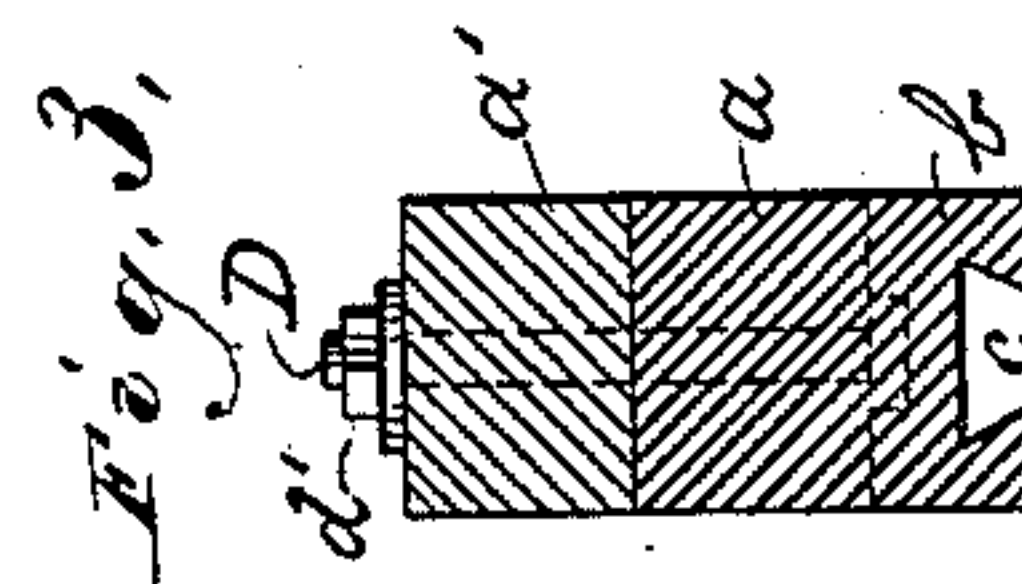
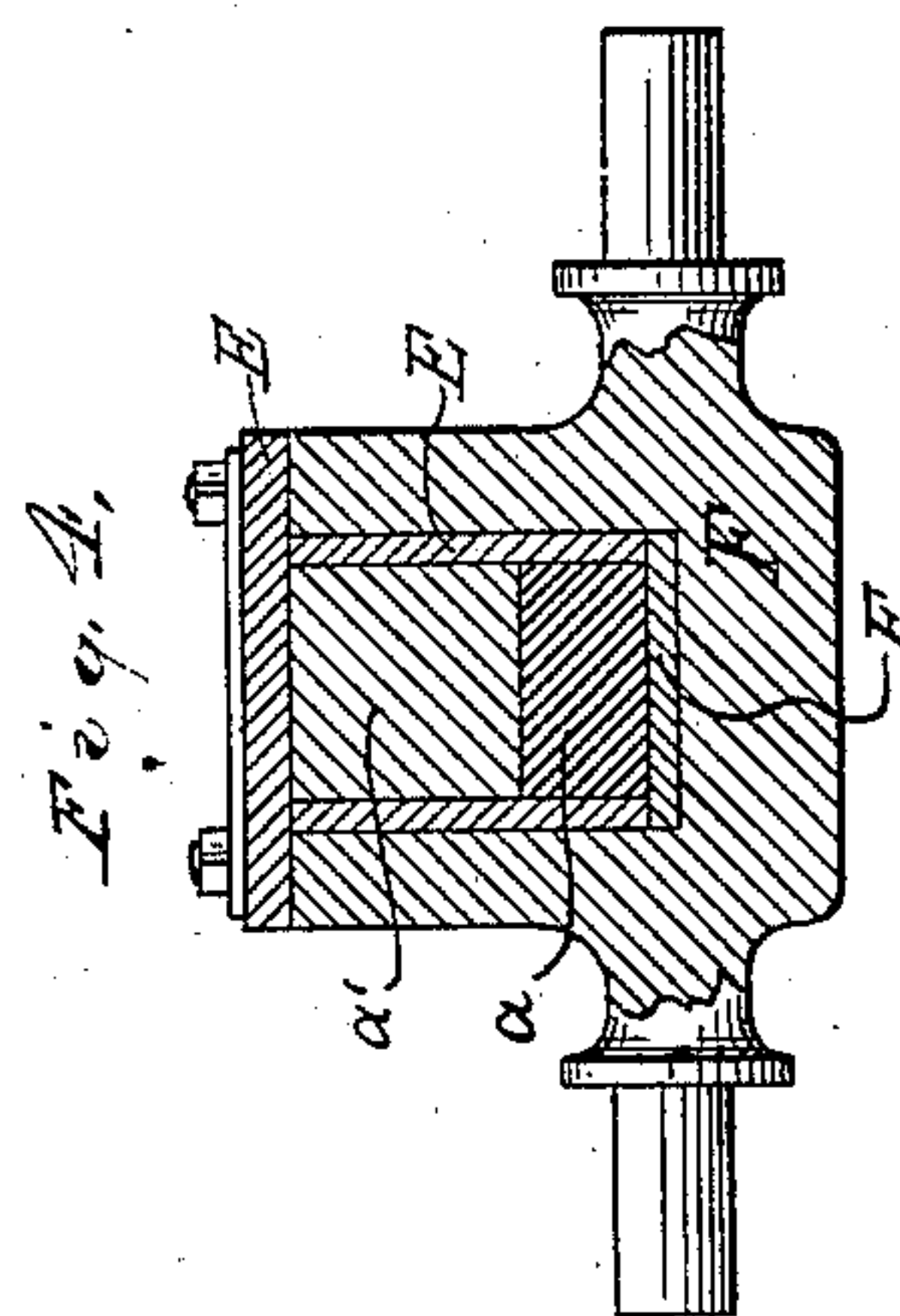
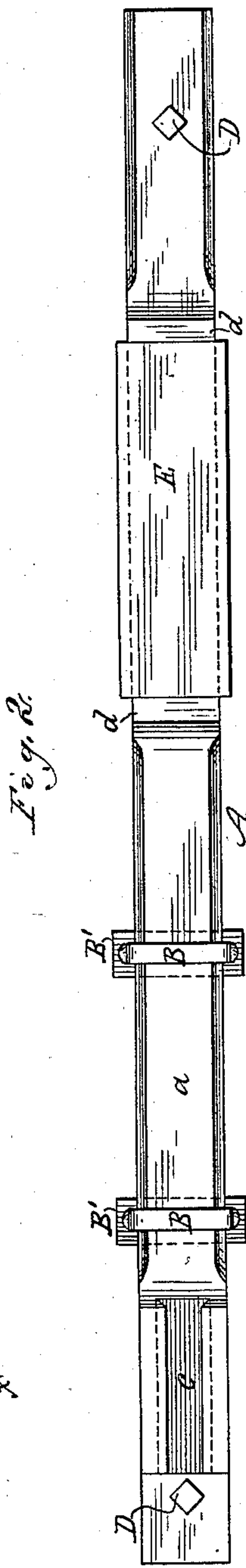
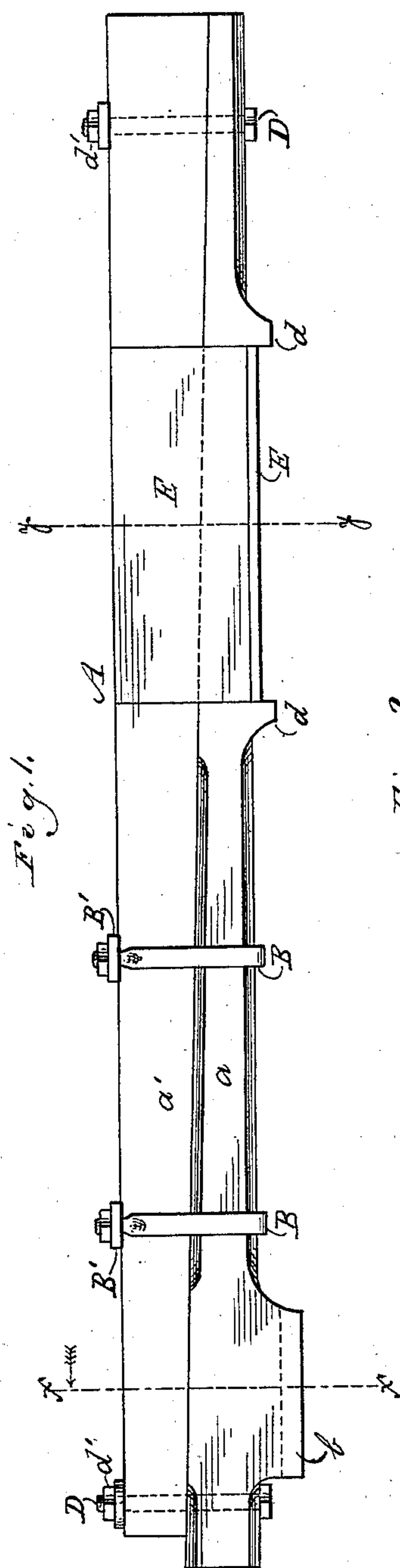


(No Model.)

C. W. WILLARD.
HELVE OF POWER HAMMERS.

No. 285,718.

Patented Sept. 25, 1883.



Witnesses,
Henry Frankfurter
J. B. Halpern

Inventor,
Charles W. Willard
per *F. F. Warner* -
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UNITED STATES PATENT OFFICE.

CHARLES W. WILLARD, OF CHICAGO, ILLINOIS.

HELVE OF POWER-HAMMERS.

SPECIFICATION forming part of Letters Patent No. 285,718, dated September 25, 1883.

Application filed May 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. WILLARD, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Helves of Power-Hammers, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is a side view of the helve. Fig. 2 is a bottom view of the same. Fig. 3 is a section in the plane of the line *x x*; and Fig. 4 is a section in the plane of the line *y y*, showing the helve in position in the husk.

Like letters of reference indicate like parts.

The object of my invention is to make a durable helve for power-hammers; and to that end my invention consists of the means I employ for that purpose.

It also consists in certain other features of construction, all of which will hereinafter be referred to.

A represents the helve, which I make of two principal parts, *a* and *a'*. The part *a*, I make of wrought-iron. In form the part *a* is tapering, gradually growing thicker toward its head *b*. In the under side of the head I make a dovetail groove, *c*, adapted to receive a detachable die, having a rib adapted to enter the said groove. The head *b* is made in one and the same part or piece with the part *a*. *d* *d* are shoulders or lugs, also made in one and the same part or piece with the part *a*, and are adapted and arranged to aid in retaining the husk in its proper place. The part *a'*, I make of wood. This part I also make tapering, it being smallest at or near the head of the hammer, as shown, thus giving the appearance of uniform thickness to the greater portion of the helve.

B B are clips or U-bolts, the threaded ends of which pass through the bars or plates B' B'; and C C are nuts upon the projecting screw-threaded ends of the said clips.

D D are bolts passing directly through the parts *a* and *a'*, and *d'* *d'* are nuts on the ends of the said bolts. By this means the parts *a* and *a'* are clamped or bound very tightly or firmly together, and may be arranged together and detached from each other with facility.

E E are slabs of wood, which I arrange on

the sides and bottom of that part of the helve to which the husk is applied; and F is the husk. In Figs. 1 and 2 I have not shown the husk, and only show it in Fig. 4 for the purpose of illustrating the relative position of the slabs E E with relation to the husk and helve. The husk may be made in any suitable or well-known way.

I find that a very strong and durable helve is produced by making the part *a* of a long piece or bar of wrought-iron, and by clamping to it a bar of wood of the same or of about the same length. The vibrations produced affect both the iron and the wood when so combined less injuriously than when the helve is made either all of iron or wholly of wood, and this combination of the two long bars *a* and *a'*, made of solid material, consisting of iron and wood, respectively, when bound or clamped together to constitute the helves of hammers of this class, constitutes the principal feature of my invention. The lining of wood between the husk and the helve serves as a cushion, and also diminishes the bad effects commonly resulting from the frequent vibrations or jars following the blows. Also, some of the other details of construction now described, though not necessarily all employed in the same hammer, may be used with advantage. I make both bars *a* and *a'* of about the same length and of solid material.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in the helve of a hammer of the class herein referred to, of the wrought-iron bar *a*, having a head made in one and the same part therewith, and the wooden bar *a'*, one arranged above the other, substantially as and for the purposes specified.

2. A hammer-helve consisting of the combination of the long tapering wrought-iron bar *a*, having a head made in one and the same part therewith, and the tapering wooden bar *a'*, clamped to the upper face or side of the bar *a*, substantially as and for the purposes specified.

3. The combination, in the helve of a power-hammer, of the solid long wrought-iron bar *a*, having a head made in one and the same part therewith, and the solid and long wooden bar

a', clamped to the upper side or face of the bar *a*, substantially as and for the purposes specified.

4. The combination, in a power-hammer, of
5 a wrought-iron bar and head, both made in one piece, a wooden bar arranged above the said wrought-iron bar and clamped thereto, and a cushion or lining of wood arranged between the helve or husk, substantially as and
10 for the purposes specified.

5. The combination of the wrought-iron bar

a, having a grooved head made in one and the same piece therewith, and the wooden bar *a'*, clamped to the upper side or face of the bar *a*, both constituting together the helve of a power- 15 hammer, substantially as and for the purposes set forth.

CHARLES W. WILLARD.

Witnesses:

F. F. WARNER,

J. B. HALPENNY.