

(No Model.)

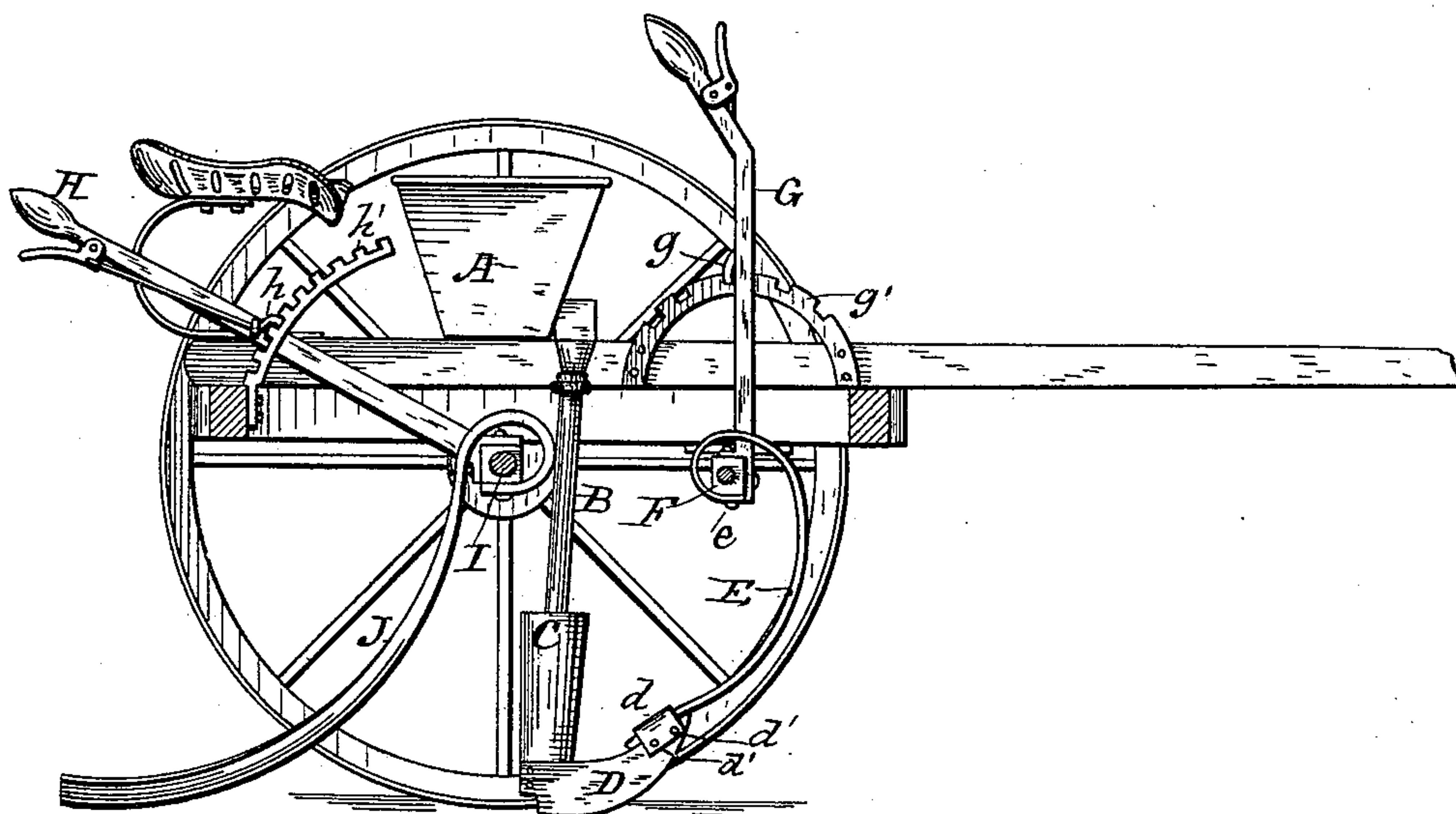
E. A. MORPHEW & H. WITHROW.

GRAIN DRILL.

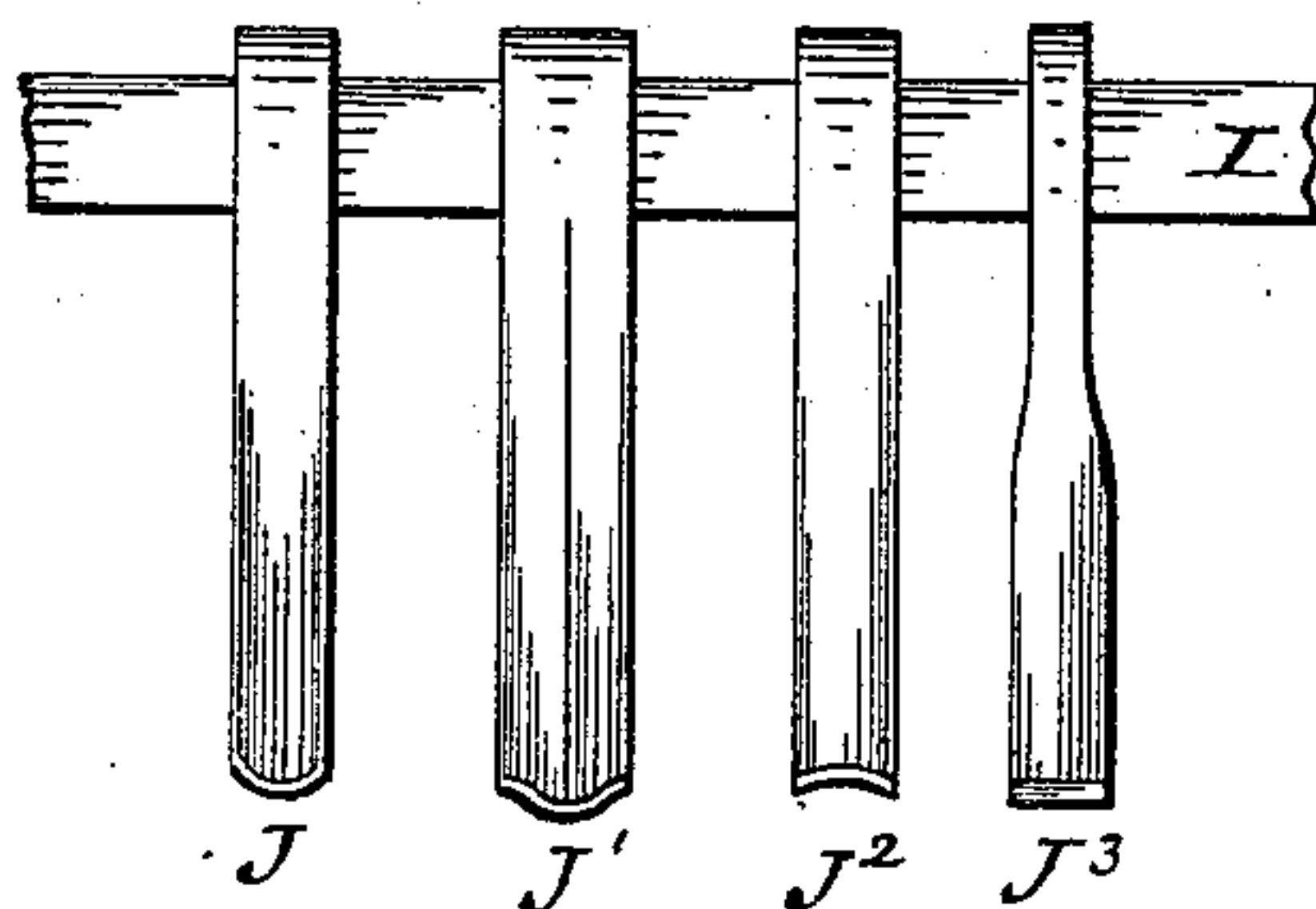
No. 266,499.

Patented Oct. 24, 1882.

*Fig. 1.*



*Fig. 2.*



Witnesses:

W. B. Masson

Harry Peruchard

Inventors:

Enos A. Morphey  
Harrison Withrow  
per Edson B. B. S.  
Attorneys

# UNITED STATES PATENT OFFICE.

ENOS A. MORPHEW AND HARRISON WITHROW, OF PETERSBURG, ILLINOIS,  
ASSIGNORS TO SAID WITHROW, AND JOHN A. BRAHM, JAMES M. ROBBINS,  
AND ALFRED W. STOKER, ALL OF SAME PLACE.

## GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 266,499, dated October 24, 1882.

Application filed July 24, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, ENOS A. MORPHEW and HARRISON WITHROW, citizens of the United States, residing at Petersburg, in the county of Menard and State of Illinois, have invented certain new and useful Improvements in Grain-Drills; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to certain improvements in seed drills or planters; and it consists in certain features hereinafter described, and specifically set forth in the claims.

Figure 1 is a longitudinal vertical section of a seed-planter provided with our improvements, and Fig. 2 is a detail view.

Like letters refer to like parts in both figures.

A represents the seed-box, suitably located upon and attached to the frame-work, from which depend the usual seed-conductors, B, which communicate with tubes C, to which are secured shoes D. Each shoe is adjustably and yieldingly held in operative position by means of a spring, E, secured to the toe thereof in any suitable manner, preferably removably, as shown, the spring being passed through a loop, *d*, which, by means of the screws *d'* *d'*, is drawn tightly upon the shoe and acts to firmly clamp the spring, thus avoiding the necessity of perforating it for the passage therethrough of the screws. The upper end of each spring is coiled once about a transverse shaft, F, suitably journaled in the frame-work, and is secured to the under surface thereof by means of a screw or bolt, *e*. If desired, a suitable clamp may be employed at this point, and thus all perforation of the spring can be avoided. Near one end of the shaft F is secured a lever, G, provided with a spring-pawl, *g*, adapted to take into a notched sector, *g'*, so as to adjustably

retain the lever in desired positions at will. A similar lever, H, pawl *h*, and sector *h'* are provided at the rear portion of the planter, said lever being secured to the axle I, or it may be to a beam through which the axle passes, said beam being loosely fitted upon the axle, so as to turn thereon. To the axle is secured a series of springs, J J' J<sup>2</sup> J<sup>3</sup>, &c., each located in rear of and in line with each shoe. These springs are secured to and coiled about the axle, as are the springs E about the shaft F, and each is curved downwardly and to the rear, so that it may be pressed upon the ground. In cross-section these springs may be concave, convex, corrugated, or flat, as desired, as shown clearly in Fig. 2.

This being the construction, the operation is as follows: By throwing the free end of lever G to the front the shoe D is caused to bear upon the soil and penetrate the same, and it readily accommodates itself to unevenness in the surface of the soil, and as the seed is dropped in the usual manner the springs J J', &c., are, by means of the lever H, depressed with such force or tension as to not only cover the seeds but to compress the earth thereupon, and this in a yielding manner, so that their pressure is practically uniform, notwithstanding the unevenness of the soil, and the result is that a uniform depth of covering-soil and a surer retention of the seed in line is accomplished, and less liability to disturbance of the seed by the action of the elements or otherwise, and uniformity of germination and growth are secured.

If desired, suitable guide-rods may be provided, to pass loosely through eyes on the tube C, and secured to the frame-work above them to retain the shoe from longitudinal displacement.

Having thus described our invention and its operation, what we claim as new, and desire to secure by Letters Patent, is—

1. In a seed-planter, the shoes D, supported upon springs E, in combination with a shaft, F, and lever G, adapted to be secured adjusta-



bly in desired positions at will, substantially as and for the purpose set forth.

5 2. The combination of the shoes D and the spring-coverers J, each adapted, substantially as shown and described, to be yieldingly depressed and adjustably held in said depressed condition, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ENOS A. MORPHEW.  
HARRISON WITHROW.

Witnesses:

J. M. ROBBINS,  
J. A. BRAHM, Jr.