

(No Model.)

T. R. CRANE.
SHOE FOR GRAIN DRILL TUBES.

No. 381,465.

Patented Apr. 17, 1888.

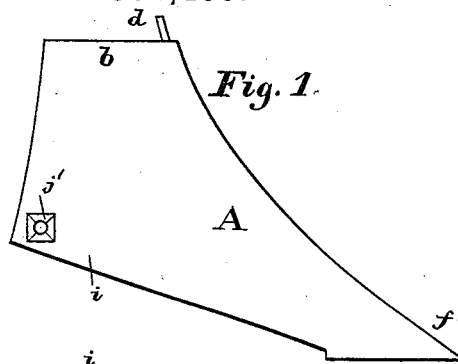


Fig. 1.

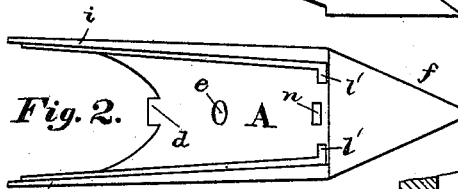


Fig. 2.

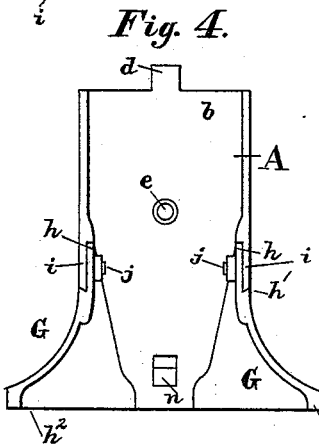


Fig. 4.

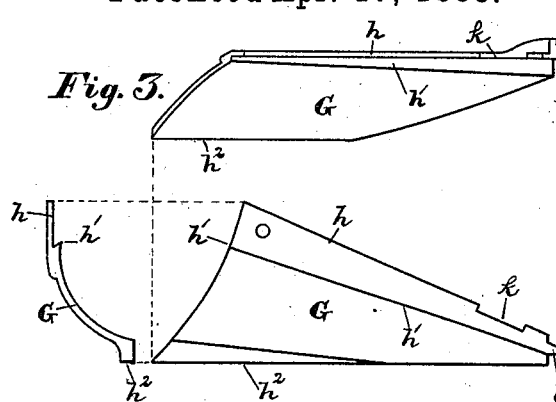


Fig. 3.

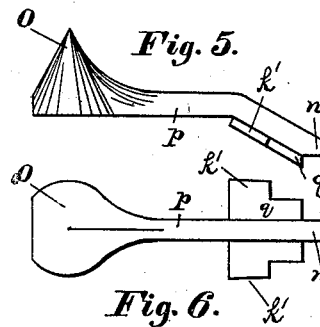


Fig. 5.

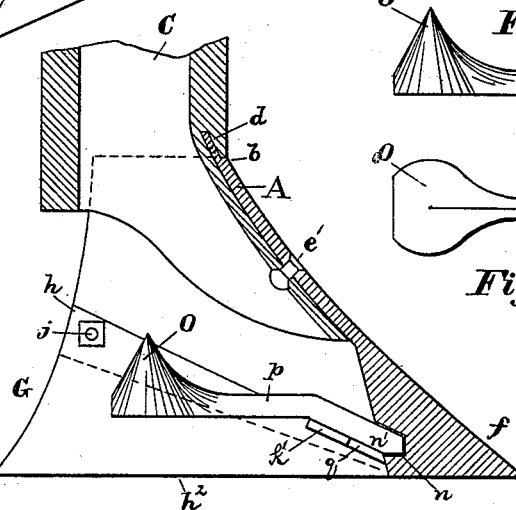


Fig. 7.

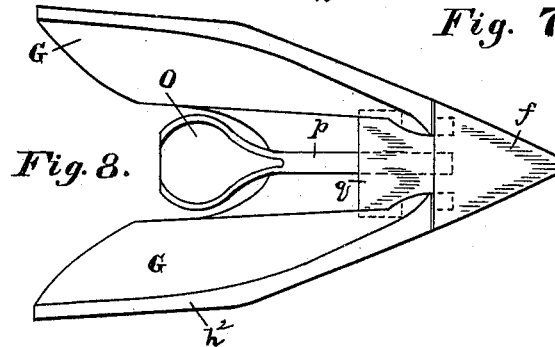


Fig. 8.

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THOMAS R. CRANE, OF HEATHSVILLE, VIRGINIA.

SHOE FOR GRAIN-DRILL TUBES.

SPECIFICATION forming part of Letters Patent No. 381,465, dated April 17, 1888.

Application filed January 17, 1888. Serial No. 261,027. (No model.)

To all whom it may concern:

Be it known that I, THOMAS R. CRANE, a citizen of the United States, residing at Heathsville, in the county of Northumberland and State of Virginia, have invented certain new and useful Improvements in Shoes for Grain-Drill Tubes, of which the following is a specification.

My invention relates to an improved shoe for grain-drill tubes.

The object of the invention is to provide a shoe which shall be convertible from an ordinary narrow drill-shoe suitable for drilling grain in a narrow furrow to a shoe with broad flaring sides suitable for drilling wheat or other grain "broadcast."

The term "drilling broadcast" is here employed to designate that operation whereby the grain, instead of falling in a narrow trench or furrow in the ground, where the grains would be crowded close together, will fall in a broad trench or furrow and the grains be distributed or spread broadcast over the entire breadth thereof.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the shoe-body. As here shown the shoe is complete for drilling grain in a narrow furrow. Fig. 2 is an inverted plan or bottom view of the shoe-body. Fig. 3 shows three views of the flaring wings, which are attachable to the shoe-body. Fig. 4 is a rear elevation of the shoe-body with flaring wings attached, showing the shoe as when employed for drilling wheat broadcast. Figs. 5 and 6 are two views of the cone or grain-spreader. Fig. 7 is a vertical section of the shoe attached to the drill-tube and showing the grain-spreader in position. Fig. 8 is an inverted plan or bottom view of the shoe and grain-spreader.

The letter A designates the shoe-body made in one piece. The neck or upper part, *b*, of this body is attached to the drill-tube C, a portion only of which is shown in Fig. 7 of the drawings. The said neck is provided at the front with an upward-projecting tang, *d*, which takes into a recess in the lower end of the drill-tube, and the shoe-body is provided with a hole, *e*, through which a rivet, *e'*, passes to secure the shoe to the tube.

Any other suitable construction for securing the shoe-body to the tube may be employed. The position of the shoe-body shown in Fig. 1 is that which it has when in use for drilling. The point *f* will open a furrow in the ground, while the seed or grain drops down through the tube.

This device and the described operation are in common use.

As already stated, the design of my invention is to provide certain attachments for the body of an ordinary shoe for grain-drill tubes, whereby to convert an ordinary narrow shoe into a broad shoe with flaring sides capable of effecting a broadcasting of the grain.

The letter G designates a wing, of which two are employed. These wings at the top have a straight vertical flange, *h*, which extends lengthwise and rise from a shoulder, *h'*. From the shoulder to the base edge *h''* the wing flares or spreads out, as shown in Figs. 4 and 8. The flange takes position on the inner side of the wall *i* of the shoe-body, and the bottom edge of the wall sets on the shoulder *h'*. A bolt, *j*, passes through the said wall and flange at the rear end, and the head of this bolt sets in a square countersink, *j'*. Near the front end the vertical flange of each wing has a notch, *k*, and at the end has a forward-projecting lug, *l*, which latter enters and fits into a socket, *l'*, in the rear of the shoe-point *f*. Thus the lug *l* at the front end and the bolt *j* at the rear end secure the wing to the shoe-body. The rear of the shoe-point *f* has a central socket, *n*, midway between and a little higher than the two lug-sockets *l'*.

A grain-spreader, O, consists of a cone or convex plate attached to a shank, *p*, which is provided near its end with a cross bar or plate, *q*, having at each side a lug, *k'*, which occupies the said notch *k* on the wing-flange. At the end the shank's extremity *n'* projects forward and occupies the central socket, *n*, in the rear of the shoe-point. It will thus be seen that when the ordinary shoe (shown in Fig. 1) is to be converted into a broadcast seeder, the first thing is to place the grain-spreader in position by inserting the shank-extremity *n'* in the central socket, *n*. Then place each wing in position by inserting the forward-projecting lug *l* into the socket *l'* and have the notch

k take over the side lug, *k*, and then apply the bolt *j*.

The grain-spreader *O* has position within the shoe and between the two flared sides and directly below the drill-tube *C*. Grain passing down the said tube will strike or fall on the cone or convex plate, and thereby be scattered or spread in the broad part of the shoe, and thus fall in the open furrow—hence the term “broad-
10 cast.”

The construction shown and described for attaching the two wings *G* to the shoe-body is useful without reference to the special construction here shown for securing the grain-spreader *O*. Obviously this latter may be otherwise secured. I am entitled, therefore, to claim separately the manner of attaching the wings.

Having described my invention, I claim and
20 desire to secure by Letters Patent of the United States—

1. A convertible shoe for grain-drills, comprising the combination of the narrow shoe-body *A*, having straight vertical side walls, *i*,
25 and a front point, *f*, and the two separate detachable wings *G*, each provided with a top flange and having flared or spread-out sides,

whereby the said narrow shoe may be used alone, or by attaching the wings be converted into a broad shoe.

2. A convertible shoe for grain drills, comprising the shoe-body *A*, having a point, *f*, and two sockets, *v*, in the rear of the said point, two detachable wings, *G*, each having a longitudinal shoulder, *h'*, a vertical flange, *h*, rising from said shoulder, a flared side extending from the said shoulder to the base edge, and at the front provided with a lug, *l*, which fits in the aforesaid socket in the rear of the point, and a rear bolt, *j*, to secure each wing.

3. A convertible shoe for grain-drills, comprising the combination of the shoe-body *A*, having a point, *f*, two detachable wings, *G*, having flared sides and each provided with a notch, *k*, and secured to the shoe-body, and a grain-spreader, *O*, having a shank with side lugs, *k*, each of which occupies one of the said notches.

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

THOMAS R. CRANE.

Witnesses:

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