

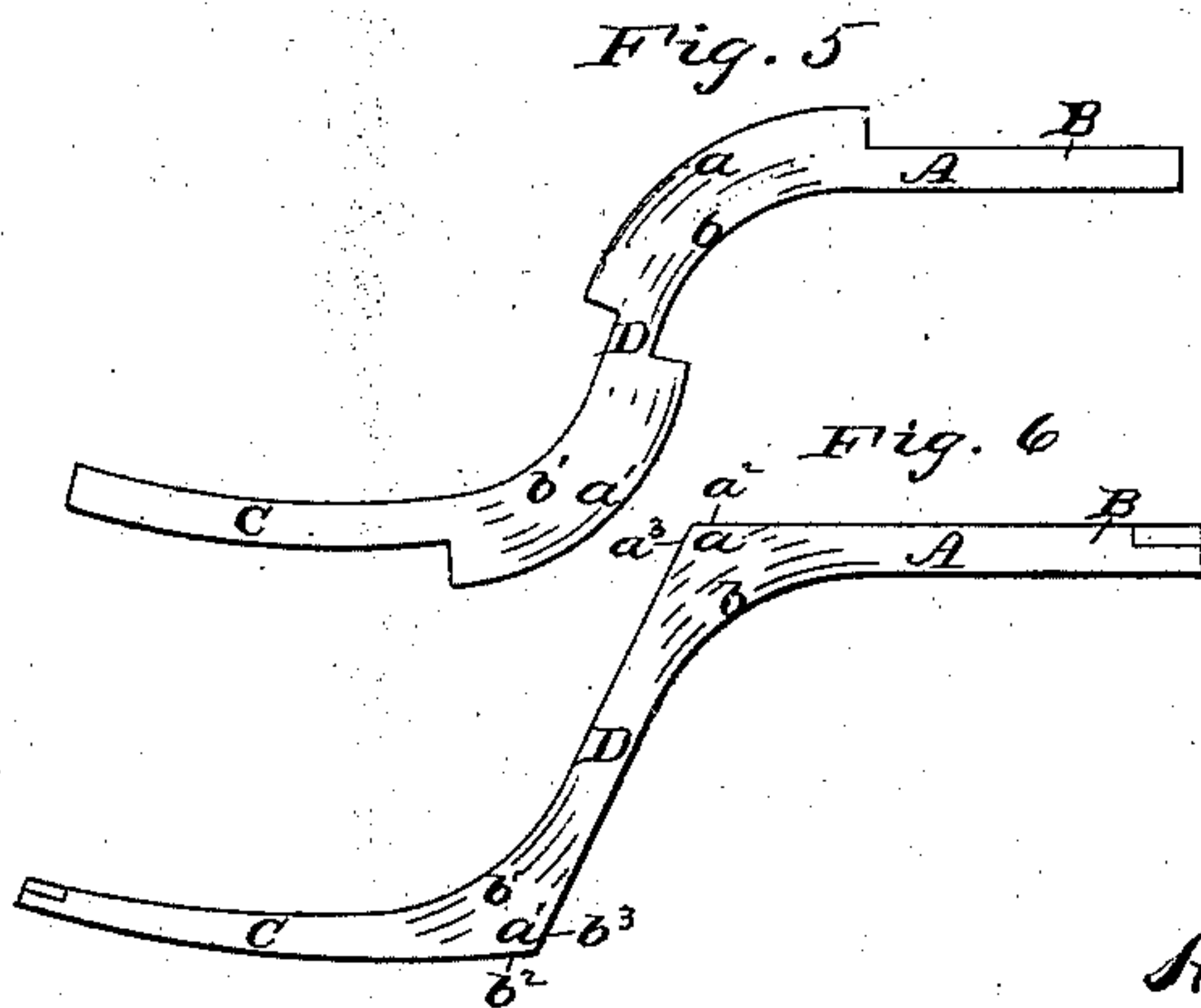
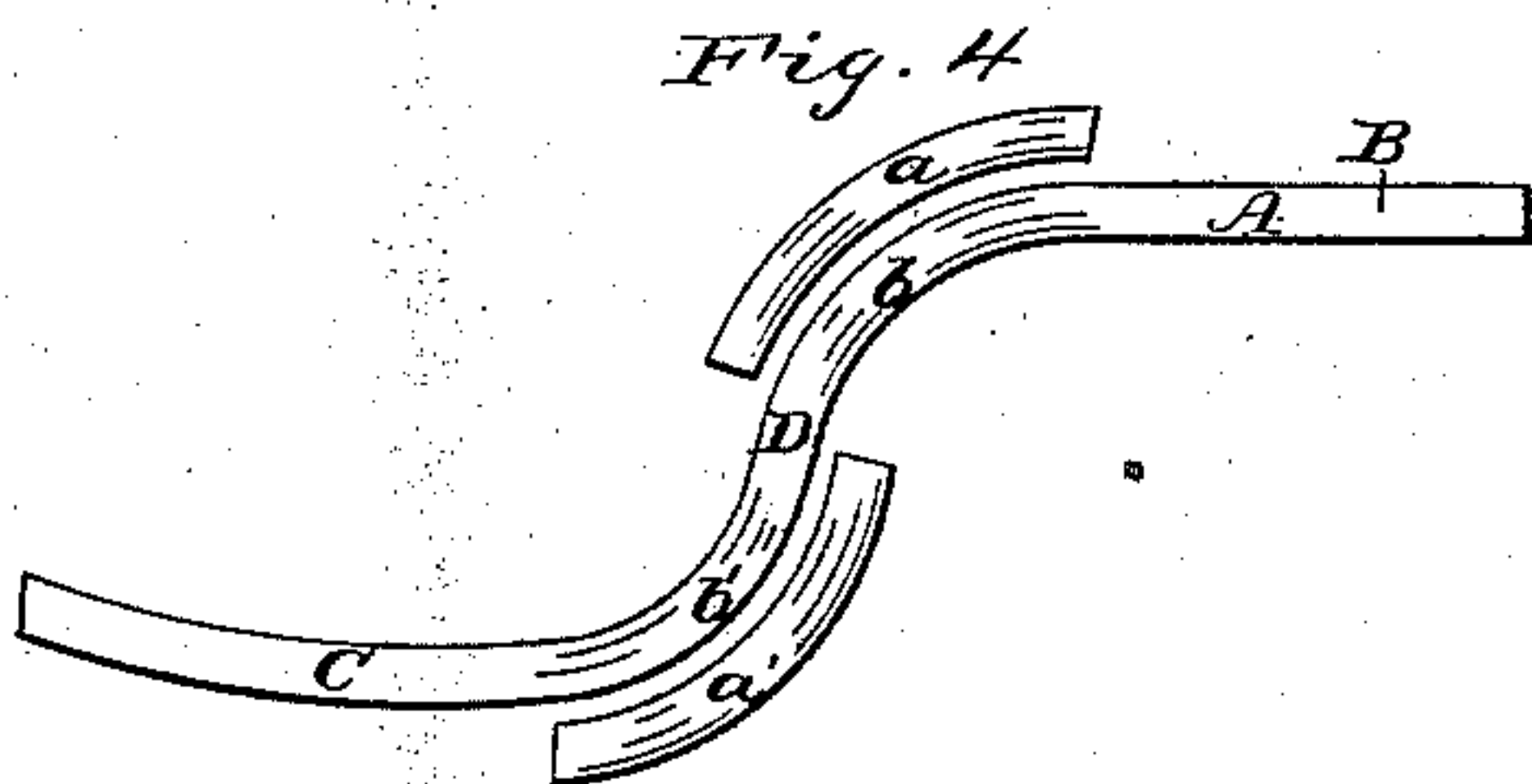
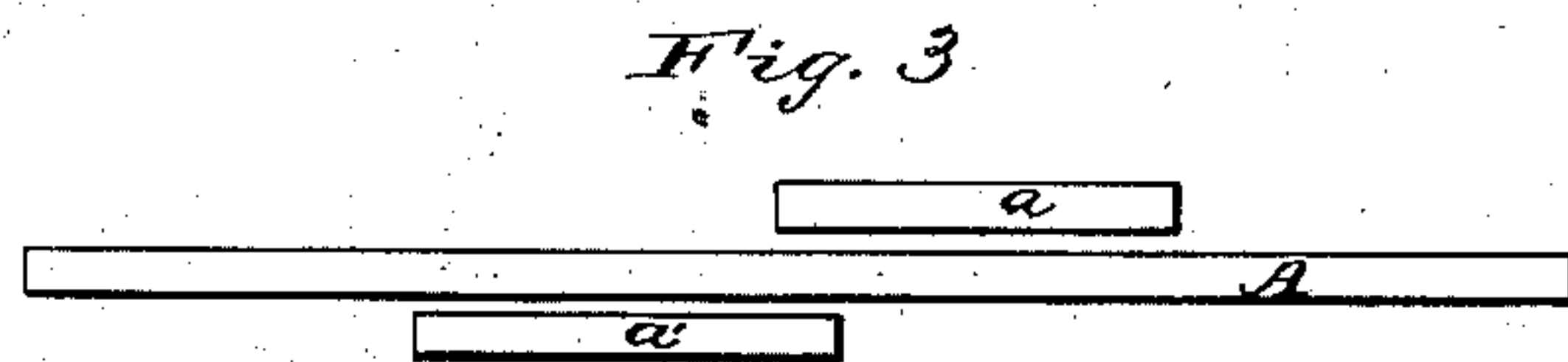
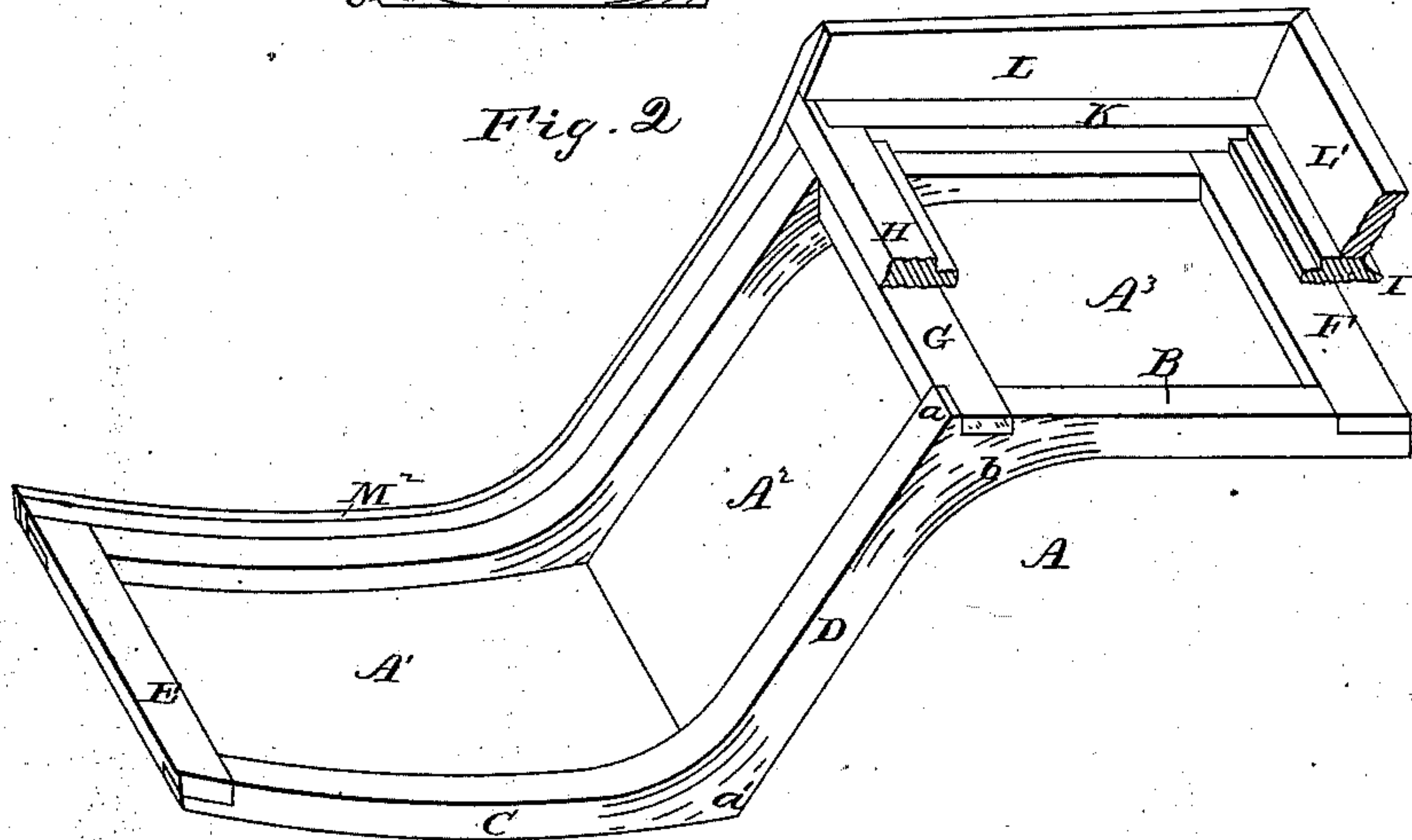
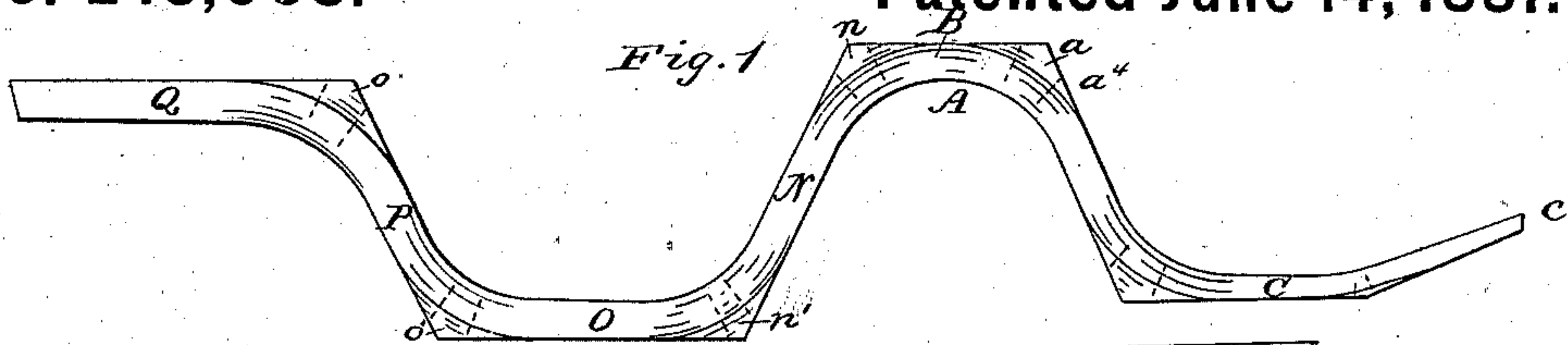
(No Model.)

2 Sheets—Sheet 1.

H. W. TITUS.
Phaeton Body.

No. 243,008.

Patented June 14, 1881.



Witnesses:
H. N. Low
J. S. Barker.

Inventor:
Hazard W. Titus
by Doubleday and Bliss
attys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 7

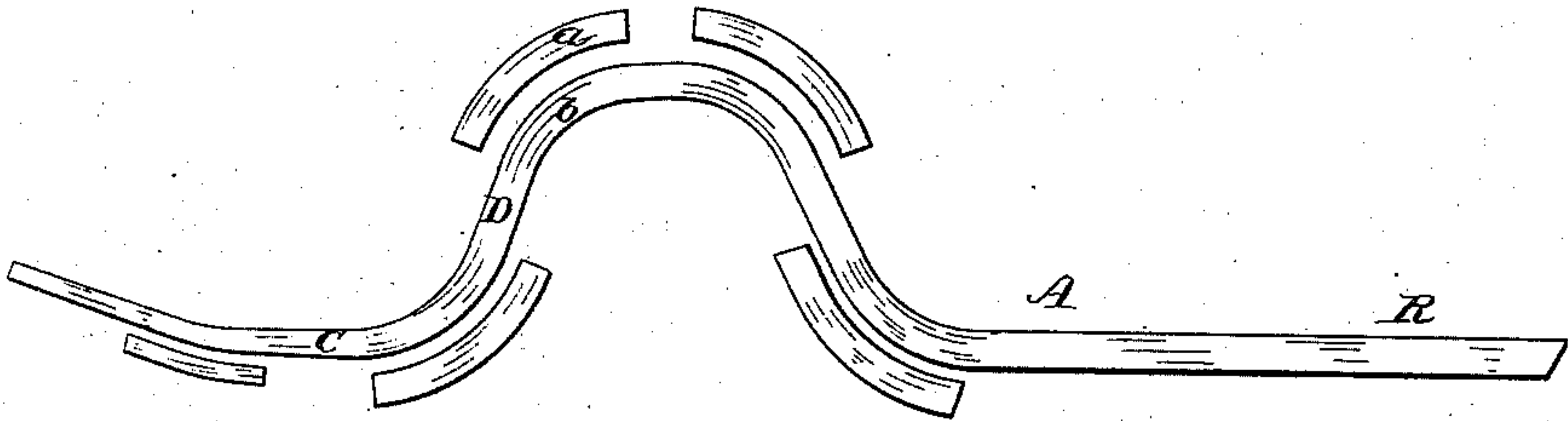


Fig. 8

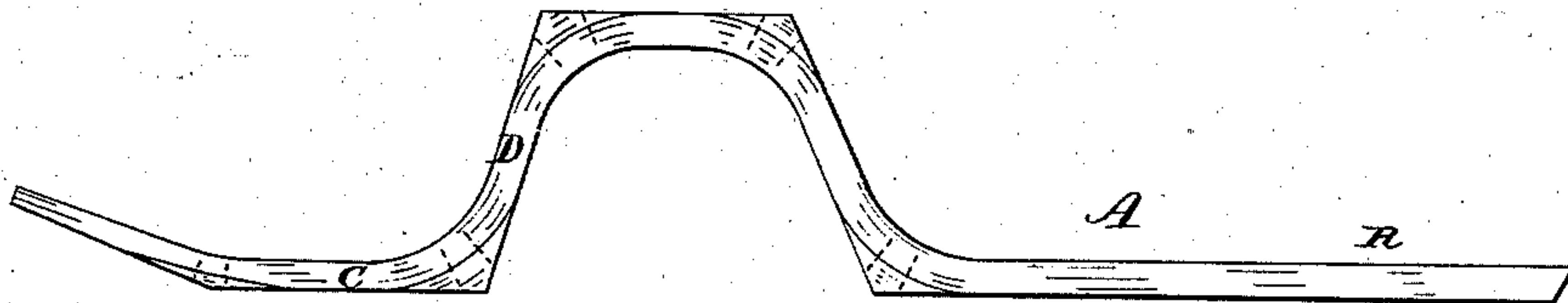
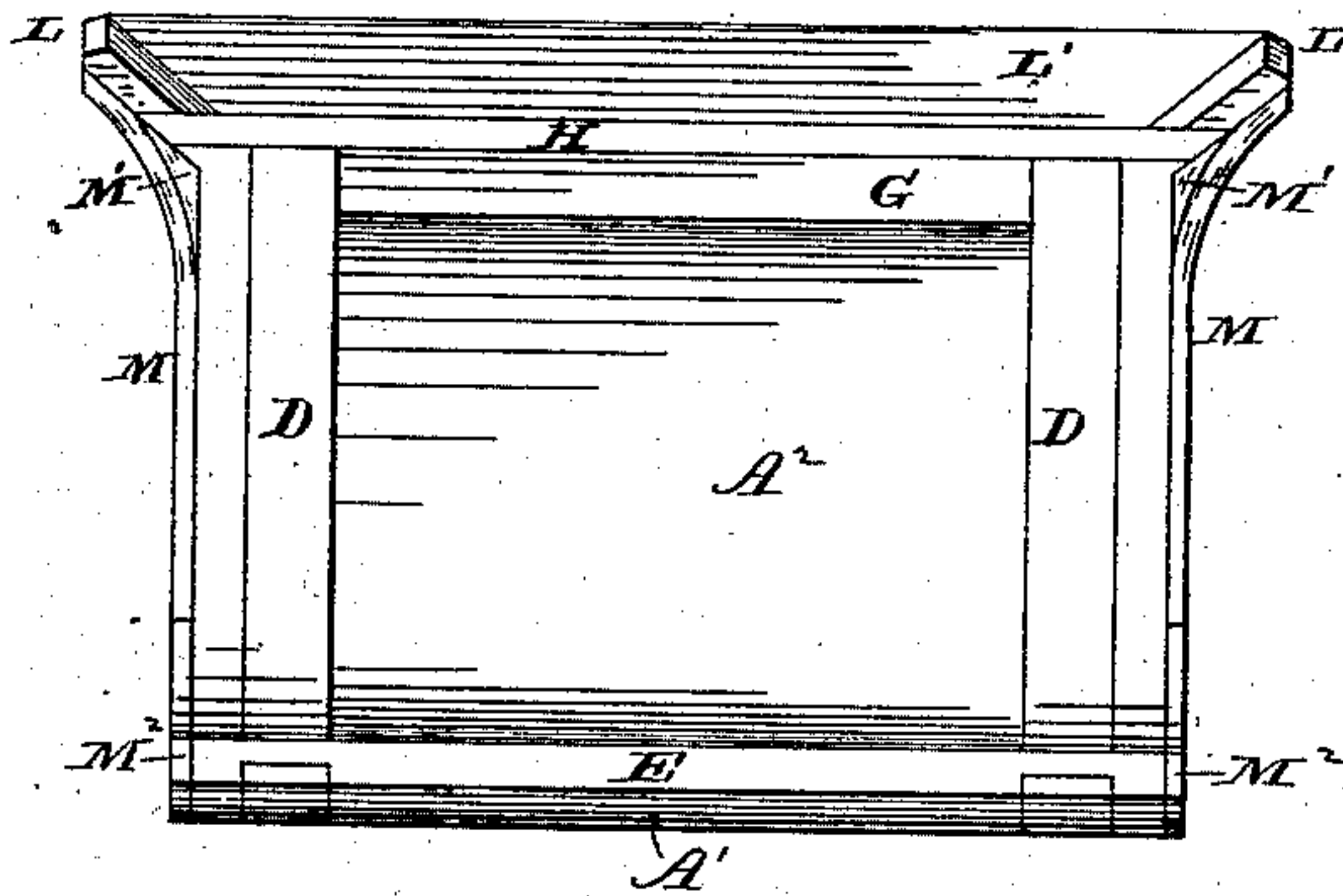


Fig. 9



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

HAZARD W. TITUS, OF JACKSON, MICHIGAN, ASSIGNOR OF ONE-HALF TO
AURELIUS O. REVENAUGH, OF SAME PLACE.

PHAETON-BODY.

SPECIFICATION forming part of Letters Patent No. 243,008, dated June 14, 1881.

Application filed April 8, 1881. (No model.)

To all whom it may concern:

Be it known that I, HAZARD W. TITUS, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Phaeton-Bodies; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of my improved sill for vehicle-bodies. Fig. 2 is a perspective view of a single-seated vehicle having a body constructed with my improvements. Fig. 3 is a side or edge view of the sill, and an upper and a lower bracket before bending. Fig. 4 is a similar view of the last said parts after bending. Fig. 5 is a similar view of said parts after being joined together. Fig. 6 is a similar view of said parts after they have been finally shaped. Figs. 7 and 8 illustrate a side sill and braces for a double phaeton at periods in the course of construction, corresponding, respectively, to those illustrated in Figs. 4 and 6. Fig. 9 is a front view of a seat and a seat-bracket.

Heretofore in manufacturing bodies for such vehicles as buggies, phaetons, rockaways, landaus, cabriolets, &c., it has been customary to follow one or the other of two methods in constructing the sills. One of these methods is to form the side sills of two or more pieces or parts sawed from a plank, there being one piece for the seat part of the body, another for the lowest part or bottom, and a third for the inclined part connecting the other two. The other method of constructing these sills has been to saw them in one piece from a plank in such manner as to leave the grain of the inclined part running across or transversely. When the sill-pieces have been thus constructed they have necessitated the use of metallic rocker-plates and bolts or screws in order to insure the proper strength, and these methods have involved much more expense

than is necessary, owing to the great expenditure of material and the tediousness of the construction.

I have succeeded in obviating the difficulties and expense met with in following these methods of manufacture by forming the side sills of the vehicle-body of, first, a single continuous piece, which is bent to have one or more upper horizontal portions, to support one or more seats; to have, also, one or more bottom parts corresponding in number and position to said seat-supports, and to have inclined parts connecting the seat parts and bottom parts.

In the drawings, A represents my improved sill, Fig. 3 showing it in the first stage of its manufacture. It is of substantially the same thickness throughout, as is shown in said Fig. 3. It is bent (preferably after being steamed) so as to provide an upper horizontal part, B, for supporting the seat of the carriage, the bottom part, C, and the inclined part D. After being bent it is in a shape substantially such as is represented in Fig. 4.

a represents a bracket-piece, which, at the first stage of its manufacture, is of substantially the shape shown in Fig. 3, but which before being attached to the sill is bent as shown in Fig. 4, its curve corresponding to the upper curve, *b*, of the sill.

a' represents a similar bracket-piece, which is bent to correspond to the lower curved portion, *b'*, of the sill.

After the parts named have been shaped as described, they are then firmly secured together by glue or other adhesive substance used in the art to which my invention appertains, so that they shall be arranged relatively to each other substantially as is shown in Fig. 5.

The next step in the operation is to shape the sill and the brackets as shown in Fig. 6—that is to say, a portion of the outer face of the bracket *a* is removed at the upper and the lower ends, so as to leave substantially straight edges, as shown at *a*² *a*³, Fig. 6, said edges meeting at an obtuse angle. The under bracket, *a'*, is treated in the same way to form straight edges *b*² *b*³, meeting at an angle, as shown. These brackets greatly increase the strength

of the sill, and, moreover, furnish square edges or shoulders for the attachment and support of the horizontal parts of the frame.

When it is desired to construct a single-seated carriage of the character indicated in Fig. 2, the side sills, constructed as above described, are joined by a girt or cross-piece, E, at the forward end of the carriage-body, a cross-piece, F, at the rear end, an intermediate cross-piece, G, at the front edge of the seat, and at the top of the inclined part D.

The bottom of the body is formed of the part A' and the parts A² A³, preferably made in one piece, bent as shown, the whole being fastened to the under side of the sills described.

In constructing double-seated carriages the sills are made in the manner illustrated either in Fig. 1 or in Figs. 7 and 8. In Fig. 1 the sill is continued in one piece from the forward end, *c*, backward and upward, to form parts corresponding to those already described and shown in Fig. 2, and then downward, to form an inclined part, N, a bottom, O, a third incline, P, and a second rear-seat support, Q. At the curves the sill is braced by brackets *n o* and *n' o'*, corresponding in structure and operation to those at *a* and *a'*, and already described.

For some carriages it may be preferable to merely bend the sill downward in rear of the front seat, and then extend it horizontally, in a substantially straight line, to the rear end of the body, as shown at R, Figs. 7 and 8.

By constructing and joining the parts in this way I am enabled to produce a vehicle-body of much less weight and cost, and of greater strength and durability, than when they are constructed by the methods first above described. Thus, for example, the weight of bodies for single phaetons, as now usually constructed, is from fifty to one hundred and twenty-five pounds; but one made according to my improved plan, while being much stronger, weighs only from fifteen to twenty-five pounds. It is more durable, from the fact that it avoids the checking and splitting that result when the sills are cut in several pieces out of a solid plank, rendering the inclined part "cross-grained." Moreover, I dispense entirely with the heavy metallic parts, such as the iron rocker-

plates, &c. Over one-half the weight of iron ordinarily used in the form of screw-plates, &c., is dispensed with. If desired, the bracket-pieces *a* and *a'* may be additionally secured by means of screws.

In Figs. 2 and 9 the method of constructing and supporting a seat-frame is illustrated. It is shown as being composed of a front cross-piece, H, a back cross-piece, I, and end pieces, K.

L represents the inclined side, and L' the back of the seat.

To firmly support the sides of the seat by a like device I employ brackets similar to that shown in Fig. 9. It is constructed of a piece, M, extending from the bottom of the inclined part D upward to the top thereof, and then out to the outer edge of the inclined side piece, L, of the seat. It also is formed from a continuous piece bent into the shape described, and provided with a supplemental bracket-piece, M', which fits the angle or corner between the inclined part D and the side piece, L, of the seat, as shown in Fig. 9.

M² represents a side piece formed of wood, bent to correspond to the shape of the lower part, C, of the sill. This bracket is much lighter and cheaper than those now used, and, from the peculiar position into which the grain is thrown by bending, it greatly increases the strength of the support.

What I claim is—

1. In a vehicle-body, a sill constructed as hereinbefore described, having the seat portion B, the bottom C, and the inclined part D formed from a piece of wood having continuous grain, bent into substantially the shape shown, as set forth.

2. In a vehicle-body, a sill having the seat-support B, the bottom part C, and the inclined connecting part D formed by bending the continuous piece of wood, and the brackets or braces *a*, bent from continuously-grained pieces of wood, and secured to the sill at the points of curvature, substantially as and for the purposes set forth.

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

HAZARD W. TITUS.

Witnesses:

WALTER JOHNSON,
BEVERLY W. SNOW.