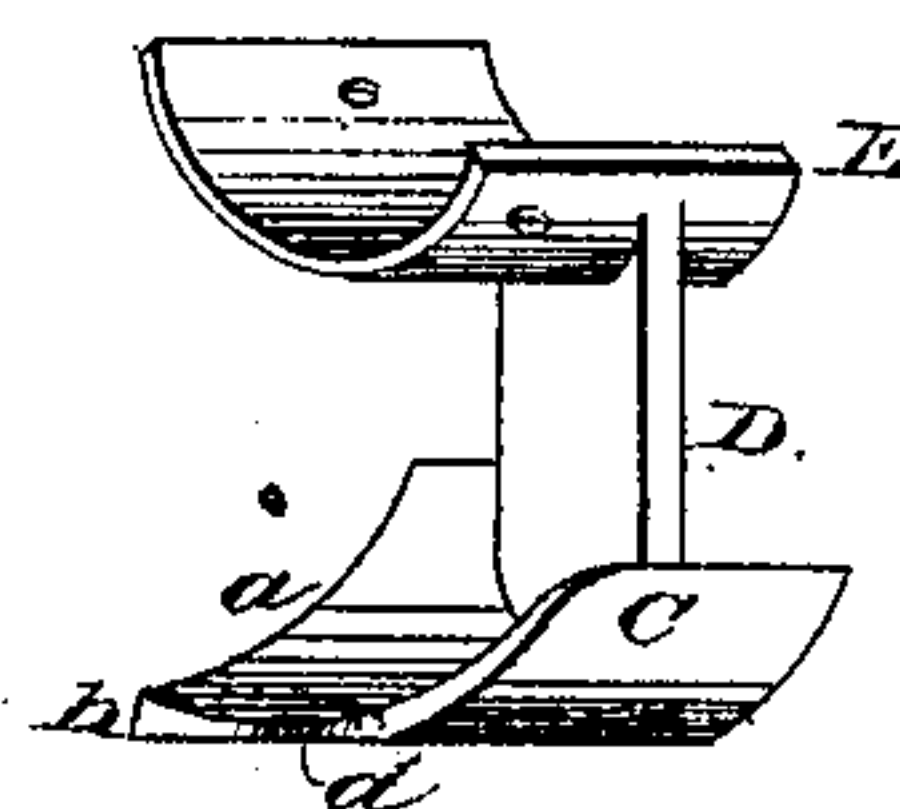
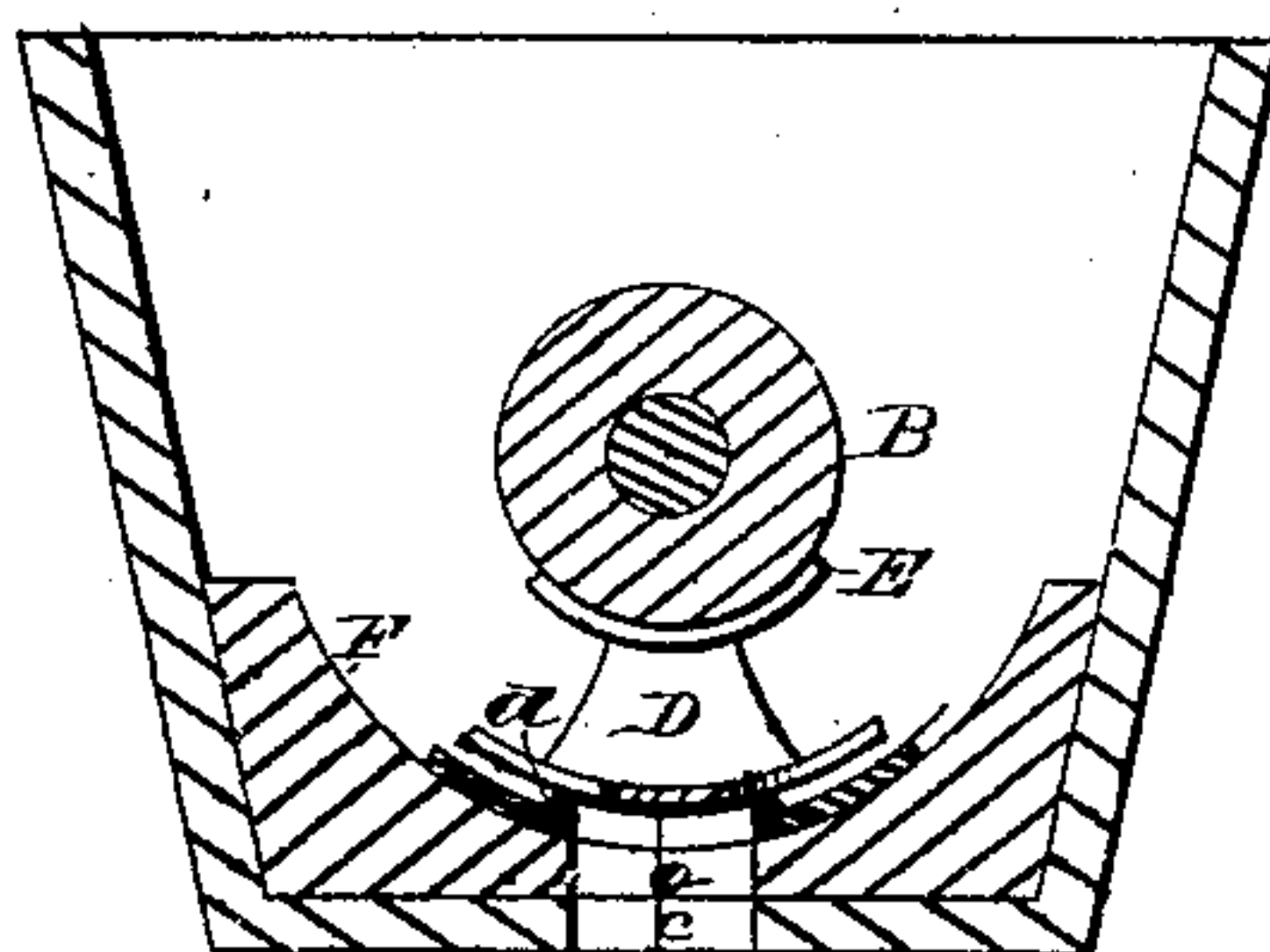
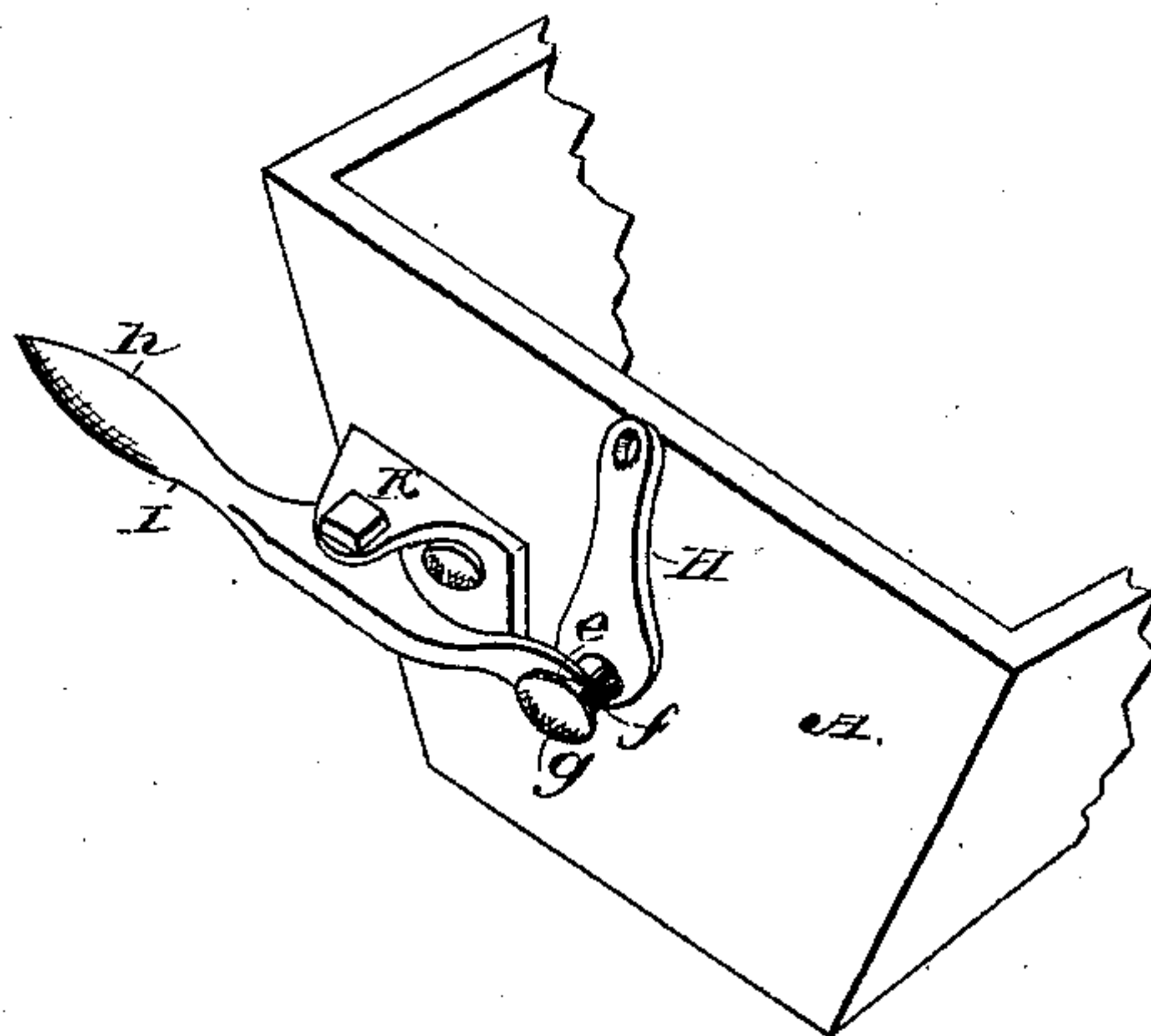
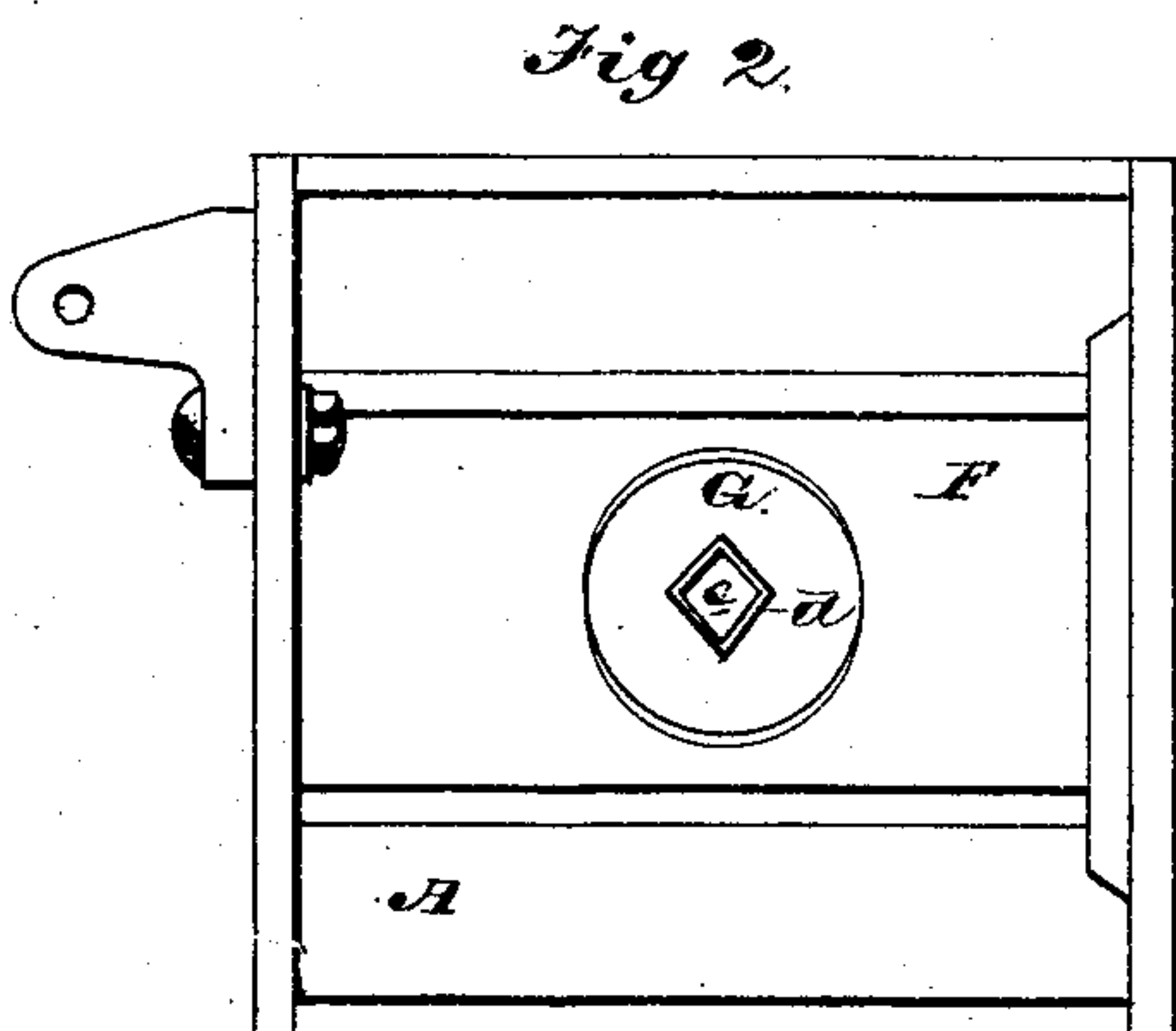
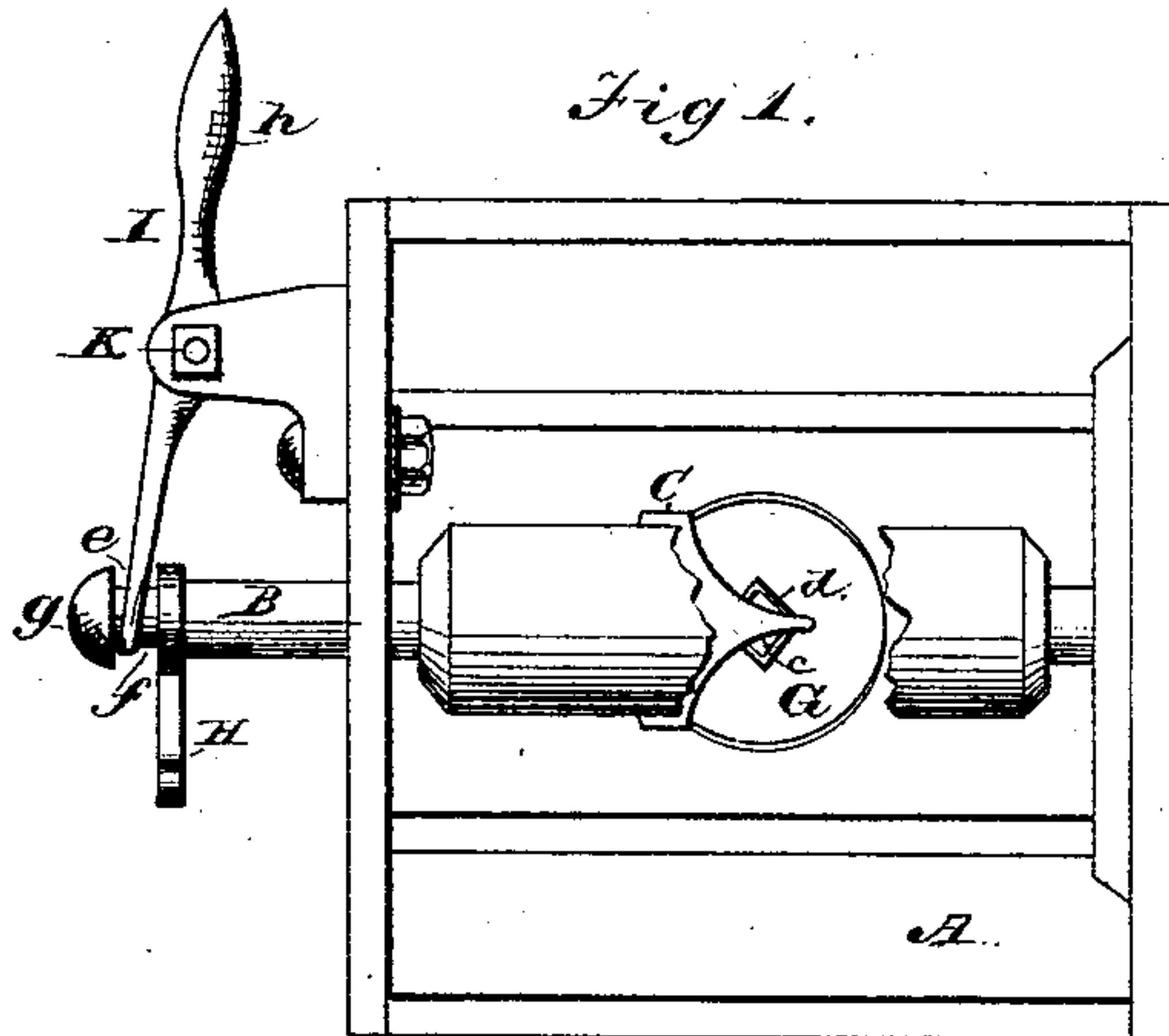


C. F. JOHNSON, Jr.
Fertilizer Sowers.

No. 149,042.

Patented March 31, 1874.



Witnesses;
H. C. Clark.
R. Dyer.

Inventor.

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Atty.

UNITED STATES PATENT OFFICE.

CHARLES F. JOHNSON, JR., OF OWEGO, NEW YORK.

IMPROVEMENT IN FERTILIZER-SOWERS.

Specification forming part of Letters Patent No. **149,042**, dated March 31, 1874; application filed August 25, 1873.

To all whom it may concern :

Be it known that I, CHARLES F. JOHNSON, Jr., of Owego, in the county of Tioga and State of New York, have invented a new and useful Improvement in Fertilizer-Sowers; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The object of my device is a box for sowing fertilizers in such a manner that the work shall be done efficiently and accurately without clogging or choking; and the invention therein consists in the improved construction and arrangement of the various operative parts, in order to effect the above purposes.

In order to enable those skilled in the art to construct my device, I proceed to describe the same, in connection with the drawings, in which—

Figure 1 is a top plan view of my device with the main shaft partly broken away. Fig. 2, a similar view of the same with the shaft and agitator-plate removed; Fig. 3, a perspective end view of the box and its attachments; Fig. 4, a vertical section of my device on line *x x* of Fig. 1, and Fig. 5 a separate view of the agitator-plate.

Like letters denote corresponding parts in each figure.

The box designed to receive the fertilizer is designated by the letter A, and is intended in use to be about eight feet long, of suitable depth and width, to be mounted on wheels and drawn by a horse. Through this box, turning in proper bearings at each end, is a shaft, B, to which, at suitable intervals, ordinarily about five inches apart, the agitator-plates C are to be secured in any convenient manner. This agitator-plate is a casting, having connected with it a standard, D, and a cap or flange, E, and is formed as follows, viz: The bottom of the agitator-plate has a regular horizontal plane, but is curved regularly on lateral lines, with its front cut away on either side *a* in lines curved inwardly, so as to leave on the front a common point, *b*. This front and point are beveled inwardly, so as to leave a somewhat sharp edge at the bottom along the sides *a* and point *b*. From the rear end of the agitator-plate a suitable standard, D,

rises vertically, which is in turn connected with the flange or cap E, which, in this instance, is a plate curved on its interior for convenient and secure fastening to the shaft. It will be observed, however, that this particular construction of the standard D, or cap E, is not essential, as any other convenient mode of attaching the agitator-plate may be used; for instance, a standard may be used with forked ends to embrace the shaft, or with a collar to encircle it, or it may pass directly through the shaft, the main feature in this respect being the agitator-plate, and convenient means for attaching it to the shaft in proper position for its work. The inside bottom F of the box A, is made curved laterally to correspond with the shape, and the path of the bottom of the agitator-plate. Secured to this bottom F, and recessed into it, is a casting, G, having a rectangular opening, *c*, with a raised lip or ledge, *d*, around it, which opening corresponds with another opening through the bottom of the box. The outer end of the shaft B has secured upon it a lever, H, to which it is designed to attach a pitman working with an eccentric or cam on the axle of the carriage, or in any ordinary or convenient way, to give a regular oscillating movement to such shaft. Outside of the lever H, a hand-lever, I, provided with a forked end, *e*, works upon a neck, *f*, of the shaft, and is prevented from slipping off the same by a suitable head, *g*, upon such shaft. This hand-lever is pivoted at K, and its outer end is provided with a handle, *h*, by means of which any desired longitudinal adjustment of the shaft with its series of agitator-plates may be made, and after such adjustment such handle may be clamped, or otherwise securely held in place.

The operation of my device is as follows, viz: The box being filled with the fertilizer, and the hand-lever adjusted so that each agitator-plate in its oscillations will uncover as much of the openings *c* as may be required, by the forward movement of the carriage the agitator-plates will be moved sidewise in each direction, alternately, across the openings *c*, allowing a portion of the fertilizer to escape regularly through such opening. The sharp edges of the front and point of each agitator-plate, fitting closely to the lip *d* around the

opening *c*, will sweep clean, and cut away such portion of the fertilizer as inclines to adhere, without much friction or danger of heating. The concave bottom of the box has the important purpose, that the fertilizers, with the shock of the carriage, are constantly settling toward the bottom, and its form best adapts it to the path of the agitator-plate which sweeps across it. In this way the common annoyance of clogging and choking will be avoided, and a simple means of adjustment provided for regulating, at will, the escape of the fertilizer, and the quantity to be sown.

It has generally been considered that fertilizers should be forced through a hole in front of the agitator, and the agitator has consequently been made round, or turned upon its edges. I have discovered that, instead of being forced through, they drop through over the back edge of the plate, and that the office of the agitator is to keep the mass loose, and to prevent it from adhering to the bottom as it is apt to do when damp and waxy. It is necessary, therefore, that the agitator-plate should work under the material to be sown, should work directly on the bottom of the box, and should have a somewhat sharp scraping edge, which should be in all parts of its path close to the bottom box to keep the bottom of the box clean, and that the bottom of the box should conform to the path of the agitator.

Having thus described my device, its manner of operation, and some of its advantages, what I claim as new therein, and my own invention, is—

1. The agitator-plate *C*, constructed as shown and described, in combination with the concave plate *G*, with opening *c* and raised lip *d*, substantially as set forth.

2. The combination of the agitator-plate *C*, constructed as described, shaft *B*, and lever *H*, for the purpose of giving an oscillating movement to said plate, substantially as set forth.

3. The combination of the shaft *B*, agitator-plate *C*, and hand-lever *I*, for the purpose of giving a longitudinal adjustment to said plate, substantially as set forth.

4. The rock-shaft having the iron scraper described, in combination with the concave bottom having an opening, as described, the scraper being adapted to work close to the bottom and beneath the material to be distributed, substantially as described.

This specification signed and witnessed this 20th day of August, 1873.

CHARLES F. JOHNSON, JR.

Witnesses:

B. C. STILES,

GEO. W. BRISTOL.