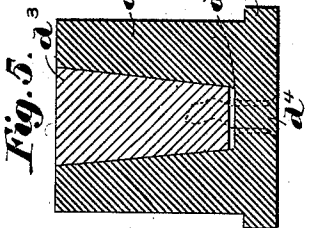
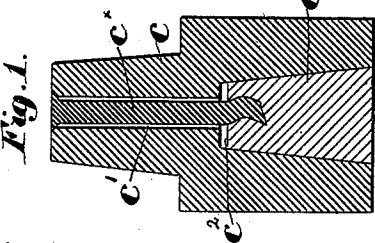
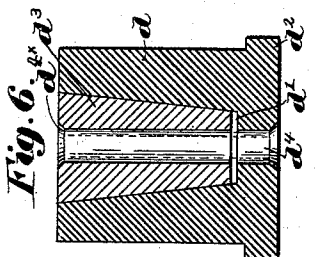
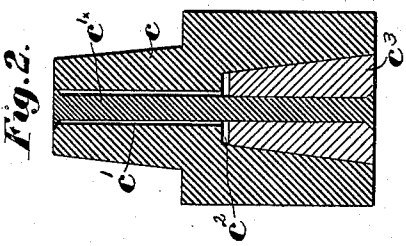
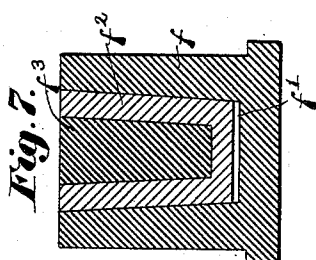
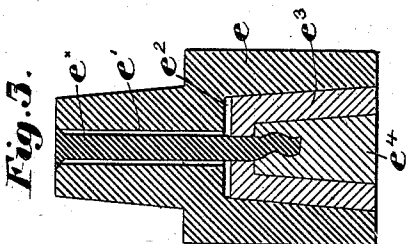
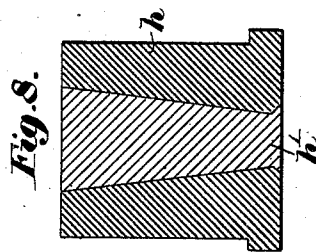
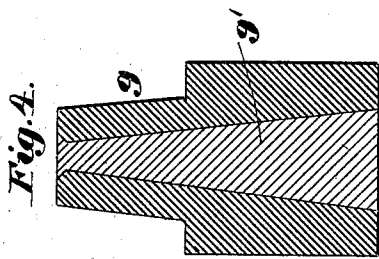
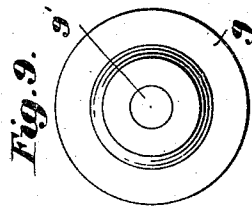


(No Model)

H. D. HIBBARD.
STAMP SHOE OR DIE.

No. 585,573.

Patented June 29, 1897.



Witnesses:
Walter C. Lombard.
Thomas J. Drummond.

Inventor:
Henry D. Hibbard,
by Crosby Gregory,
Attys

UNITED STATES PATENT OFFICE.

HENRY D. HIBBARD, OF HIGH BRIDGE, NEW JERSEY, ASSIGNOR TO THE
TAYLOR IRON AND STEEL COMPANY, OF SAME PLACE.

STAMP SHOE OR DIE.

SPECIFICATION forming part of Letters Patent No. 585,573, dated June 29, 1897.

Original application filed June 19, 1895, Serial No. 553,266. Divided and this application filed September 28, 1896. Serial No. 607,190. (No model.)

To all whom it may concern:

Be it known that I, HENRY D. HIBBARD, of High Bridge, county of Hunterdon, State of New Jersey, have invented an Improvement in Stamp Shoes or Dies, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My present invention relates to improvements in stamp shoes and dies, this application being based on my application, Serial No. 553,266, filed June 19, 1895, and containing subject-matter divided out of the latter application.

It is the object of my invention to provide a stamp shoe or die made in a plurality of separate sections, at least one of which is separately heat-treated, and fitted into each other to constitute a compact shoe or die, each section constituting a part of the face and a part of the body of the shoe or die. By this means a steel shoe or die may be made having sufficient evenness of heat-treatment throughout the mass. My invention is particularly valuable in rendering it feasible to make use of manganese steel for these purposes. This steel conducts heat very slowly, and it is therefore impracticable, and in fact impossible, in view of this quality of manganese steel, together with the necessity for quick cooling in the water-toughening process, to make an evenly toughened and tempered shoe or die of this steel in one mass.

By my invention I am enabled to make a perfect stamp shoe or die in whole or in part, as desired, of manganese steel, and having sufficiently uniform heat-treatment throughout.

The details of my invention will be described in connection with the accompanying drawings, illustrative of the preferred embodiment thereof.

In the drawings, Figures 1, 2, 3, and 4 are vertical sectional views of various forms of stamp-shoes embodying my invention. Figs. 5, 6, 7, and 8 are similar views of the dies, corresponding in their construction to the shoes shown in the preceding figures; and Fig. 9 is a top plan view of one of the shoes.

I have herein shown the shoes and dies as of one type in general form and as circular in cross-section, but this is merely a preferred type and is not of the essentials of my invention. The latter reside in making the shoe or die of two or more sections adapted to be fitted snugly together, so as to form thereby a solid compact face made up of a plurality of these independently heat-treated pieces of metal, preferably steel. These sections are shown as tapering, so that they may be wedged together; also, they may be anchored together, or riveted, and may have vertical openings therethrough, if desired, as set forth in my said former application, Serial No. 553,266, filed June 19, 1895, these holes being preferably subsequently closed.

In Figs. 1 and 2 the shoe *c* is made with a central opening *c'* and a cup-shaped recess or opening *c''* in its base, in which tightly fits a correspondingly-shaped section *c'''*, the two sections being held together by an anchor *c^x* in Fig. 1, preferably of wrought-iron, cast into or otherwise attached to the section *c'''* and riveted to the shoe *c* or fastened thereto in any other suitable way. The anchor *c^x* in Fig. 2 extends through the section *c'''*, suitably shaped—*e. g.*, by coring—to receive it, said anchor being riveted or otherwise attached to the shoe and to the section *c'''*.

The corresponding dies are shown in Figs. 5 and 6, the outer section *d* thereof having an opening *d'* therein to receive the correspondingly-shaped section *d'''*, the outer section being provided with a base, as *d''*, and in Fig. 6 I have shown by dotted lines an anchor *d⁴*, similar to the anchor *c^x* described.

The impact of the shoe upon the die serves to force one section into the other more firmly, as is evident, but, if desired, both sections may be cored, as at *d^x*, Fig. 6, and through the core a suitable anchor *d^{4x}* (shown by dotted lines) may be passed.

In the construction of the sectional shoes or dies, as herein shown, the sections are made separately and separately heat-treated, after which they are assembled, as shown.

In actual practice the parts are cast as true and smooth as possible and any lump or unusual roughness is taken off by grinding with

an emery-wheel, or in the case of the hole with an emery-spindle, the inner section is placed in the outer and driven home by use of a heavy drop-hammer, which makes a sufficiently tight and smooth joint. The top part of the inner section may then be riveted over, securing the said section permanently in place.

The shoe shown in Fig. 3 is composed of an outer section or shell e , having a core-opening e' and an opening e^2 to receive therein a recessed and cored section e^3 , the latter section inclosing a third section e^4 , all of the sections being held together by an anchor e^x , to one end of which the section e^4 is cast or otherwise attached, the anchor extending through the cored openings in the sections e^3 and e and riveted.

A three-part die is shown in Fig. 7 composed of shell-like sections f and f^2 , the latter entering an opening f' in the former, while a third section f^3 fills the opening of the section f^2 .

Fig. 4 shows a two-part shoe, the outer section g having a tapering core-opening, into which is inserted a similarly-tapered section g' , which may be secured by riveting, and in Fig. 8 a similar die is shown, consisting of the outer section h with a tapering core-opening, in which enters the correspondingly-shaped section h' , which may be riveted at its bottom.

The anchor ends may be readily upset or riveted to hold them in place.

Other constructions may be used, the sectional shoes or dies formed thereby, however, partaking of the general characteristics hereinbefore described and being of any desirable shape, so long as they are adapted to be heat-treated in a uniform manner throughout their substance, the number of the sections being also immaterial.

In certain cases in service where the wear of the shoes and dies is irregular and they show a tendency to "cup" or "ball"—that is,

to become concave or convex on the wearing face—I make the shoe or die of sections of different metals or different degrees of hardness—that is, having different rates of wear—and thereby control such tendencies and maintain the fairly-even faces which are essential to efficient work.

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

1. A cast stamp shoe or die consisting of separate sections, each constituting a part of the face of the stamp shoe or die and extending therefrom to constitute a part of the body of the same, certain of said sections being separately heat-treated, the sections being formed separately, fitted together one within another, and secured in place, substantially as described.

2. A cast stamp shoe or die, consisting of separate sections, each section extending from the face into and forming a part of the body of the stamp shoe or die, certain of the said sections being independently heat-treated, and the sections fitted one within another, and an anchor connecting a plurality of sections, substantially as described.

3. A stamp shoe or die consisting of separate sections, each section extending from the face into and forming a part of the body of the stamp shoe or die, one or more of said sections being of cast manganese steel, said manganese-steel sections being separately heat-treated, and all said sections being assembled to constitute a compact stamp shoe or die having substantially uniform heat-treatment throughout its mass, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY D. HIBBARD.

Witnesses:

EDITH J. GRISWOLD,
HUBERT HOWSON.