

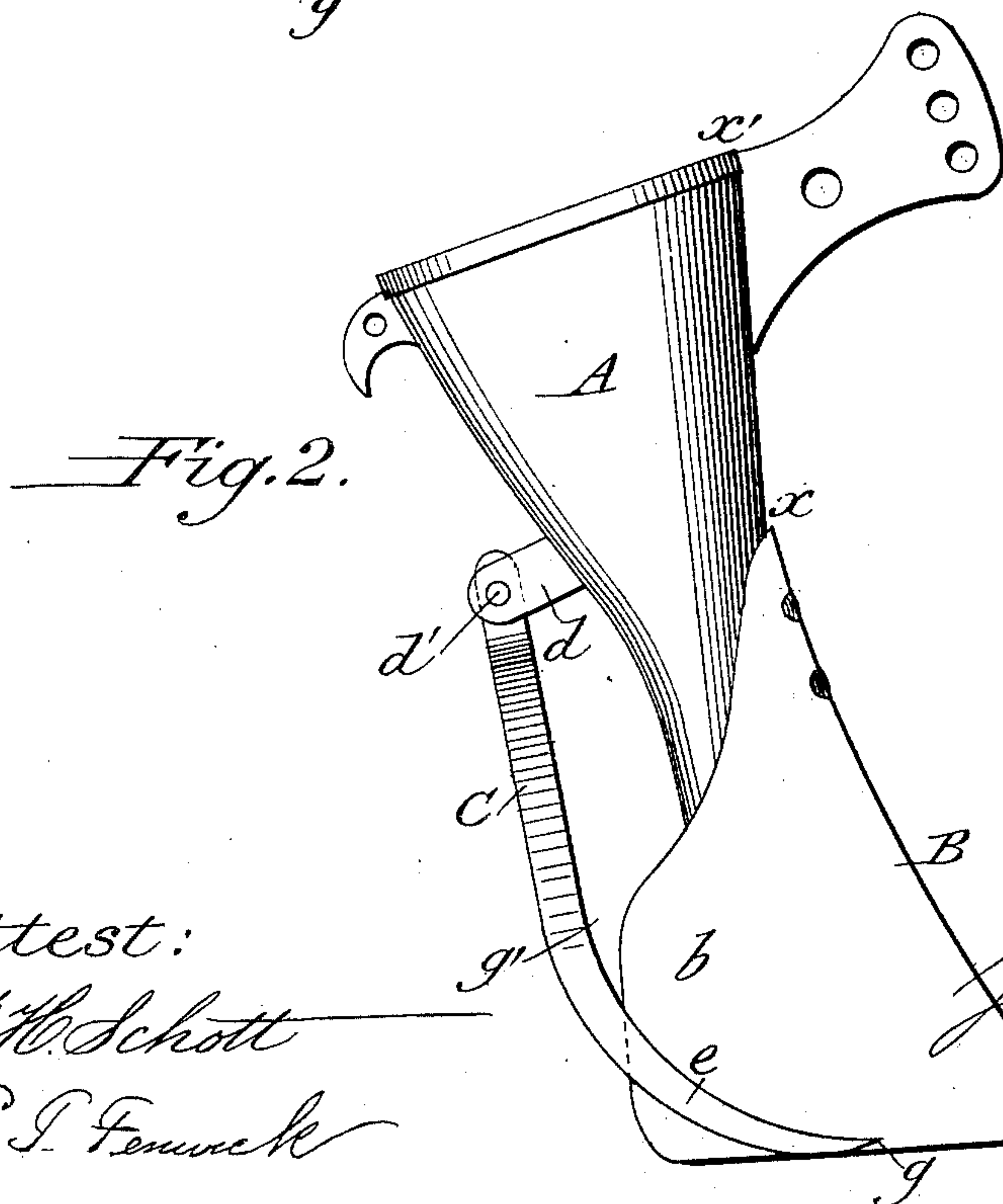
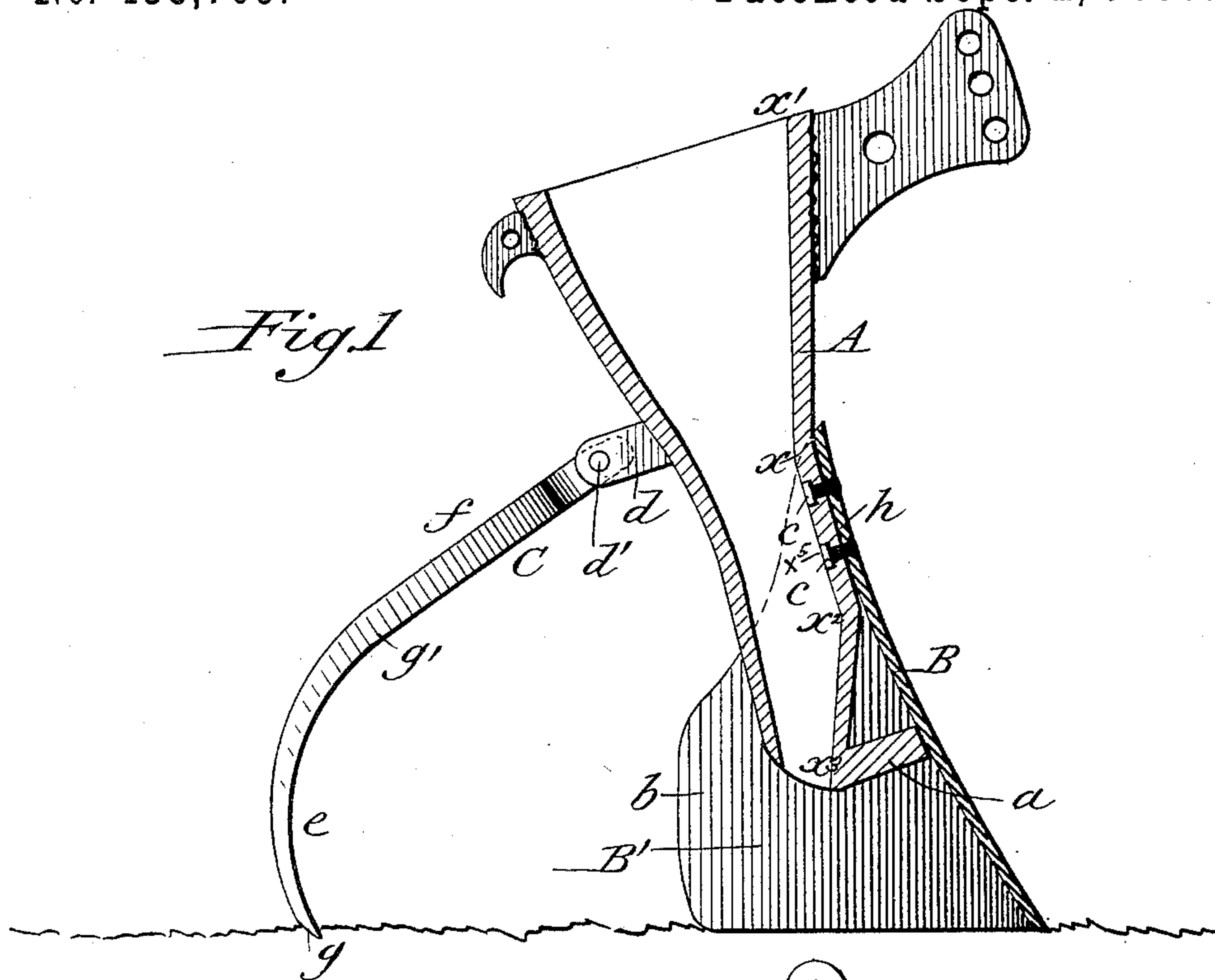
(No Model.)

2 Sheets—Sheet 1.

J. H. PURDY.
GRAIN DRILL.

No. 435,769.

Patented Sept. 2, 1890.



Attest:

J. H. Schott
E. J. Fenwick

Inventor
James H. Purdy
by his Atty
Mamie Fenwick Lawrence

(No Model.)

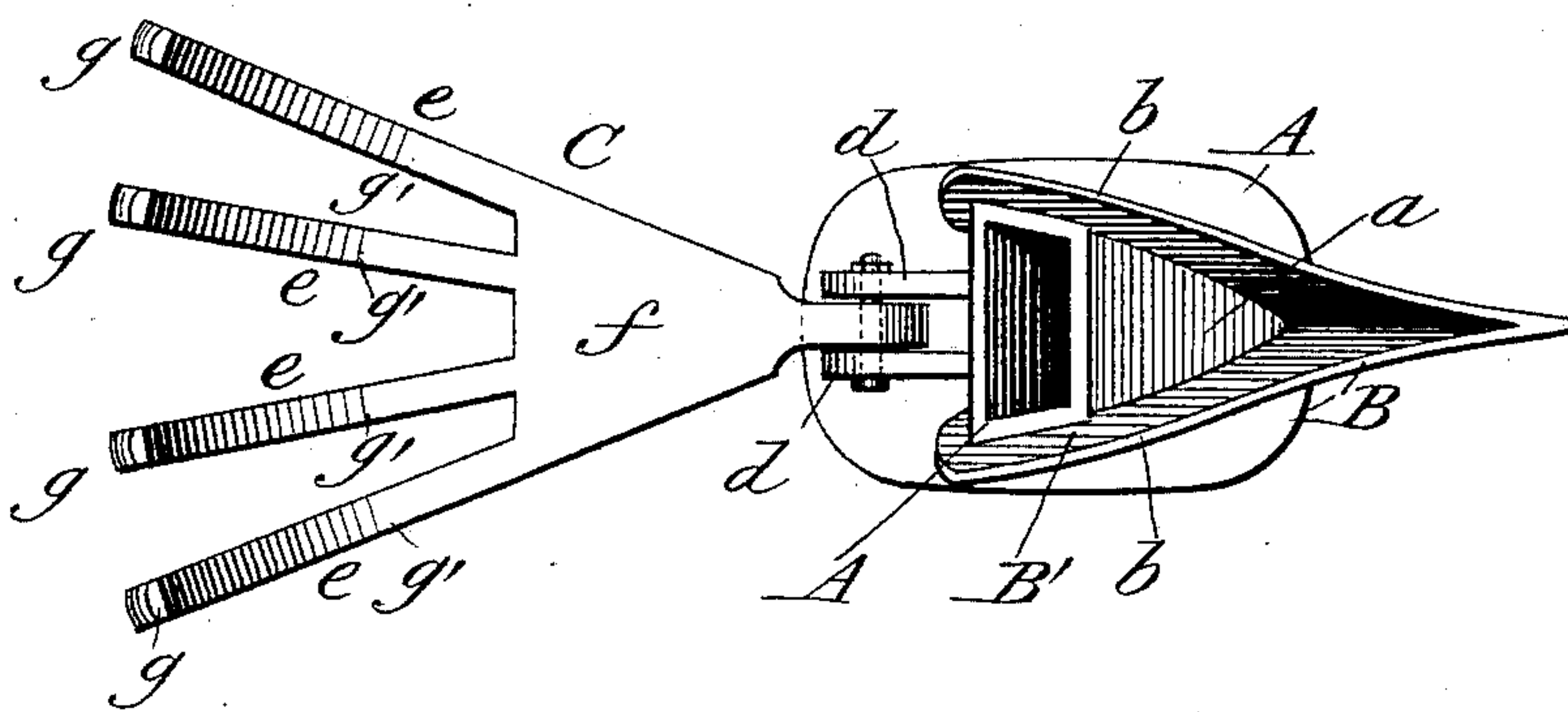
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Fig. 3.



Attest:

H. H. Schott
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Inventor
James H. Purdy
by his Attys
Wm. Fenwick Lawrence

UNITED STATES PATENT OFFICE.

JAMES H. PURDY, OF EARL, NEW YORK, ASSIGNOR OF ONE-HALF TO
CORNELIUS S. VAN WYCK, OF SAME PLACE.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 435,769, dated September 2, 1890.

Application filed May 12, 1890. Serial No. 351,368. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. PURDY, a citizen of the United States, residing at Earl, in the county of Yates and State of New York, have invented certain new and useful Improvements in Grain-Drills; 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 consists in an improvement in drill-teeth which are provided with a low-down plow at their lower ends, and are adapted to scatter the wheat or other grain as it passes into the ridges or furrows, and also are provided with means for covering the grain deposited in the furrows, as will be hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 is a vertical central section of one of my improved drill-teeth and an elevation of the covering device. Fig. 2 is a side elevation of the same, illustrating the position the coverer assumes while the drill proper is being backed. Fig. 3 is an inverted plan view of the improved drill-tooth with its plow and coverer.

A in the drawings represents the tubular part of a drill-tooth, provided with the usual bracket for hinging it to the drag-bar and a bracket at its rear for attaching a chain for elevating the tooth when necessary or not in action. The upper part a of the tubular portion A is made flaring upwardly from x to x' and of uniform size from x to x^2 , and from x^2 to x^3 downwardly it is made tapering. This tapered portion is produced by making the front surface of the passage through the drill-tooth perpendicular, or nearly so, with the surface of the ground, and the back surface of said passage inclined backwardly with respect to said front surface, as illustrated in the drawings. In its horizontal section the passage of the drill-tooth from the point x^2 to x^3 , or from the point x to the point x^3 , or from x^5 to x^3 , preferably, is oblong in a transverse direction, the form being preferably that shown in Fig. 3, this form giving the oblong discharging-opening the greatest width at

the rear of the passage and insuring the scattering of the grain to the extent desired, and at the same time an external form to the drill-tooth, which adapts it for the application thereto of a low-down furrow or drill-opening plow B, as will be presently described. By forming the angle in the passage of the portion A at the point x^2 the grain in passing down through the passage and against the surface included between $x x^2$, or $x x^2 x^3$, or, preferably, from x^5 to x^3 , is caused to be deflected backward, and thus to be scattered to the full width of the passage before it passes out at the point x^3 , and thus all bunching of the grain in the furrow or drill-row is perfectly avoided, and by making the passage wider transversely than longitudinally below the point x , as shown in the drawings, ample room is afforded for the scattering and diffusion of the grain in its passage to the furrow or drill-row.

At the front lower extremity of the portion A a strong bearing and supporting triangular lug a is cast or provided. This lug preferably has its front edge standing oblique to a perpendicular line, and it projects far enough forward to serve by its end and oblique sides as an abutment and bearing for the low-down plow B, as shown. The low-down plow is of V form approximately, or other analogous shape, with its edge or bottom parallel with the ground and its central ridge-like upright portion sharp from top to bottom. The oblique wings $b b$ of this plow extend backward beyond the discharging end of the tubular portion A a considerable distance, and thereby form a large receiving-chamber B' below, forward of, and in rear of the discharging end of said tubular portion A, as illustrated in the drawings. This low-down plow has its support against the front oblique portion h of the tubular portion A, and also against the end and sides of the abutment-lug a , and is bolted to the portion A by one or two rivet-bolts c , as shown in the drawings. By forming simply the bracket-lug a , instead of making the metal solid out to the plow from x^2 to x^3 , lightness is secured and also useless waste of metal avoided, and at the same time the plow is sustained by this abut-

ment-lug in connection with the support above, on which it bears as firmly as required. The plow in passing through the ground cuts away all obstructions by being sharp at its front central or ridge-like portion, and it forms a horizontal broad drill row or furrow for the reception of the grain, the bottom of said furrow being level on account of the base or sole of the plow running on a horizontal plane, as illustrated in the drawings. In rear of the drill-tooth a toothed or fingered coverer C is pivoted, it being connected to brackets *d* of said tubular portion A. The fingers or teeth *e* are formed on a V-shaped body portion *f*, and they are divergent right and left from the line of draft, so as to pass over the whole width of the furrow which is to be covered. The teeth or fingers *e* are curved—that is, the front sides of these fingers or teeth are concave from their points *g* to *g'*, and their rear sides are correspondingly convexed, as shown. This coverer articulates freely on its pivot-connection *d'* and acts similarly to harrow or rake teeth, and as the drill passes over the ground it comminutes or breaks up the earth and draws the same over the grain in the furrow in a perfect manner, and in case of any obstruction, as a stump or other object coming in contact with its fingers or teeth, it rises and passes over the same and again falls to its proper position.

By referring to Fig. 2 of the drawings, another important operation of the coverer will be seen. In this figure the drill-tooth is represented as having been backed sufficiently to cause the convex sides of the teeth of the coverer to come in contact with the surface of the ground and the drill-tooth to have been thrown upward at its point, and the parts having assumed this position the drill proper can be backed to any extent desired without any obstruction from the coverers, the teeth of said coverers serving in the position shown in Fig. 2 an office similar to that served by sleigh-runners, they allowing the drill-teeth to ride backward upon them. As soon as the drill proper is again started forward each coverer resumes its normal position.

What I claim as my invention is—

1. The tubular portion A of a drill-tooth, formed with the angular surface between α' and α^3 on its inner front wall, substantially as described. 50

2. The tubular portion A of a drill-tooth, formed with a backwardly-deflecting surface between the points α^2 α^3 , substantially as described. 55

3. The tubular portion A of the drill-tooth, formed with a downwardly-flared backwardly-deflecting surface and with a passage of an oblong form in transverse section near the distributing end of said tubular portion, substantially as described. 60

4. The tubular portion A of a drill-tooth, provided with an abutment-lug at its front lower end portion, substantially as described. 65

5. The combination of the double-winged sharp-edged plow with the tubular portion A of a drill-tooth, said plow bearing against the abutment and attached to the portion A above said abutment and having its base parallel with the horizon and its wings extended considerably below and in rear of the distributing end of said tubular portion, substantially as described. 70 75

6. The coverer hinged by its upper end to the drill-tooth and having its teeth formed with a front concave surface and a convex-curved or sleigh-runner-shaped rear surface from their points to a suitable distance upward, the point on which the coverer swings backward and forward being at such an altitude with respect to the length of the coverer and located so that the teeth of the coverer are compelled to swing forward with their rear curved surface in contact with the ground during any backward movement of the drill-tooth and thus made to serve as runners for the tooth to ride on during its backward movement, substantially as described. 80 85 90

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

JAMES H. PURDY.

Witnesses:

WM. S. CORNWELL,
A. C. HARWICK.