

J. S. LEWIS.

Grain Drill.

No. 97,530.

Patented Dec., 7, 1869.

FIG. 1.

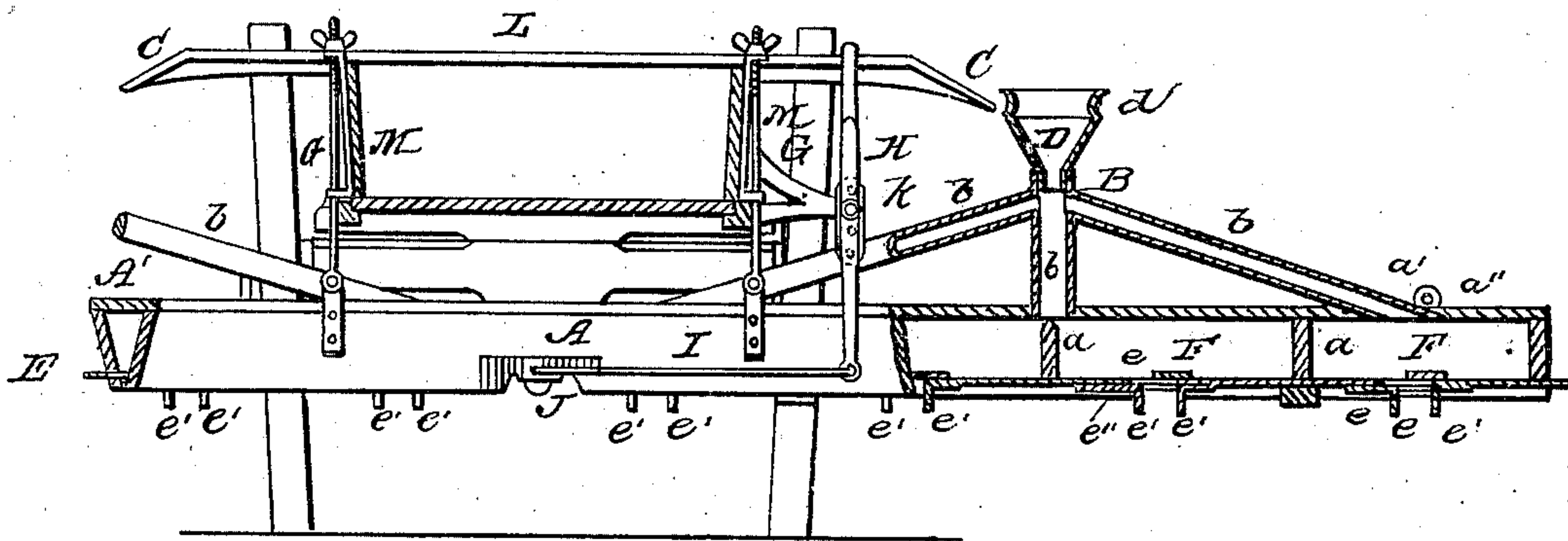


FIG. 2.

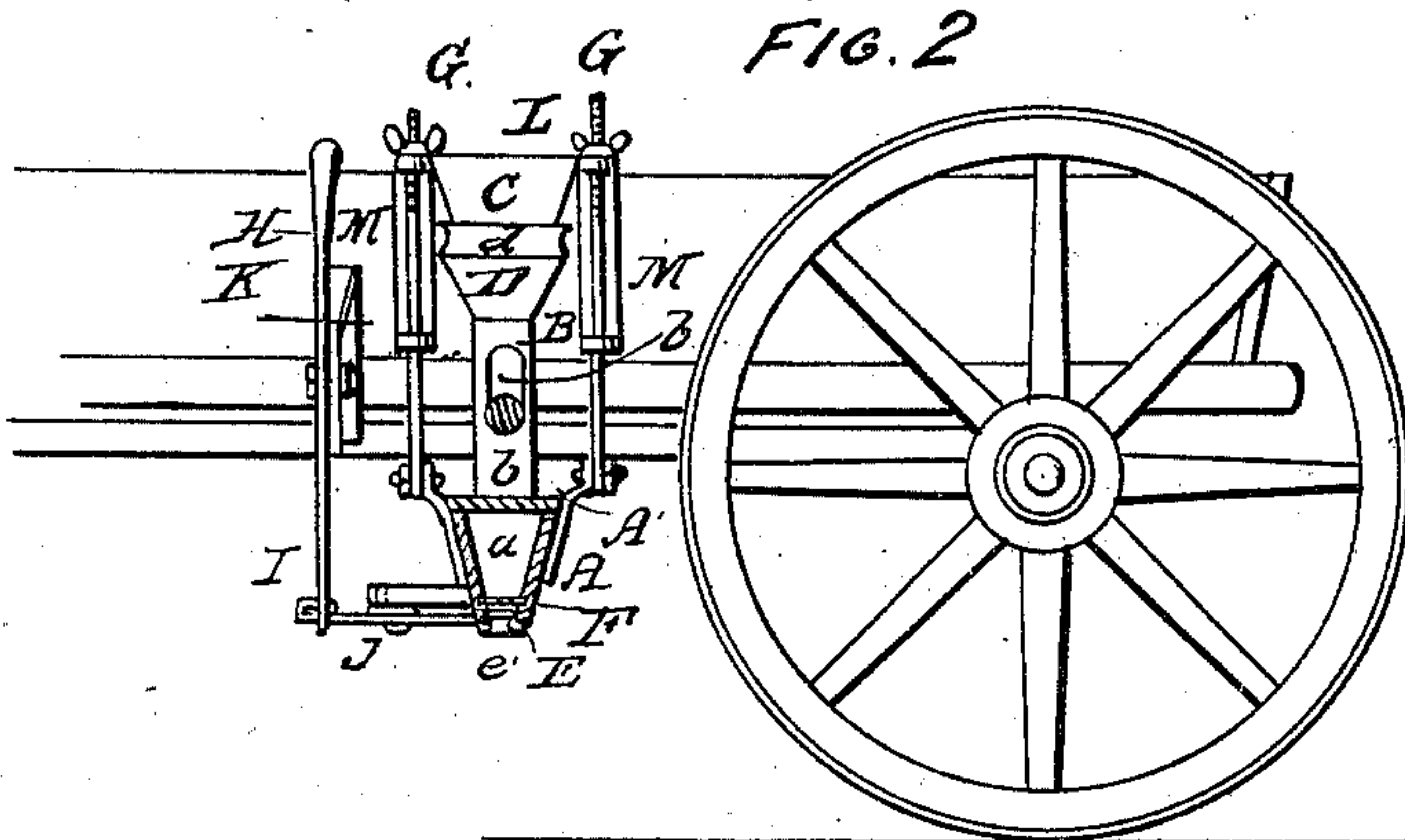


FIG. 3.

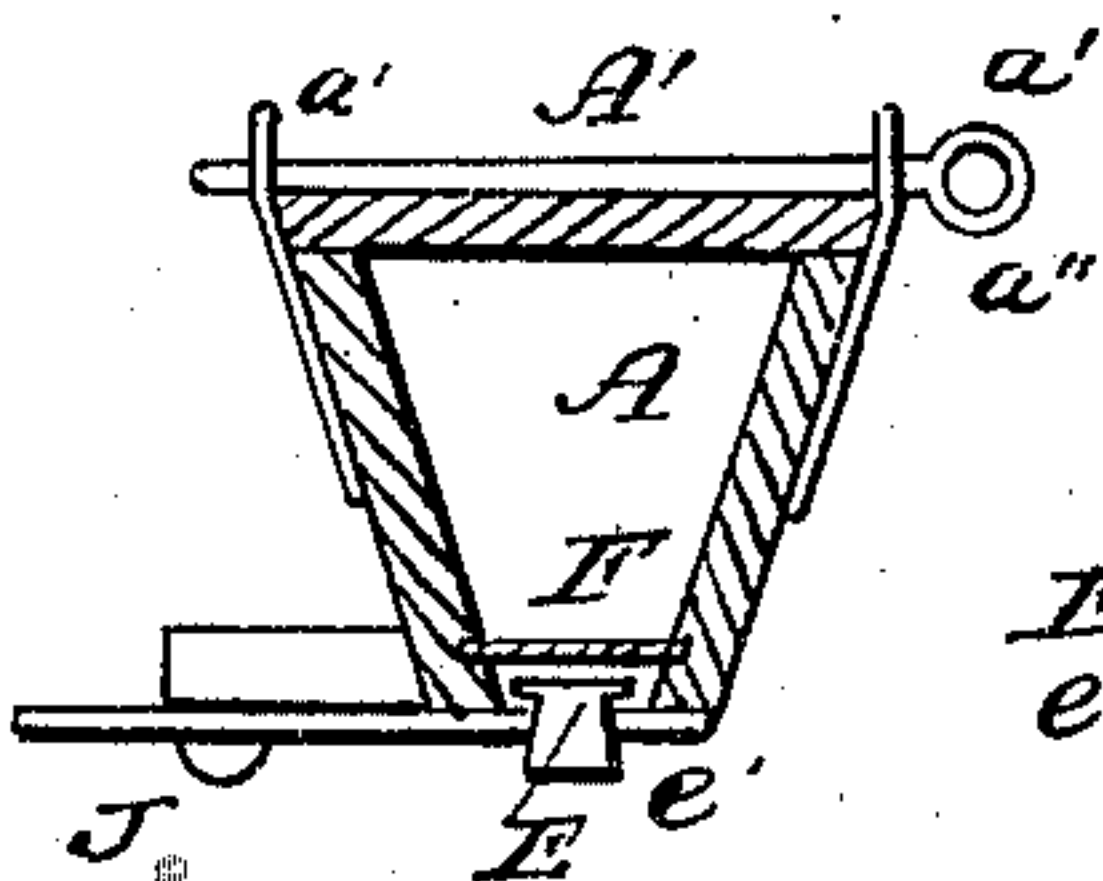


FIG. 4.

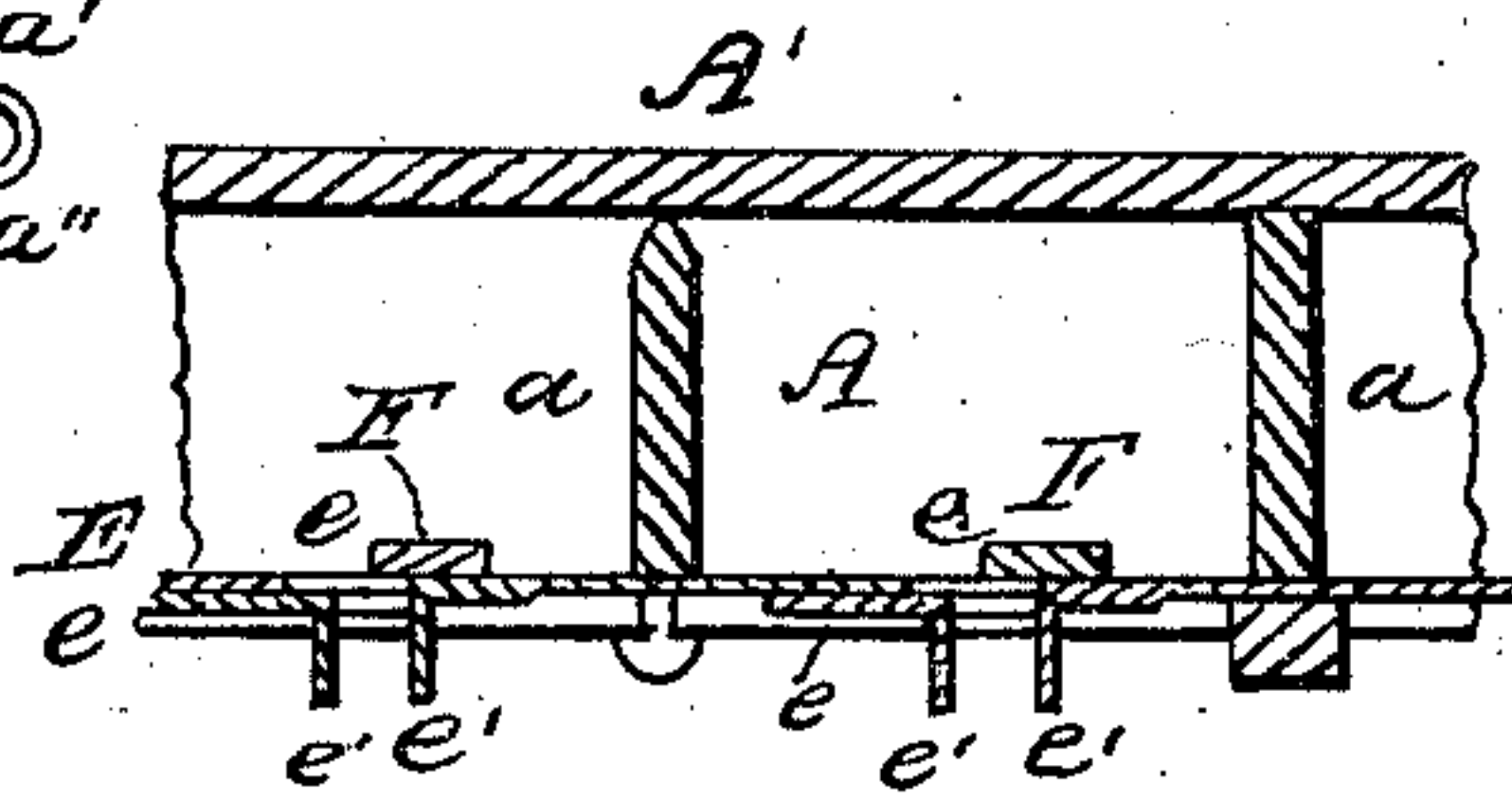
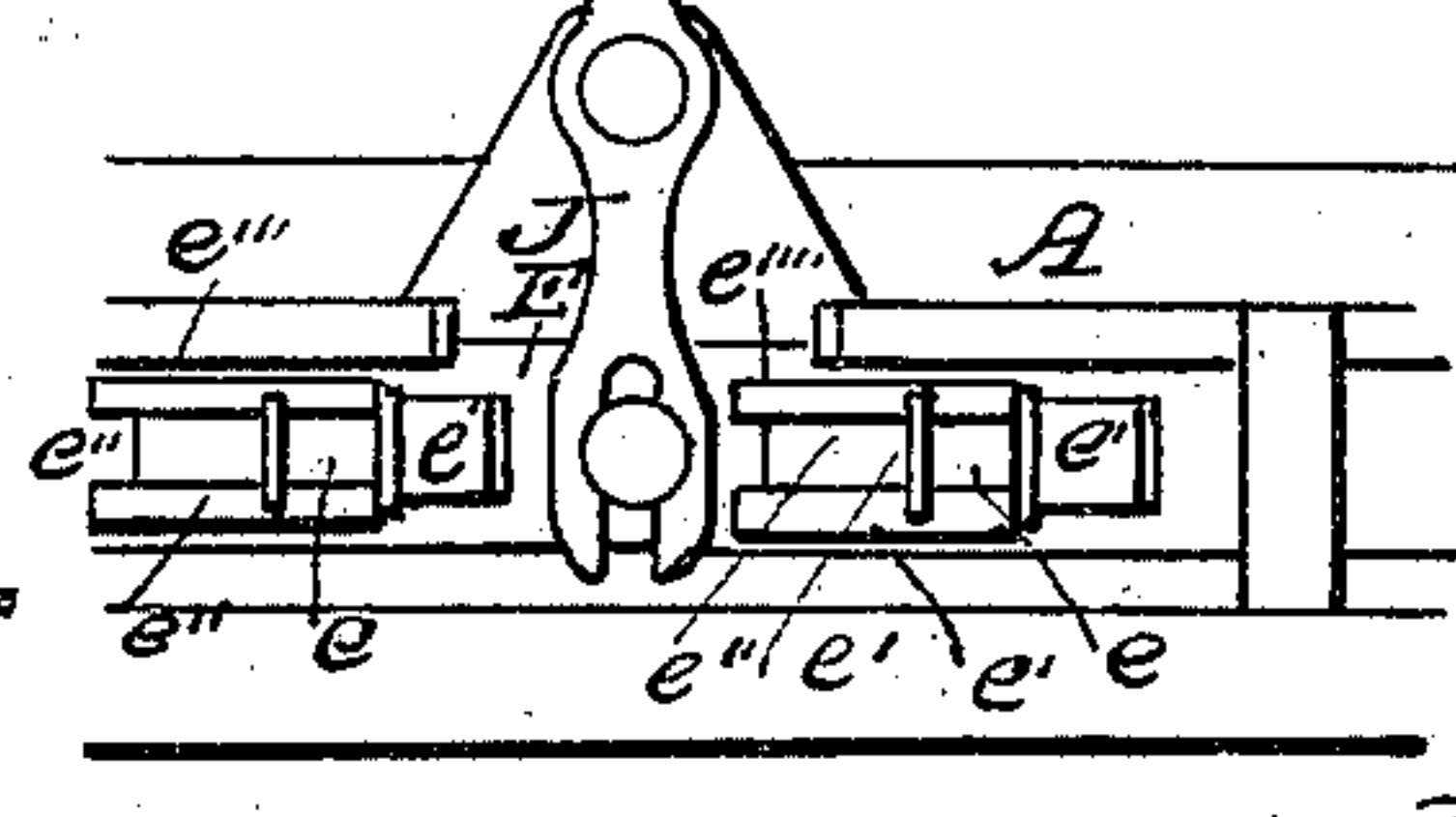


FIG. 5.



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# United States Patent Office.

JOHN S. LEWIS, OF ELKPORT, IOWA.

Letters Patent No. 97,530, dated December 7, 1869.

## IMPROVEMENT IN BROADCAST-SEEDERS.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOHN S. LEWIS, of Elkport, in the county of Clayton, and State of Iowa, have invented an Improved Broadcast-Seeder; and do hereby describe the same.

### *Nature and Objects of the Invention.*

The subject of my invention is a broadcast-seeder, of novel and simple construction, adapted to receive a continuous supply of seed, during the operation, directly from the bags, and to scatter the same in a superior manner.

It may be suspended beneath the frame of a common wagon, or cultivator, or other vehicle, or carried upon a frame of its own.

### *Description of Drawings.*

In the accompanying drawings, made part of this specification—

Figure 1 represents a rear elevation, partly in vertical section, of my improved seeder, in the form of an attachment applied to a common wagon, the section being longitudinal of the apparatus.

Figure 2, a vertical section of the same, in a plane at right angles to that of fig. 1, being transverse of the apparatus.

Figure 3 represents a transverse section of the seed-box or hopper on a larger scale.

Figure 4 represents a longitudinal section of the central portion of the seed-box or hopper on the same scale as fig. 3.

Figure 5 is an under-side view of the part shown in fig. 4.

Similar marks of reference indicate like parts in the several figures.

### *General Description.*

The "seed-box" A, of my apparatus, is long, as compared with others in use, and is distinguished further therefrom, as constituting only a conduit to the discharge-apertures.

It is preferably divided, by partitions *a*, into a number of compartments to equalize the discharge, especially in working on hill-sides.

A removable top, A', held in place by staples, *a'*, and cross-bars or bolts *a''*, may enable access to the interior of the box, when desired.

The seed is continuously supplied to the seed-box directly from the bags, through tubes, B B, having diverging branches, *b*, leading to the several compartments.

Elevated inclined supports, C, for the bags, and funnels, D, for application to their mouths, facilitate the discharge of the seed from them. Said supports C may be constituted in any suitable manner.

The funnels D are preferably made separate, and re-

movable from the tubes B, to which they are applied during the operation, and constructed with circumferential grooves, *d*, to enable the bags to be tied to them.

The funnels D and tubes B will preferably be connected by flexible tubes of rubber, or other suitable material, to permit independent motion, as the seed-box is thrown from side to side by the jolting of the wagon. Such flexible tubes also accommodate variations in the height of the box, and permit it to be set near the ground, as is necessary in windy weather.

The discharge of the seed is governed, preferably, by a reciprocating slide, E, working in metallic bearings, in connection with shields F, in the box.

Said slide, when employed, is constructed with the usual seed-cells or perforations, *e*, for the reception and passage of the seed, and with projecting lips, *e'*, at the ends of said perforations, which, coming in contact with the grains as they are discharged, fling or scatter them in all directions.

Its area of passage may be made variable by means of regulating-slides *e''*, which may be supported by guides, *e'''*, and sustained in place by friction.

To regulate the elevation of the seed-box, to suit different conditions of the weather, or other circumstances, it may be supported by means of elongated screw-bolts, G, or any equivalent device.

Even sowing may thus be secured in both windy and calm weather, which would be otherwise impossible, as with the box at the height requisite in calm weather, in order to secure the scattering of the seed, in windy weather the seed would be carried too much in one direction by the wind.

I propose regulating the discharge, to suit different kinds and qualities of seed, by varying the stroke of the slide E so as to make the discharge more or less continuous.

The slide E may be operated by a hand-lever, H, through a link, I, and secondary lever, J, beneath the box, arranged to impart a greater motion to the slide than is applied to the hand-lever, or by any other suitable means.

As substitutes, I propose, first, connection with one of the supporting-wheels, by means of a cog-rim thereon, and a movable pinion, adjusted through a spring-lever, and suitable media; and second, the employment of multiplying-gearing, similar to that used in a fanning-mill, mounted on its frame, and driven by hand or by connection with one or both ground-wheels, its crank-disk being connected by a pitman to the slide E.

A vertical series of perforations, *k*, in the pivotal bracket K, of the slide-driving lever H, for the reception of its pivot, or a corresponding provision may permit the vertical adjustment of the box referred to.



The device may be adapted for attachment to an ordinary wagon, or other vehicle or wheel-implement, by the provision of a board, L, for the attachment of the bag-supports C, adapted to rest across the implement, as represented, and brackets, M, for the attachment of the suspending-bolts G, or their equivalent, or an independent sulky-frame may be provided for it. The suspending-devices may support the box from swinging, or separate means may be provided for this purpose.

The relative size of the several parts, except as specifically stated, their precise construction and arrangement, and the material of which composed, are variable.

The capability for continuous and automatic feeding direct from the bag, and the provision of the scattering-lips on the slide, are the essential features of the invention. They may exist separately, and under various modifications.

Among the advantages of my improved seeder may be named the following:

The seed being supplied from the bag, a box of much less relative capacity is adapted to be employed, and the cost of the apparatus is thus proportionately cheapened. By the same means, a much longer box is adapted to be employed than could be otherwise,

and the extent sown, in a given time, with the same labor, is thus greatly increased, and the difficulty of lapping or joining the throughs is obviated.

The box, being much lighter than it would be otherwise, handling and adjusting it are facilitated. It is thus especially adapted for employment as an attachment for ordinary vehicles, &c., as proposed.

The scattering-lips, without seriously increasing the cost of the apparatus, cause a greatly-augmented relative distribution of the seed, and thus enable the box to be worked very near the ground.

The operation of the device is obvious, and will be fully understood from the foregoing description.

#### *Claims.*

I claim, as my invention—

1. A broadcast-seeder, having a seed-box, A, adapted to receive the seed continuously from the bag during the operation, substantially as herein described.
2. The combination, with the seed-slide E of a broadcast-seeder, of scattering-lips e', arranged and operating as herein set forth.

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