'* of the second dial *B'*, and the button *k''* connects, by a wire, 14, with one end of the helix of the sustaining-magnet *F'* of the dial *B''*. The other end of this helix connects with one end of the releasing-magnet *E''* of this dial, and the loose ends of the helices of all the releasing-magnets *E E' E''* connect, by a wire, 13, with one pole of a battery, *O*.
 10 The other pole of this battery connects, by a wire, 15, with the key *K*. The dials *B B' B''* are supposed to be all in their elevated positions. If the key is turned to the button *k* the electro-magnet *E* is vitalized, and the dial *B* is dropped, so as to exhibit the figure "1." Then the key is turned to the button *k'*, the electro-magnet *E'* is vitalized, and the dial *B'* is dropped, so as to exhibit the figure "2." Finally, the key is turned to the button *k''*, and there-
 15 by the sustaining-magnet *F'*, and also the releasing-magnet *E''*, are vitalized, and the dial *B''* is dropped, so as to exhibit the word "Waiter," thus indicating that a waiter is wanted in room 12.

35 In practice the dials *B B'* will each contain the figures from 0 to 9, and a corresponding number of sustaining-magnets will be applied, so that by the combined action of these two dials the figures from 0 to 99 can be exhibited;
 40 and if more rooms are to be in the circuit a third dial will be inserted, containing the same set of figures. The dial *B''* will be employed entirely for the articles called for, and each room up to 99 will have two buttons, *k k'*, for the number-dials *B B'*, and a separate set of
 45 buttons, *k''*, for the article-dial *B''*. The wires

11, 12, and 14 extend through the hall, and the buttons from the several rooms are connected to the same in the manner indicated in the drawings, while the battery-wire 15 also ex-
 50 tends through the hall and connects with the keys of the several rooms. By this arrangement I am enabled to work an annunciator with comparatively few wires, and with a single battery of comparatively little power. 55

If desired, the releasing-magnets may be so arranged that they also form the sustaining-magnets, allowing the dial, after it has been released by one of its magnets, to drop until it strikes the armature-stop of said magnet. 60

In practice the keys in the several rooms will be arranged in a cluster, one key for each article to be called for, and each of these single keys will make a connection with the dials carrying the numbers of the rooms, and also with
 65 the dial carrying the names of the article to be called for, so that if the occupant of room 36 calls for fire he will press upon the key marked "Fire" in his room, and the annunciator will show the number "36" and the word "Fire;"
 70 and if he wants the waiter he presses the key marked "Waiter," and so on.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the lifting-slide *C*,
 75 the gravitating dials *B B' B''*, &c., their dogs *a*, and the armature-stops *j*, and lifting-tappets *i*, secured to said slide, substantially as and for the purpose described.

2. The combination, with the mechanism for
 80 recovering the gravitating dials *B B' B''*, with the sustaining-magnets *F F' F''* and their stops *j j' j''*, of a rock-shaft, *n*, and cams *m*, for replacing said stops or either of them, substantially as set forth. 85

In testimony that I claim the foregoing I have hereunto set my hand and seal this 30th day of April, 1878.

JNO. W. NORTON. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.