(No Model.)

C. E. PATRIC & F. R. PACKHAM.

GRAIN DRILL.

No. 410,438. Patented Sept. 3, 1889.

Fig. 1

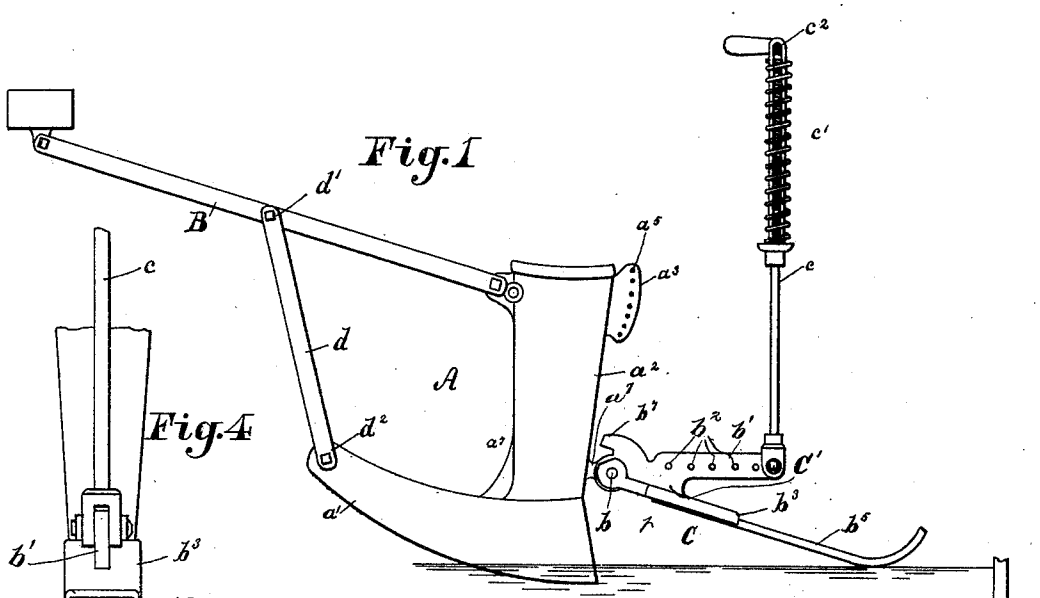


Fig. 4

Fig. 2

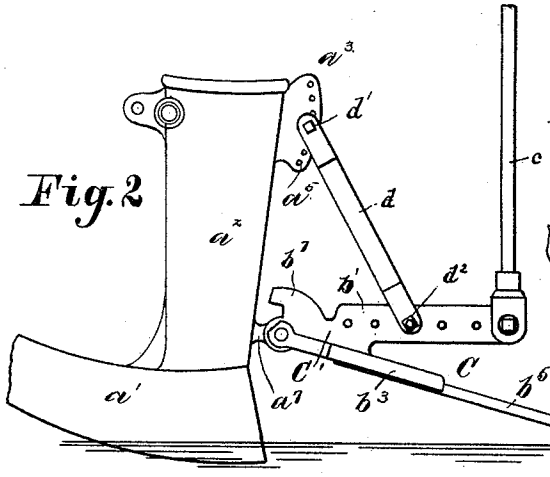
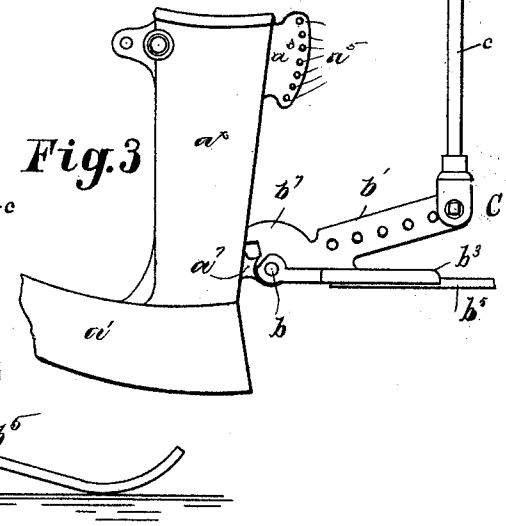


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES E. PATRIC AND FRANK R. PACKHAM, OF SPRINGFIELD, OHIO, ASSIGNORS TO THE SUPERIOR DRILL COMPANY, OF SAME PLACE.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 410,438, dated September 3, 1889.

Original application filed October 29, 1888, Serial No. 289,433. Divided and this application filed May 8, 1889. Serial No. 309,986. (No model.)

To all whom it may concern:

Be it known that we, CHARLES E. PATRIC and FRANK R. PACKHAM, citizens of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Grain-Drills, of which the following is a specification.

Our invention relates to improvements in grain-drills; and it also relates in its nature to certain constructions set forth but not claimed in our Letters Patent No. 404,108, issued May 28, 1889, this application being intended as a division of the said patent.

The object of our invention is to provide a pressing and gaging attachment for grain-drills of simple and novel character to be used in place of the presser-wheels heretofore used.

Our invention consists in the constructions and combinations of parts hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a device embodying our invention. Fig. 2 is an elevation, enlarged, of the same, showing the means of connecting the pressing attachment rigidly to the shoe when desired. Fig. 3 is a similar view showing the pressing attachment loosely attached to the shoe and in position for raising. Fig. 4 is a detailed section hereinafter referred to.

Like parts are represented by similar letters of reference.

In the said drawings, A represents the shoe of a grain-drill; B, the drag-bar attached thereto.

The shoe A is composed of the runner a' and the upper hollow portion a^2 in the usual manner. The shoe A is provided at the rear with a backwardly-projecting flange a^3, provided with a series of openings a^5. Below the flange a^3 is a boss or projection a^7.

C is the presser-foot, which is attached to the said boss a^7 by a bolt or pin b. The presser-foot C consists of a supporting-casting C′, provided with a backwardly-extending bearing-support b', having a series of openings b^2. Below the bearing-support b' is a saddle or seat b^3, arranged at an angle to said bearing-support and adapted to receive a flexible runner or presser b^5, preferably made of steel, and bolted or otherwise secured at its forward end to the seat b^3 and projecting downwardly and rearwardly to a distance of about two-thirds of its length, and then curved upwardly, as shown in the drawings. This runner or presser b^5 is preferably made slightly convex or rounding on its under surface, as shown in section in Fig. 4.

The supporting-casting C′ is provided with an upwardly and forwardly projecting spur b^7, adapted as the presser-foot is moved about the pivoted connection b to come against the upper portion a^2 of the shoe and form a stop for said presser-foot, as shown in Fig. 3.

Extending upwardly from the bearing-support b' is a connecting-rod c, preferably arranged with a spring-connection c', by which it is attached to the presser-bar c^2, arranged in the main frame of the drill in any suitable and well-known manner and adapted to be connected to the raising and lowering mechanism, so that the shoes may be raised or lowered thereby, and a pressure applied to the said presser attachment by increasing the tension of the said spring, as more fully set forth in our patent referred to.

Connected to the flange a^3 is a link-bar d, provided at each end with openings d' d^2, adapted to receive a pin by which it may be connected to the said flange and to the bearing-support b' of the presser-foot.

The operation of the device is as follows: When it is desired to use the presser-foot as a gage to regulate the depth of planting, the link is connected to the bearing-support and to the flange, as above described, the openings in the flange furnishing means for adjusting the position of the foot as desired. When thus connected, by changing the position of the connecting-rod c along the bearing-support b', the pressure upon the shoe and presser-foot may be varied by moving the point at which the pressure is applied to or from the point at which the shoe or hoe is pivoted. By disconnecting the link d a flexible presser attachment is secured, which permits the shoe and presser-foot to rise independently of each other in passing obstructions, while the pressure applied may be varied, as before, so as to bring the pressure more or less on the shoe or presser-foot, as desired. In lifting the shoe the stop b^7 comes

against the shoe and prevents a further movement of said presser-foot about its pivoted connection as the bearing-support b' is raised, the lifting mechanism being attached to the connecting-rod c.

By having the runner b^5 convex, as set forth, it is adapted to slide more readily over the surface of the ground.

We have shown in the drawings our presser attachment in use with a grain-drill shoe. It is evident, however, that it may be used with any desired form of shoe or hoe in common use with grain-drills.

A device as above described is adapted to be used in place of the presser-wheels heretofore used for this purpose, and in certain soils performs its functions in a much more perfect manner than the wheels.

Having thus described our invention, we claim—

1. In a grain-drill, a presser-foot pivoted to the shoe or hoe and provided with a lower runner and an upper bearing-support, and a connection from said bearing-support to the lifting mechanism, substantially as described.

2. In a grain-drill, a presser-foot having a lower flexible runner, an upper bearing-support, and a stop projection to limit the upward movement of said bearing-support, substantially as specified.

3. The combination, with a grain-drill, of a presser-foot pivoted to a shoe or hoe and having a flexible runner and an upper bearing-support, a connection from said bearing-support to the raising and lowering mechanism, and means for adjusting said connection along said bearing-support, substantially as specified.

4. The combination, in a grain-drill and with the shoes or hoes, of a series of presser-feet—one for each shoe or hoe pivoted thereto—said presser-feet each being provided with a lower flexible runner and an upper bearing-support, a connection from each of said presser-feet to the raising and lowering mechanism, and means for connecting said presser-feet rigidly to the shoes or hoes, substantially as specified.

5. The combination, with a grain-drill shoe, of a presser-foot having a flexible runner and an upper bearing-support, a series of openings in said bearing-support to connect the raising and lowering mechanism, a stop on said presser-foot, and means, substantially as described, for connecting said presser-foot rigidly to the said hoe or shoe in different positions of adjustment, substantially as specified.

6. The combination, with a grain-drill shoe having a backwardly-extending flange with a series of openings therein and a boss or projection on the same side with said flange, of a presser attachment pivoted to said boss or projection having a lower flexible runner and upper bearing-support, said bearing-support being provided with a series of openings adapted to be connected by a link-connection to the respective openings in said flange, substantially as specified.

7. The combination, with a grain-drill shoe or hoe, of a presser-foot pivoted thereto, said presser-foot being provided with a lower flexible runner and an upper bearing-support, a connection from said bearing-support to the raising and lowering mechanism, said connection being provided with an elastic or yielding portion adapted to exert a pressure on said presser-foot, substantially as specified.

8. The combination, with a grain-drill hoe having a backwardly-extending flange with a series of openings therein, of a presser-foot pivoted to said hoe and provided with a lower flexible runner, and an upper bearing-support having a series of openings adapted to be connected by a link to the openings in said flange, a stop on said presser-foot, and a yielding connection from said bearing-support to the raising and lowering mechanism, substantially as specified.

9. The combination, with a grain-drill shoe or hoe, of a pressing attachment having a bearing-support pivoted to said shoe and a flexible runner connected to said bearing-support, said runner being convex in cross-section on its bottom surface, substantially as specified.

In testimony whereof we have hereunto set our hands this 4th day of May, A. D. 1889.

CHARLES E. PATRIC.
FRANK R. PACKHAM.

Witnesses:
JOSHUA SCOTT,
CHAS. S. WELCH.