

(No Model.)

S. H. WOOLDRIDGE.  
Plow.

No. 232,868.

Patented Oct. 5, 1880.

Fig1.

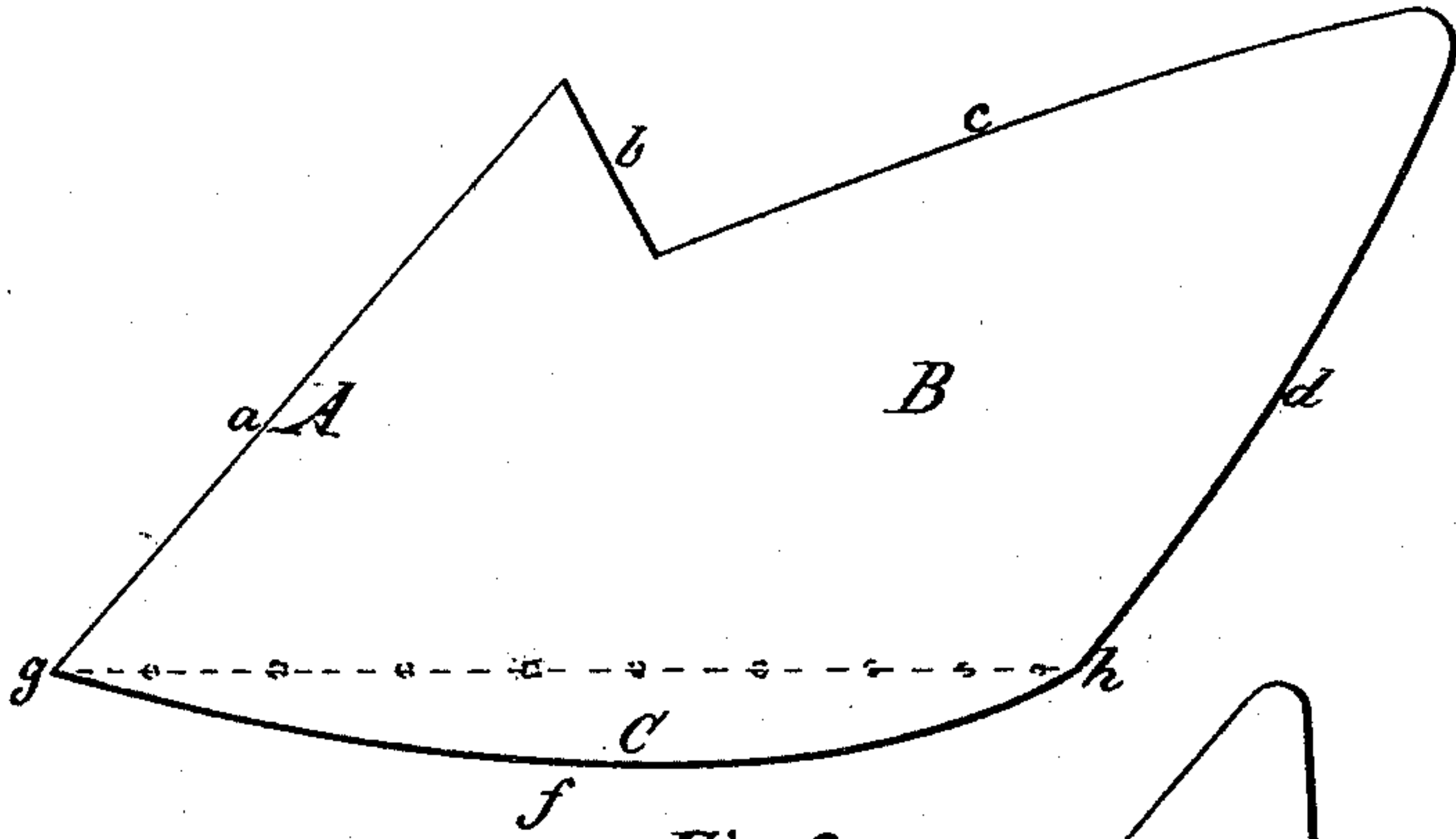


Fig2.

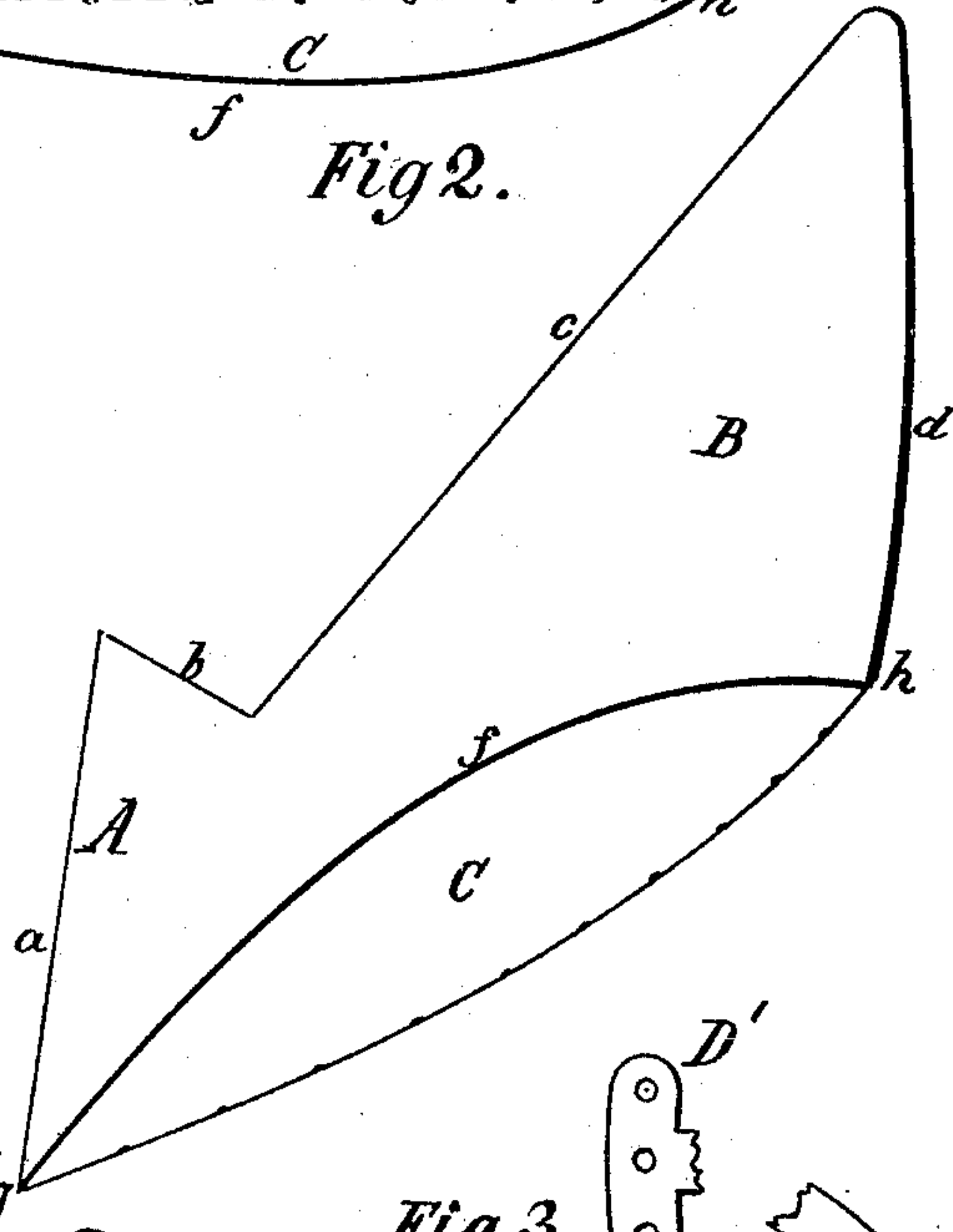


Fig5.

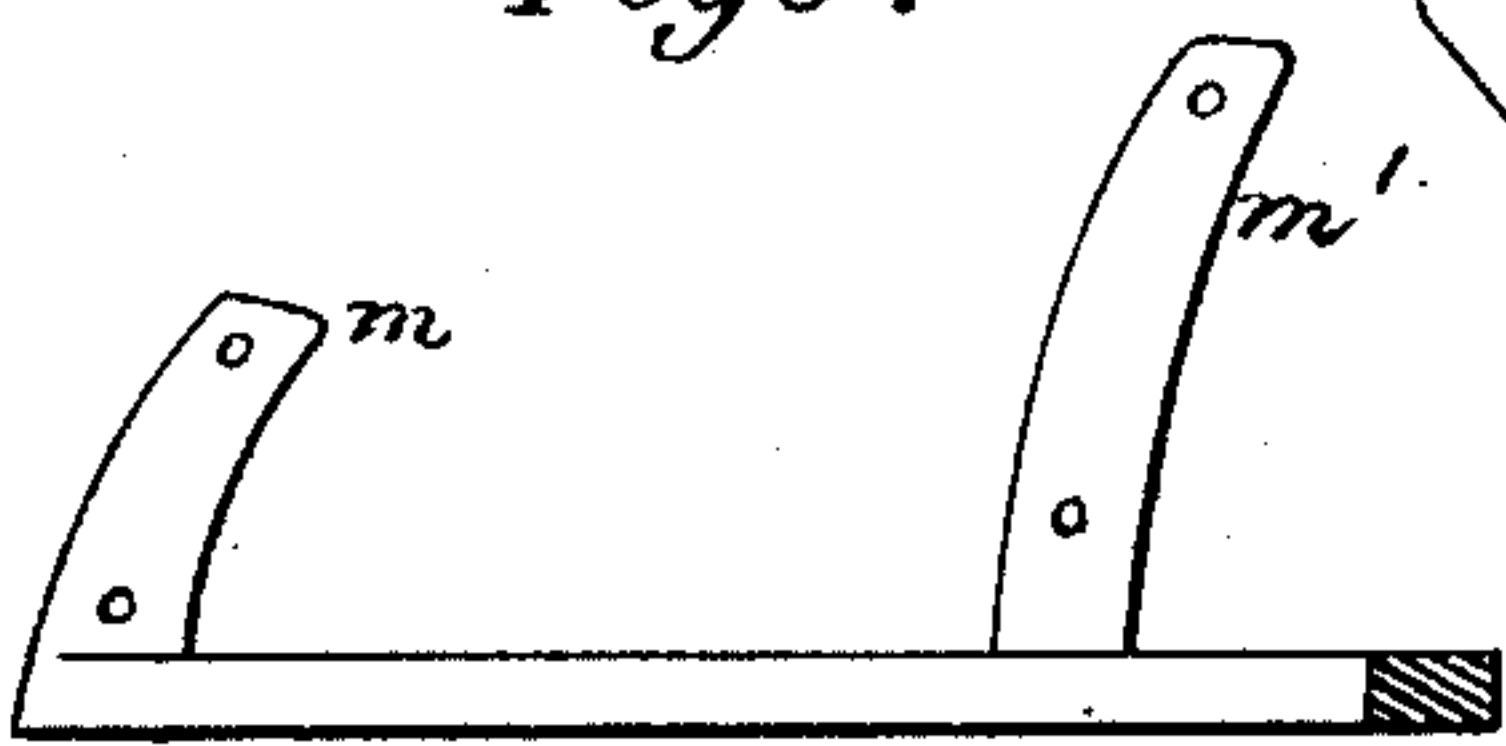
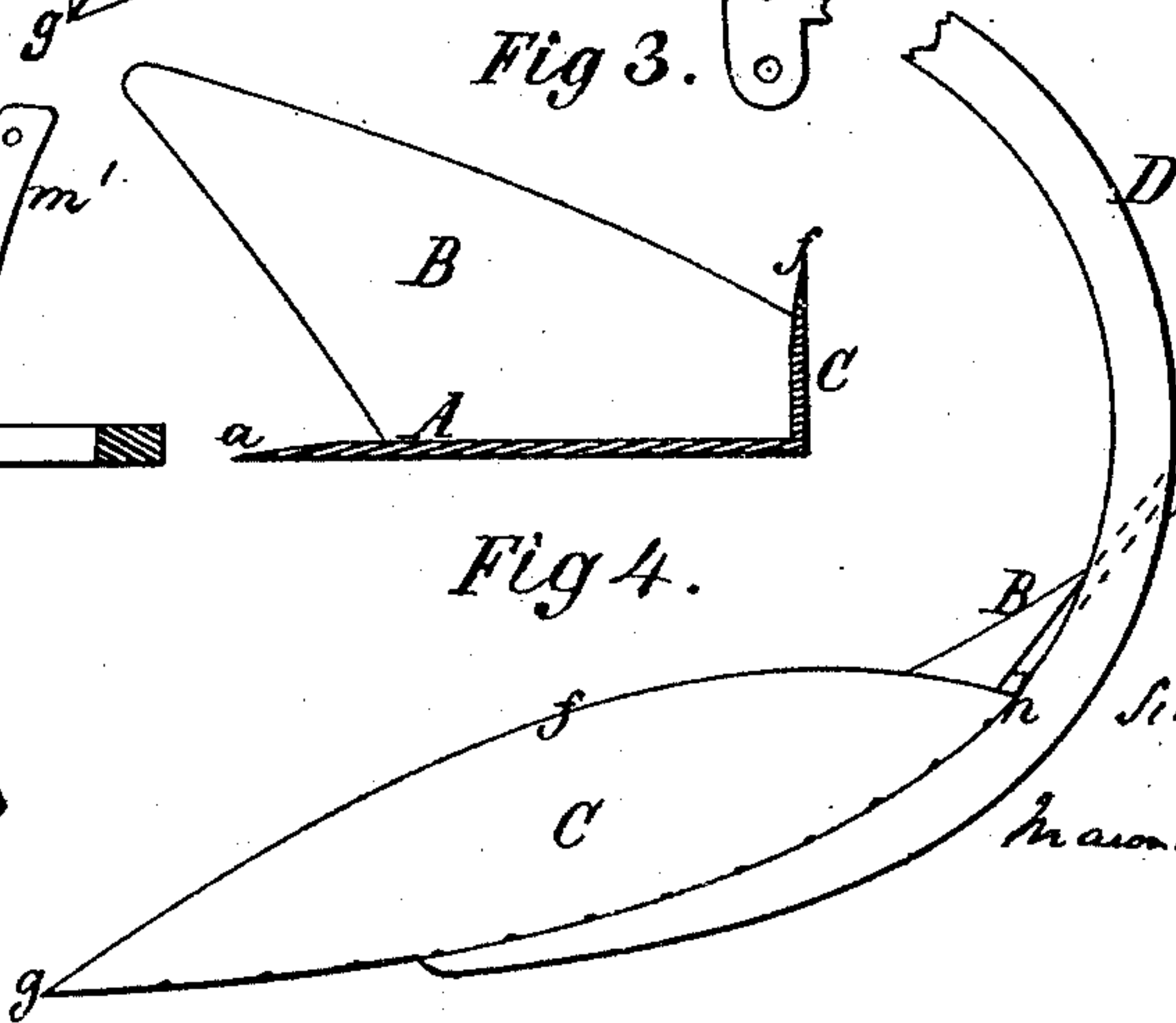


Fig3.



Fig4.



Witnesses:  
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Silas H. Wooldridge  
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# UNITED STATES PATENT OFFICE.

SILAS H. WOOLDRIDGE, OF VENICE, ILLINOIS.

## PLOW.

SPECIFICATION forming part of Letters Patent No. 232,868, dated October 5, 1880.

Application filed May 13, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, SILAS H. WOOLDRIDGE, a citizen of the United States, residing at Venice, in the county of Madison and State of Illinois, have invented a new and useful Improvement in the Manufacture of Plows, of which the following is a specification.

My invention relates to an improvement in that description of plow which has a vertical cutting-blade riveted to the landside edge of the mold-board and share portions thereof; and the object of my improvement is to avoid the necessity of riveting or welding the vertical cutter to the mold-board and share portions of the plow by constructing the mold-board, share, and vertical bracing-cutter of a single piece of wrought metal, the mode of manufacture being as hereinafter specified.

The drawings represent my improved article of manufacture detached from, and also attached to, the plow-beam.

Figure 1 shows a wrought-metal plate cut to form a share, mold-board, and cutter. Fig. 2 is a perspective view of the share, mold-board, and cutter formed out of the plate shown in Fig. 1. Fig. 3 is a vertical cross-section of Fig. 2, showing the share and vertical cutter drawn out to a thin edge during the bending and shaping operation. Fig. 4 is a landside view of the improved plow applied to its standard and beam. Fig. 5 is a horizontal section of the standard and beam, showing a top view of the braces or supports for the share and mold-board.

Similar letters refer to like parts in the several figures.

To make the plow, comprising in one piece a share portion, A, mold-board portion B, and a vertical cutter portion, C, take good steel or wrought metal rolled into a sheet form, and with a pattern mark out the share edge *a* and its rear shoulder, *b*, also the right and left edges *c* and *d* of the rear portion of the mold-board; next mark the curved upper edge, *f*, of the vertical cutter portion by the pattern. This done, cut out the plow-blank with suitable shears. The share edge and the edge of the cutter are thinned down and the blank placed upon a concave or convex former corresponding to the desired shape of mold-board and share, and bend it by a die or hammer to the

proper shape. A line is now struck from the point *g* to the point *h*, as indicated by dots in Fig. 1, and marks are made with a center-punch along this line, as shown. The bent blank is then heated so that its outer edge is hotter than the body portion thereof, and while thus heated the portion which forms the cutter C is gradually turned up so as stand at right angles to the horizontal lines of the share and mold-board. When the metal cools the cutter contracts in a manner to act as a tie-brace between the upper and lower portions of the mold-board, and thus serves to keep the mold-board in its proper curved form, as well as answering as a cutter and landside.

A cutter thus formed on the mold-board offers no undue friction to the earth, which is not the case when the cutter is riveted or otherwise fastened, and it is more durable and permanent than cutters which are welded or riveted in position, and as a continuous brace for holding the mold-board in its bent form it is far superior to a riveted cutter.

The mold-board plow — comprising share, cutter, and mold-board in one piece — can be sharpened after it is bent and shaped, as described, and it can be attached to a curved beam, D, provided with bolting braces or arms *m m* and with a clevis-head, D', which regulates the depth of cut; or it may be used in connection with any other beam of appropriate construction.

It has been common heretofore to form a vertical cutter between the front end and upper rear terminus of the mold-board of a plow, and also to form a landside-bar on the mold-board and share united, and these parts have been proposed to be made of a single piece of metal; but such construction differs from mine in that the cutter is not extended from the extreme point of the plow to the extreme landside upper portion of the mold-board, as shown in my drawings, which construction serves to retain the curved or concave form of the mold-board and share by a bracing action, such bracing action being insured by the special process adopted by me in manufacturing the plows — to wit, heating the upper thin edge of the cutter portion of the plate much hotter than the body portion, and then bending up the plate. The plate in cooling thus is enabled



to contract to the greatest extent at the turned-up thin edge of the cutter portion, and in thus cooling it causes a downward thrust upon the curved mold-board, and this thrust is met by the two extreme ends of the plate as abutments, and the result is the curvature of the mold-board and share is held during the use of the plow.

What I claim as my invention is—

10 1. The plow comprising share A, mold-board B, and cutter C, made of one piece of sheet metal, the cutter of said plow extending from the point *g* to the point *h*, and serving the office of both a cutter and a brace for retaining the curved form of the share and mold-board, as herein described.

15 2. The process of making the combined share, mold-board, and cutter, consisting in cutting out the plate in the form shown in Fig. 1, forming

ing gage-marks for bending up the cutter between the points *g* and *h*, sharpening the edges *a* and *f*, bending the plate into a concave form, corresponding to that required for the upper surface of the share and mold-board, then heating the mold-board and share portions to a moderate degree, and the cutter portion to a comparatively high degree, hottest near the edge *f*, and while the plate is thus heated bending up the cutter at right angles to the horizontal portion of the mold-board and share, the bending operation being effected gradually, and the contraction of the cutter portion being greater than that of the mold-board and share portions of the blade, all as described.

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