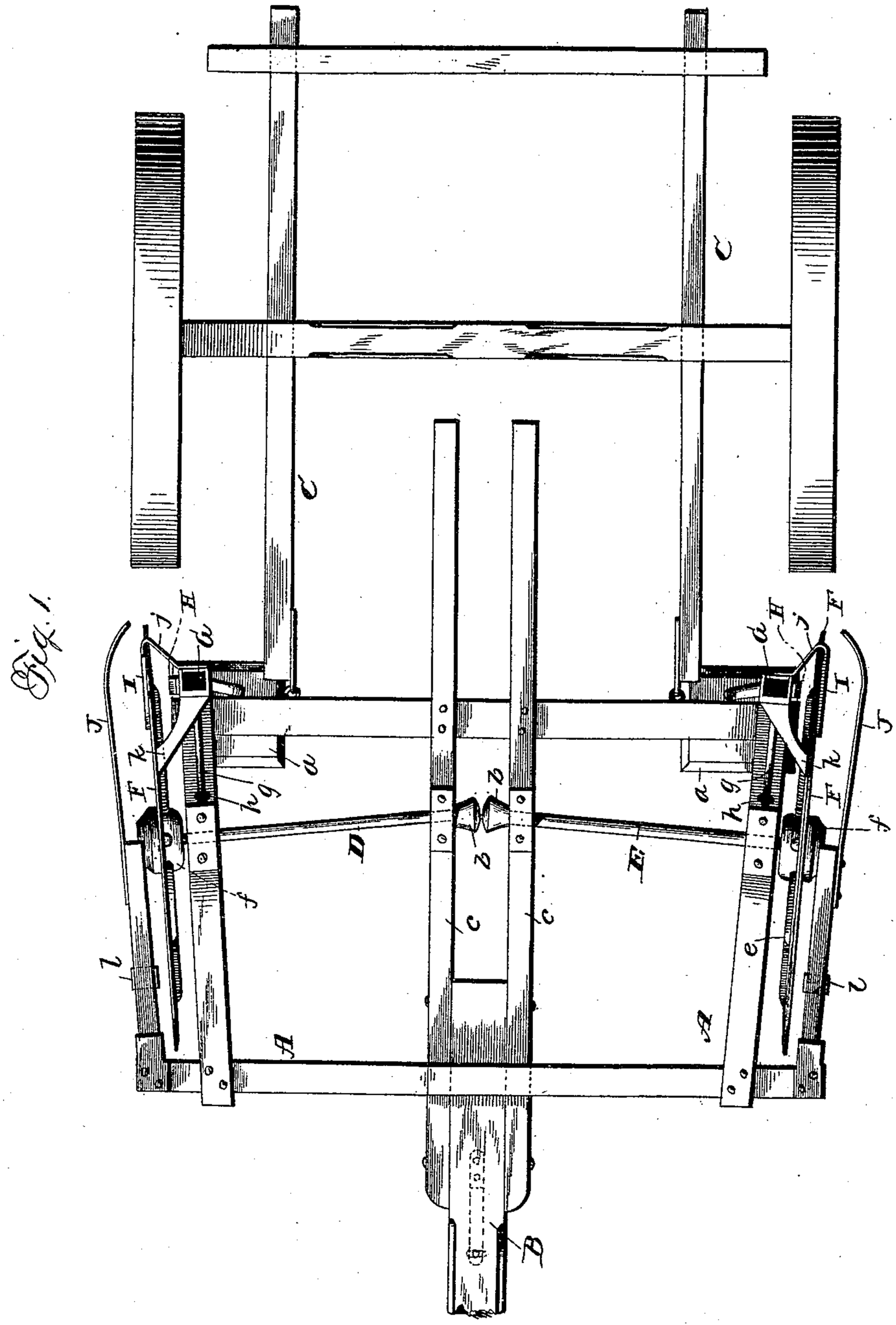
(No Model.) 2 Sheets—Sheet 1.

C. H. & H. L. DOOLEY.

DISK CORN PLANTER.

No. 448,943. Patented Mar. 24, 1891.



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(No Model.) 2 Sheets—Sheet 2.

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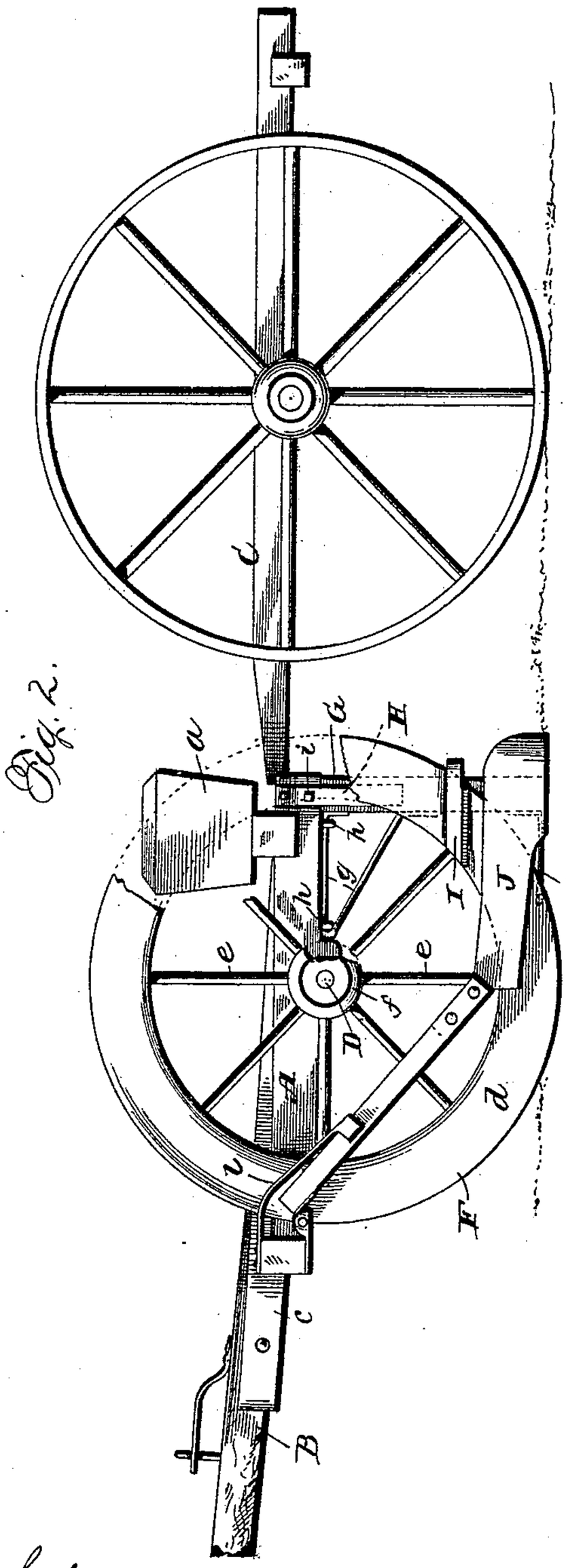

Fig. 2.

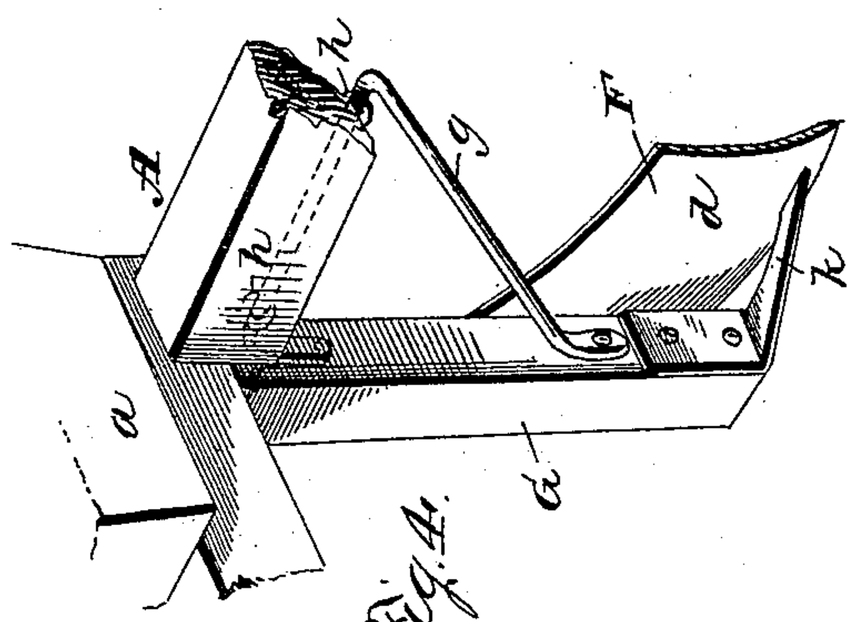

Fig. 4.

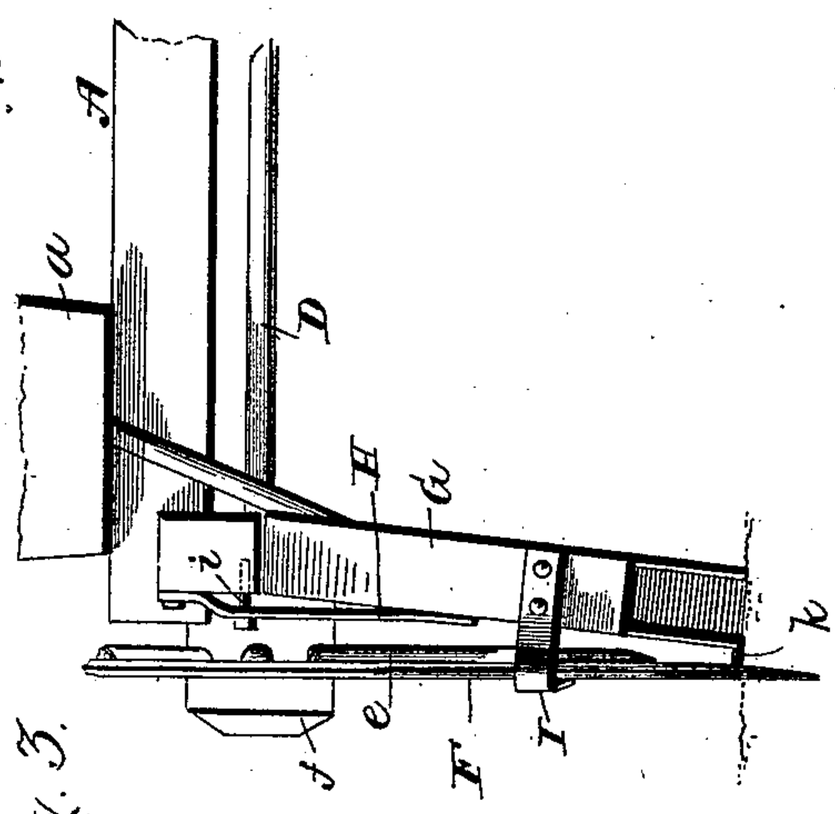

Fig. 3.

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UNITED STATES PATENT OFFICE.

CLARENCE H. DOOLEY AND HARRY L. DOOLEY, OF BLOOMINGTON, ILLINOIS.

DISK CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 448,943, dated March 24, 1891.

Application filed December 8, 1890. Serial No. 373,912. (No model.)

To all whom it may concern:

Be it known that we, CLARENCE H. DOOLEY and HARRY L. DOOLEY, citizens of the United States, residing at Bloomington, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Disk Corn-Planters; 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 of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in disk corn-planters, and it has for its objects, among others, to provide an improved device of this character which shall be simple and cheap in its construction, durable, and efficient in use.

Another object of the invention is to dispense with runners and in their stead employ disk wheels which will cut and lift, and therefore do good work in hard ground where a runner or shoe could do practically nothing, making loose earth with which to cover the seed. These wheels will not pack the ground when it is damp, as a wedge-shaped runner will do. We provide the inner ends of the axles with small wheels or bumpers, so that the inward pressure of the wheels will cause them to roll together on their bumpers and thus avoid wear on the wheels and boxes that would otherwise follow. The inner side of a disk wheel set at a slight angle will, under almost any condition of the soil, remain clean, while the reverse is true of the outside. We provide scrapers on the outside of each wheel, which are fastened rigidly to the grain-spouts. We employ springs bearing on these spouts, the tendency thereof being to press them away from the wheels; but the scrapers, being made rigid to them, will not allow them to be withdrawn. The effect of this is that the scrapers are made to bear more or less, as desired, provision being made for the tightening or loosening of the bolt, which will be more fully hereinafter described. The grain-spouts are so attached to the frame of the machine that they admit of lateral movement, but cannot move either forward or back. This lateral movement is to allow the lower point of the spout to be controlled by the scraper, which, being acted upon by the said spring, is made to conform to any side movement of the wheel or possible unevenness of the same. We arrange the lower point of the grain-spout so that it will extend forward in contact with the wheel, but so that there will be no pressure against the wheel as the spring bears it, or rather inclines the spout away, but prevented from too much movement by being rigid to the scraper. This arrangement of the lowest point of the grain-spout is considered of great importance, as by this means is formed an unbroken line from wheel to back of spout, allowing no place to catch and drag rubbish.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The novelty in the present instance resides in the peculiar combinations and the construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a bottom plan view of our improved corn-planter. Fig. 2 is a side elevation of the seed-spout and the accompanying mechanism. Fig. 3 is a detail perspective view of the same. Fig. 4 is an enlarged perspective detail looking at right angles to Fig. 3.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the front frame of the machine, to the forward cross-bar of which the tongue B is attached in any suitable manner. To the rear cross-bar of their frame are attached the seed-boxes *a*, which may be of any of the approved forms.

C is the rear frame hinged to the rear cross-bar of the forward frame A in any suitable manner.

Journaled in suitable boxes on the under side of the frame A are the two axles D and

E, each independent of the other, and to the outer end of each is secured a disk wheel F, the construction of which will be more fully hereinafter set forth. The inner adjacent ends of these axles are journaled in suitable boxes on the under side of the parallel longitudinal bars *c*, between which the tongue is secured. These bars are arranged a sufficient distance apart to permit of the insertion between them of the small wheels or bumpers *b*, which are attached one to each axle and arranged to rub against each other, as shown in the drawings, the adjacent portions being rounded, as shown. These rounded bumpers prevent wear on the boxes and wheels, as will be readily understood. The disk wheels are each composed of a band *d*, preferably of steel, about three-sixteenths of an inch in thickness by four inches wide. To this band are fastened the spokes *e*, which are set in the hub *f* on the axle. These wheels are set at a slight angle to the perpendicular, so that they will keep clean under almost all conditions of soil.

G are the seed-spouts communicating with the seed-boxes in the usual manner and so attached to the frame A as to allow of slight lateral movement, but prevented from movement either forward or back. This connection in the drawings is shown as formed by a triangular wire *g*, which is held in staples or eyes *h*, so that it may rock somewhat laterally, but cannot move otherwise.

H are springs arranged to bear against the seed-spouts so as to press them away from the wheels, the said springs being connected at one end to the frame A and provided with an adjusting-bolt *i*, which passes through the spring and into the frame. Turning this bolt or screw in or out regulates the tension of the spring upon the spout.

Attached to the seed or grain spouts are the scrapers I, which are made with a bend or loop *j*, which embraces the wheel, and the free end of the scraper comes against the outside of the wheel, as clearly shown. It is gently pressed against the wheel by the action of the spring just described. The pressure of the scraper against the wheel is regulated by the adjustment of the screw or bolt *i*, which moves the spout in or out, and the scraper being rigidly attached to the spout necessarily moves with it. The lowest point of the spout extends forward, as shown at *k*, and comes in contact with or bears against the wheel upon the inner face thereof; but there will be practically no pressure against the wheel, as the spring tends at all times to keep the spout inward. This arrangement of the spout with its lowest point in contact with the wheel is an essential feature in our device, as we thus form an unbroken line from the wheel to the back of the spout, thus allowing no place to catch and drag along rubbish.

J are the covering-hoes, provided at their front ends with a joint admitting of no lateral movement, but provided with a spring *l*, which exerts a slight downward pressure thereon. These covering-hoes are not designed to cut into the ground, but are designed to be arranged on a plane above that of the lowest periphery of the wheels, and thus bringing again into the furrow the earth lifted out by the wheels.

The machine is simple, durable, and in practice has proved most efficient for the purpose for which it is intended.

Various modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What we claim as new is—

1. The combination, with the frame and the disk wheels, of the spouts arranged to move laterally, the triangular wire connecting the spout and frame, and the springs bearing upon the spouts, substantially as and for the purpose specified.

2. The combination, with the frame and the disk wheels, of the spouts arranged to move laterally, and the springs on the frame and bearing on the spouts, and provision for adjusting the tension of the springs, substantially as specified.

3. The combination, with the frame and the disk wheel, of the laterally-movable spout and the scraper carried thereby and having a loop embracing the wheel, and the triangular wire *g*, connecting the spout and frame, substantially as specified.

4. The combination, with the frame and the disk-wheel, of the laterally-movable spout having its lowest point in contact with the wheel, the triangular wire secured to the spout and working loosely through staples on the frame, and the scraper carried by the said spout, substantially as shown and described.

5. The combination, with the frame and the disk-wheel, of the spout arranged to move laterally, the spring bearing against the spout, the lower extension of the spout bearing against the wheel, and the scraper carried by the spout and having a loop embracing the wheel, substantially as specified.

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

CLARENCE H. DOOLEY.
HARRY L. DOOLEY.

Witnesses:
CHAS. BROWN,
WILL HUGHES.