(No Model.)

L. M. JONES & W. F. JOHNSTON.

SEEDING MACHINE.

No. 590,154. Patented Sept. 14, 1897.

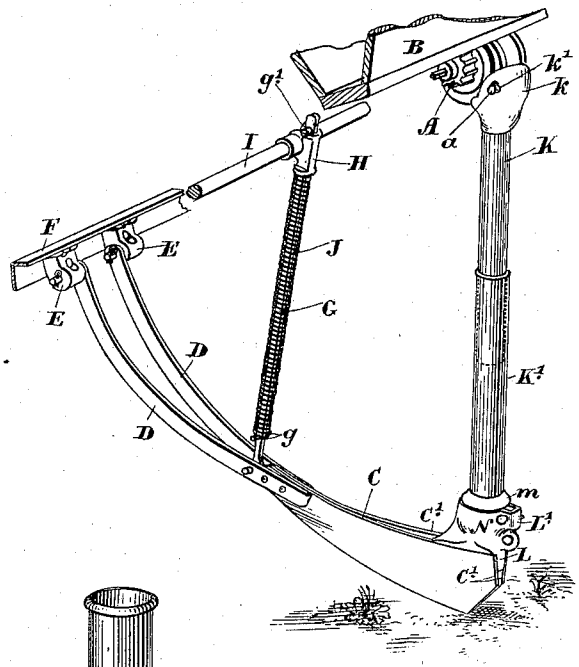

Fig. 1.

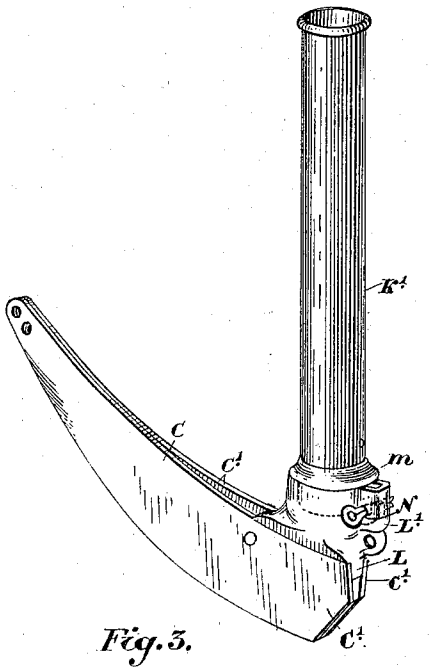

Fig. 3.

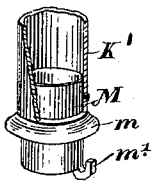

Fig. 4.

Fig. 2.

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UNITED STATES PATENT OFFICE.

LYMAN MELVIN JONES AND WILLIAM F. JOHNSTON, OF TORONTO, CANADA, ASSIGNORS TO THE MASSEY-HARRIS COMPANY, OF SAME PLACE.

SEEDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 590,154, dated September 14, 1897.

Application filed July 20, 1896. Serial No. 599,773. (No model.)

To all whom it may concern:

Be it known that we, LYMAN MELVIN JONES, manufacturer, and WILLIAM F. JOHNSTON, manufacturer, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Seeding-Machines, of which the following is a specification.

Our invention relates to improvements in seeding-machines, and more particularly to what is known as the "shoe-drill;" and the object of our invention is to provide a simple, light, easily-handled, and durable conveyer to connect the grain-distributer or feed-run with the shoe or runner, and thereby very materially increase the lasting qualities of this portion of the machine; and it consists, essentially, of a metallic tubular conveyer suitably connected to the feed-run, and a corresponding tubular conveyer peculiarly connected to the shoe and within which the former tubular conveyer is designed to have a telescopic movement, as and for the purpose hereinafter more particularly explained.

Figure 1 is a perspective view of the shoe and a portion of the accompanying parts to which our invention relates. Fig. 2 is an enlarged sectional perspective view showing the arrangement of the telescopic tubular conveyers and their peculiar mode of connection to the shoe. Fig. 3 is a perspective view of a part of the lower tubular conveyer and the shoe to which it is connected. Fig. 4 is a perspective detail of the lower portion of the tubular conveyer connected to the shoe, showing the thimble and hook.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is one of the feed-runs, which is connected to the hopper B, a portion only of which is shown, and may be of any usual construction now commonly in use.

C is a shoe, which is connected by the drag-bars D D to brackets E E on the transverse bar F at the front of the machine.

G is a rod which is pivotally connected between the drag-bars at the front of the shoe and extends up through a bracket H, secured to the transverse rod I.

g is a pin which extends through the bottom end of the rod G.

g' is a pin which extends through the top end of such rod above the bracket H.

J is a spiral pressure-spring extending between the bracket H and the pin *g*, and designed to exert a downward pressure upon the draw-bars and shoe.

So far the parts described are of the usual construction in machines of this class.

K is the upper tubular conveyer, which has an enlarged upper end *k*, provided with slots *k'*, which are fitted over the pins *a*, extending from each side of the feed-run. By means of these pins the upper tubular conveyer K is maintained in position and allowed a swinging movement. The upper tubular conveyer K is made, preferably, of a parallel metal tube of iron galvanized to preserve it from rusting.

The shoe or runner C is a divided shoe, which converges to a knife-edge at the front and is formed of the two sides C' C', which are spread at the rear and have fitted between them the conveying-socket L, which is suitably secured in position and has a central opening *l* for the passage of the seed between the sides of the shoe. The socket L is provided with a rearward U-shaped extension L'.

K' is a metal tubular conveyer parallel throughout and preferably formed of iron, galvanized. The conveyer K fits and is designed to have telescopic movement within the conveyer K'.

M is a thimble which is provided with a central flange *m*. The lower end of the tubular conveyer K' extends down outside the thimble and abuts the top of the flange *m*. The bottom of the flange is designed to abut the top of the conveying-socket L, and the bottom of the thimble M abuts a shoulder *l'* in the conveying-socket, so as to present no shoulder for the lodging of the seed.

m' is a hook which is arranged, preferably, to be at the rear side of the thimble and fits within the hollow U-shaped extension L'.

N is a split pin which is inserted through holes in the side of the U-shaped extension L' and passes within the hook *m'*, and thereby serves to detachably connect the tubular conveyer K' with the shoe, or more properly the conveying-socket, attached to the shoe.

We do not describe in this specification the lever and means whereby all shoes of the machine are raised simultaneously, as such means form no part of our invention; but we may merely state that each shoe is adjusted in relation to the feed-run either to apply varying degrees of pressure or to elevate the shoes for transportation, and the tubular conveyers are held together during such movements by reason of their telescopic connection.

Our tubular conveyers are so arranged that the end of the tubular conveyer K extends sufficiently far into the tubular conveyer K′, so as to absolutely prevent them being disconnected by any adjustment of the shoes in relation to the feed-run caused by such shoes traveling over the unevenness of the ground-surface. In order to attach the tubular conveyers, they must first be telescopically connected, and it is then merely necessary to insert the thimble of the lower tubular conveyer into the socket L and then insert the split pin over the hook. The top of the upper conveyer may then be connected to the pins attached to or forming part of the feed-run.

Should the lower tubular conveyer become broken or injured and it be desired to detach the lower tubular conveyer K′, this may be readily and quickly done by simply withdrawing the split pin N, instead of as at present required by detaching the drag-bars and the pressure-rod and spring.

Although we describe in this specification the tubular conveyers as connected to a shoe such as described it will of course be understood that they might be used with any suitable runner or other device designed to open the ground and deposit the seed.

What we claim as our invention is—

1. The combination with a seeding-machine having a seed-run and shoe, of a conveyer leading from said seed-run to said shoe, said conveyer being formed of telescopic sections, the detachable connection between the upper end of said conveyer and said run, and the positive connection between the lower end thereof and said shoe, said connection being freely detachable.

2. The combination with a seeding-machine having a seed-run and shoe, of a conveyer leading from said run to said shoe, said conveyer being formed of telescopic sections, the positive connection between the conveyer and shoe said connection being freely detachable and the pivotal detachable connection between the hopper and seed-run.

3. The combination with a seeding-machine having a seed-run and shoe, of a telescopic conveyer, a connection between the upper end thereof and said seed-run, a conveyer-socket secured between the sides of said shoe and interlocking devices carried by said conveyer and socket for detachably connecting the same, substantially as described.

4. In a seeding-machine a shoe or runner suitably supported, a conveyer-socket secured between the sides of the shoe at the rear end thereof, a tubular conveyer extending upwardly from such socket and a hook at the bottom rear end of the tubular conveyer and a suitable pin or projection with which it is designed to engage as and for the purpose specified.

5. In a seeding-machine a shoe or runner suitably supported, a conveyer-socket secured between the sides of the shoe at the rear end thereof, a U-shaped extension to such socket and pin extending through such U-shaped extension and the tubular conveyer having a hook formed at its rear bottom end, and the coacting pin extending through the U-shaped rearward extension as and for the purpose specified.

6. In a seeding-machine a shoe or runner suitably supported, a conveyer-socket secured between the sides of the shoe at the rear end thereof, a U-shaped extension to such socket and pin extending through such U-shaped extension, the tubular conveyer, the thimble forming the extension thereof provided with an exterior intermediate flange and having the end abutting an annular shoulder in the top of the socket against which the end of the thimble abuts, and a hook on the thimble designed to grasp the pin extending through the U-shaped extension as and for the purpose specified.

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