

No. 607,914.

Patented July 26, 1898.

E. CHRISTMAN.
SEEDING MACHINE.

(Application filed Apr. 23, 1898.)

(No Model.)

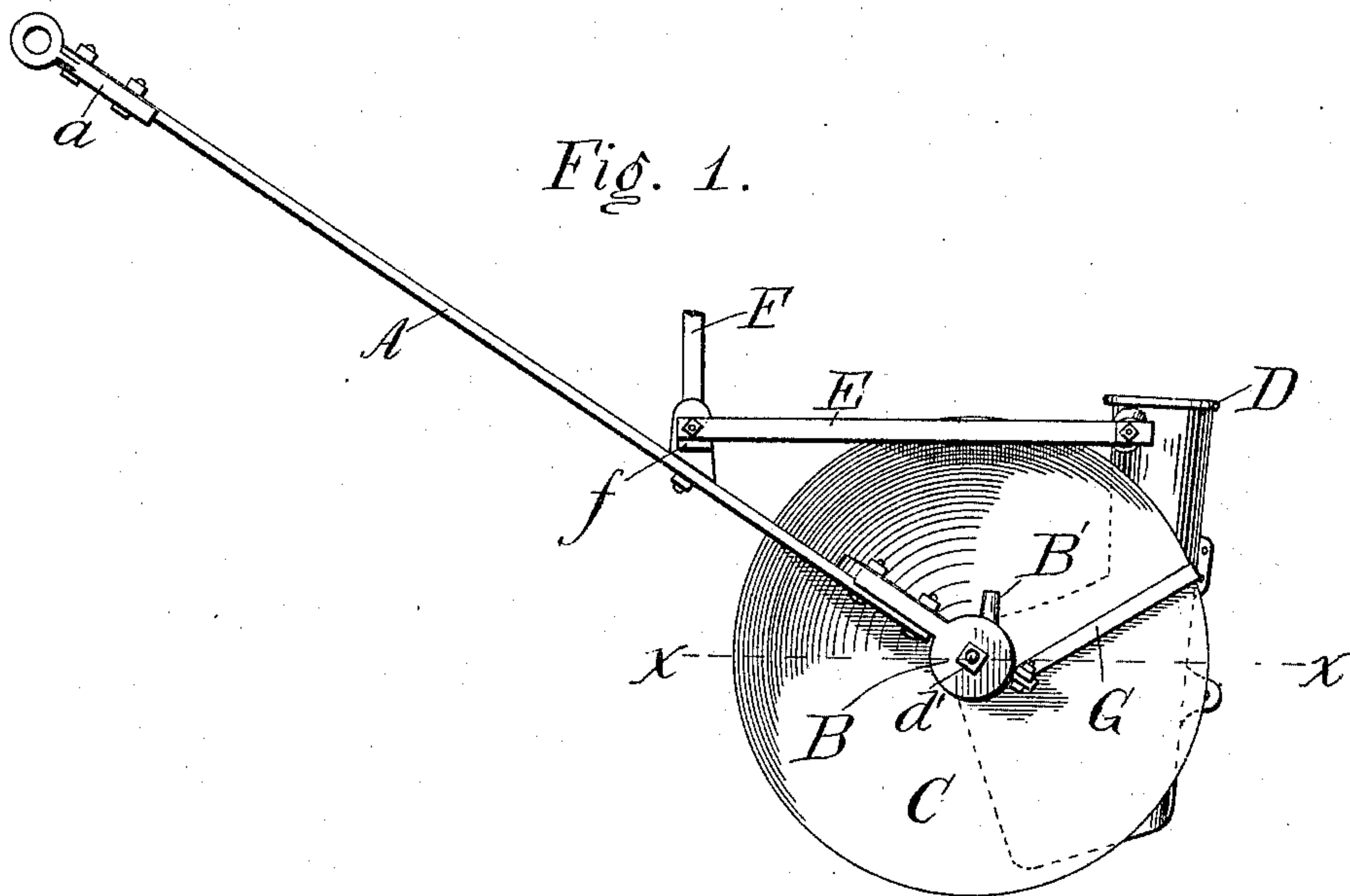


Fig. 1.

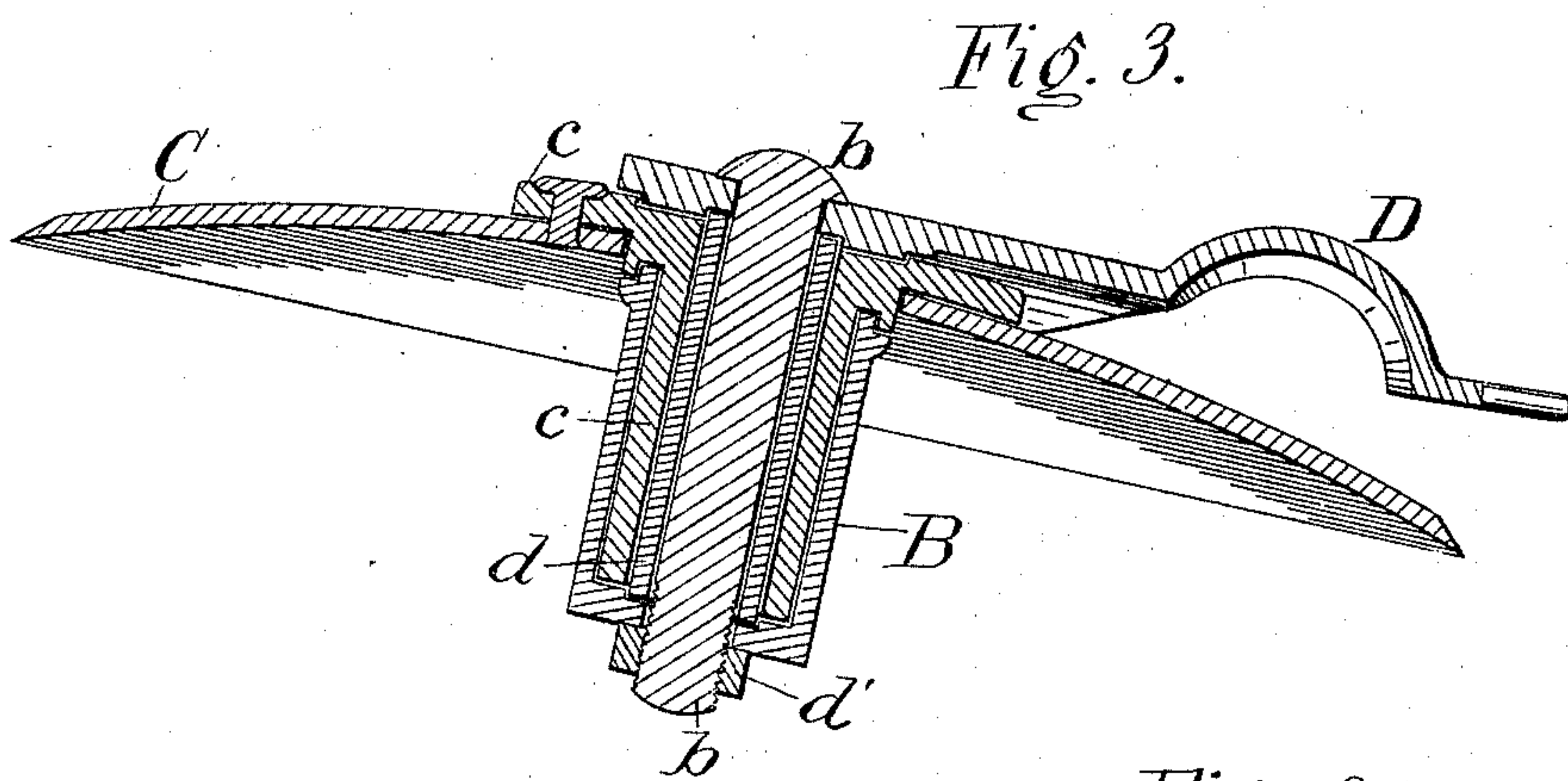


Fig. 3.

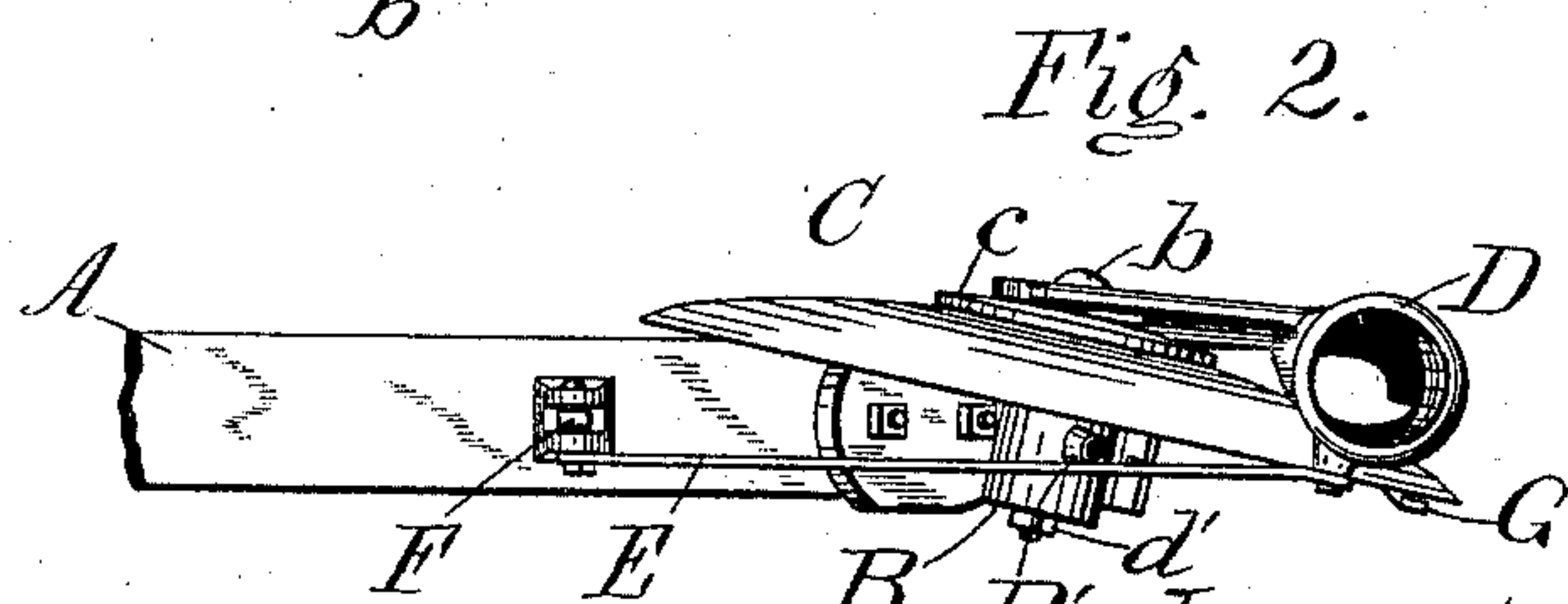


Fig. 2.

Witnesses.

Clarence E. Muhlhoff
Daniel Malove

B^B Inventor.
Edward Christman,
By Arthur Stem,
Attorney.

UNITED STATES PATENT OFFICE.

EDWARD CHRISTMAN, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO THE
BRENNAN & CO. SOUTHWESTERN AGRICULTURAL WORKS, OF SAME
PLACE.

SEEDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 607,914, dated July 26, 1898.

Application filed April 28, 1898. Serial No. 679,121. (No model.)

To all whom it may concern:

Be it known that I, EDWARD CHRISTMAN, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a certain new and useful Improvement in Seeding-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improvement in seeding-machines, more especially to the construction and method of attachment of the furrow-forming and seed-conveying devices, as will be more fully hereinafter set forth.

The object of my invention is to provide a more simple arrangement of planting device adapted to be attached to a seeding-machine and at the same time obtaining greater rigidity of the parts, producing a much stronger construction and one that will be cheaper to manufacture.

In the drawings, Figure 1 is a side elevation of a drag-bar with disk and conduit, with my improved method of attachment or support for the conduit, and also of the scraper. Fig. 2 is a top plan view thereof. Fig. 3 is a horizontal sectional view taken on the line X X of Fig. 1.

A is the drag-bar, which is provided with the draw-head *a*, whereby it is attached to the draw-rod of the frame of the machine. The other end of the drag-bar A is attached to a hub or boxing B, preferably by means of bolts. Secured around the opening in the disk C, preferably on the convex side and extending through to the concave side, is a bearing support or trunnion *c*, which is hollow to receive an ordinary bolt *b*. This trunnion or support *c* fits into the boxing or hub B. In order to give a better bearing for the revolving disk and maintain proper separation of the parts, I provide the bolt *b* with a sleeve of ordinary gas-pipe *d*. The forwardly-extended portion of the conduit D is also clamped or secured to the box B by the connecting-bolt *b*, which passes entirely through the extension of the conduit D and the trunnion of the disk and the box or hub B and holds the parts together by the nut *d'*. By

this construction the necessity for a collar-bolt or spacing-pin in the disk hub or box, as in constructions heretofore in use, is obviated and a simpler and cheaper arrangement is obtained. The hub or box B is provided with the usual oil cup or inlet B'.

As will be seen in Fig. 3, the base of the trunnion *c* extends through the opening in the disk and has a countersunk portion into which the hub or box B takes in order to exclude dust, dirt, &c. It will thus be seen that the entire bearing-support may be on one side of the disk and, as shown in the drawings, preferably on the concave side thereof. By this arrangement the downward pressure of the drag-bar is exerted in the direction of a vertical line through the cutting edge of the disk and the center of the hub device.

Heretofore it has been customary to support and hold the conduit in position by the use of a collar-bolt, thus concentrating the strain entirely on the bolt which connected the various parts and supported the conduit, bringing considerable strain to bear at this point.

In my construction I provide an independent supplemental support E for the conduit D. This support consists of the supporting-rod E, one end of which is attached to the clip or lug on the drag-bar, the other end being bolted to the upper end of the conduit and, with the connecting-bolt *b*, forms a triangular or three-point framework or support for the conduit and shield. The clip on the drag-bar is preferably provided with a shoulder *f*, which acts as a brace or support for the connecting-bar E and prevents its dropping down when the conduit, with its shield, is disconnected from the hub-bolt. This clip and bar E and connection may be made strong enough and adapted to entirely support the conduit and shield, so as to make its support independent of the bolt *b*, and that is one of the features of my invention. This method of supporting the seed-tube and shield may be used when the drag-bar is attached to either side of the disk. By this arrangement a rigid connection is obtained, which is simple and cheap to manufacture.

G is a strip of metal made to conform to the

side of the disk to which it is adjacent, which is bolted, preferably, to a small lug or lip on the box or hub B and acts as a scraper for the disk. In this construction and arrangement of the parts connecting the disk with the drag-bar I am enabled to vary and distribute the strain upon the parts and use a simple carriage-bolt for connecting the parts together, the trunnion and the box-hub bearing the strain and having it so distributed as not to endanger either breakage or binding at any one point. The construction is thus made much more simple and economical.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a disk furrow-opener for grain-drills, a concavo-convex disk provided with a hollow trunnion extending through an opening in the center of the disk and fitting in a box-hub, the parts held together by an ordinary clamping-bolt provided with a sleeve, substantially as and in the manner described.

2. In a disk furrow-opener for grain-drills, a conduit for guiding the grain into the fur-

row opened by the disk provided with a shield extending below the axis of the disk, in combination with a supporting arm or brace extending from the conduit to a point on the drag-bar, substantially as and for the purpose described.

3. In a disk furrow-opener for grain-drills, a conduit for guiding the grain, provided with a triangular or three-point support, these points being at the axis of the disk, the upper portion of the conduit, and a point on the drag-bar forward of the disk, substantially as and for the purpose described.

4. A disk furrow-opener for grain-drills provided with a conduit, one portion of which is attached at the axis of the disk, in combination with the supporting-rod E, and the clip or lug on the drag-bar provided with a shoulder *f*, substantially as and for the purpose described.

EDWARD CHRISTMAN.

Witnesses:

W. B. HOKE,

B. P. JOHNSON.