

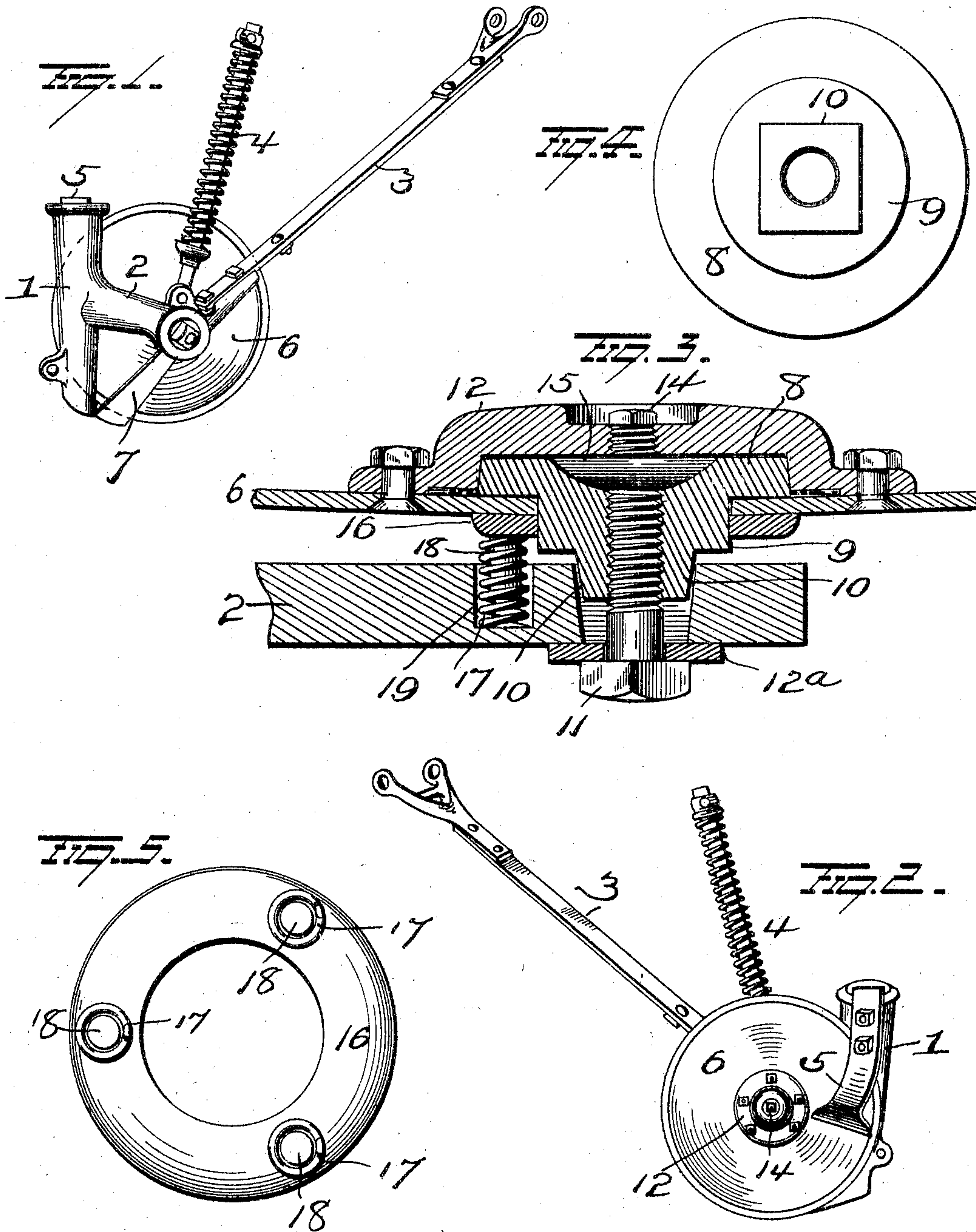
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F. E. MARSH.
GRAIN DRILL.

APPLICATION FILED AUG. 10, 1903.

NO MODEL.



WITNESSES
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GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 776,527, dated December 6, 1904.

Application filed August 10, 1903. Serial No. 168,963. (No model.)

To all whom it may concern:

Be it known that I, FRANK EGGLESTON MARSH, a resident of La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain new and useful Improvements in Grain-Drills; and I do hereby 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.

My invention relates to an improvement in grain-drills, and more particularly to disk bearings therefor, the object of the invention being to provide improvements of this character which will afford a narrow easily-lubricated bearing which will be slightly flexible to cooperate with the spring tension of the scrapers to prevent the accumulation of trash between the scrapers and disk and position the disk to perform the best results.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figures 1 and 2 are views of opposite sides of my improvements. Fig. 3 is a view in section, and Figs. 4 and 5 are views of details of construction.

1 represents a grain-dropping boot having a forwardly and slightly downwardly projecting integral arm 2, connected with the ordinary drag-bar 3 and lifting-bar 4. To the forward end of this arm 2 is connected by improved bearing, as will more fully hereinafter appear. The convex face of the disk 6 is adjacent to the boot 1 and arm 2, and a scraper 5 is secured to boot 1 near its upper end and bears against the concave face of the disk to clean the same.

A beveled or sharpened scraper-bar 7 is secured at one end to the arm 2 and at its opposite end to the toe of boot 1 and extends diagonally across the convex face of disk 6 to effectually clean the latter and prevent any dirt or trash from passing into the space between the scraper 7, arm 2, and bolt 1, which

would interfere with the rotation of the disk and prevent the perfect operation of the drill.

8 represents a circular bearing-block having a cylindrical journal 9 projecting through a central opening in disk 6 and made with an angular extension 10, held in an angular opening in arm 2 by means of a screw or bolt 11, having its head located against a washer 12 over the opening in arm 2 and its shank screwed into a threaded socket in extension 10. A cup 12 incloses bearing-block 8 and is secured to the concave face of the disk 6 by bolts, screws, rivets, or otherwise and has a lubricant-opening in its center, closed by a removable plug 14, which can be readily removed and lubricant supplied to the cup. A recess 15 is provided in the face of bearing-block 8 to provide a lubricant-pocket therein.

As the bearing is small in proportion to the size of the disk, to insure the disk running evenly and practically true with relation to the scraper 7 I provide a ring washer 16, surrounding journal 9 and held against the convex face of disk 6 by means of coiled springs 17. These springs surround posts 18 on washer 16 and are housed in sockets 19 in arm 2; but I may of course provide other spring-pressure between the washer 16 and arm 2.

In the operation of the disk the operation of the scraper is of great importance. The disk of a grain-drill works in well-prepared soil. Therefore a scraper which should be held in place against the disk by its spring-pressure—in other words, a scraper set up at a tension against the outer edge of the disk—will often offset the resistance of the soil, so that the disk will discontinue to revolve. Again, a disk which has spring-scrapers which have not this strength will by the accumulation of roots and fibers under the scrapers force away the scrapers to such a degree that they accumulate trash, bringing the pressure against the disk, which will stop it. In the construction of my improved drill I have to use a close-fitting scraper, so that if single fibers get between the scraper and disk they will be worn out or cut off before others can accumulate. I use the spring-pressed

washer 16 to steady the disk, so that it may run uniformly with regard to the scrapers, and the disk may not, by reason of this narrow bearing, vary enough at its circumference to admit of the accumulation of fibers under either scraper. A scraper can readily wear off a single layer of weeds, flux, roots, or fibers; but if the disk works away from the scraper far enough to allow of an accumulation of several thicknesses of these fibers, &c., then they form a cushion which does not wear out and which will exert sufficient pressure to the disk to hold it stationary. Such a condition of affairs cannot exist with my improvements.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention. Hence I would have it understood that I do not restrict myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. The combination with a concavo-convex disk, of a boot, a bearing for the disk on the concave face thereof, projecting through the disk and secured to the boot, and a washer against the convex face of the disk, and a spring between the washer and boot.

2. The combination with a concavo-convex disk, of a boot, an arm on said boot adjacent to the convex face of the disk, a bearing for the disk secured to the arm, and a spring-pressed washer between the arm and convex face of the disk.

3. The combination with a boot having a forwardly-projecting arm, and a scraper connecting the toe of the boot with said arm, of a concavo-convex disk having its convex face adjacent to the boot, arm, and scraper, a bearing-block on the concave face of the disk and having a journal projecting through a central opening in the disk, a cup secured to the disk and inclosing the bearing-block, an angular extension on the journal secured in an angular opening in the arm, and a spring-pressed washer between the disk and arm.

4. The combination with a boot having a forwardly-projecting arm, and a scraper connecting the toe of the boot with said arm, of a concavo-convex disk having its convex face adjacent to the boot, arm, and scraper, a bearing-block on the concave face of the disk and having a journal extending through a central opening in the disk, a cup inclosing said bearing-block and secured to the disk and having a plugged opening for lubricant, an angular extension on the journal, a bolt securing said angular extension in an angular opening in the arm, a ring washer around the journal and against the convex face of the disk, posts on said washer, and coiled springs on said posts housed in sockets in the arm, and a scraper secured to the boot and bearing against the concave face of the disk.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRANK EGGLESTON MARSH.

Witnesses:

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J. M. HOLLEY, Jr.