

No. 862,885.

PATENTED AUG. 13, 1907.

W. CROSSLEY.
STICK FOR SUPPORTING SHOE LASTS.

APPLICATION FILED JUNE 23, 1905.

2 SHEETS—SHEET 1.

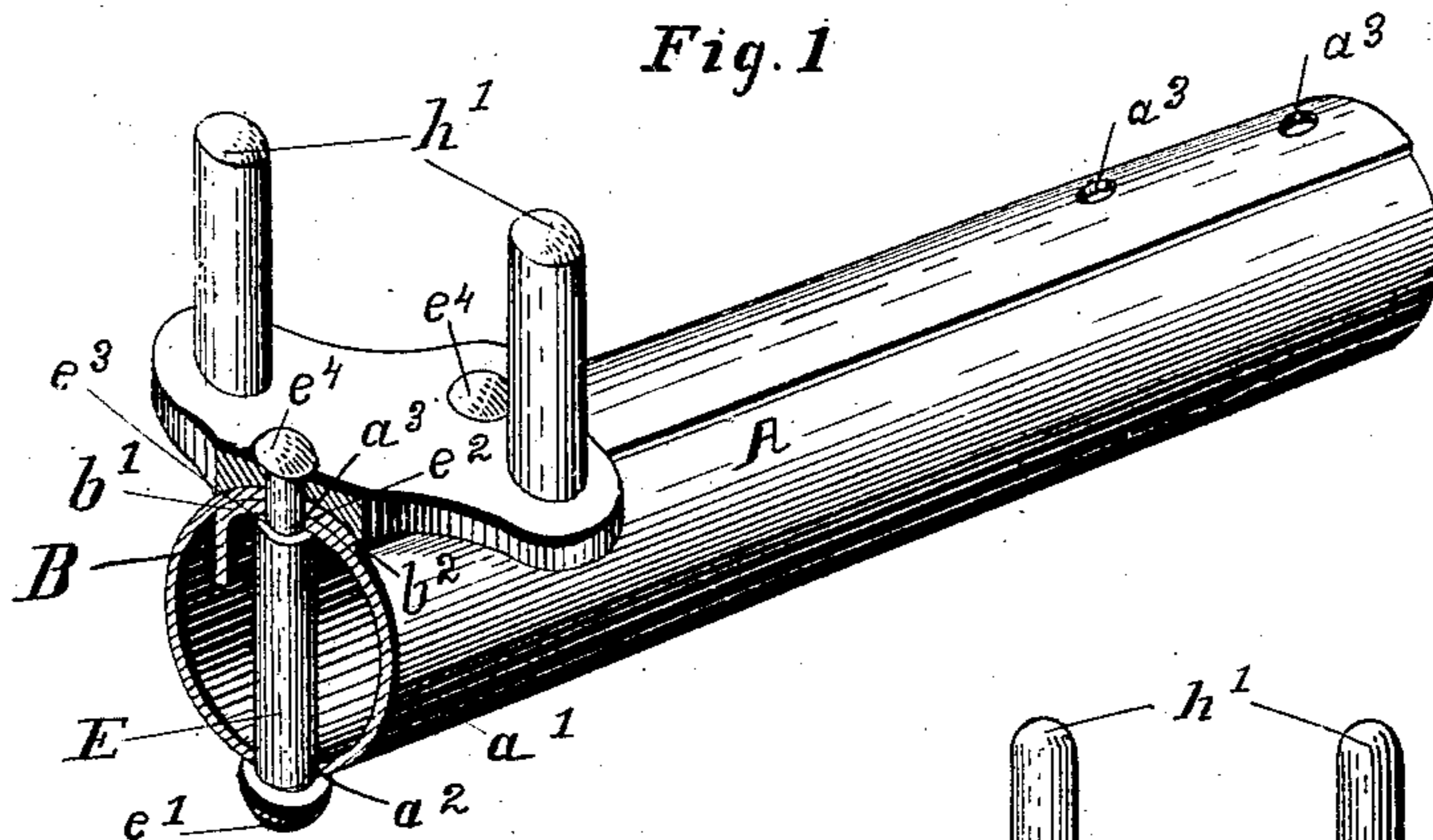


Fig. 2

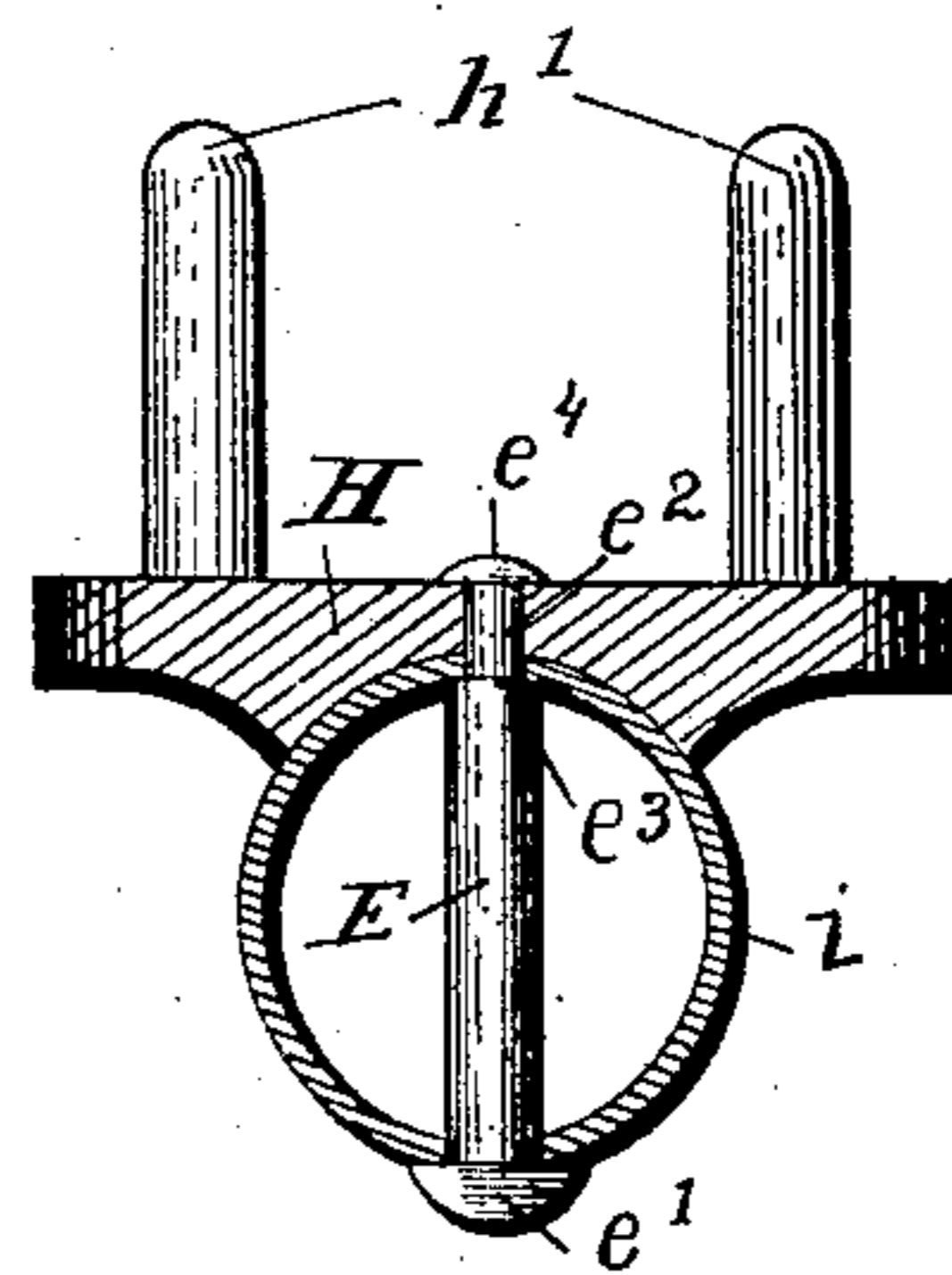


Fig. 3

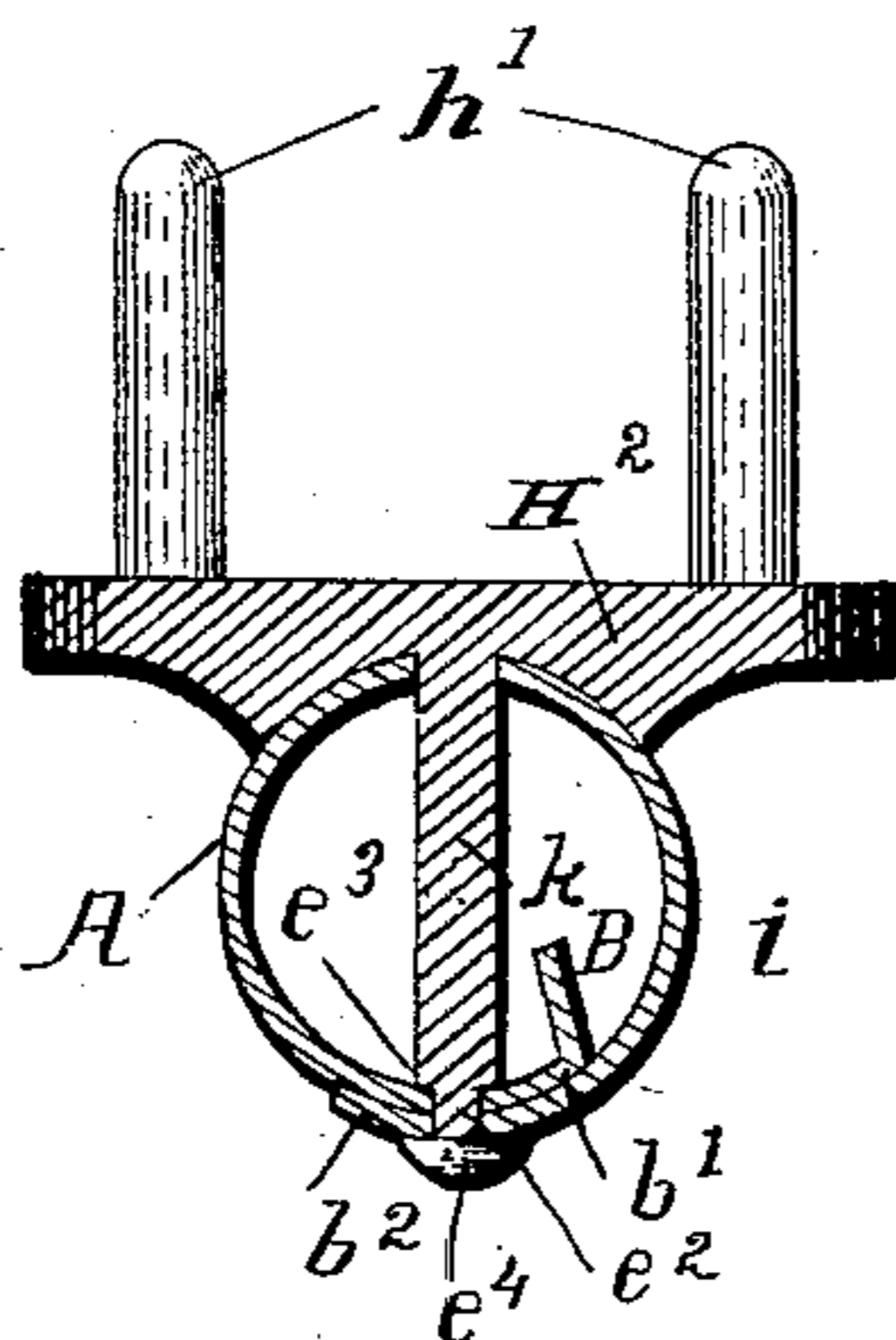


Fig. 5

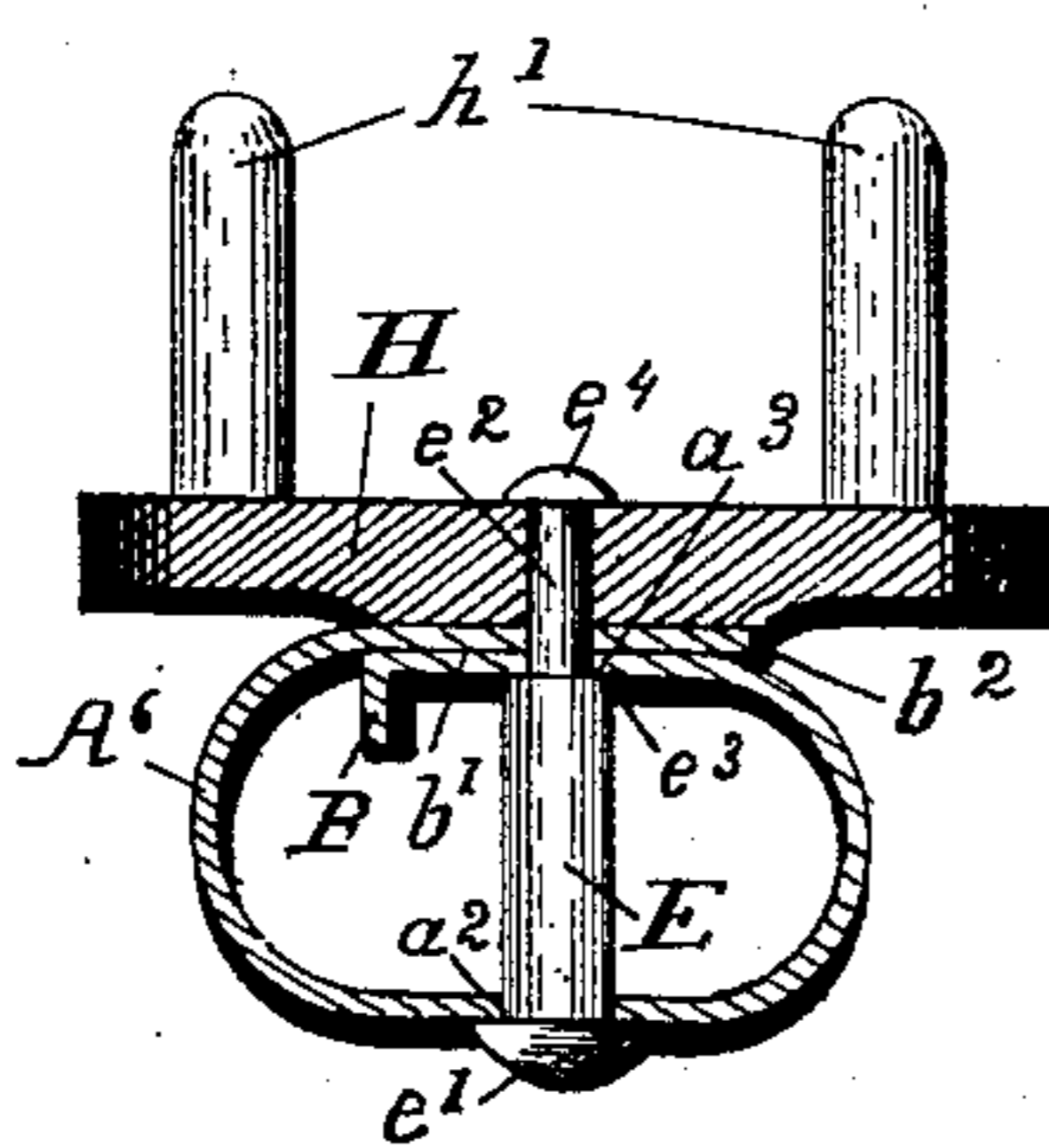


Fig. 4

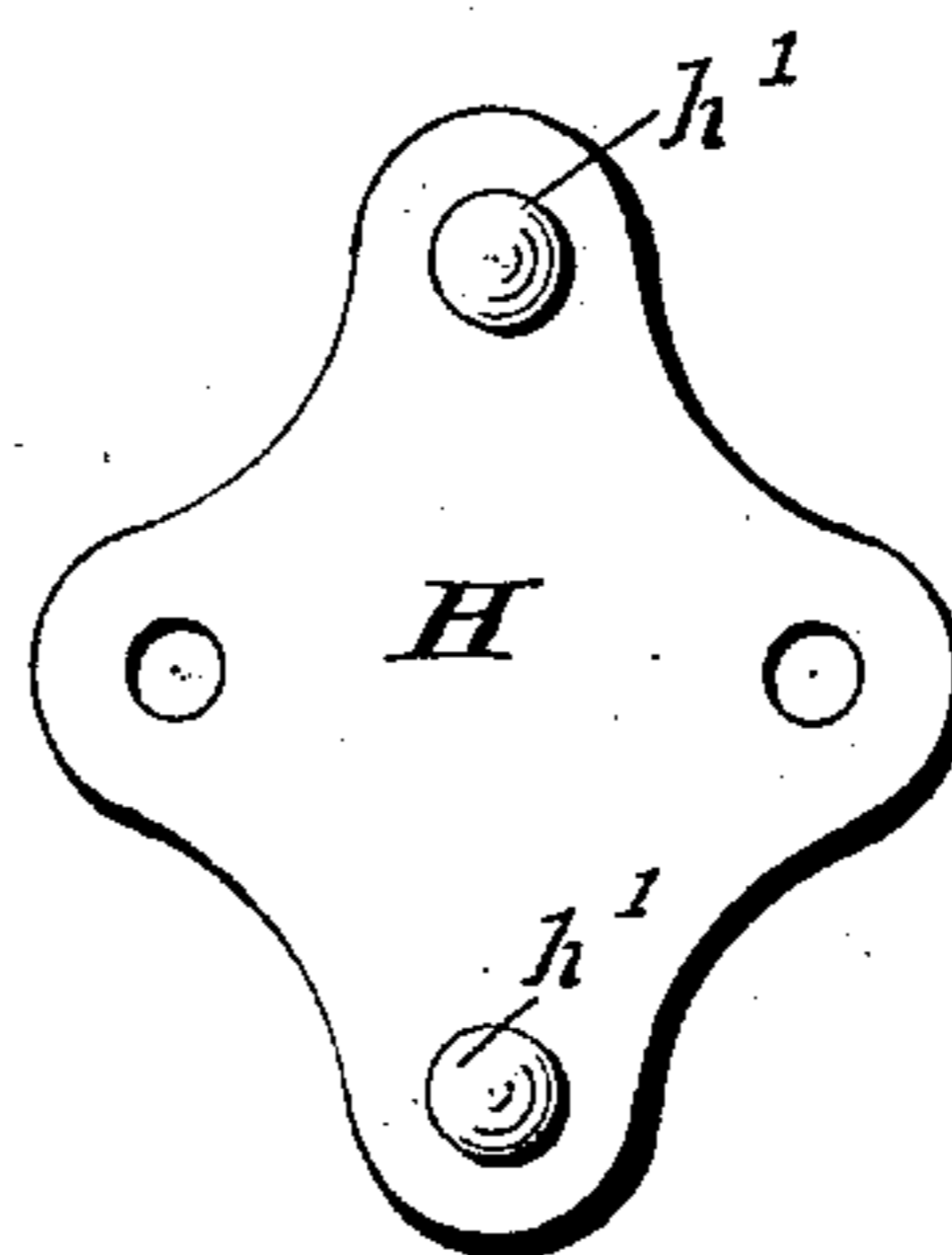


Fig. 6

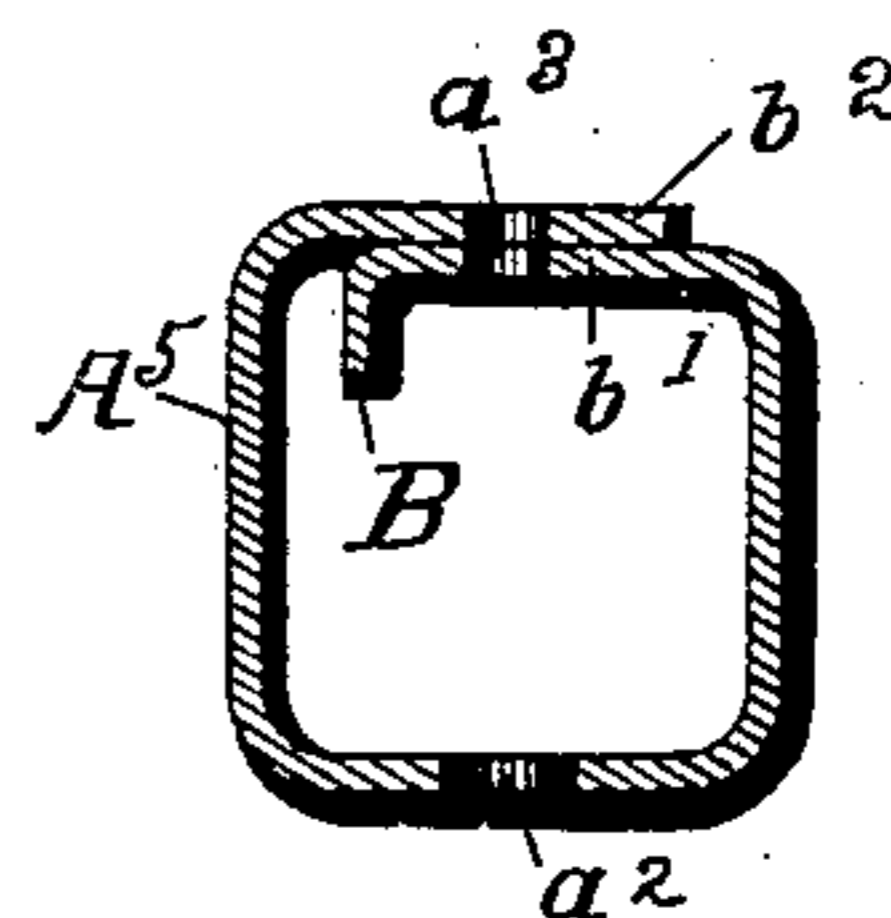
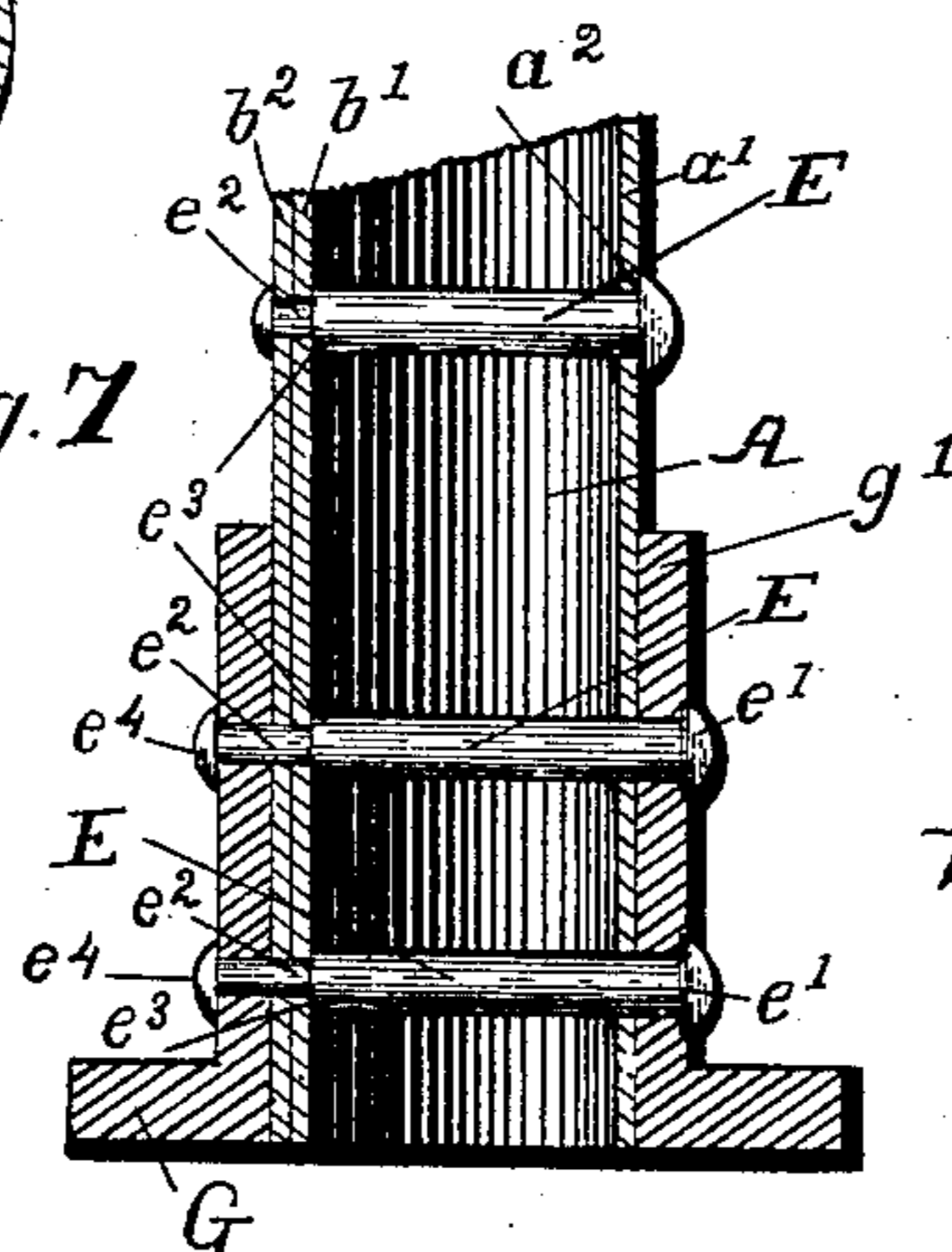


Fig. 7



WITNESSES:

Linus Barnes
Phillis Barnes

INVENTOR
William Crossley

BY
George L. Barnes
ATTORNEY

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2 SHEETS—SHEET 2.

Fig. 8

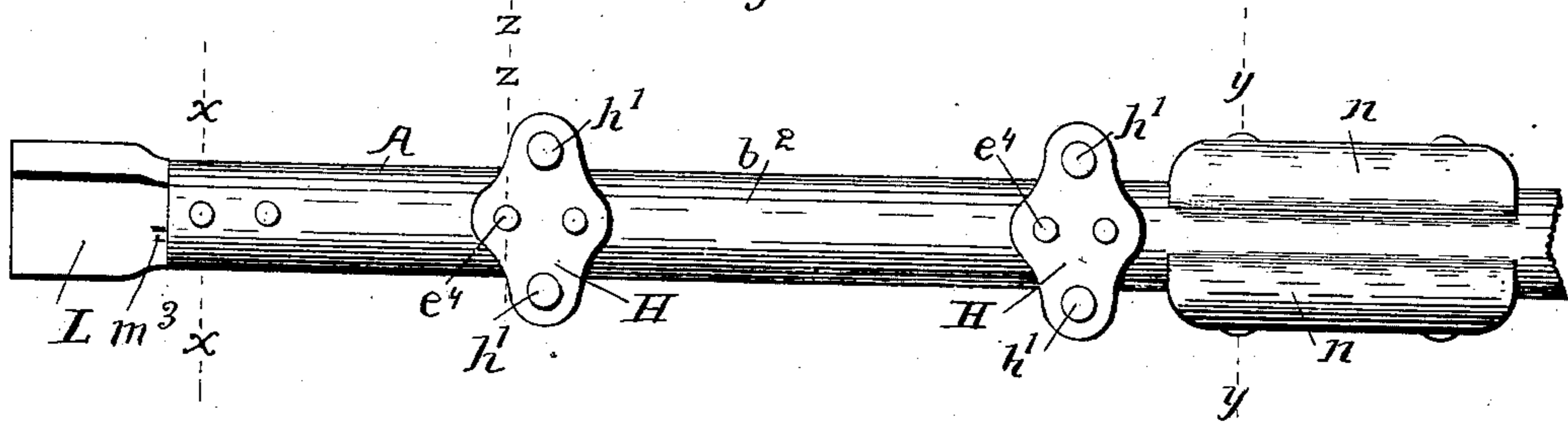


Fig. 9

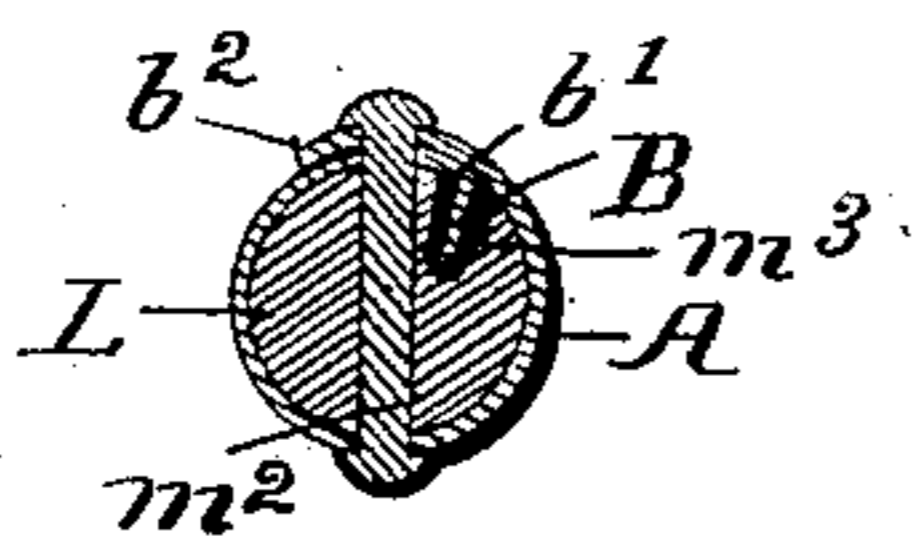


Fig. 10

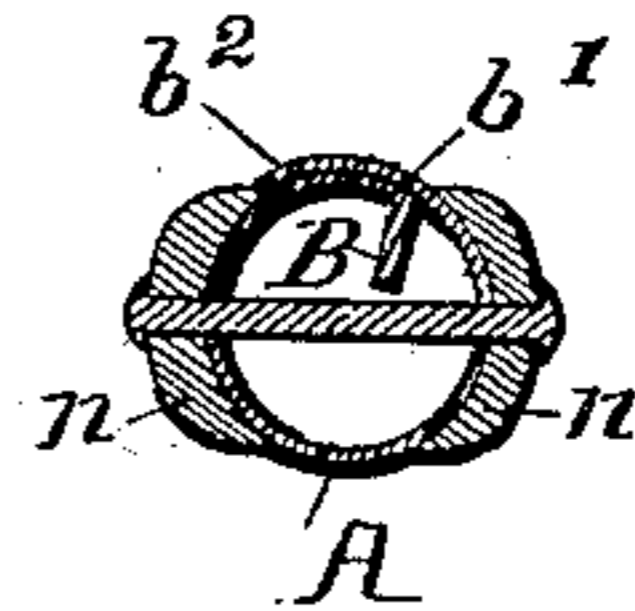
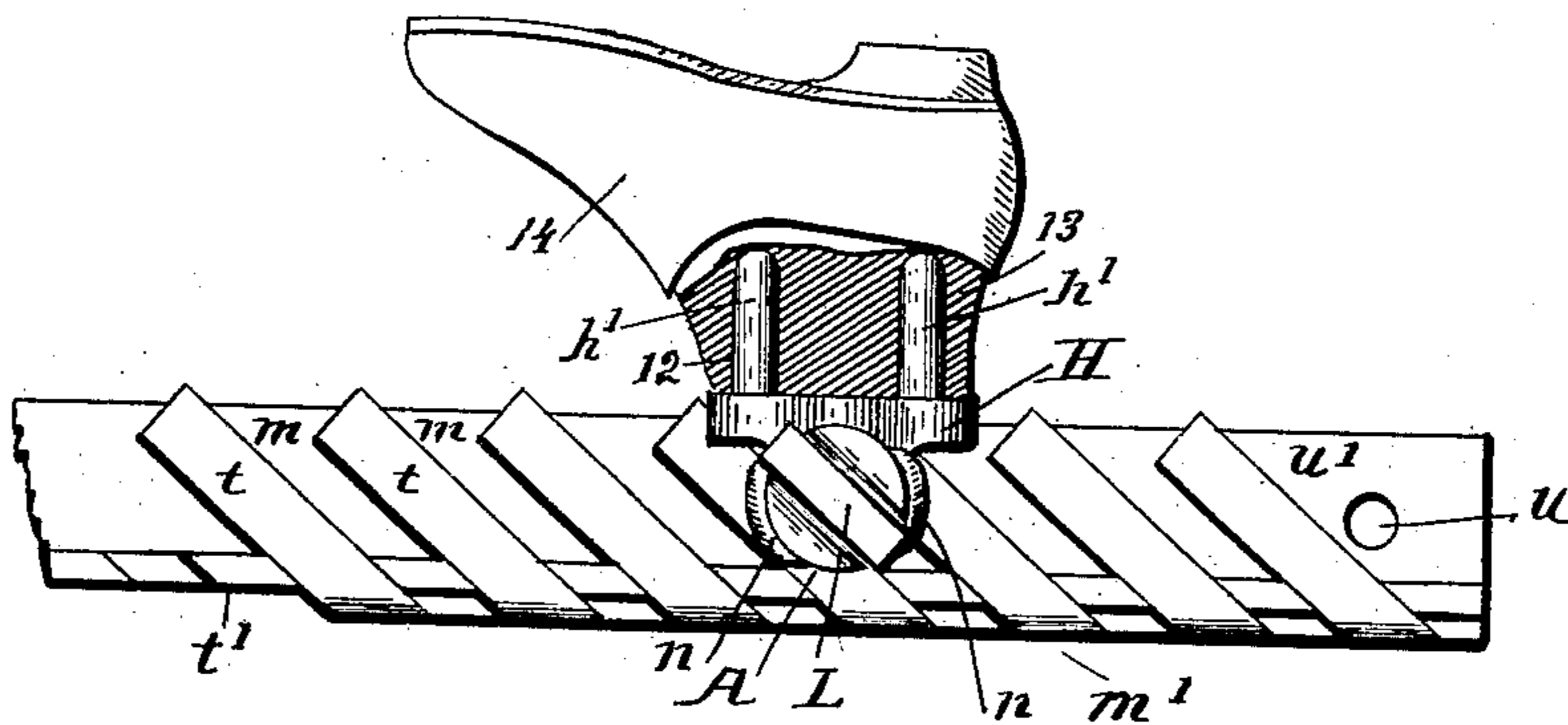


Fig. 11



WITNESSES:

Linne Barnes
Willie Barnes

INVENTOR

William Crossley
BY
George L. Barnes
ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM CROSSLEY, OF WEST HAVEN, CONNECTICUT.

STICK FOR SUPPORTING SHOE-LASTS.

No. 862,885.

Specification of Letters Patent.

Patented Aug. 13, 1907.

Application filed June 23, 1905. Serial No. 266,688.

To all whom it may concern:

Be it known that I, WILLIAM CROSSLEY, a citizen of the United States, and a resident of West Haven, in the county of New Haven and State of Connecticut, have
5 invented certain new and useful Improvements in Sticks for Supporting Shoe-Lasts, of which the following is a full, clear, and exact specification.

My invention relates to the appliances known as sticks used in connection with the manufacture of rubber
10 boots and shoes for supporting the articles, with the lasts or forms on which they are made, in the racks of the oven trucks or cars wherein they are assembled and transported from the work benches into the drying kilns. Said sticks commonly comprise simple bars of
15 iron having their ends shaped and adapted to be received in the slots of the supporting racks on the frame work of the trucks and provided with a series of pairs of upwardly projecting pins at regular distances apart on which the lasts or forms are set in a compact row.

20 The object of my invention is to provide a metallic stick of strong and light design that will not bend or sag with the weight of its load, which is a common objection to the aforesaid bars of iron, and which may be cheaply manufactured and will not readily become fractured or
25 damaged with the rough usage the sticks are ordinarily subject to.

The invention consists in a novel form of combined tube and girder and in the combination, arrangement and construction of the parts and appendages of the
30 stick as hereinafter more fully described and claimed.

In the accompanying drawings forming a part of this specification, Figure 1 is a perspective view of a section of my improved stick shown cut squarely across on the plane $z z$ of Fig. 8. Fig. 2 is a cross section on the same
35 plane as that of Fig. 1 but showing a modification in which a part only of the novel features illustrated in that figure are employed. Fig. 3 is a similar view to Fig. 2 of another modification. Fig. 4 is a plan view of one of the saddles by means of which the pins for the
40 support of the lasts are mounted on the sticks. Fig. 5 is a cross section on the same plane as that of the preceding figures, of a modification of the girder tube. Fig. 6 is a cross section of a modified form of the tube. Fig. 7 is a central longitudinal section of my improved girder tube
45 provided with a flange for adapting it to be used for structural purposes. Fig. 8 is a view of the end section of a stick showing the saddles in plan view. Fig. 9 is a cross section on the line $x x$ Fig. 8. Fig. 10 is a cross section on the line $y y$ Fig. 8. Fig. 11 shows an end
50 view of a stick and a side elevation of one of the supporting racks of the oven trucks or cars, with a form shown partly in cross section mounted on the saddle or bracket.

Referring to the drawings A designates my improved
55 girder tube, which is comprised of a sheet of metal rolled into cylindrical or other suitable hollow form

with its edges $b^1 b^2$ lapped and having the edge of its innermost lapped portion b^1 bent inwardly as shown in Fig. 1 to form a nearly radial flange or girder B throughout its entire length. The construction is substantially
60 the same when the tube is made in forms other than cylindrical, as for instance the tube A^6 of oval cross section shown in the modification in Fig. 5, or a rectangular tube having flat sides A^5 as shown in Fig. 6, but the circular cross sectional outline can be more readily shaped
65 than the other forms, as the bend or deflection of the sheet of metal from its original flat plane is distributed over its entire surface.

For use as a stick for the support of forms for rubber articles the tube is ordinarily from four to six feet in
70 length, and along the side on which the edges of the rolled sheet metal are lapped are arranged a row or series of saddles H, fitted to the curve of the tube and mounted from six to ten inches apart when adapted for
75 boot and shoe lasts, each fastened in place by a pair of rivets E extended diametrically across the tube from one side to the other through suitable perforations a^3 in the lapped portions $b^1 b^2$ thereof and the perforation a^2 in the opposite side a^1 , the heads e^1 of the rivets being
80 on the side a^1 opposite the saddle. The parts e^2 of the rivets, which pass through the saddles and lapped portions of the tube are reduced in diameter to provide shoulders e^3 on the inner side of the inner lapped portions b^1 , and the projecting ends e^4 are riveted over on the surface of the saddle, thus clamping the saddles and
85 the lapped parts rigidly together as shown in Figs. 1 and 5. The saddles may be riveted upon ordinary tubes i in the same manner, as shown in the modification in Fig. 2. In the modification in Fig. 3 the saddle H^2 is shown with the rivets k cast integral therewith, in which
90 case the shoulder and the riveted part of the rivet are brought upon the side of the tube opposite the saddles, as also are the lapped portions of the tube, $b^1 b^2$.

The saddles are each provided with a pair of upwardly projecting pins or studs h^1 placed parallel in a
95 plane substantially at a right angle with the axis of the tube, and adapted for engagement with corresponding sockets 12 in the forms or lasts 13 on which the rubber shoes 14 or other articles are molded. The pins and the saddles together form brackets for supporting said
100 lasts or forms on the sticks, and are so termed in use.

In each end of the tube is fitted a plug L, having its projecting end of rectangular cross sectional outline to fit in suitable corresponding receiving recesses or spaces
105 m which are provided in the racks m^1 of the oven trucks or cars to support the sticks. The plugs are riveted in place by ordinary rivets m^2 passed through the plug and the sides of the tube, and they are provided with slots m^3 for the reception of the ends of the girder or flange B. The flattened ends of the plugs are commonly placed
110 at such angle with the plane of the saddles that the latter will set nearly level when the sticks are placed

in the racks of the oven trucks, as shown in Fig. 11. Said racks are of various designs and constructions, adapted for being bolted to the uprights or posts of the oven truck in horizontal position. The section of the one here shown comprises a bar of angle iron having suitable bolt holes u , bored through its vertical side u^1 for attachment to the uprights of the car, and a series of vertical metal tongues t , riveted to its horizontal side t^1 to form the spaces m for the reception of the ends of the sticks, as sufficiently shown in said figure.

The angle of the receiving spaces m relative to a vertical plane is usually from forty to sixty degrees, and is determined and proportioned with reference to convenience in placing the sticks into and removing them from the racks. The saddles are set in planes other than horizontal when the shape of the forms is such that it becomes expedient to do so, the requirement being that the center of gravity of the load of forms shall draw somewhat to one side of the vertical plane of the stick in order that the latter may rest steadily in the racks free from vibration as the oven trucks or cars are wheeled on their tracks through the shop from the work benches to the kilns.

Between the brackets, at the distance from each end of the stick most convenient to be grasped by the hands in carrying or holding the stick in the horizontal position, or from ten to eighteen inches in sticks of ordinary length, a pair of grips n are riveted, comprising castings of curved cross sectional outline, riveted on opposite sides of the tube by rivets passed through the parts. The leverage of grasp provided by the oval section of the stick at those points or departure from the cylindrical form enables the tube to be conveniently held and handled, secure against turning by the weight of its load. In the modifications shown in Figs. 5 and 6 this result is secured by the shape of the tube and the grips may be dispensed with.

In the manufacture of rubber shoes, the sticks are set up in a horizontal position in front of the work benches with the saddles upward, and the lasts with the shoes thereon in inverted position are placed upon the pins as shown in Fig. 11 in a compact row or series. The sticks when filled are placed on the racks of suitable cars or trucks whereon the shoes are wheeled into the drying kilns and remain during the baking process. When the cars are run out from the kilns and the shoes removed from the sticks, the latter are returned to the benches to be refilled for the next baking operation.

The sticks constructed as described do not sag with

their loads or become warped by the heat of the kilns, and are convenient for handling and durable in use. The improved girder form of tube is less expensive than ordinary tubing and it is also adapted for structural uses. For such purposes it may be provided with a coupling flange G at the end, as shown in Fig 7 or other suitable part for fastening it in place in structures, said parts being slipped upon the end of the tube and riveted in place by the rivets E formed and arranged as described in connection with Fig. 1.

I claim and desire to secure by Letters Patent:

1. A tube comprised of a sheet of metal rolled into tubular form with its edges lapped and having the edge of its inner lapped portion bent inwardly to form a nearly radial flange or girder, lengthwise of the tube, in combination with rivets passed from one side of the tube to the other having necks or reduced parts fitted through the lapped portions of the tube and riveted over thereupon substantially as and for the purpose specified.

2. A stick for supporting shoe lasts or forms comprising a sheet of metal rolled into tubular form with its edges lapped and riveted together and having the edge of its inner lapped portion bent inwardly to form a nearly radial flange or girder lengthwise of the tube, in combination with a series of form brackets mounted upon and arranged along the tube, and comprising saddles secured on the tube by means of the holding rivets thereof, and pins projecting from the saddles substantially in the manner and for the purpose specified.

3. A stick for supporting shoe lasts or forms comprising in combination a tube, a series of brackets comprising saddles mounted upon and riveted to the tube and provided with projecting pins and the end rests or tenons secured to the ends of the tube for supporting the stick in rack slots substantially in the manner and for the purpose specified.

4. The herein described stick for supporting shoe lasts or forms comprising in combination a tube having the internal flange or girder B the saddles mounted on the tube and riveted thereto and provided with the projecting parallel pins, the end rests or tenons secured in the ends of the tube, and the handles or grips n secured to the tube between the saddles, substantially in the manner and for the purpose specified.

5. The herein described stick for supporting shoe lasts or forms comprising in combination a tube having the internal flange or girder B the saddles mounted on the tube and provided with integral rivets k passed diametrically through the tube and riveted through the lapped portions thereof, parallel pins mounted on the saddles, and end rests or tenons secured in the ends of the tube, substantially in the manner and for the purpose specified.

Signed by me at New Haven, Connecticut, this 1st day of June 1905.

WILLIAM CROSSLEY.

Witnesses:

GERTRUDE R. FARRELL,
GEORGE L. BARNES.