(No Model.) 2 Sheets—Sheet 1.

D. B. HILTON.

METAL LATH.

No. 551,766. Patented Dec. 24, 1895.

FIG. 1.

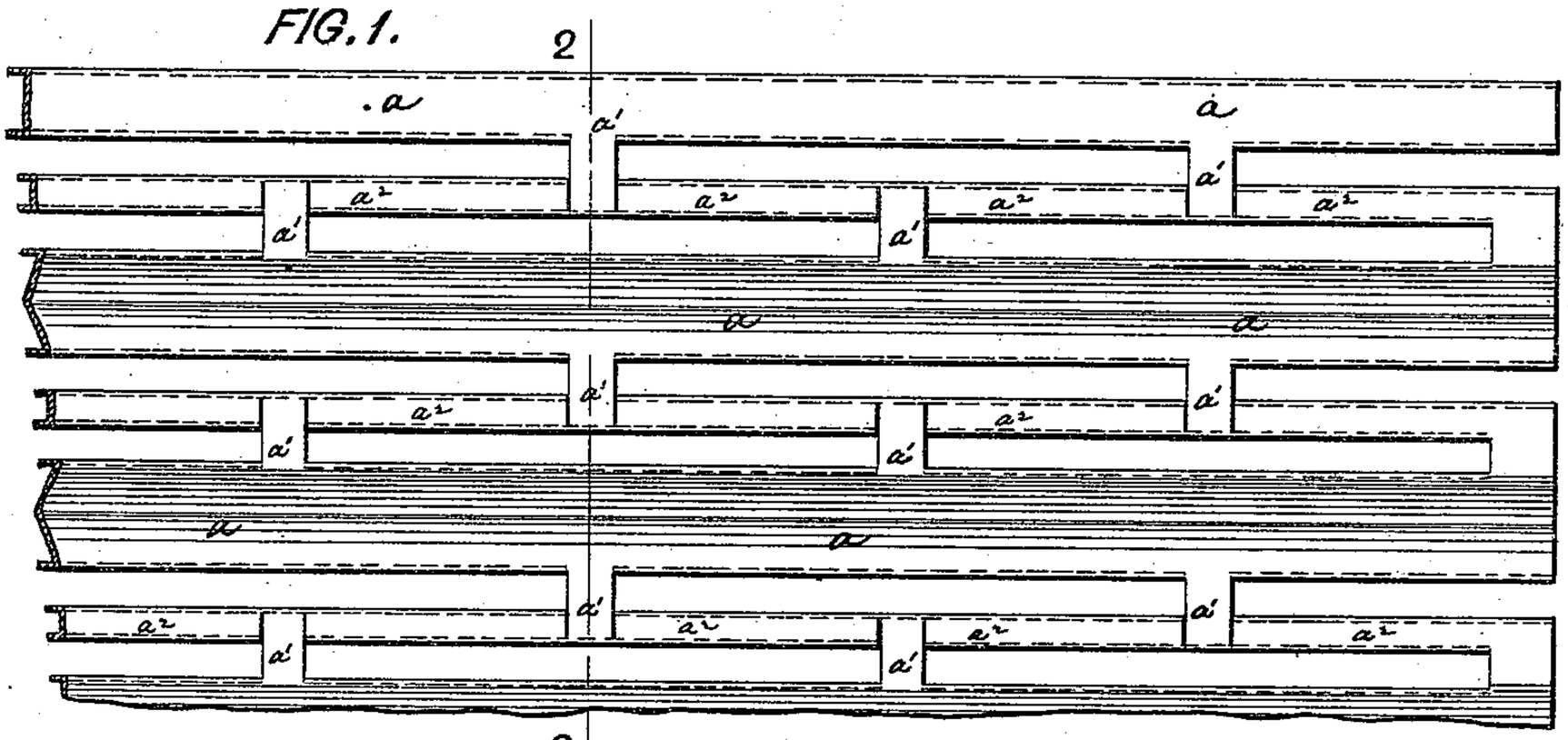


FIG. 2.

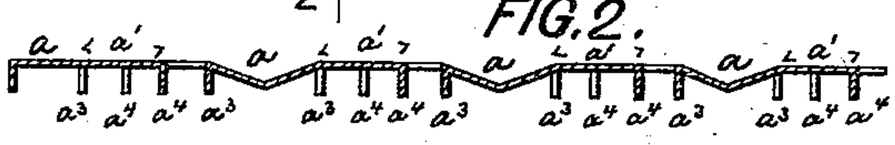


FIG. 3.

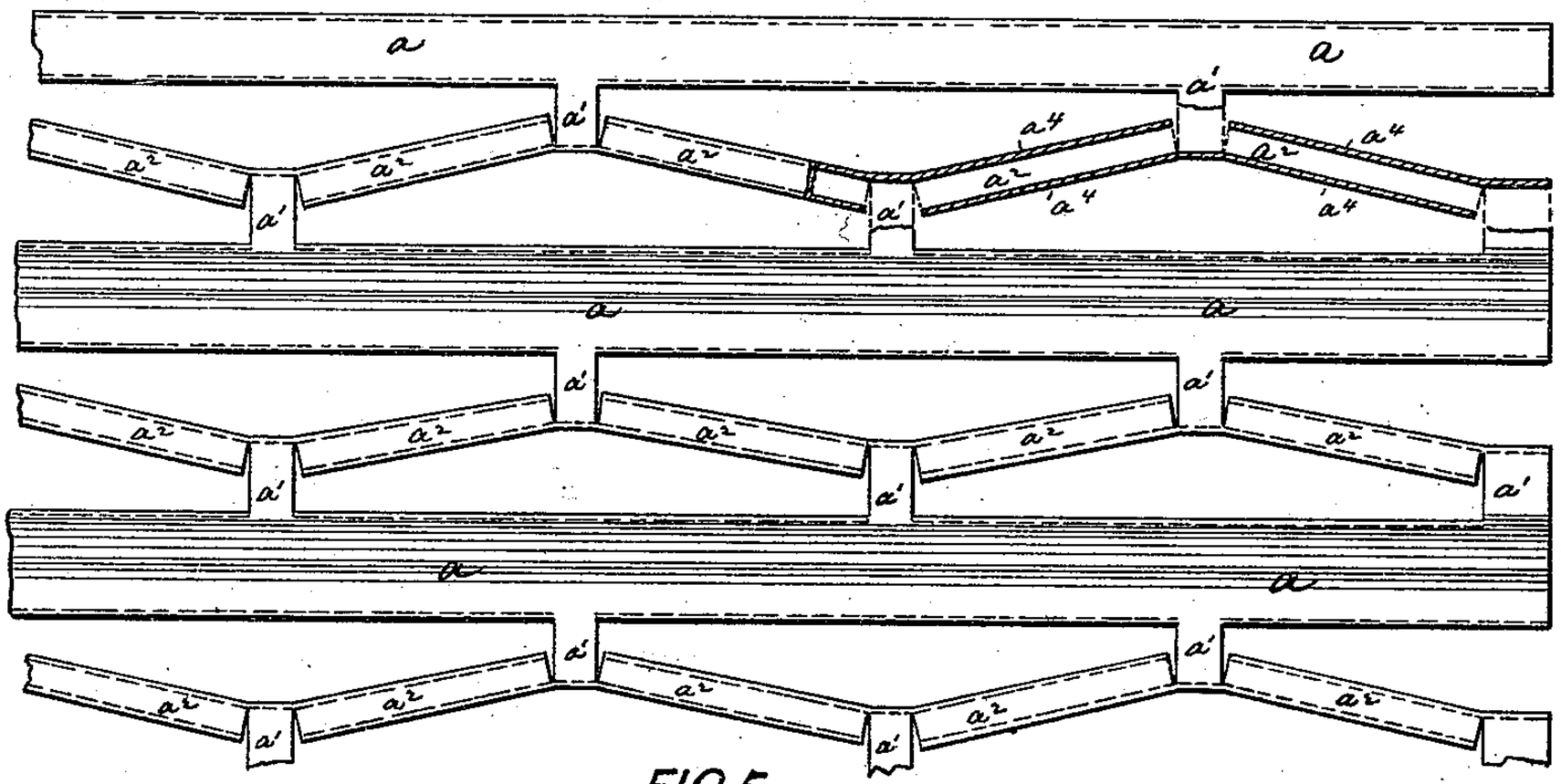
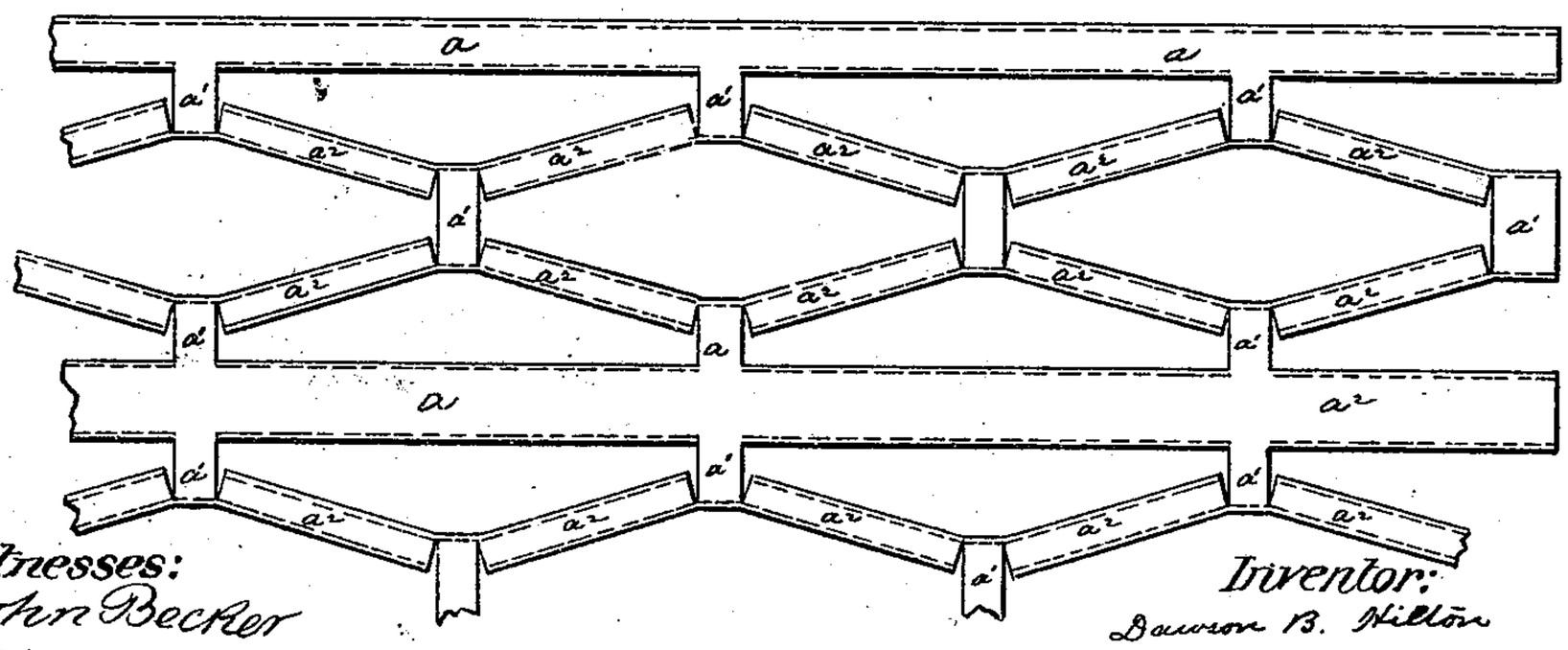


FIG. 5.



Witnesses:
John Becker
Theodore Becker.

Inventor:
Dawson B. Hilton
by his attorneys
Roeder & Brisben

(No Model.) 2 Sheets—Sheet 2.

D. B. HILTON.

METAL LATH.

No. 551,766. Patented Dec. 24, 1895.

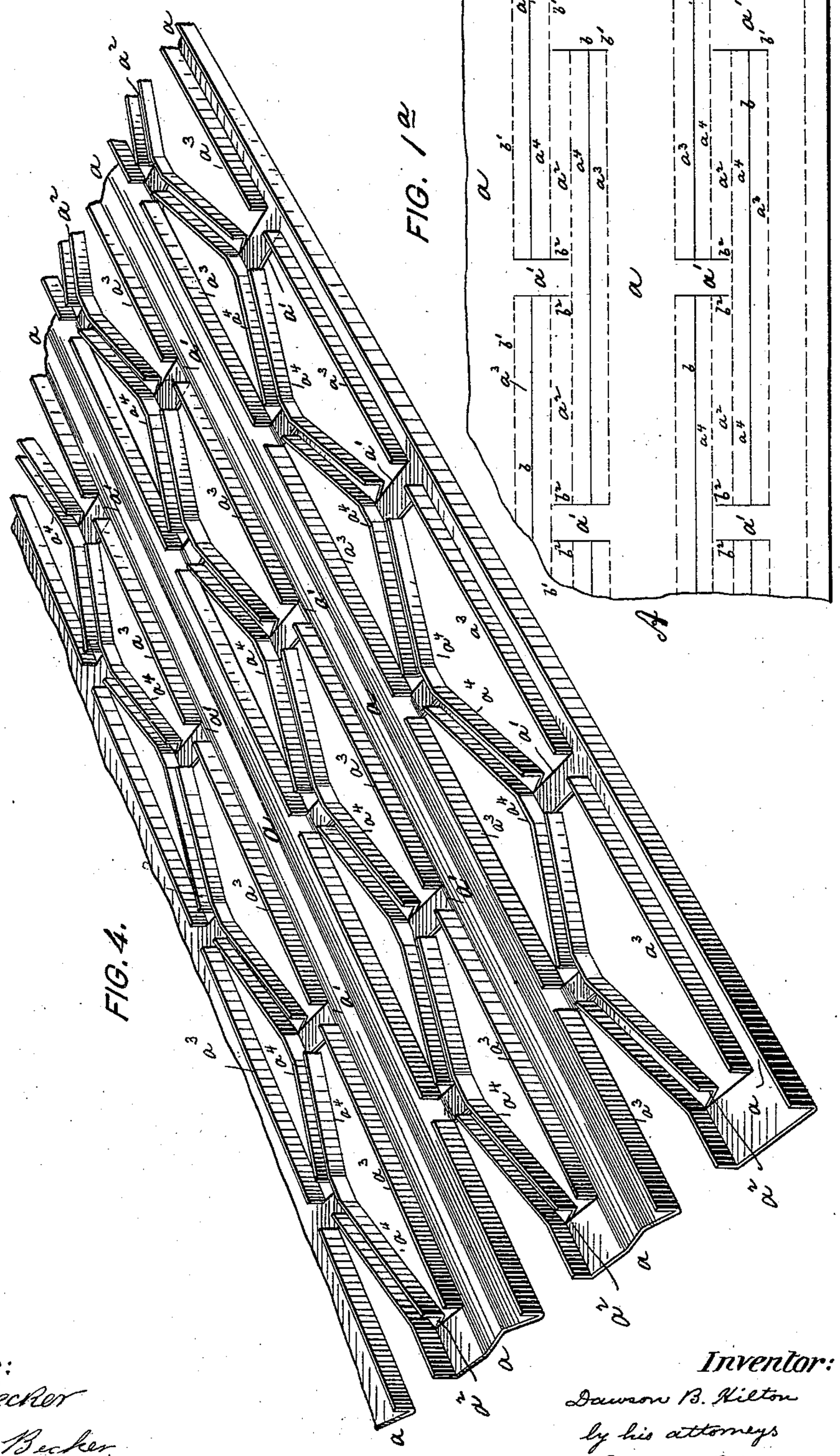


FIG. 4.

FIG. 1.

Witnesses:
John Becker
Theodore Becker.

Inventor:
Dawson B. Hilton
by his attorneys
Roeder & Briesen

UNITED STATES PATENT OFFICE.

DAWSON B. HILTON, OF BROOKLYN, NEW YORK.

METAL LATH.

SPECIFICATION forming part of Letters Patent No. 551,766, dated December 24, 1895.

Application filed July 16, 1895. Serial No. 556,186. (No model.)

To all whom it may concern:

Be it known that I, DAWSON B. HILTON, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Metal Laths, of which the following is a specification.

This invention relates to a metal lath so constructed that a given size of sheet metal will produce a lath of increased area without distorting, expanding or thinning out the metal. Thus the manufacture of the lath is greatly cheapened, while at the same time its weight is reduced and its strength is not impaired.

In the accompanying drawings, Figure 1ª is a diagram showing the lines of the cuts in the blank. Fig. 1 is a plan of my improved metal lath before it is spread. Fig. 2 is a cross-section on line 2 2, Fig. 1. Fig. 3 is a plan, partly in section, of the completed lath; Fig. 4, a perspective view of the same looking at the bottom of Fig. 3, and Fig. 5 is a plan of a modification.

My improved metal lath when completed is composed of longitudinal sections or strips a, provided with laterally-projecting lugs or tongues a', the tongues of adjoining strips breaking line, Fig. 3. These tongues a' of adjoining strips are connected by the flanged inclined sections or diagonal arms a^2, which have been drawn from a straight into their inclined position by a lateral pull on the lath-body to bend the flanges. In this way the width of the lath-body is greater than the width of the work-piece, and consequently a great saving of material is effected.

To produce my improved lath, I proceed as follows: A blank or work-piece A, Fig. 1ª, is provided with parallel rows of longitudinal slits b, the slits in one row breaking line with those of the adjoining rows. The solid sections or tongues a', remaining between the slits b, are severed at their sides by the transverse cuts b^2, which, however, do not extend to the longitudinal slits of the next row. The punches that form the slits also upset the metal along the longitudinal lines b' parallel to such slits, such an upsetting action being rendered possible by the transverse slits. In this way depending flanges a^3 are formed along the edges of longitudinal and unbroken strips a that connect the roots of the tongues a'. Depending flanges a^4 are also formed along the edges of the arms a^2 that connect the tips of such tongues. The transverse slits b^2 should be of such a length as to cut through the first flange a^4, and also through the body of the arms a^2, but not through the second flange a^4, which is left intact. The work after leaving the punches is in the condition illustrated in Figs. 1 and 2, where the longitudinal strips a, tongues a', arms a^2, and flanges a^3 a^4 are clearly illustrated.

It will be noticed that by the process thus far described the joint between the arms a^2 and tongues a' has been considerably weakened, consisting only of one of the flanges a^4, while the other flange and the body of the arms are cut through. In this condition the work-piece is placed in a suitable stretching-machine that exerts a lateral pull on the same—*i. e.*, a pull at right angles to the longitudinal axis of the work-piece. This pull will at once produce a lateral distension of the lath-body, which is caused by a tilting of arms a^2 upon their junction with the tongues. During this action the joints between tongues and arms will open and the flange a^4 at the end of the tongue in line with the opened joints will bend at both sides of the tongue. In this way the arms a^2, which had heretofore been parallel with the strips a, will form a zigzag line, and consequently the width of the lath will be increased to an extent equal to the deflection of the arms from their straight position. After the lath has thus been distended the pull is discontinued and the lath is completed, Fig. 3. The lath thus formed will permanently retain its shape, because the flanges a^4, being bent and being sufficiently stiff, will retain their newly-acquired form.

It will be seen that the lateral pull on the lath-body while bending the flanges a^4 has not a tendency to tear such flanges, because the strain is exerted at right angles to the plane of such flanges. Thus the completed lath-body while widened is not unduly weakened, nor is the metal distorted at the joints. The flanges, besides constituting the connecting-links between the tongued strips and the bent arms, have the additional function of serving as mortar-retaining projections.

That the lath is therefore of great commercial value is readily apparent.

The main strips a may be surface-grooved, Fig. 2, to increase the stiffness of the lath, and if desired the flanges a^3 may be dispensed with. The flanges a^4 are, however, indispensable as forming the connection between tongues and arms.

The design of the lath is open to various modifications. Thus in Fig. 5 two rows of inclined arms a^2 are interposed between every pair of strips a. Other modifications will readily suggest themselves, the underlying principle being in all cases the formation of an open-work metal lath with flanged arms that have been turned sidewise so as to bend the flange and assume an inclined position with relation the axis of the lath.

What I claim is—

1. A metal lath composed of strips and inclined connecting arms having flanges that are bent at the junction with the strips, substantially as specified.

2. A metal lath composed of tongued strips and inclined connecting arms having open joints and flanges that are bent in line with the open joints, substantially as specified.

3. A metal lath composed of tongued strips and of inclined doubly flanged arms connecting the strips, the body of the inclined arms and one of the flanges being severed at the junction with the tongues, substantially as specified.

4. A metal lath composed of tongued strips, inclined and doubly flanged arms connecting the strips, one of the flanges being severed and the other flange being bent at the junction with the tongues, substantially as specified.

Signed at New York, in the county of New York and State of New York, this 13th day of July, A. D. 1895.

DAWSON B. HILTON.

Witnesses:

F. v. BRIESEN,

WILLIAM SCHULZ.