

(No Model.)

G. E. HOPKINS.

FERRULE.

No. 295,399

Patented Mar. 18, 1884.

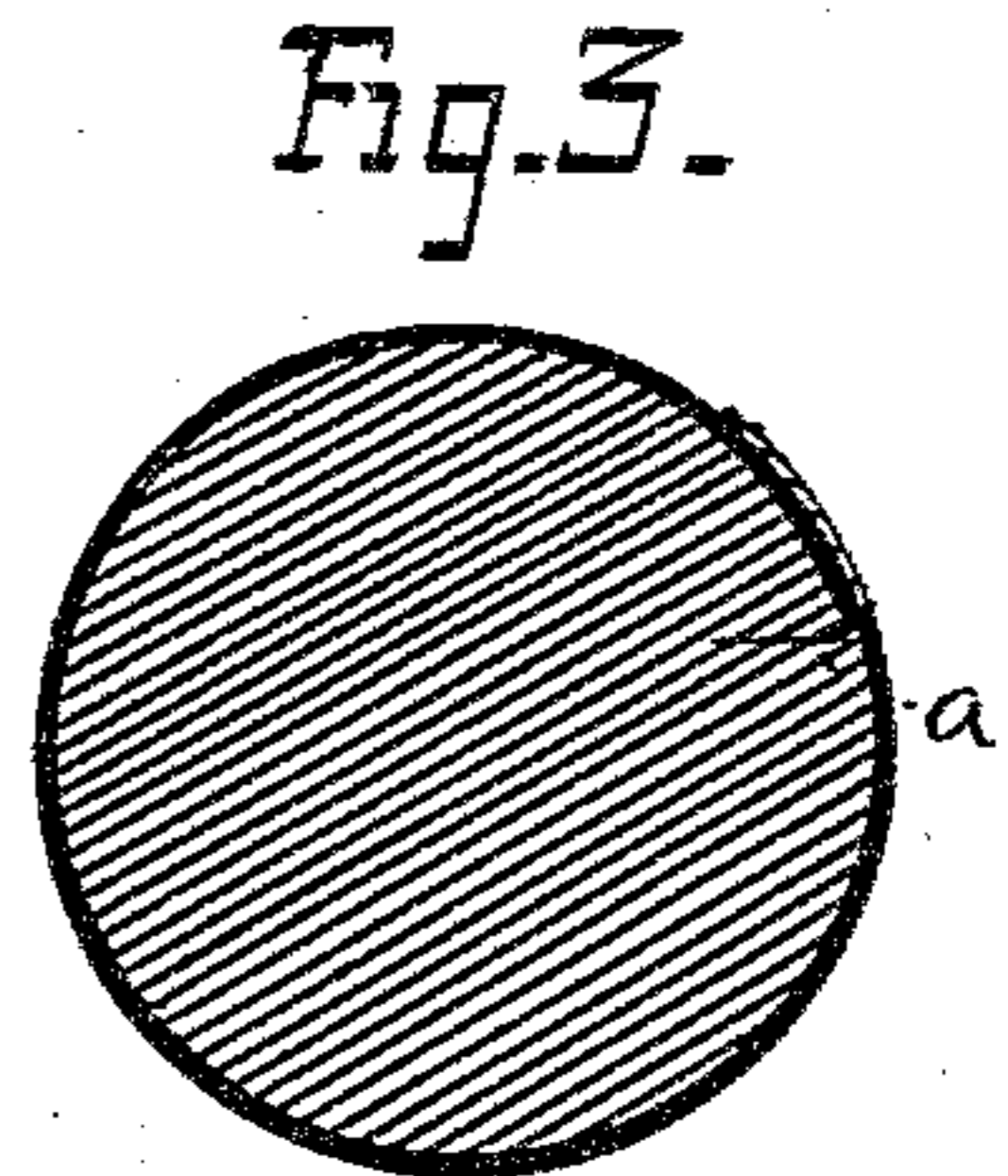
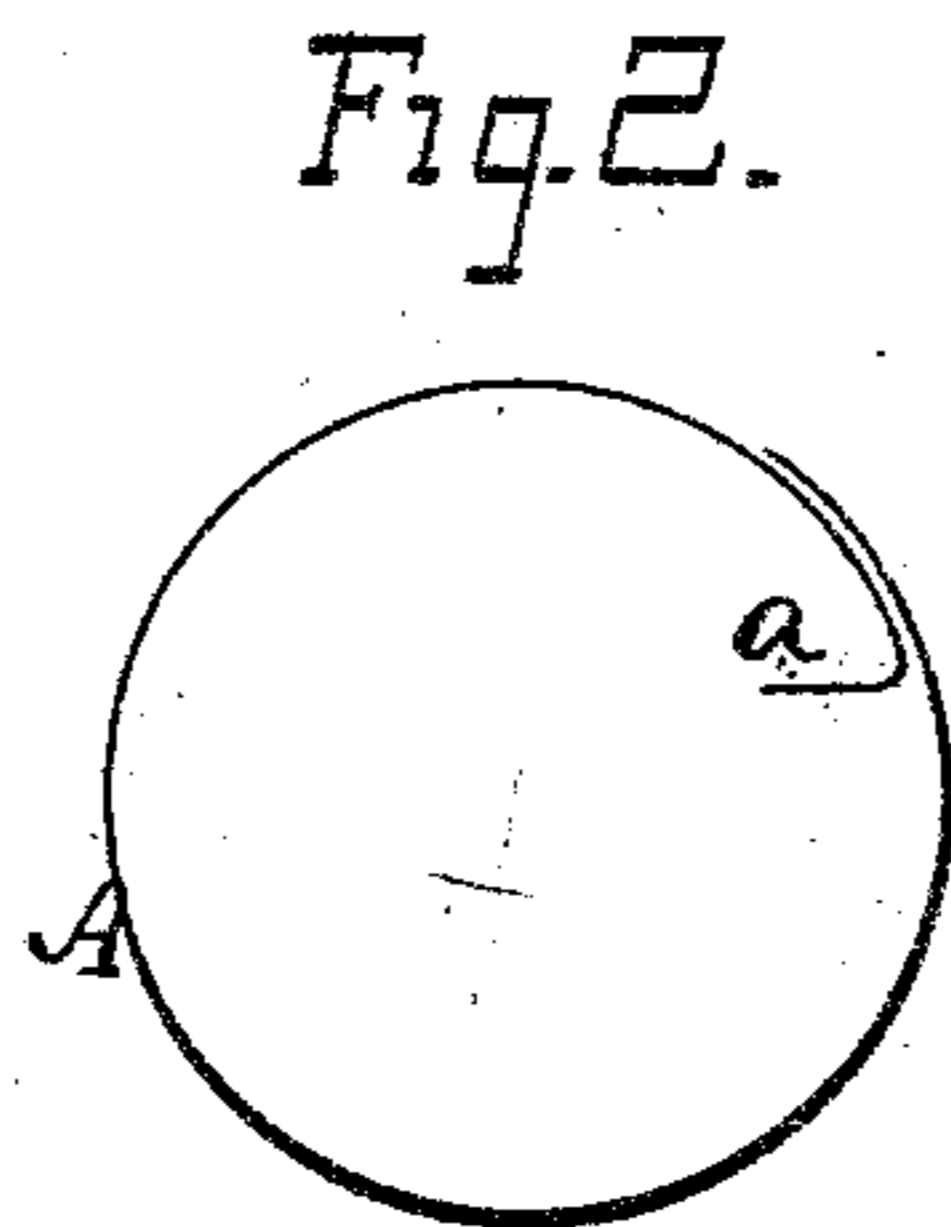
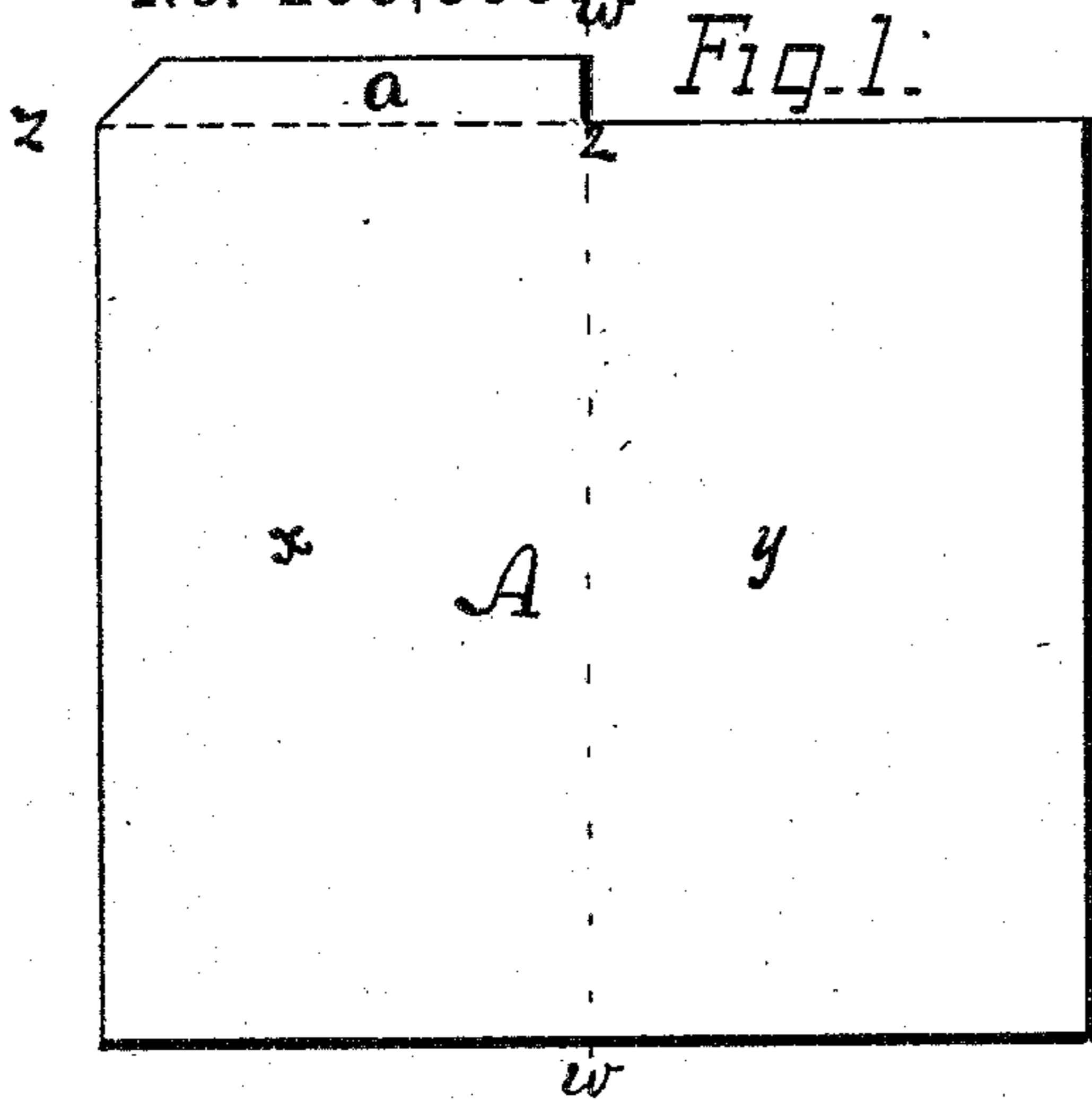


Fig. 4.

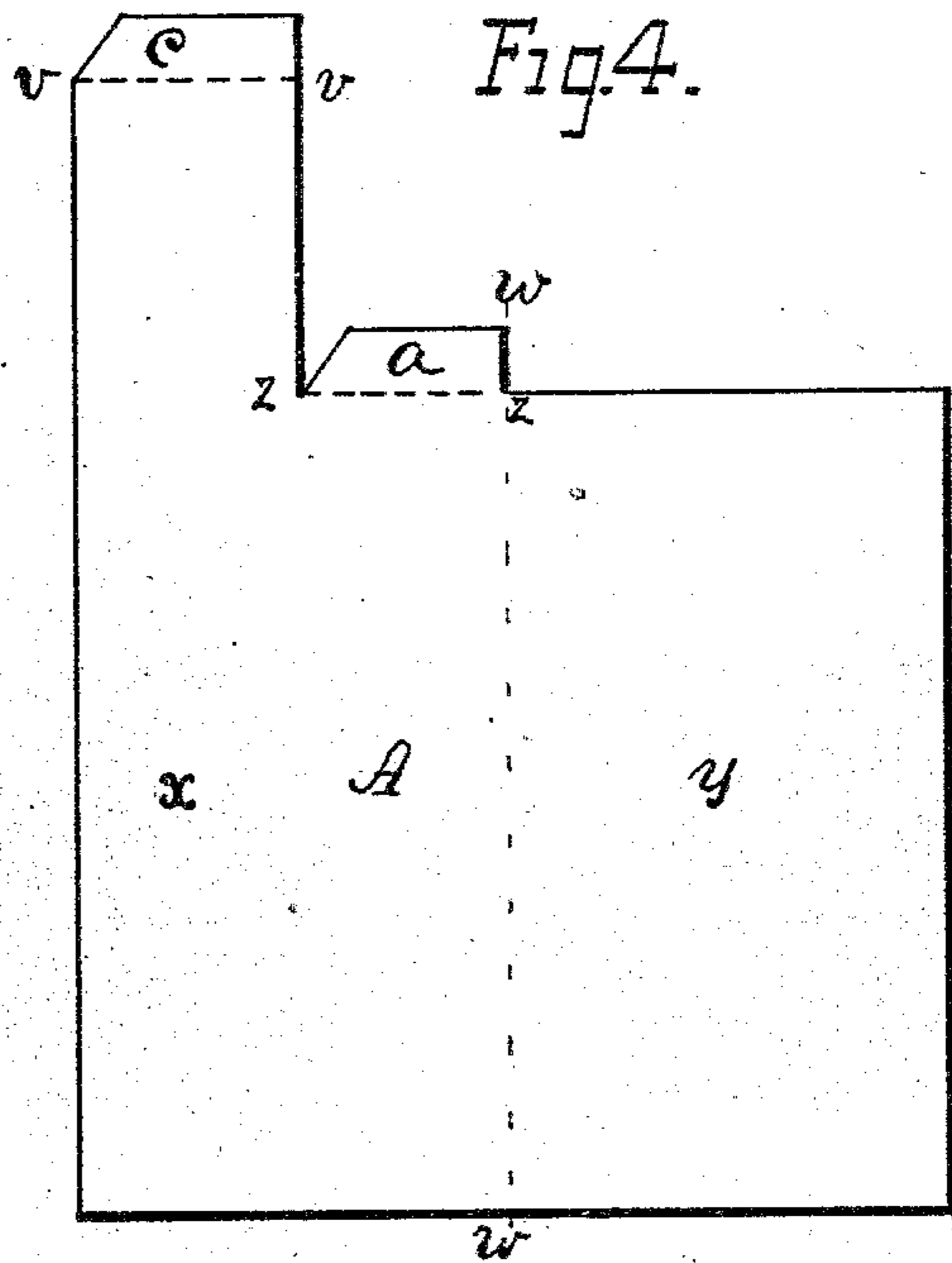
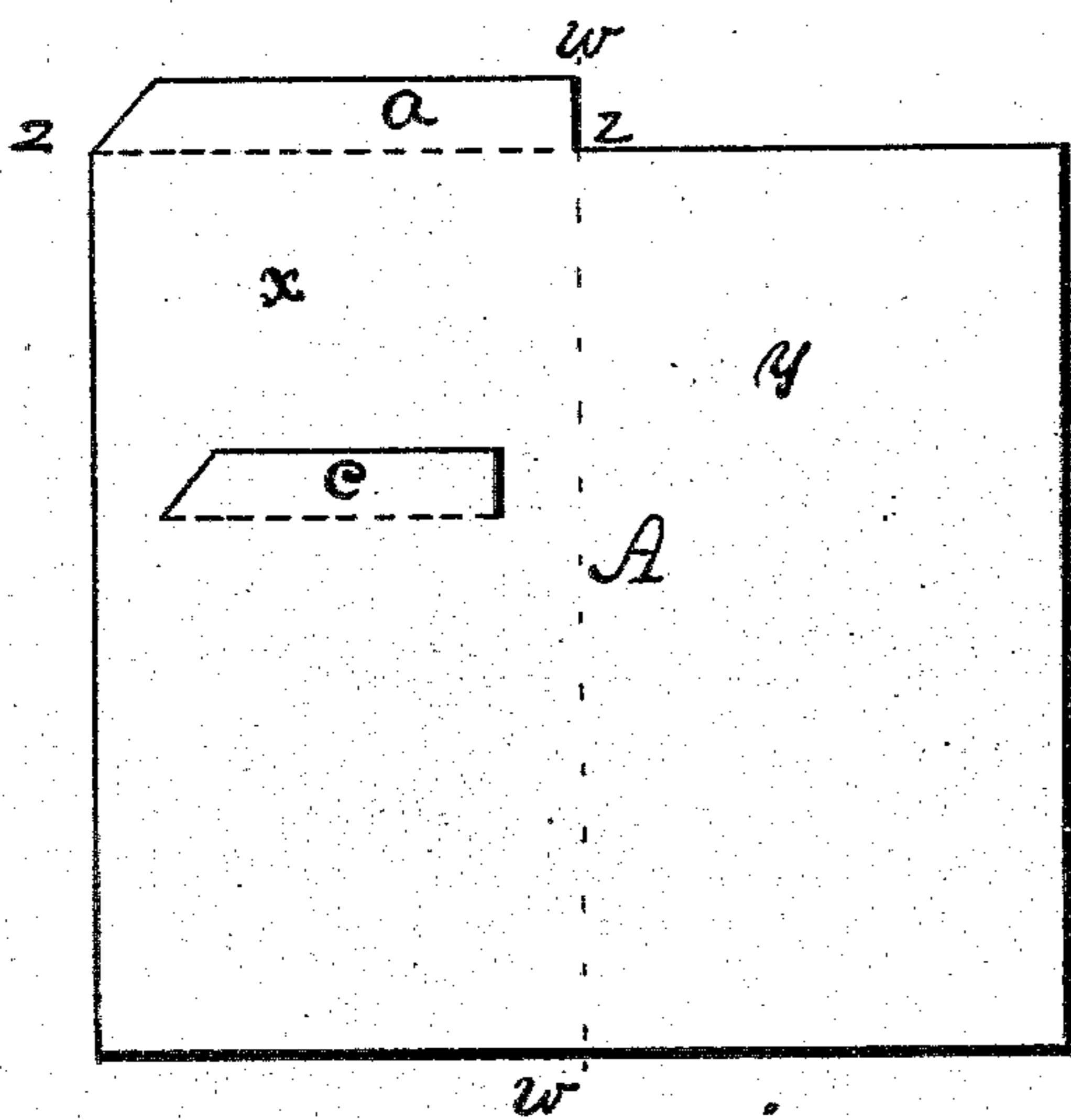
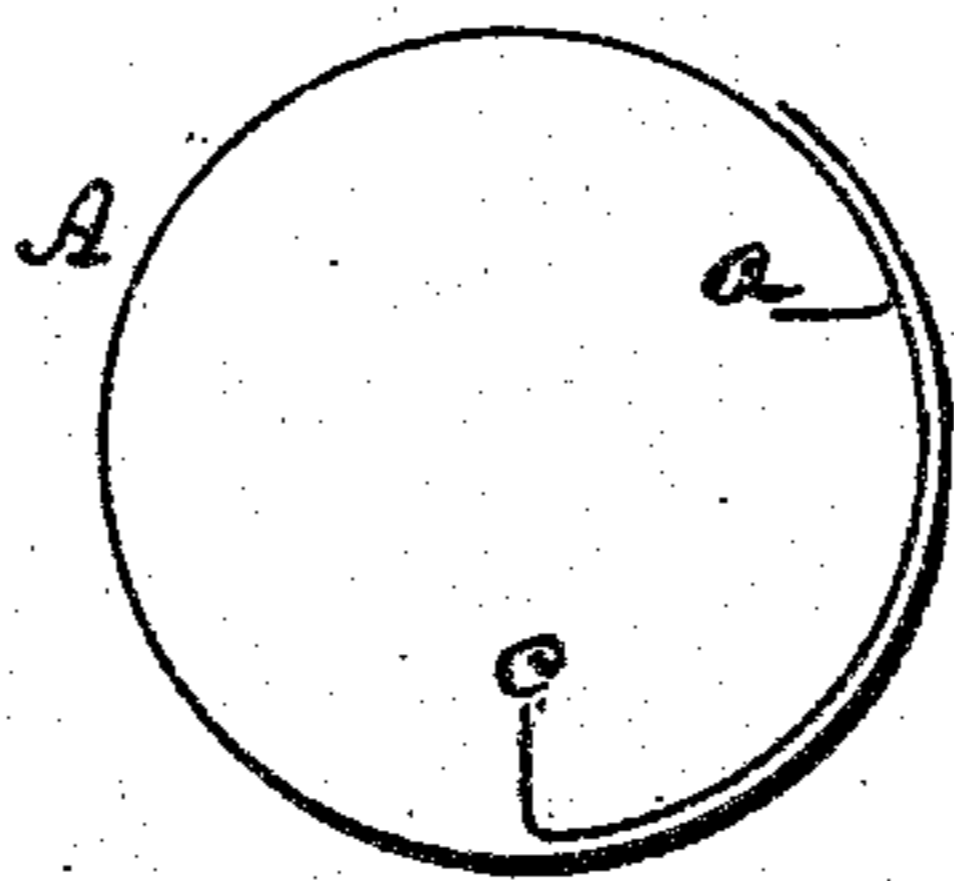


Fig. 5.



Witnesses

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Inventor,

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By his attorney,

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UNITED STATES PATENT OFFICE.

GEORGE E. HOPKINS, OF CINCINNATI, OHIO.

FERRULE.

SPECIFICATION forming part of Letters Patent No. 295,399, dated March 18, 1884.

Application filed July 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. HOPKINS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented an Improvement in Ferrules for Brushes; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention consists in an improved ferrule for securing the bristles or hairs to the brush-handle by a particular construction, as hereinafter described, to prevent the ferrule and the bristles or hairs from working loose, applicable especially to paint-brushes and artists' brushes.

In the drawings, Figure 1 represents a sheet-metal blank from which my improved ferrule is formed. Fig. 2 is an end view of the ferrule formed therefrom; Fig. 3, a cross-section of a brush across the handle and the improved ferrule applied thereto; Fig. 4, a view of a blank for forming a construction of the ferrule containing an additional feature; Fig. 5, an end view of the ferrule formed therefrom; Fig. 6, a view of a modified form of a blank for producing this additional feature of construction.

Like letters designate corresponding parts in all the figures.

The "sheet-tin," or other sheet metal from which the ferrule is formed, is first cut into a blank, A, of the form shown in Fig. 1, with a projection, *a*, on one edge next to one end thereof, this projection preferably being as long, or thereabout, as that portion of the ferrule which laps over the handle of the brush, the dotted line *w w* indicating the dividing-line between the handle portion *x* and the bristle portion *y* of the ferrule. This projection *a* is then bent to a position substantially at right angles to the main part of the blank along the line *z z*, then, when the blank is formed into a ferrule, the edge on which the part *a* projects is made to come inside of the opposite edge, *b*, of the blank which overlaps it, as shown in Fig. 2, and is soldered to the under lap. The part *a* forms a flange projecting radially inward, which, being thin, readily cuts its way into

the wooden handle B as the ferrule is driven thereon. Thus it keeps the ferrule from turning in either direction, and thereby prevents the working loose of the ferrule and bristles or hairs, this being principally caused, with ordinary brushes, by the twisting action consequent on the use of the brush. To facilitate the entering of the flange into the handle, the outer corner is preferably clipped, as shown in Fig. 1. The sheet tin or metal very easily enters the wood, since it is made very thin, and the flange need not exceed one-eighth of an inch in width. For large brushes, where it is desirable to make the ferrule of thicker metal, the brush-handle may be first slit with a saw or cutter where the flange is to enter. The bristles may be inserted in the ferrule either before or after the ferrule is put upon the handle, in the first case the ferrule being driven upon the handle, and in the second case the ferrule being held by a clamp and the handle driven into it; also, the flange *a* may be turned up after forming the ferrule instead of before, as described. In some cases, especially the larger paint-brushes, it will be desirable to have two of these holding-flanges; and I prefer to arrange them at right angles to each other, or thereabout. In Fig. 4 I have shown a way to form a blank for this purpose. I take half the length of the part of the ferrule which goes upon the handle for one flange, and the other half of the same for the other flange. The first flange, *a*, will be next to the middle of the blank edge, and the other flange, *c*, will project beyond the first far enough to reach a quarter (more or less) around the handle, thus forming the two flanges at right angles to each other, as shown in Fig. 5. The flange *c* is bent over on the line *v v*. Another method of forming the second flange is shown in Fig. 6. Here the flange *c* is punched from the body of the metal, while the main flange *a* is formed just as shown in Fig. 1, where only a single flange is used.

This improved ferrule is applicable to flat as well as round brushes.

What I claim as my invention is—

1. The method of forming ferrules for brushes, which consists in forming the blank with a

projection, *a*, on one edge, bending the projection to a position at right angles, or thereabout, to the body of the blank, then forming the ferrule with the flanged edge overlapped
5 by the opposite edge of the blank.

2. A sheet-metal ferrule provided with one or more internally-projecting flanges, formed by bending inward a portion or portions of

the plate of which the ferrule is made, for the purpose set forth.

In testimony whereof I have signed my name in presence of two witnesses.

GEORGE E. HOPKINS.

Witnesses:

GEO. H. PEET,

C. L. DOEGEN.