

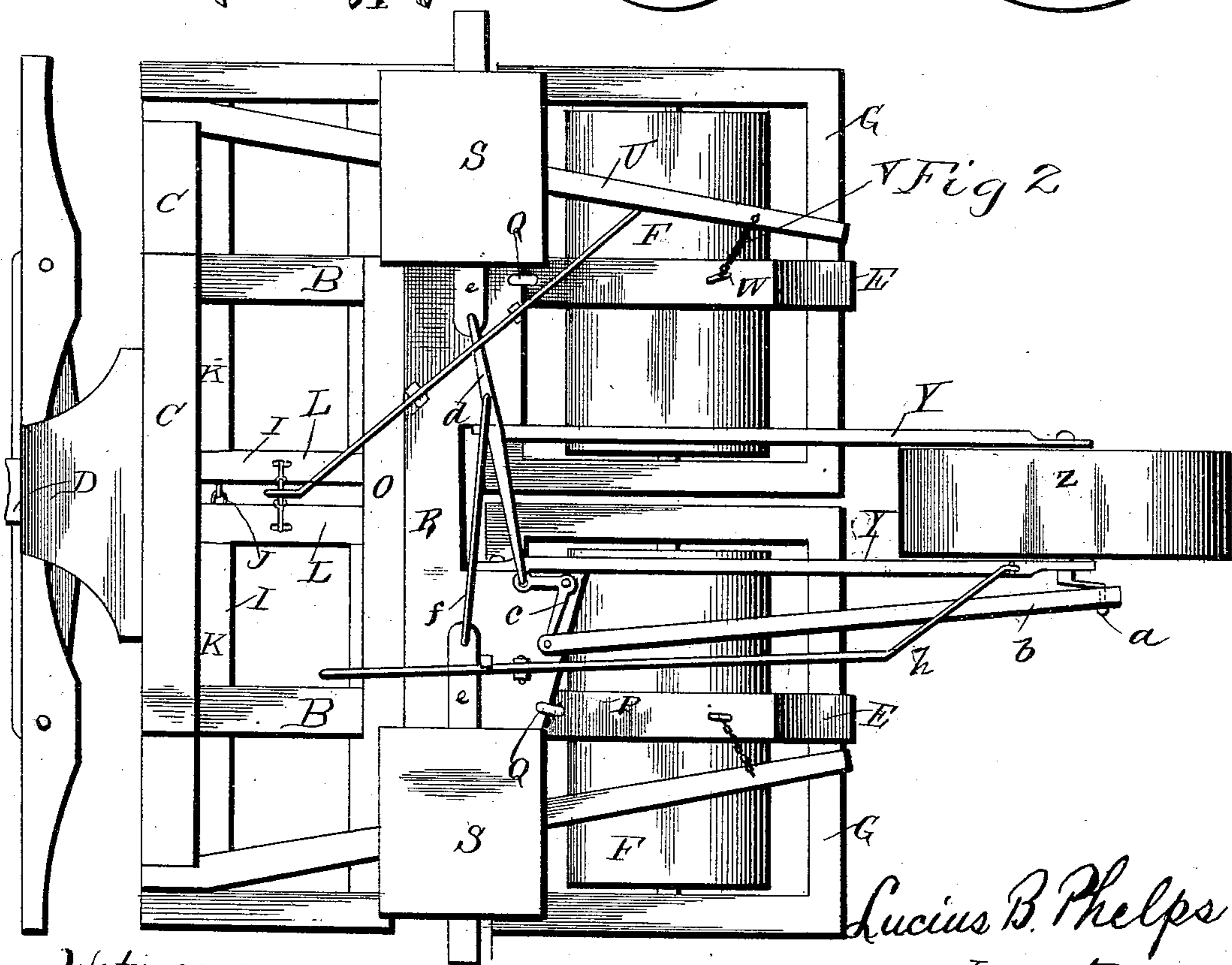
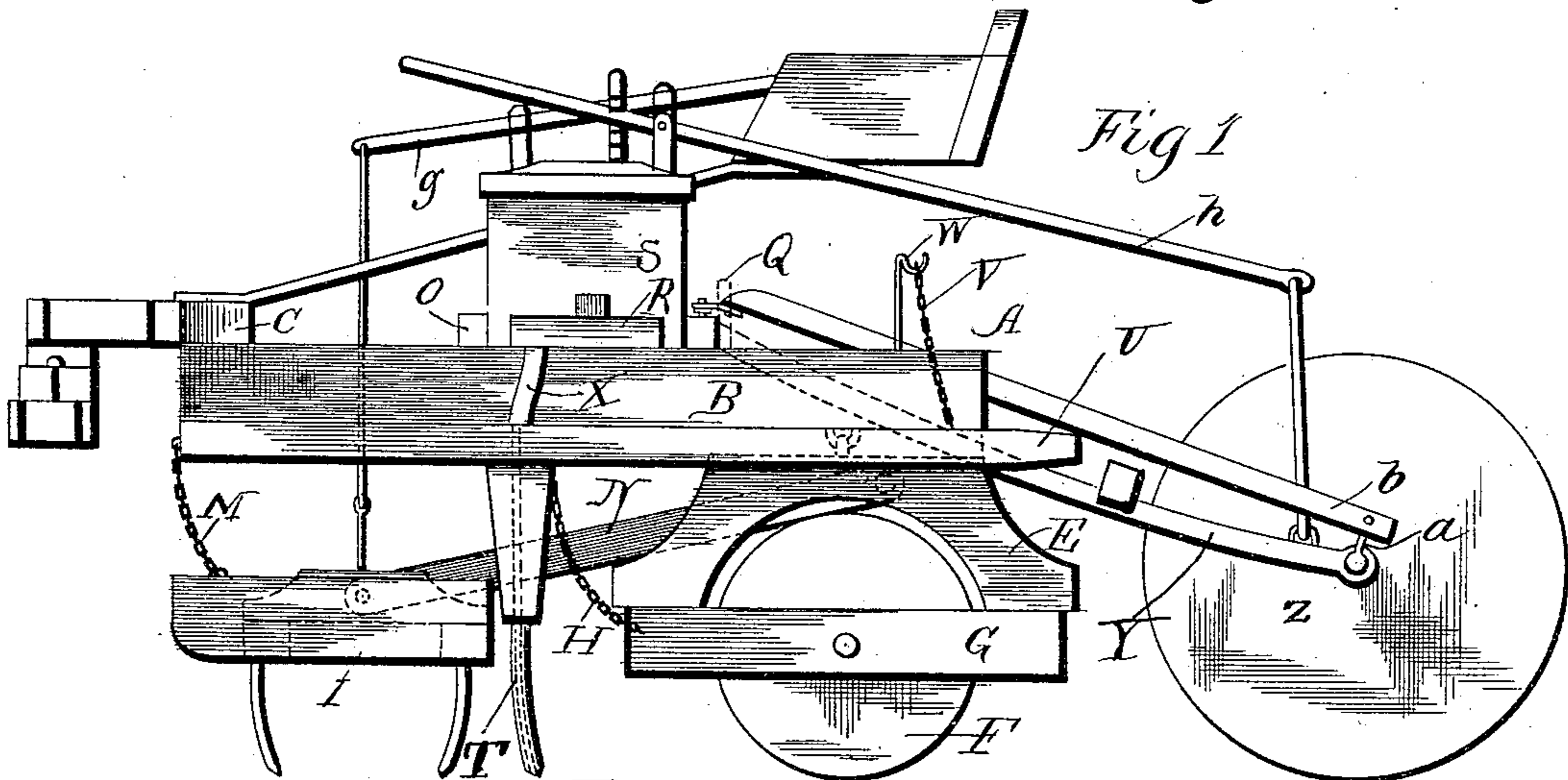
(No Model.)

2 Sheets—Sheet 1.

L. B. PHELPS.
HARROW AND SEED PLANTER.

No. 434,644.

Patented Aug. 19, 1890.



Witnesses

C. C. Burdette

R. W. Bishop.

Lucius B. Phelps
Inventor

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~~W. F. Fitzgerald~~
~~atty~~

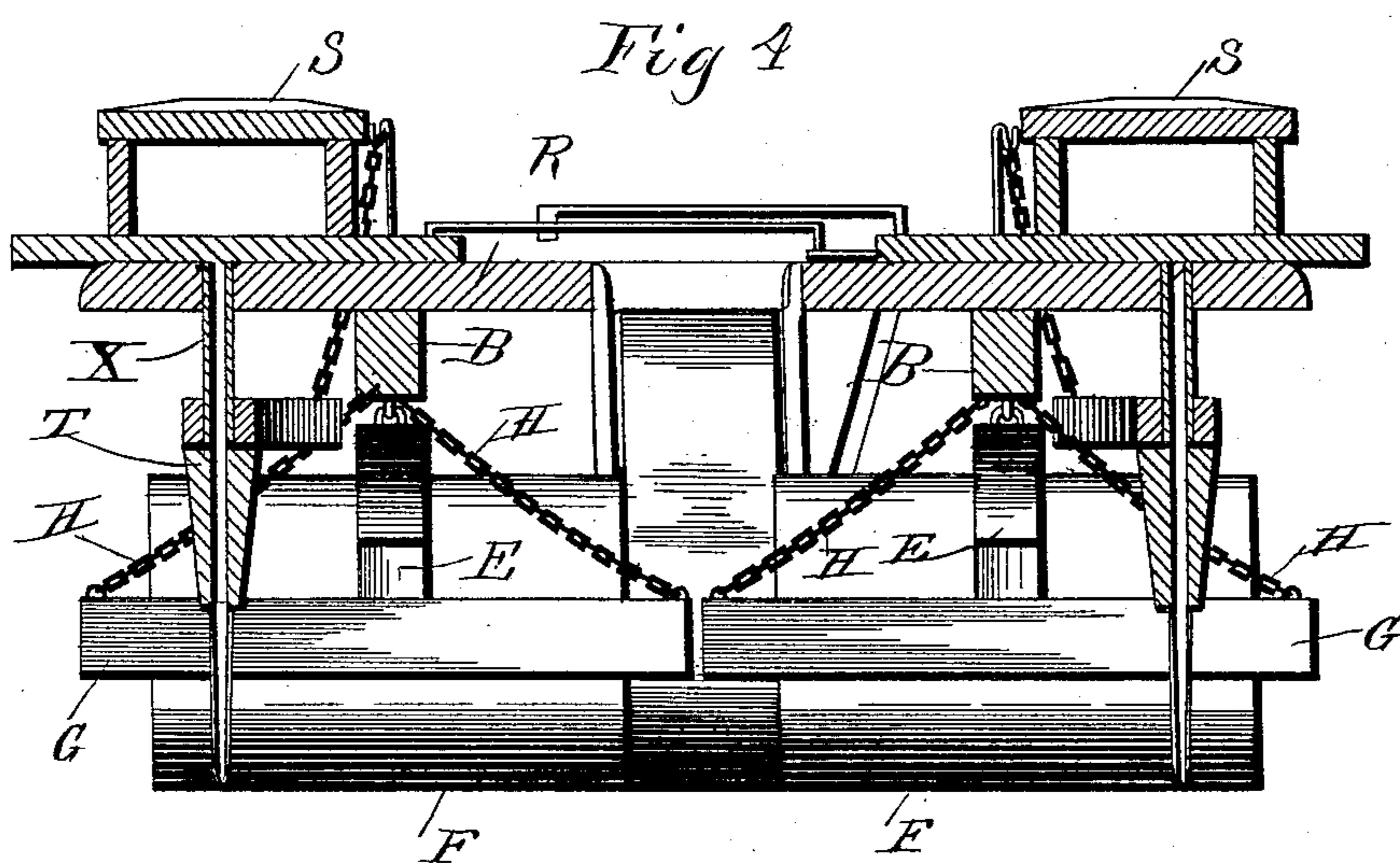
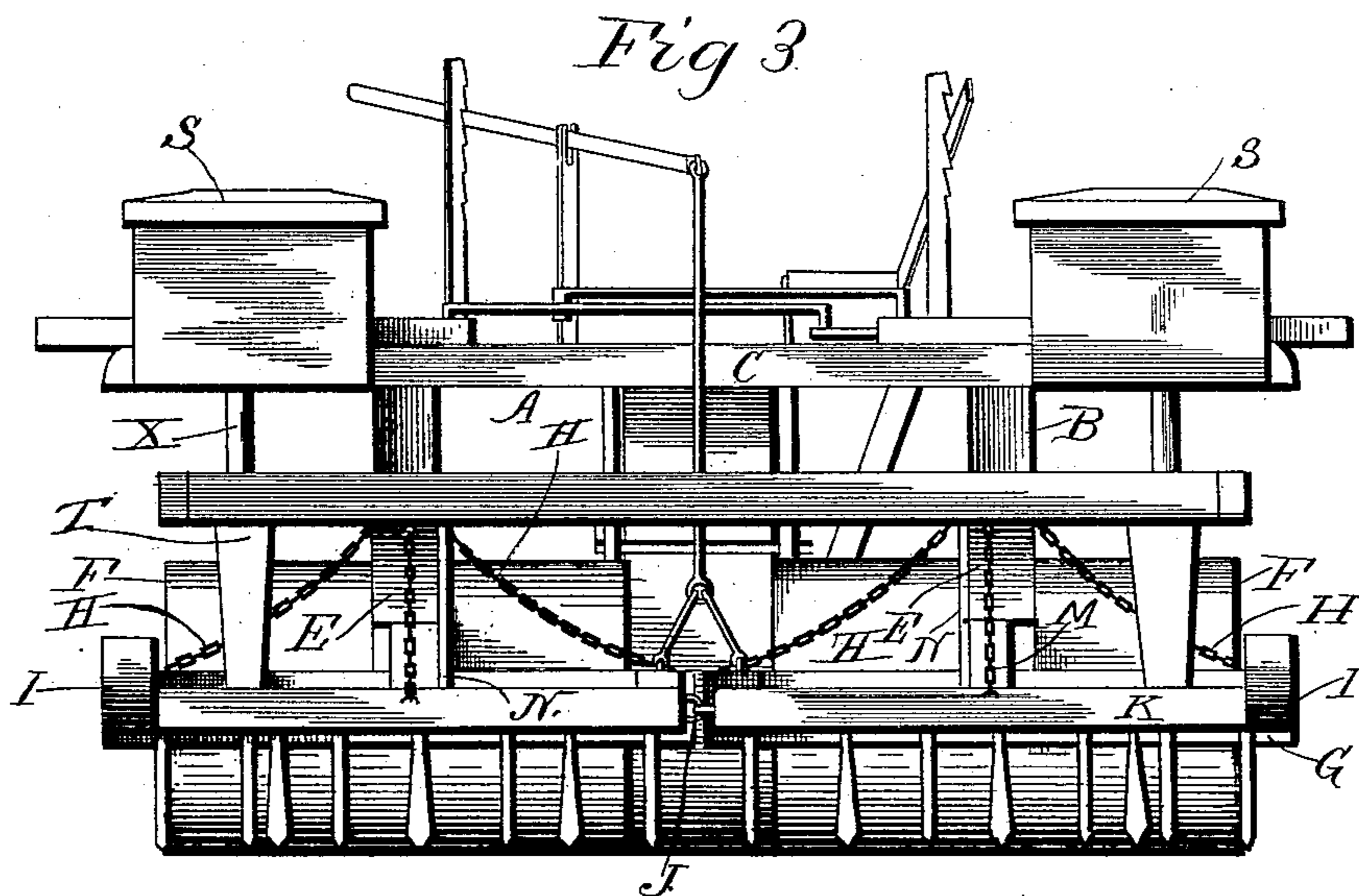
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A. H. Bishop.

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UNITED STATES PATENT OFFICE.

LUCIUS B. PHELPS, OF EAGLEVILLE, OHIO.

HARROW AND SEED-PLANTER.

SPECIFICATION forming part of Letters Patent No. 434,644, dated August 19, 1890.

Application filed January 7, 1890. Serial No. 336,167. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS B. PHELPS, a citizen of the United States, residing at Eagleville, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Harrows and Seed-Planters; 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 improvements in harrows and seed-planters; and it consists in certain novel features hereinafter described and claimed.

Figure 1 is a side view of a harrow and land-roller with my improved seed-planting attachment in position thereon. Fig. 2 is a plan view of the same with the driver's seat removed. Fig. 3 is a front elevation. Fig. 4 is a transverse section.

The main frame A of my improved machine consists of the longitudinal bars B B and the bar C, connecting the front ends of said longitudinal bars. The tongue or draft-pole D is secured to the bar C, and this bar C is extended at its ends beyond the bars B B, for the purpose hereinafter to be specified.

Near the rear ends of the bars B and to the under sides of said bars I secure by suitable universal joints the arches E, which extend over the land-rollers F and have their front and rear ends secured to the supporting-frame of the rollers.

The supporting-frames G of the land-rollers consist of open rectangular frames of suitable dimensions, and the rollers are journaled in the ends of said frames, and may be of any desired construction, although I prefer to construct them of staves and in the style known as drum-rollers. The front corners of the supporting-frames G are connected with the side bars of the main frame by chains H, as clearly shown, so that the rollers can readily accommodate themselves to any inequalities in the surface over which they are drawn, and also in order that they may be positively drawn forward and that any tendency to lateral movement will be overcome.

In advance of the rollers I arrange the harrows, and these harrows are similar in construction, and consist of the rectangular

frames I, which have their meeting ends connected by suitable hinges J, and are composed of transverse bars K and the shorter longitudinal bars L connecting the same. The front sides of the harrow-frames are connected with the front end of the main frame by the chains M, so that they may be positively drawn forward and at the same time allowed to yield to any unevenness of the surface; and they are further held to their work by the push-bars N, which have their rear ends pivoted to the sides of the arches E and their front ends pivoted to the central longitudinal bars of the harrow-frames.

At about the center of the main frame I secure to the side bars of the same, on the upper sides thereof, the cross-bar O, which serves as a stop against which the base of the seed-planting attachment impinges, and in rear of this cross-bar or stop I form in the side bars the openings or sockets P, which are engaged, when the planting attachment is in use, by vertical pins Q bearing against the rear side of the base of said attachment so as to hold it against the cross-bar and thereby retain it in position.

The base of the seed-planting attachment consists of a suitable bar R, having the seed-boxes S on its ends and provided with suitable openings through which the seed passes to the seed-tubes. The said seed-tubes, designated by the letter T, are carried by the levers or arms U, pivoted to the ends of the lower bars C, and extend rearward therefrom over the harrow and the rollers. The rear ends of these levers or arms U are provided with chains V, which are adapted to engage hooks W on the main frame at the rear ends of the same, so as to regulate the depth to which the seed-tubes will enter the ground, and also to hold them entirely clear of the ground, when so desired. The seed is conducted from the seed-boxes to the seed-tubes by flexible pipes or tubes X, which are carried by the planting attachment.

To the rear edge of the bar R, I pivot the front ends of the supporting-arms Y, which extend rearward beyond the rollers and have a driving-wheel Z journaled between their rear ends. This driving-wheel is provided with a crank-axle a, and the said crank-axle is connected by a pitman b with an angle-lever

c fulcrumed on the bar *R*. The front end of this angle-lever is connected by a pitman *d* with the seed-slide *e* in one of the seed-boxes, and a connecting-rod *f* extends from the other 5 seed-box to this pitman and is pivoted thereto so as to secure a simultaneous but alternate action of the seed-slides. The harrow-teeth in the front tooth-bar are provided with sharpened lower edges, so that they will cut the 10 turf and roots, while the harrow-teeth in the rear tooth-bar have broad points, so as to pulverize the earth and prepare the ground for the seed.

A suitable lifting-lever *g* is mounted on the 15 main frame and connected with the harrow so as to raise the same when so desired, to permit the machine to be moved from field to field, and a similar lifting-lever *h* is mounted on the main frame and connected to the supporting-arms *Y* for a similar purpose. 20

The construction and arrangement of the several parts of my improved machine being thus made known, the operation and advantages of the same are thought to be obvious. 25 The machine is drawn over the ground in the usual manner, and the harrow will cut up and pulverize the earth so as to prepare the same for the seed, while the seed is dropped directly in the rear of the harrow at regular intervals, 30 and the dirt is then packed over the seed by the rollers.

The machine is very compactly arranged,

and consequently can be manufactured very cheaply. It is very strong and durable and serves to economize time and labor by simultaneously preparing the ground for the seed 35 and planting the seed in the prepared ground.

The machine automatically accommodates itself to any unevenness of the surface over which it is drawn, and the operation of planting 40 is not interfered with by the position of the machine.

The planting attachment can be easily and quickly removed, if so desired, and the machine used as an ordinary harrow and roller. 45

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

The combination of the main frame, the roller-frames, the arches secured to the roller-frames and extending over the rollers and 50 connected to the main frame by universal joints, the harrows arranged in advance of the rollers, and the push-bars having their front ends pivoted to the harrows and their 55 rear ends pivoted to the said arches, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LUCIUS B. PHELPS.

Witnesses:

L. W. PECK,
C. I. PECK.