A. J. NELLIS.
Plow-Beam.

No. 219,006. Patented Aug. 26, 1879.

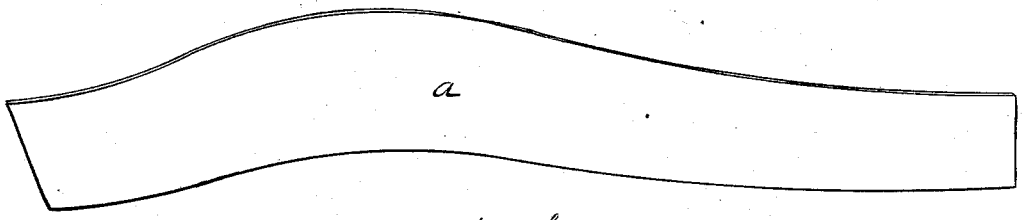

Fig. 1.

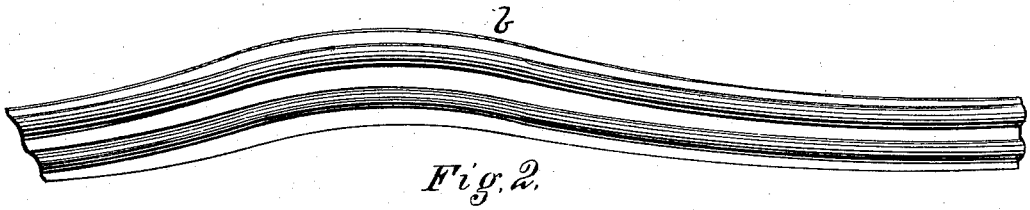

Fig. 2.

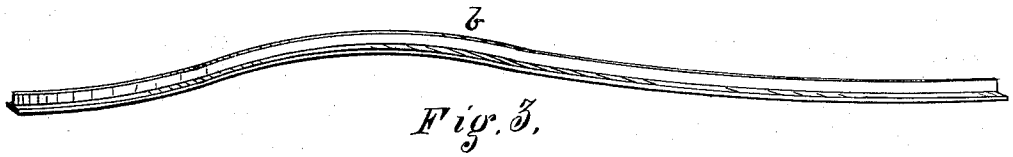

Fig. 3.

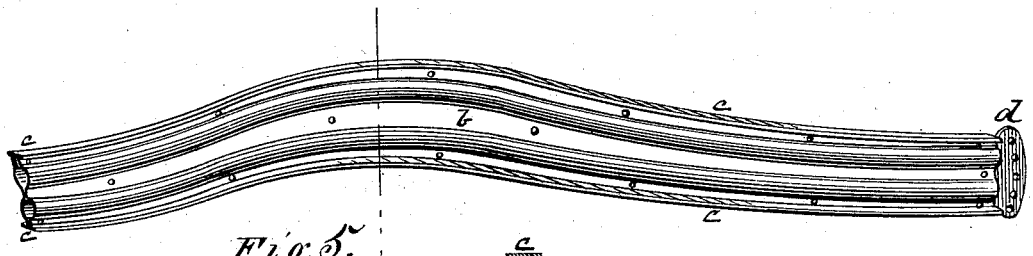

Fig. 5.

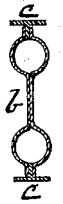

Fig. 4.

Witnesses.
John K. Smith
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UNITED STATES PATENT OFFICE.

AARON J. NELLIS, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN PLOW-BEAMS.

Specification forming part of Letters Patent No. **219,006**, dated August 26, 1879; application filed July 14, 1879.

To all whom it may concern:

Be it known that I, AARON J. NELLIS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Plow-Beams; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a view of the blank from which my improved plow-beam is made. Figs. 2 and 3 are side and edge views of the finished beam. Figs. 4 and 5 are views of a plow-beam composed of two pieces like Fig. 2, and having edge pieces formed of T-iron.

Like letters of reference indicate like parts in each.

Plow-beams have heretofore been made of wood and of solid bars of iron. The requisites of a good beam are strength, stiffness, lightness, and durability. These have been obtained in only a limited degree in prior beams, and where one or more of them have been present the others were lacking or were possessed in an inferior degree.

My invention, which consists of a corrugated sheet-metal beam, possesses these properties to an eminent degree.

I form my improved beam from a blank, *a*, of sheet iron or steel of any desired thickness, but preferably of from 15 to 25 gage, which is from one-sixty-fourth to one-sixteenth of an inch in thickness, and of the requisite form, by rolling, stamping, or pressing in suitable rolls or dies, the desired curve or outline of the beam being preserved in such operation. This produces a beam, *b*, Fig. 2, which is designed for cultivators and light plows.

For heavier plows I make the beam by placing two or more pieces, *b*, face to face, and riveting or otherwise uniting them either with or without the T-pieces *c* between them. The beam may have one or more corrugations, as may be desired. It is fitted with a clevis, *d*, and attached to the plow in the usual way.

Thus I obtain a strong, stiff, light, elastic, and durable plow-beam, and that at a largely-reduced cost. The T-pieces may be of the same material as the pieces *b*. This beam can be made elastic without impairing its strength.

I am aware that plow-beams have heretofore been formed by casting the same with lateral flanges at the edges of the web, and with truss-ribs crossing the web and connecting the lateral edge flanges, in order to strengthen the beam against torsional strain; and I am also aware that a plow-standard has been formed with corrugations concentric with the cutting-edge of the plow, in order to enable it to resist the angular force brought to bear on it when the plow is in use; and, further, that cultivator-sweeps have been provided with horizontal and vertical ribs, in order to prevent them from bending either vertically or horizontally, and do not herein claim such devices, first, because cast-metal plow-beams, whatever may be the shape given them to secure greater strength, will always be of excessive weight, and illy adapted for use with the heavier class of plows, wherein chilled land-sides, &c., are employed; secondly, because the material employed will, from its nature, have little spring, and if ribbed or corrugated will be devoid of spring, and its ability to resist sudden shocks will be proportionately decreased; and, thirdly, because the structure of cast metal illy fits it to resist the sudden shocks to which a plow-beam is subject, whereas a beam constructed as described by me, while being both light and strong, will possess sufficient elasticity to enable it to resist either sudden shocks or torsional strain.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A plow-beam composed of one or more longitudinally-corrugated blanks of sheet iron or steel, substantially as and for the purpose specified.

2. The plow-beam composed of two longitudinally-corrugated blanks, united by rivets, and arranged parallel with the concavities of the corrugations, facing each other, substantially as and for the purpose specified.

3. The plow-beam formed by the combination of two longitudinally-corrugated sections, arranged face to face, and two T-edge pieces, riveted between the corrugated sections at the top and bottom edges thereof, substantially as and for the purpose specified.

In testimony whereof I, the said AARON J. NELLIS, have hereunto set my hand.

AARON J. NELLIS.

Witnesses:
JAMES H. PORTE,
JNO. K. SMITH.