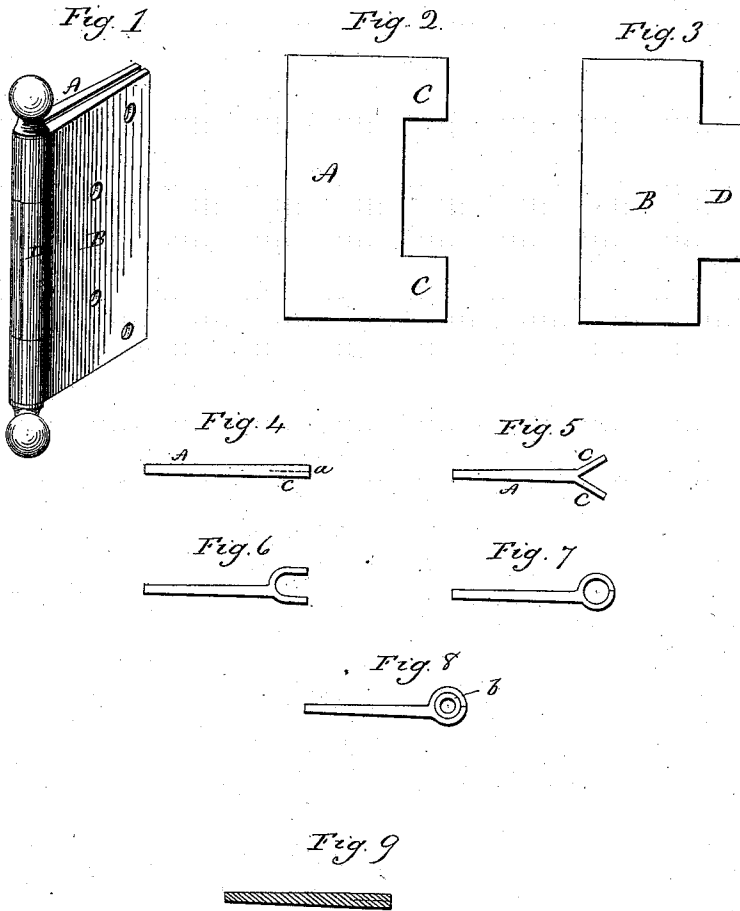


(No Model.)

H. HOFFMAN, Jr.
MANUFACTURE OF BUTT HINGES.

No. 376,597.

Patented Jan. 17, 1888.



Witnesses:
J. H. Shumway,
Fred C. Earle

Henry Hoffman Jr.
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UNITED STATES PATENT OFFICE.

HENRY HOFFMAN, JR., OF SOUTH NORWALK, CONNECTICUT, ASSIGNOR TO
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MANUFACTURE OF BUTT-HINGES.

SPECIFICATION forming part of Letters Patent No. 376,597, dated January 17, 1888.

Application filed September 26, 1887. Serial No. 230,655. (No model.)

To all whom it may concern:

Be it known that I, HENRY HOFFMAN, Jr., of South Norwalk, in the county of Fairfield and State of Connecticut, have invented a new
5 Improvement in the Manufacture of Butt-Hinges; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of the hinge complete; Fig. 2, the blank for one leaf; Fig. 3, the blank for the other leaf; Figs. 4, 5, 6, and 7, end views of the blank, illustrating the method of forming the ears; Fig. 8, the same method with the bushing introduced; Fig. 9, a section of a blank diminishing in thickness
20 toward the front edge of the blank.

This invention relates to an improvement in that class of butt-hinges which are made from finer metals—as brass or bronze—but applicable to other metals, the object of the invention
25 being to construct the hinges from wrought metal instead of cast metal, whereby labor in finishing is reduced and the loss consequent upon defective castings is avoided; and the invention consists in forming the blanks from
30 wrought metal, the shape and size for the leaves, with projections from their edges, corresponding to the ears on the respective parts, then splitting the said projections in a plane parallel with the plane of the surface of the blank, and then opening the said split projections and bending them into tubular shape, so
35 as to bring the two edges of the projections together, the said tubular projections forming the ears by which the two parts are secured together through the introduction of the pintle.

In illustrating my invention I show it as applied to the manufacture of a butt-hinge having one ear at each end of one leaf, with an intermediate ear on the other leaf corresponding to the space between the two ears on the
45 first leaf.

From suitable sheet metal (may be of even thickness throughout or varying in thickness, as hereinafter described) I cut blanks A B for
50 the two leaves, the size of the blanks proper

corresponding substantially to the size of the leaves of the hinge required. On one edge of one part, A, projections C C are formed, one at each end, and in length corresponding to the ears which are required for that leaf, leaving a space on the edge between the said two
55 projections C C. On the corresponding edge of the other part a projection, D, is formed corresponding in length to the space between the two projections C C of the blank A. The
60 width of these projections should be substantially one-half the circumference of the ear to be produced. The projections are then split from the rear edge inward in a plane substantially parallel with the plane of the leaf, and,
65 as indicated by the line *a*, Fig. 4, this split should be made close up to the edge of the body of the blank. The split portions are then turned to the right and left, as indicated in
70 Fig. 5. Then they are bent into U shape, as seen in Fig. 6, and finally closed around a mandrel, as seen in Fig. 7, to bring the two edges of the split portions substantially together. The ear may then be brazed or not, as may be required. This completes the ears for the hinge. The
75 mandrel being the size required for the pintle, and the split portions being closed closely thereon, form a perfect tubular ear, quite as much so as may be produced by boring.

In some of the softer metals it is desirable
80 that a hard-metal bushing—as steel—may be applied to the ears. In that case I form a metal tube, *b*, of steel or other suitable hard metal, the internal diameter of which corresponds to the diameter of the pintle required,
85 and make the ears of a size to close around the hard-metal tube, as represented in Fig. 8. This forms a lining or bushing for the ears of hard metal.

In case of several ears the ears should all be
90 closed upon the same mandrel, and if the bushing is employed the bushings should be applied to the same mandrel, so as to secure the pintle, the holes through the several ears being in proper axial line, the one with another.
95

In some cases the thickness of the metal required for the leaf will be more than twice that required for the thickness of the ear. In that case a thicker cutter will be used to make the split than when a thicker metal for the ear is
100

required, so that the thickness of the ear may be varied by the thickness of the cutter which forms the split.

In some cases it is desirable that the leaf should diminish in thickness from the rear or ear edge to the opposite or front edge. In such case the metal would be best rolled in bars of the required width, a transverse section of which is indicated in Fig. 9, and then the blanks for the leaves cut therefrom to the required length.

It will be understood that the leaves of the hinge are to be pierced or prepared in any of the usual methods for attachment.

Under this method of manufacture the metal being rolled presents a smooth surface, and one in which none of the defects incident to cast metal exist.

The hinge is not only stronger than cast-metal hinges, but with suitable machinery I am enabled to produce these hinges at a less cost than cast-metal hinges.

The parts of the hinge are set together and the pintle introduced in the usual manner.

I claim--

1. That improvement in the manufacture of wrought-metal butt-hinges which consists in

forming the blanks with projections therefrom on the ear sides in the plane of the blanks, splitting the said projections from their rear edge inward and in a plane substantially parallel with the plane of the blank, and then turning such split portions outwardly and returning them into tubular shape, and so as to form tubular ears on the edge of the blank, substantially as and for the purpose described.

2. The improvement in the manufacture of sheet-metal butt-hinges which consists in first forming blanks corresponding to the respective leaves of the hinge, each blank formed with projections upon one edge corresponding in length to the ears required for the said leaves, then splitting the said projections from their rear edge inward and in a plane substantially parallel with the plane of the blank, and then turning such split portions outwardly and closing them around a metal tube in length corresponding substantially to the length of said projections, and substantially as described.

HENRY HOFFMAN, Jr.

Witnesses:

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