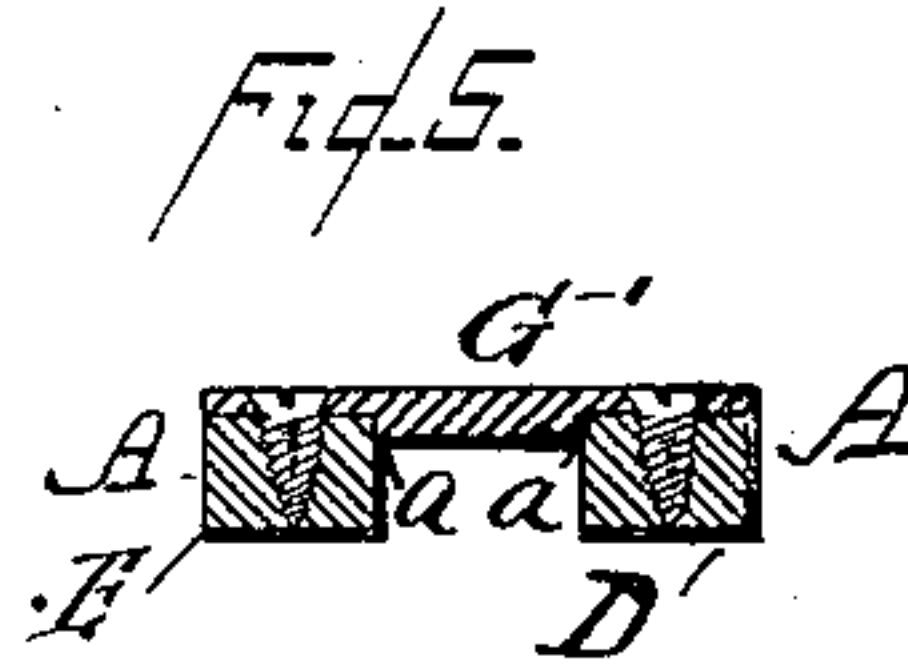
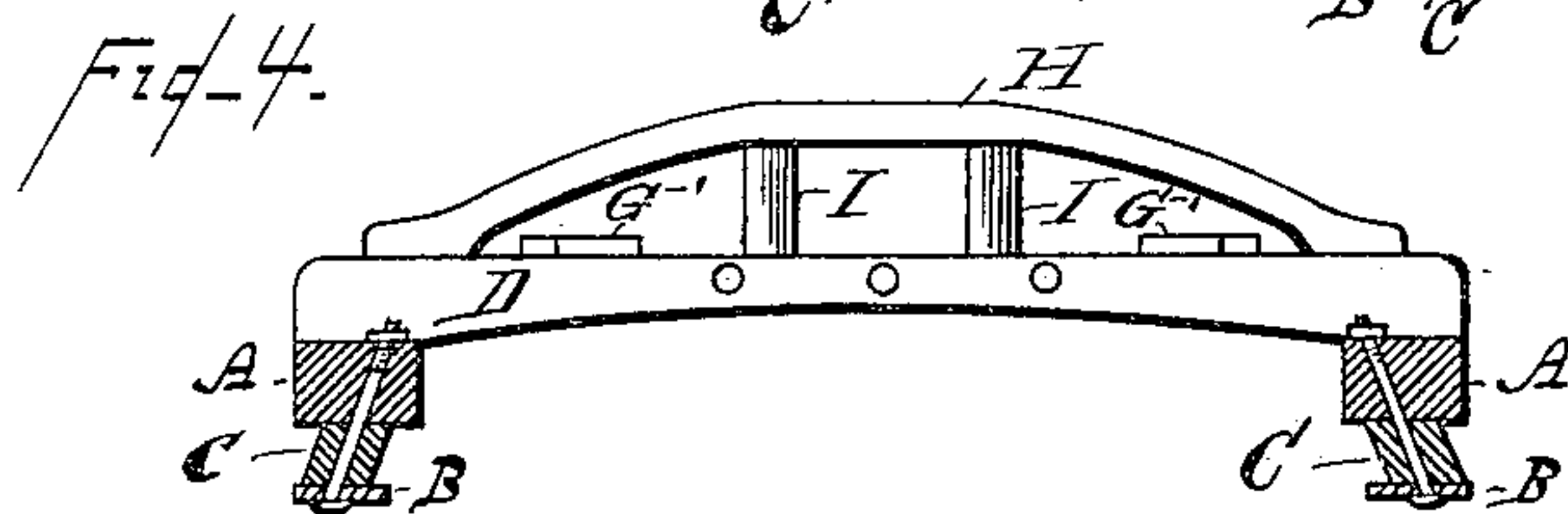
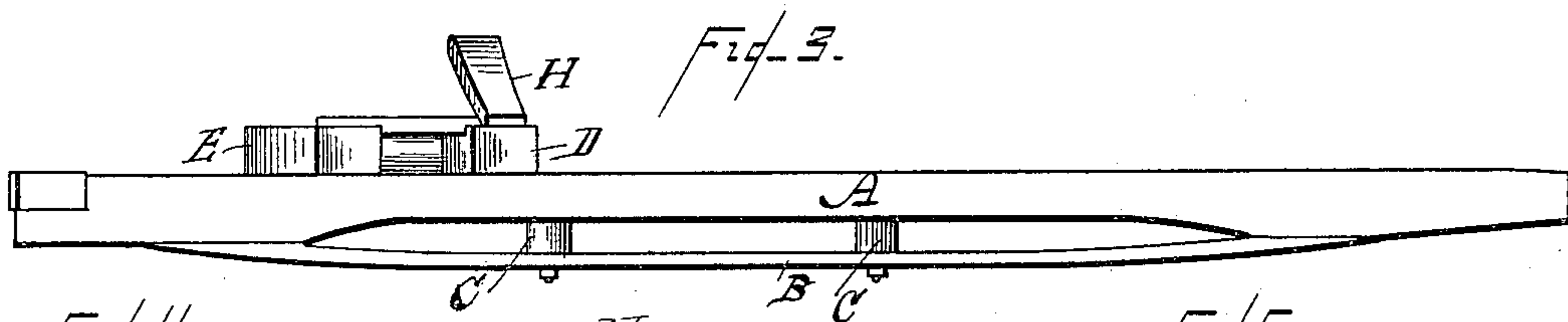
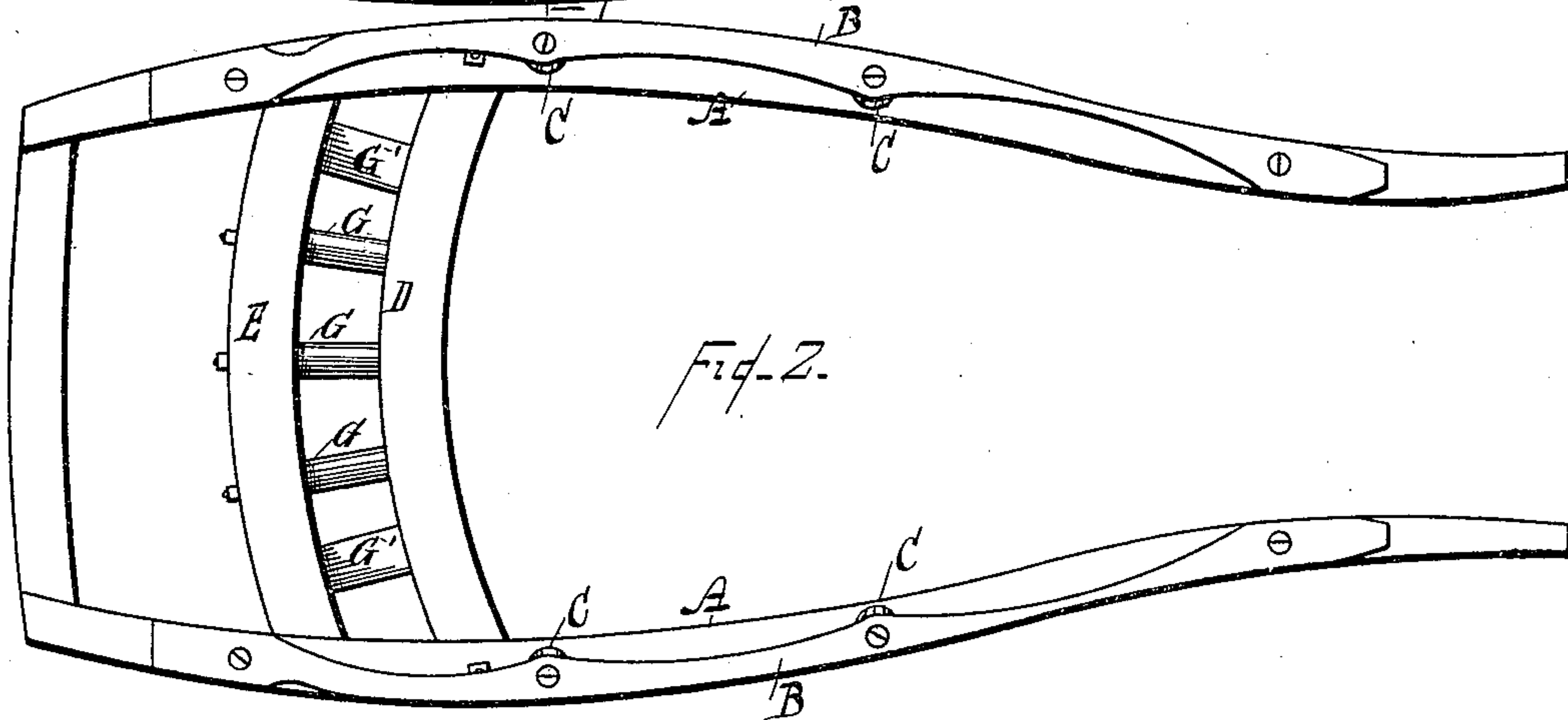
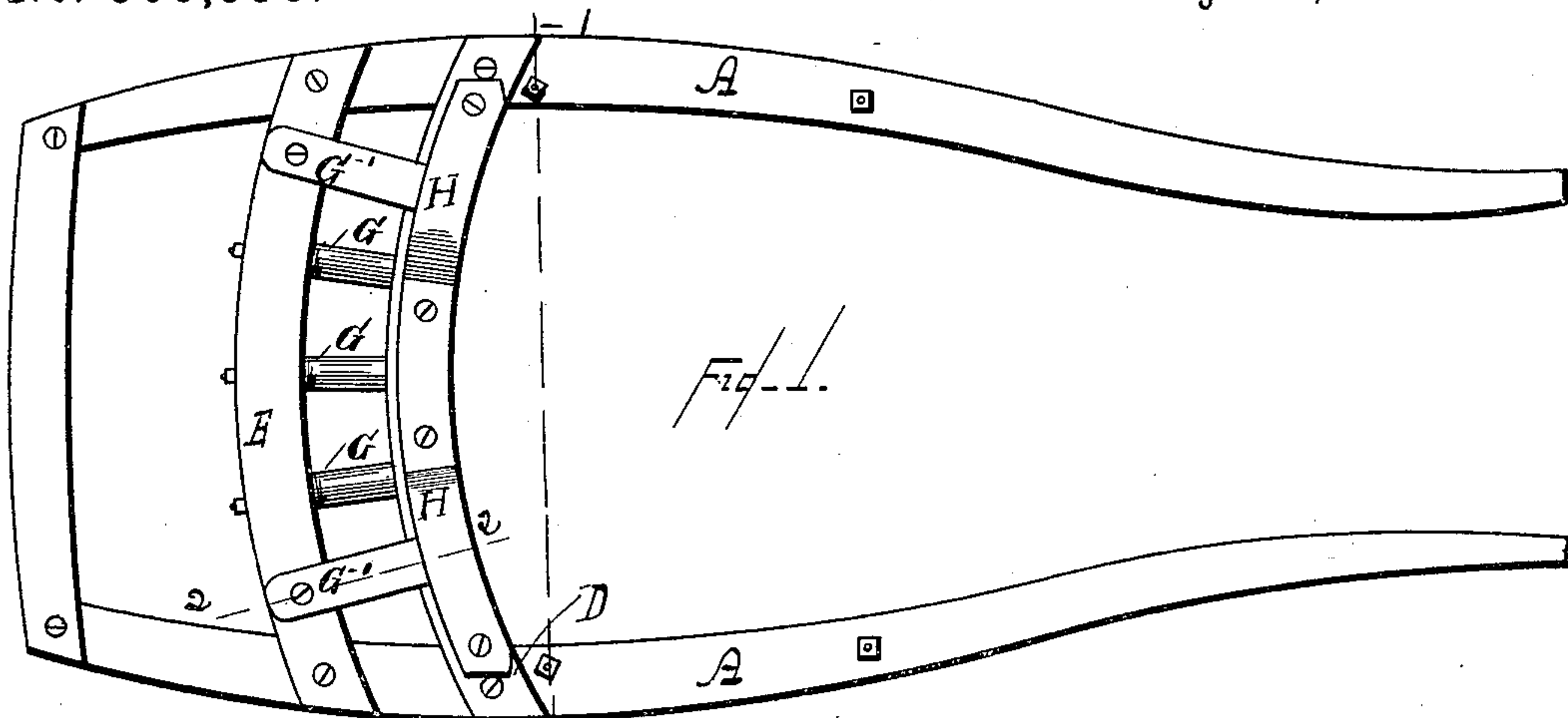


(No Model.)

S. TOOMEY.
VEHICLE SHAFTS.

No. 366,530.

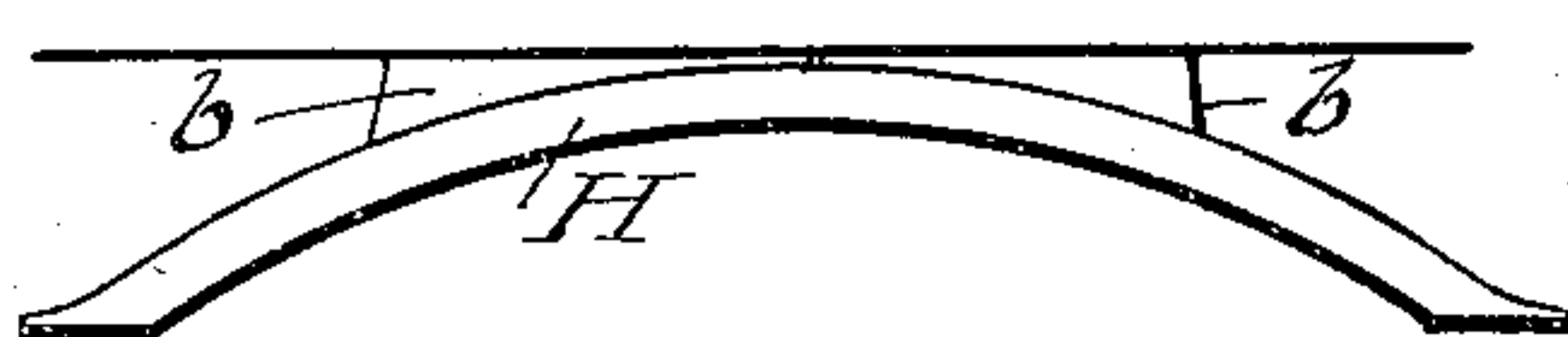
Patented July 12, 1887.



WITNESSES.

Louis L. Clark
W. E. Stearns

Fig. 5.



INVENTOR,

Samuel Toomey,
By his attorney,
J. S. Brown

UNITED STATES PATENT OFFICE.

SAMUEL TOOMEY, OF CANAL DOVER, OHIO.

VEHICLE-SHAFTS.

SPECIFICATION forming part of Letters Patent No. 366,530, dated July 12, 1887.

Application filed October 28, 1886. Serial No. 217,410. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL TOOMEY, a citizen of the United States, residing in Canal Dover, in the county of Tuscarawas and State of Ohio, have invented an Improvement in the Shafts of Vehicles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention consists in an improved trussing for the shafts, to give them strength and stiffness in the desired manner without any considerable increase in the weight, and in the trussing and improved construction of cross-bars connecting the shafts, all substantially as set forth. These improvements are designed especially for sulky-shafts, but may be applied to any kind of vehicle where they may be useful.

In the annexed drawings, Figure 1 represents a top view of a pair of sulky-shafts provided with my improvements; Fig. 2, an under side view of the same; Fig. 3, a side view thereof; Fig. 4, a cross-section in a plane indicated by the line 1 1, Fig. 1; Fig. 5, a section in a plane indicated by the line 2 2, Fig. 1; Fig. 6, a side view of a cross-bar truss-plate, showing a slight modification in its construction.

Like letters designate corresponding parts in all of the figures.

In the drawings, A A represent a pair of sulky-shafts to which my improved trussing is applied. Such shafts, receiving a part of the weight of the driver, and especially the weight and pressure of his feet and legs upon them, require especial strength and stiffness in a vertical direction; and, also, because the pressure of the driver's feet is outward as well as downward, it is required also to have additional strength in a horizontal direction, though not to so great a degree as in the vertical direction. By my invention I provide for strengthening the shafts both vertically and horizontally and to the proper degree in both directions by a single trussing, as follows:

The shafts proper may be of ordinary form and the trussing applied thereto without changing the original construction, so that the improvement may be applied to those already in use or made. Upon the under side of the shafts the truss bars or plates B B, of wood or

metal, are applied, being secured at their ends to the shafts by screws, bolts, or clip bands, as found most convenient or desirable. I have shown simple screws for the purpose, intended to represent any equivalent means. The truss-plates might extend the whole length of the shafts; but it is sufficient, and generally preferable, to have them shorter, extending along the middle part of the shafts, where they are principally needed. Between the shafts and truss-plates is a proper number of stays, C C, in the form of bolts, blocks, or straps—screw-bolts and thimble-blocks being shown in the drawings.

Now, to give the trussing a double bracing action against both vertical and horizontal strain, the truss-plates B B are located beneath the outer edges of the shafts A A, and the stays C C are arranged obliquely downward and outward between the shafts and truss-plates, as clearly shown in Figs. 2 and 4. Thus the desired bracing in both a vertical and horizontal direction is effected, while the stay-rods pass centrally through the shafts and truss-plates, or substantially so.

The shafts are connected by two bars, D E, one forward of the other, and both curved, with their concave sides forward, the forward bar, D, giving additional room for the horse. The bars D E also are curved upward on the under side, as shown in Fig. 4, to give abundant room for the rise and fall of the horse's buttocks in trotting or traveling. These two bars D and E, I connect at several places along their length by stays G G or G' G'. I have represented at G G stay-bolts with thimble-sleeves thereon, like the trussing-stays of the shafts; and at G' G', I have shown simple stay-blocks screwed to the tops of the bars, and having shoulders *a a*, Fig. 5, fitting against the inner edges of the bars. These constructions are considered equivalent in effect. In addition to the staying of the two bars together in a horizontal direction, I truss at least the front bar, D, in a vertical direction.

The trussing, as shown, consists of a curved or bent truss-plate, H, secured to the upper side of the bar at its ends, curved upward in the middle, and connected with the bar between its end fastenings by stays I I of any construction, as shown or otherwise. Thus not only are the shafts braced together hori-

zontally by the two bars D E stayed together, but this cross-bracing is supported vertically against the weight of the vehicle-body and driver by the trussing of the bar D, also preventing the curving upward of the bars when the shafts are held to the horse by the girth.

In sulkies the bar D will support the front end of the sulky-body. The body may rest on a flattened or straight part of the truss-plate H, of the form shown in Fig. 4; or the truss-plate may be curved through its whole length on top, as shown in Fig. 6, there being blocks b b fitting the crown of the truss-plate and affording a plane upper surface to receive the body, as indicated.

I claim as my invention—

1. The shafts of a vehicle provided with a trussing obliquely downward and outward in direction, substantially as and for the purpose herein specified.

2. Vehicle-shafts A A, having truss plates or bars B B under their outer edges, and connecting-stays C C, obliquely downward and

outward in direction, substantially as and for the purpose herein specified.

3. In combination with shafts A A of a vehicle, two curved parallel bars, D E, connecting the shafts, the said connecting-bars being connected with each other by a series of cross-stays, G G G', substantially as and for the purpose herein specified.

4. In combination with shafts A A of a vehicle, a bar, D, connecting the shafts, having a truss-plate, H, thereon, and stays I I between the bar and truss-plate, substantially as and for the purpose herein specified.

5. In a sulky, in combination with shafts A A, a connecting-bar, D, having a convex truss plate or bar, H, upon which the front end of the body of the sulky rests, substantially as and for the purpose herein specified.

SAMUEL TOOMEY.

Witnesses:

E. C. DICKSON,
JOSEPH H. HOSTETTER..