(No Model.)

W. R. WEBSTER.

DIE FOR UPSETTING EYE BARS.

No. 400,979. Patented Apr. 9, 1889.

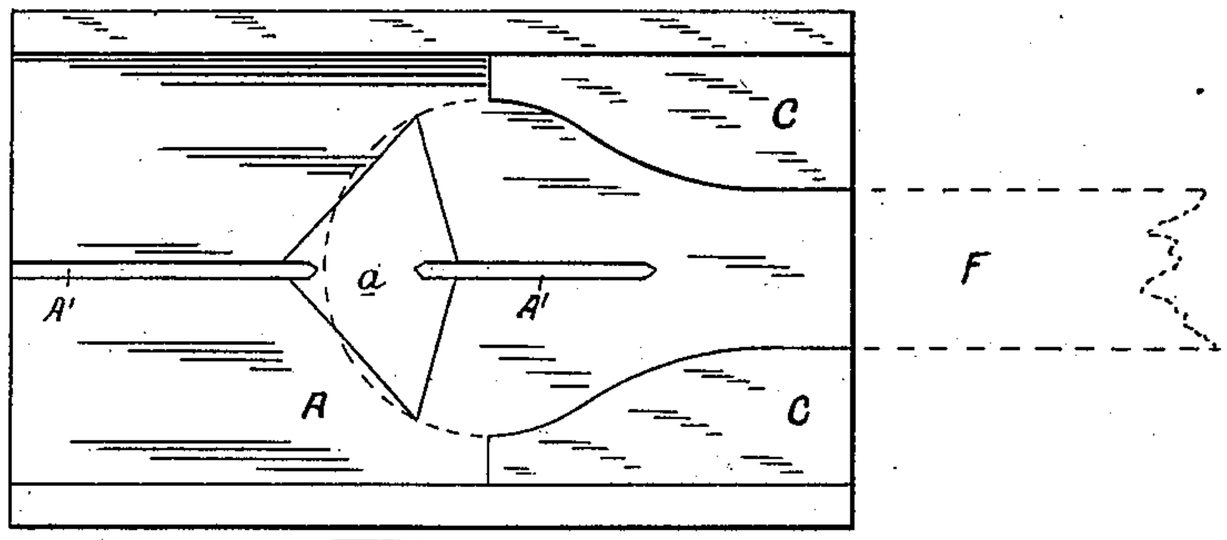

Fig. 1.

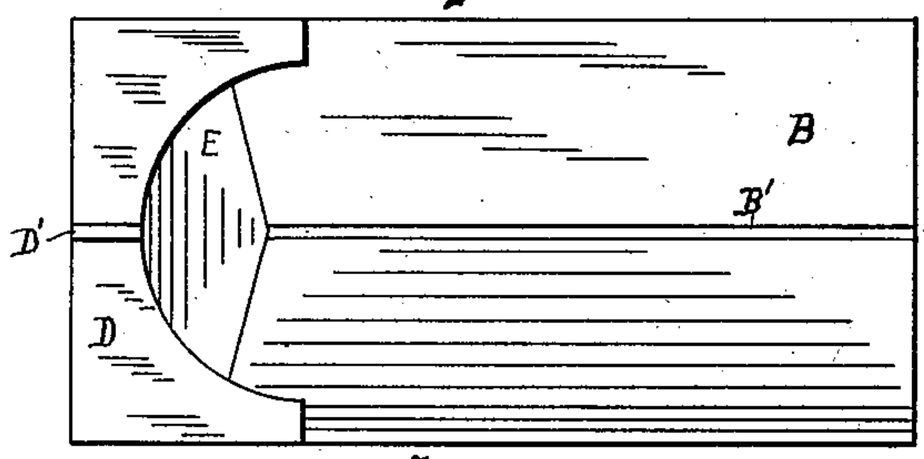

Fig. 2.

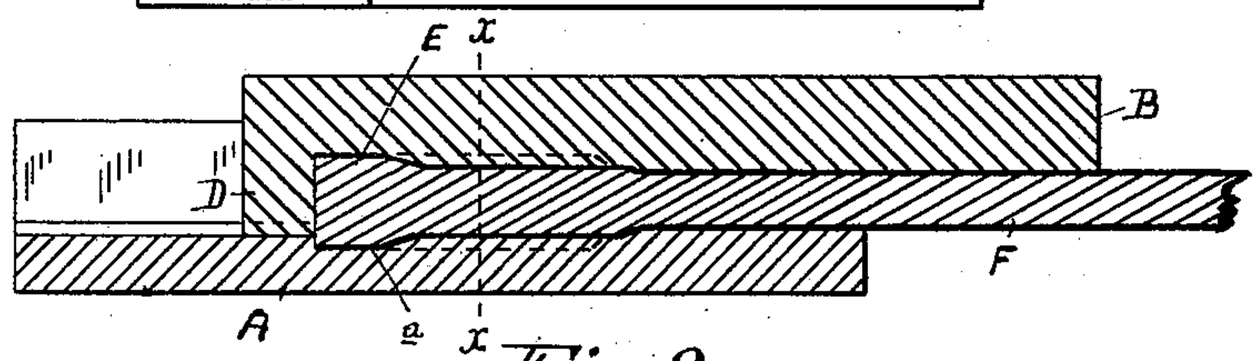

Fig. 3.

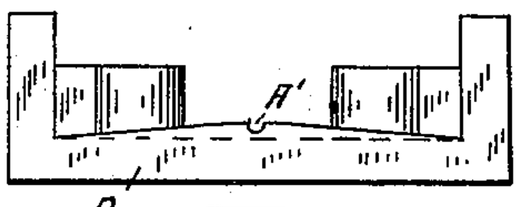

Fig. 4.

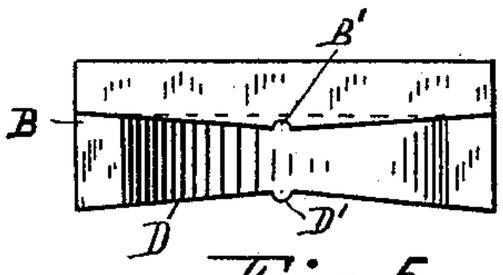

Fig. 5.

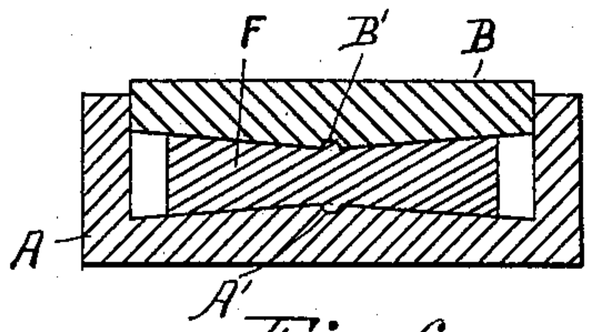

Fig. 6.

WITNESSES:
Joshua Wallack, Jr.
Francis T. Chamberlain Jr.

INVENTOR
William R. Webster
by his attorney
Francis T. Chamberlain

UNITED STATES PATENT OFFICE.

WILLIAM R. WEBSTER, OF PHILADELPHIA, PENNSYLVANIA.

DIE FOR UPSETTING EYE-BARS.

SPECIFICATION forming part of Letters Patent No. 400,979, dated April 9, 1889.

Application filed January 12, 1889. Serial No. 296,157. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. WEBSTER, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Dies for Upsetting Eye-Bars, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to dies for upsetting eye-bars of the general character of those described in my former patents, Nos. 380,413 and 383,508, granted, respectively, on the 3d of April and the 29th of May, 1888. In these dies a central longitudinal projection is formed along the medial line of the die-faces in order to engage the bar placed between them and prevent it from bending or buckling under the action of the plunger, and it will be obvious that an eye-bar made in these dies will be thinnest at the extreme end of the eye—a result which in some cases is disadvantageous.

The object of my present invention is to provide a die which, while retaining the feature of a central longitudinal projection to engage the bar, will also be so constructed as to obviate or mitigate the above-noted disadvantageous feature, and also I have improved upon the device of a central longitudinal projection, as shown in my former patents.

The novel features of my invention are hereinafter clearly pointed out in the claims, and will be best understood after a description of the drawings, in which my invention is illustrated, and in which—

Figure 1 is a plan view of the lower die; Fig. 2, a plan view of the lower face of the upper sliding die; Fig. 3, a central cross-section showing the upper and lower dies in the position they occupy at the end of the upsetting action, and also showing an eye-bar between said dies. Fig. 4 is a front view of the lower die; Fig. 5, a front view of the upper die; and Fig. 6 a cross-section on the line *x x* of Fig. 3.

I will here say that the inclination of the converging surfaces of the die-faces are for the purpose of illustration exaggerated in the drawings beyond that which in practice is necessary or desirable, a very slight departure from a horizontal plane being all that is necessary in most cases to insure that the bar should be engaged along its medial line and prevented from bending or buckling.

A is the lower die, which, as shown, is stationary.

B is the upper dies, to which, in the plan shown in the drawings, the plunger D is secured, being either cast at the same time with the die or fastened to it. The faces of both dies are formed of two converging planes meeting at the center line of the die-face, so as to form a central longitudinal projection, and in the plan shown the apex of this projection in both cases is slotted or grooved, as is shown at A′ and B′, the purpose of this slot in the apex of the projection being twofold—first, to provide two parallel edges to engage the metal of the bar, and, second, to permit the metal of the bar to thicken up on the center line.

D′ indicates a projection, which may be conveniently formed on the lower edge of the plunger D to fit into the groove A′ in the lower die.

Where stationary dies, such as A, are used, I cut away the projecting surface of the die in that part thereof which lies over the end of the eye when the upsetting operation is completed, as is indicated at *a* in Figs. 1 and 3, and where, as in Fig. 2, the die slides over the bar in upsetting it I cut away the projecting surface, as is indicated at E, this, as in the case of *a*, Fig. 1, being that part of the die which rests over the end of the finished eye. It will of course be understood that F indicates the eye-bar and C C cheek-pieces.

The result of cutting away the projecting portion of the die-face in the way indicated and described is to permit the metal of the bar to thicken up at that part which constitutes the end of the head of the finished eye after upsetting. In the case of the stationary die the intermitted projection is sufficient to guide the bar and prevent it from being bent or buckled, while with the sliding die, as shown in Fig. 2, the guiding projection is practically not intermitted, as the head of the bar is sufficiently tightly gripped by the curved face of the plunger.

It is of course evident that the above-described features of my improved die are capable of separate as well as conjoint use, and I do not wish to be understood as limiting my-

self to their use in combination with each other, except where it is so specifically stated in the claims.

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

1. In dies for forming eye-bars substantially as specified, a central longitudinal projection recessed or cut away in that part of the die-surface which rests upon the end of the finished eye, all substantially as and for the purpose specified.

2. In dies for forming eye-bars substantially as specified, a sliding die having a central longitudinal projection cut away at its end, which rests on the end of the eye, in combination with a plunger formed with or secured on said end of the die, all substantially as and for the purpose specified.

3. In dies for forming eye-bars substantially as specified, a central longitudinal projection formed with a groove along its apex, substantially as and for the purpose specified.

4. In dies for forging eye-bars substantially as specified, a central longitudinal projection formed with a groove along its apex and cut away in that part which rests on the end of the finished eye, all substantially as and for the purpose specified.

WILLIAM R. WEBSTER.

Witnesses,
LEWIS R. DICK,
FRANCIS T. CHAMBERS.