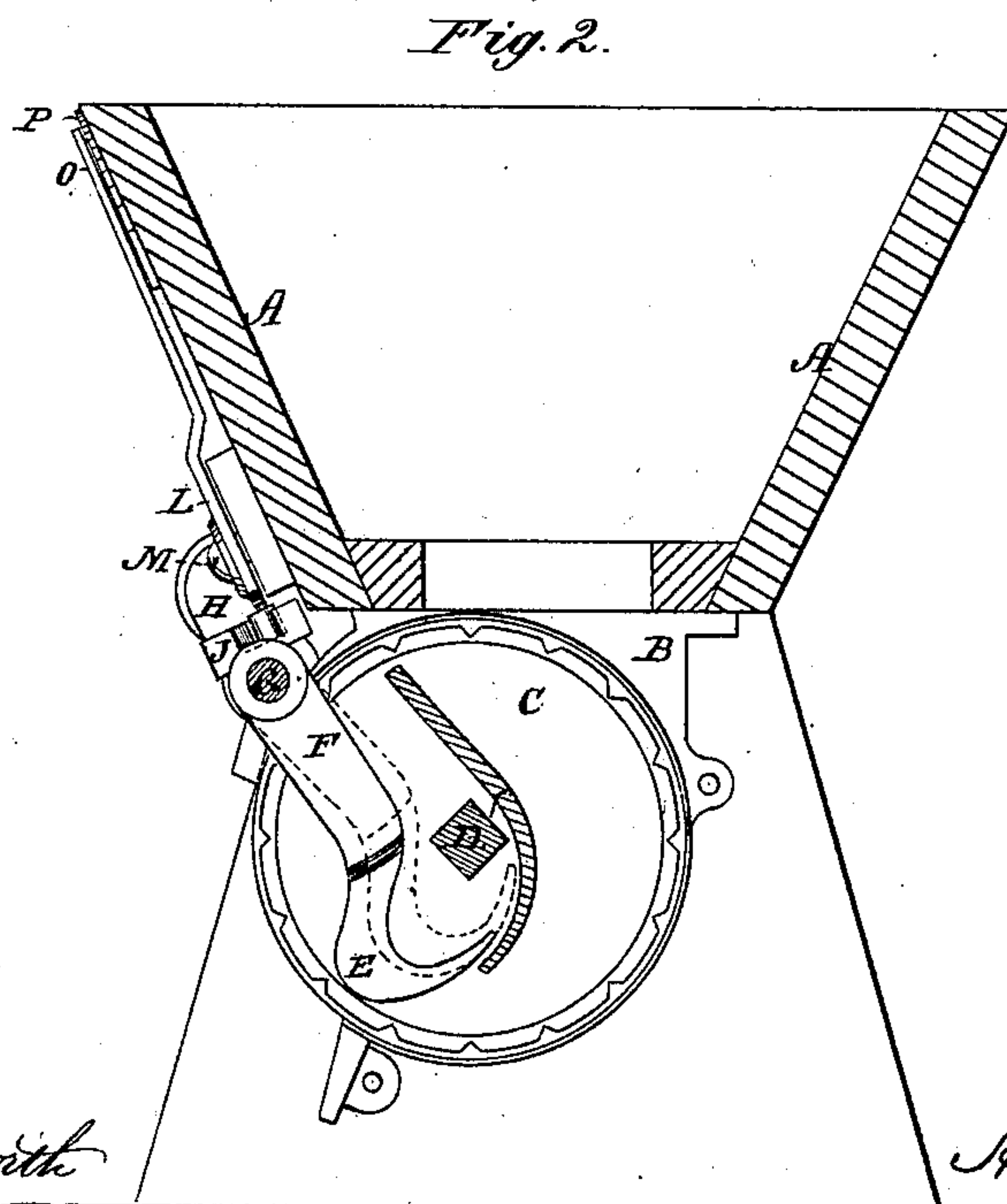
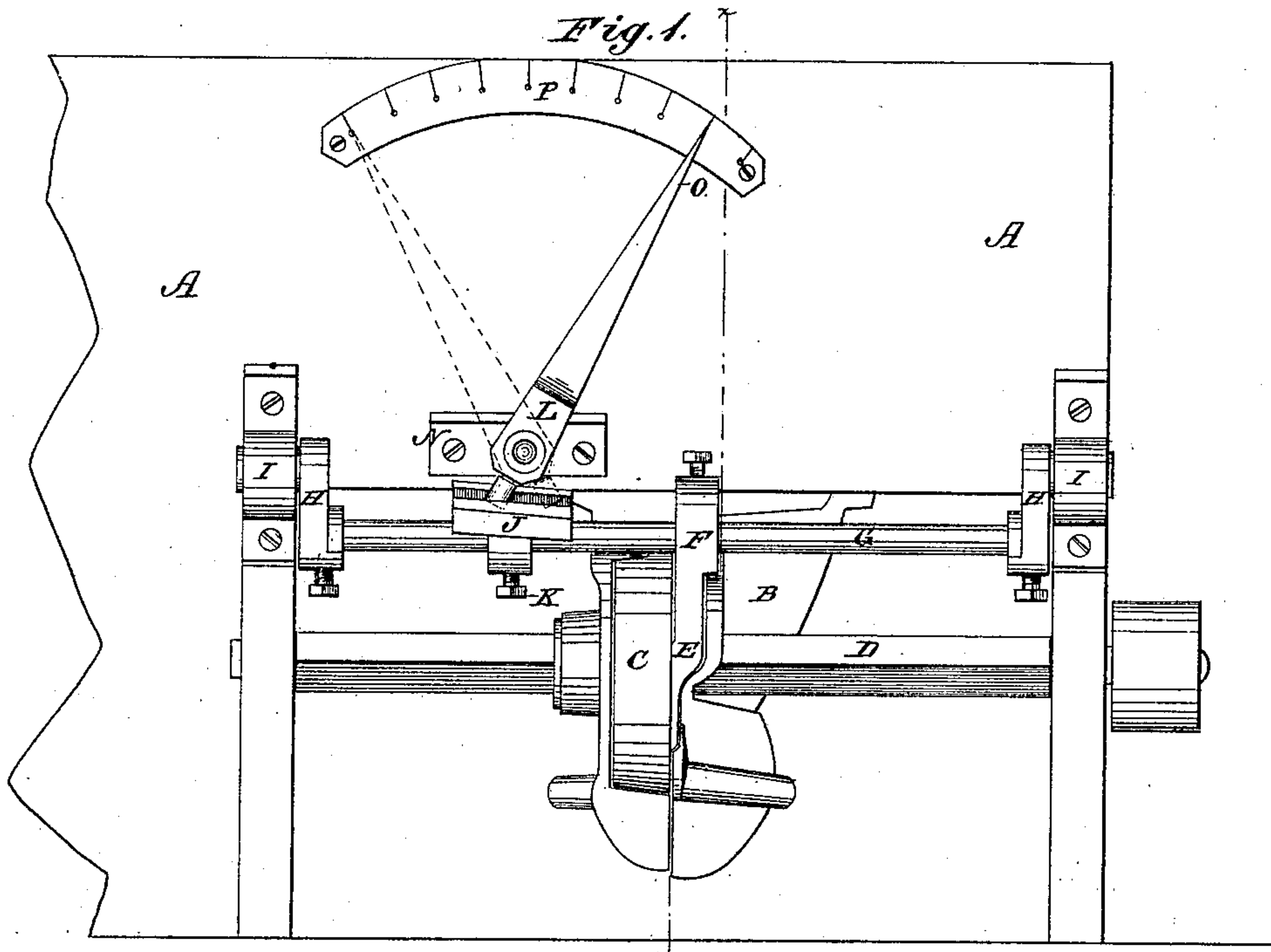


A. RUNYAN.  
Grain-Drill.

No. 210,364.

Patented Nov. 26, 1878.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ALONZO RUNYAN, OF CATAWBA, OHIO.

## IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **210,364**, dated November 26, 1878; application filed October 21, 1878.

*To all whom it may concern:*

Be it known that I, ALONZO RUNYAN, of Catawba, in the county of Clarke and State of Ohio, have invented a new and useful Improvement in Grain-Drills; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement in the class of force-feed seeders and planters having a gage or regulator for increasing or diminishing the flow of seed at will.

The improvement consists in the construction and arrangement of parts, as hereinafter described and claimed.

In the accompanying drawing, forming part of this specification, Figure 1 shows a front elevation, and Fig. 2 a vertical cross-section.

A A represent the hopper, from which depends the casing B of the feed-wheel C, which revolves with the shaft D. Inside the casing and wheel is the regulator E, attached by an arm, F, to a swinging shaft, G, which is hung by arms H H from bearings I I, attached either to the hopper or to some other suitable part of the drill.

At J is a grooved plate, which may be made in the form of a casting, attached by a set-screw, K, to the shaft G; or the groove may be made in a plate secured thereto in any convenient manner. This groove in the plate J is set diagonally to the shaft G, and receives the short or lower end of a lever, L, pivoted at M to the plate N, attached to the hopper A. The upper end of the lever is made pointed, so as to serve as a pointer, O, on the scale P.

The operation of this device is as follows: Supposing the regulator to be at the point shown in the drawing, and it is desired to increase the feed, if the pointer O is moved over to the left, as shown in dotted lines, the short arm of the lever will be moved to the right in the groove in the plate J, and the diagonal position of said groove will compel the shaft to swing toward the hopper, carrying with it the regulator E, which will thus move toward the hub of the distributing-wheel and increase the size of the channel through which the seed passes, thus increasing the flow of the seed.

By this arrangement a regulator is obtained that will not only be perfect in its operation, but one that can be easily set to any desired amount of feed, and which always indicates the amount of seed the wheel is delivering.

Although I prefer to use the arms H H, yet it is obvious that by properly proportioning the parts the shaft G may rock on its own axis, and thus the arms H H be dispensed with.

What I claim as new is—

1. The combination of the wheel C, regulator E, shaft G, arms H H, grooved plate J, and lever L, substantially as described.

2. The combination of the shaft G, arms H H, grooved plate J, and lever L, substantially as described, and for the purpose specified.

ALONZO RUNYAN.

Witnesses:

ROBT. C. RODGERS,  
D. S. RUNYAN.