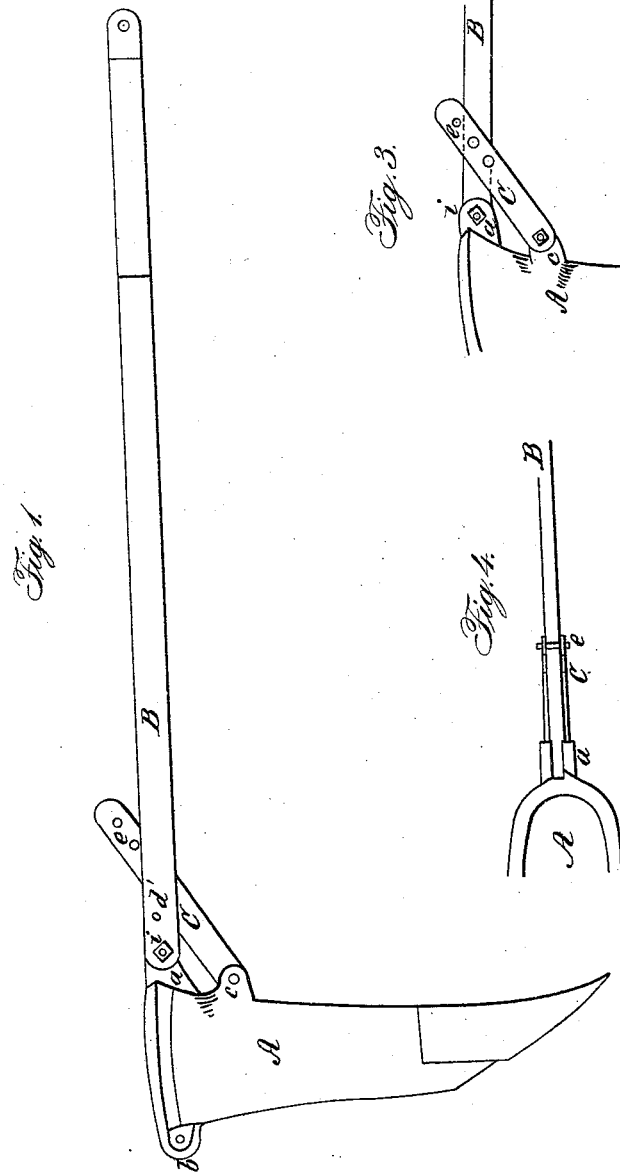
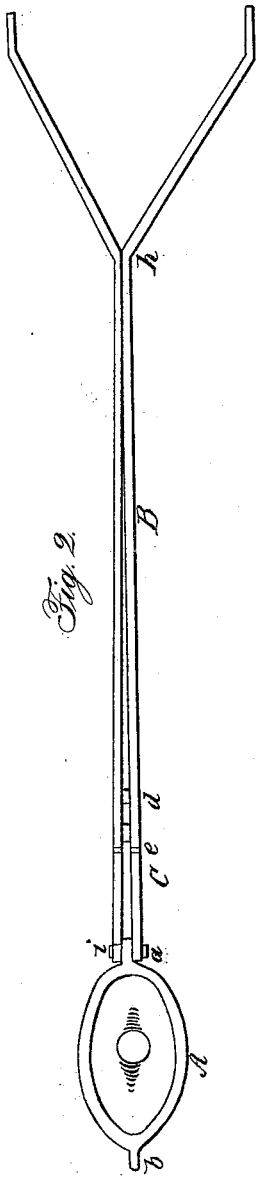
THOMAS & MAST.

Seed-Drill Teeth.

No. 46,732. Patented Mar. 7, 1865.





Witnesses:

E. W. Stean

R. E. Richardson

Inventor:

J. H. Thomas

P. P. Mast

By Smith & Dodge

UNITED STATES PATENT OFFICE.

J. H. THOMAS AND P. P. MAST, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN ATTACHING DRILL-TEETH TO SEEDING-MACHINES.

Specification forming part of Letters Patent No. **46,732**, dated March 7, 1865.

To all whom it may concern:

Be it known that we, J. H. THOMAS and P. P. MAST, of Springfield, in the county of Clarke and State of Ohio, have made certain new and useful improvements in the manner of attaching the drill-tubes to drag-bars of grain-drills, and of bracing and pivoting the same; and we hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon.

The nature of our invention consists in bracing the drill-tube by means of an independent or separate brace with a wooden pin in such a manner that when the drill is turned or backed the tube will yield without breaking the wooden pin, and that will permit the tube to return automatically to its original position when the machine is moved forward again.

To enable others skilled in the art to construct and use our invention, we will proceed to describe it.

A represents the ordinary drill-tube, constructed with two small flanges, *a* and *c*, near its upper end in front, as clearly shown in Figures 1 and 3. A flange, *b*, is also cast on its rear side at the upper for attaching the hoisting-chains in the usual manner.

B represents the drag-bar, composed of two thin bars of wrought-iron, which are firmly united in any suitable manner at *h*, their front ends being separated, as shown in Fig. 2, for attaching it in a proper manner to the machine. A stud, *d*, is placed between these bars, as shown in Fig. 2, for the purpose of uniting and holding them rigid, and at the same time keeping them sufficiently asunder to permit the flange *a* and brace C to play easily between them. The tube A is pivoted to the rear end of the drag-bar B by means of the flange *a*, an iron bolt, *i*, passing through the flange and the end of the bars composing the rod or drag-bar B. A brace, C, made of a flat thin bar of wrought-iron, is then pivoted to the flange *c*, as shown. This brace C then extends up between the bars of B, and is held there by a wooden pin inserted in a hole in the upper end of C, and resting upon the upper edge of the drag-bar B. If desired, the stud *d*, Fig. 2, may be located in the rear of brace C in the position shown in red at *d'* of Fig. 1. As there shown, the flange *c* is made double, so as to embrace the rear end of the brace C. In the drawings, Fig. 1 is a side view, and Fig. 2 a top plan view, of the parts thus arranged. If preferred, however, the drag-bar B may be made of a single piece at its rear end, as shown in plan in Fig. 4, the flange *a* in that case being made double, as there shown. In that case the flange *c* will be made single and the brace C will be composed of two pieces, which shall embrace the drag-bar B between them, as shown in Figs. 3 and 4. Either form or method may be used at pleasure and as experience may determine is best, they being merely the equivalents of each other.

The operation is as follows: The tube being pivoted to the drag-bar by the bolt *i*, the brace is then pivoted in a similar manner to *c*, and the wooden pin *e* inserted in a hole through the upper end of brace C above the drag-bar B. When the machine is moved forward the lower end of the tubes A, resting on or in the soil, will be drawn backward, the pin *e* sliding back on top of B until the brace C is brought in contact with the front end of flange *a* or against stud *d'*, if that be used, when the further movement of the brace C and pin *e* will be prevented, by which the tube A will be locked and held in position, a series of holes in the upper end of C serving to adjust the tube A at any desired angle. In this position the tube remains during use, unless in passing along it comes in contact with a root, stone, or other unyielding object, when the wooden pin *e* will be broken and the tube permitted to swing back on its pivot *i*, and thus escape injury. The pin *e* being renewed, the machine is again ready for operation, as before.

When the machine is backed, as is sometimes necessary—as, for instance, when the seed has ceased to flow regularly from whatever cause—the pin *e*, being placed above the bar B, allows the tube A to swing forward on its pivot *i* and raise the brace up without breaking the wooden pin *e*. As these machines are mounted on two wheels, like a cart, it follows that whenever the team is backed, or when the machine is turned square about, the front end of the tongue is thrown up, which causes the rear portion of the machine to be lowered, thus causing the tubes A to rest heavily upon or sink into the soil, and such a movement would cause the breakage of the pin *e* if there were no provision by which the tube was al-

lowed to yield and accommodate itself to this condition of things. By the arrangement here described such breakage of the pin is entirely prevented and the machine kept in a condition ready for proceeding immediately on its work.

By constructing the drag-bar B and brace C of thin bars of wrought-iron, in which the necessary holes can be punched without heating, we are enabled to make them rapidly and cheaply, and by using the independent brace C we avoid the use of the long and heavy flange usually made at the upper end of the tube A, and which, being of cast-iron, necessitates the drilling of all holes therein. It is obvious that the wooden pin *e* may be placed at the lower end of the brace C, where it is pivoted to the flange *c*, and the iron bolt there used placed in the upper end, and the result still be the same; but there would be a mere change of position, not at all modifying its operation.

What we claim as new, and desire to secure, is—

Bracing a drill-tooth or tube to a drag-bar by means of a separate brace-bar in such a manner as to allow the drill-tooth to swing or fold forward without breaking the wooden pin, substantially as and for the purpose set forth.

P. P. MAST.
J. H. THOMAS.

Witnesses:
W. C. DODGE,
B. HOLTZ,
WILLIAM ENOCH.