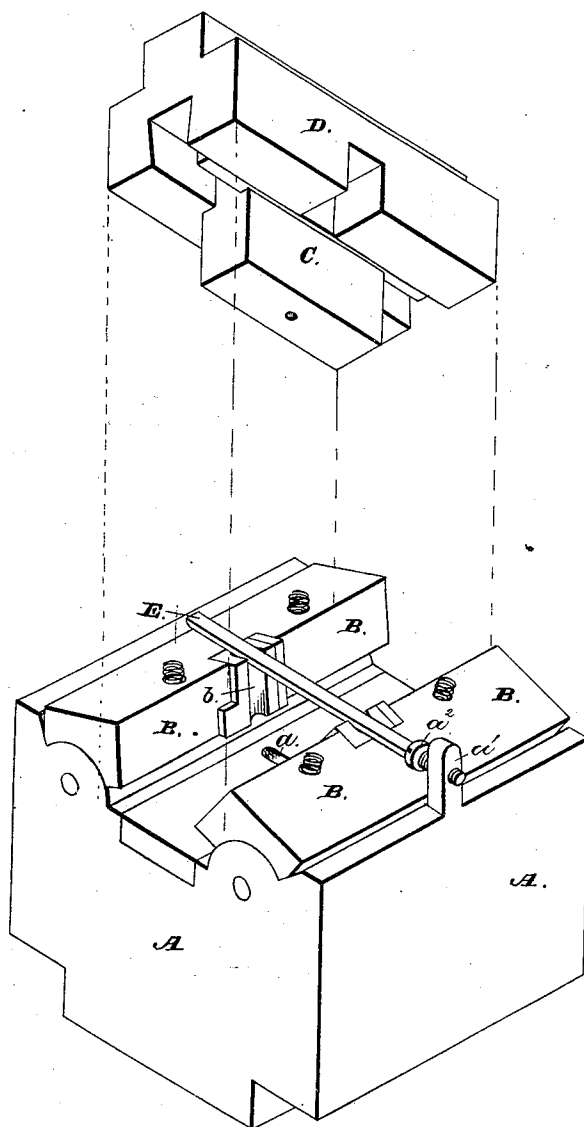


(No Model.)

3 Sheets—Sheet 1.

W. PEARCE.
Die for Forming Saddle Clips.
No. 240.174. Patented April 12, 1881.

Fig. 1.



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Fig. 2.

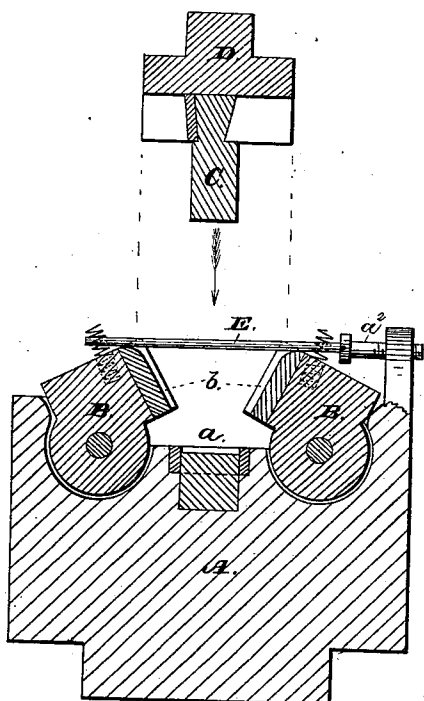


Fig. 3.

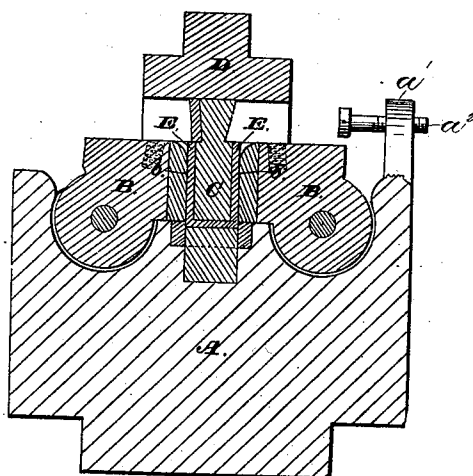


Fig. 4.

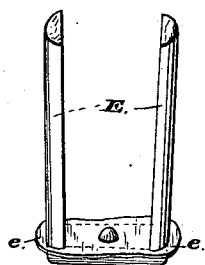
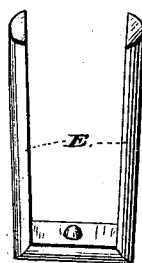


Fig. 5.



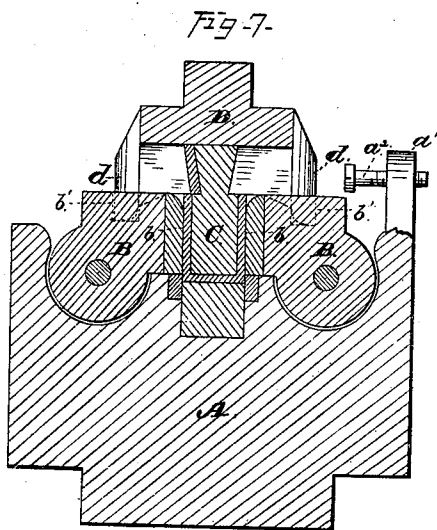
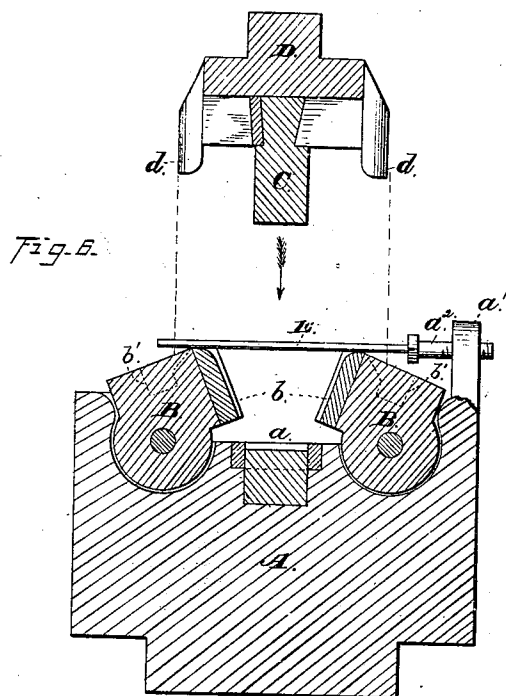
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UNITED STATES PATENT OFFICE.

WILLIAM PEARCE, OF PLANTSVILLE, ASSIGNOR TO HIMSELF, M. N. WOOD-
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DIE FOR FORMING SADDLE-CLIPS.

SPECIFICATION forming part of Letters Patent No. 240,174, dated April 12, 1881.

Application filed July 19, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PEARCE, of
Plantsville, in the county of Hartford, and in
the State of Connecticut, have invented cer-
tain new and useful Improvements in Methods
of and Dies for Forming Saddle-Clips; and I
do hereby declare that the following is a full,
clear, and exact description thereof, reference
being had to the accompanying drawings, mak-
ing a part of this specification, in which—

Figure 1 is a perspective view of my dies
separated from each other. Fig. 2 is a verti-
cal cross-section of the same when occupying
the relative positions shown in Fig. 1. Fig. 3
is a like view of said dies when closed together.
Figs. 4 and 5 are, respectively, perspective
views of the clip formed by said dies before
and after passing through the trimming-dies.
Fig. 6 is a vertical cross-section of my dies sepa-
rated, and provided with one form of means for
closing the side dies in advance of the plunger;
and Fig. 7 is a like view of the same when
closed together.

Letters of like name and kind refer to like
parts in each of the figures.

The design of my invention is to enable a
saddle-clip to be perfectly formed at one oper-
ation; and to this end it consists, principally,
in the means employed for forming the head
of the clip and causing the fin to project hori-
zontally, so as to be removable by trimming-
dies, substantially as and for the purpose here-
inafter specified.

It consists, further, as an improvement in
dies for forming carriage-clips, in combining
with a base-die two hinged or pivoted side
dies and a plunger, springs projecting above
the surface of said side dies, or equivalent
means, whereby said side dies are closed by
the downward movement and reach their bear-
ings in advance of said plunger, substantially
as and for the purpose hereinafter shown.

In the construction of saddle-clips by my
method I employ a base-die, A, in which is
formed a half round recess, *a*, that corresponds
in size and shape to the like features of the
head of the clip.

Hinged or pivoted upon the die A, at each
end of the recess *a*, is a block, B, which is ca-
pable of movement, so as to cause its inner

face to have a right angle with the upper face
of said die A, as shown in Fig. 3, or to cause said
inner face to have an upward and an outward
inclination, as seen in Figs. 1 and 2. Within
the said inner face of said pivoted block or
die B, or within a block of metal secured with-
in the same, is formed a vertical half-round
groove, *b*, which corresponds in size and shape
to the like features of one of the arms of a
saddle-clip, has its upper end rounded out-
ward, and at its lower end coincides with one
end of said recess *a*, when said die is turned
inward to the position shown in Fig. 3.

The dies described are secured within the
bed of a drop, and are used in connection with
an upper die, C, which, as shown in Fig. 3,
corresponds in size and shape to the space
between the faces of said dies when the side
dies, B and B, are turned to the inner limit of
their movement, said die C being attached to
or within the face of a block, D, which is, in
turn, secured to or within the drop. The dies
B and B being held at the outer limit of their
motion by means of springs, a bar, E, of half-
round iron, having suitable size and length, is
heated and placed in the position shown in
Figs. 1 and 2, its rounded side being down-
ward and resting in the flaring upper ends of
the grooves *b*. The upper die or plunger, C,
is now caused to descend, and, impinging upon
the center of the bar E, it bends the same down-
ward and carries it into the recess *a*; but be-
fore said bar has reached said recess the block
D impinges upon the upper inner corners of
the side dies, B, and causes said dies to turn
inward to the position shown in Fig. 3, by
which means said bar is forced into and caused
to conform to the shape of the said recess *a*
and the grooves *b*, forming a clip, which, when
released, presents the appearance shown in
Fig. 4, the surplus metal having been forced
outward between the upper face of the lower
die, A, and the bottom faces of said side dies,
B, in the form of a fin, *e*, which projects hori-
zontally from the outer curved face of each
clip-arm.

To complete the forging of the clip E, it is
only necessary that the fin *e* should be removed,
which operation is easily and perfectly per-
formed by passing said clip through trim-

ming-dies which correspond in size and shape to the horizontal outline of the recess *a* of the die A. The horizontal projection of the fins *e* from the sides of the clip-arms renders practicable their removal by means of trimming-dies, whereas if said fins were differently located it would be necessary to remove them by grinding or filing, in which event a large increase in time and expense would result.

Under ordinary circumstances the inward and downward movement of the side dies, B, and the downward movement of the plunger C will cause the rod E to be upset sufficiently to produce perfect and full corners at the angles of the clip; but should there be a lack of metal at such points the difficulty may be obviated by causing said side dies to close slightly in advance, so as to cause said plunger to carry down more metal, which movement may be produced in various ways, among which is the use of springs placed within recesses in the upper face of each side die, and having sufficient projection therefrom to cause them to be engaged by the block D in advance of contact between the latter and the corners of said side dies. Another means for effecting such movement of the side dies, B, is by means of two lugs, *d*, which are secured upon each side of the block D, and, projecting below its lower face, engage with the upper faces of said side dies, and operate to turn the latter inward to the position shown in Fig. 7, after which said lugs pass into vertical recesses *b'* formed in the upper faces of said side dies, and offer no obstacle to the farther downward movement of said block D and the plunger C.

By the use of my dies but one fall of the drop is required in order to form a saddle-clip, which, in consequence of the peculiar operation of said dies, is solid at its angles, instead of having cold sheets at such points, as is usually the case with die-made saddle-clips.

In order that the longitudinal position of the bar E may be easily and quickly determined, a lug, *a'*, extends upward from one side of the base-die A, and is provided with a set-screw,

a', which passes horizontally inward and furnishes a bearing or gage, against which one end of said bar may be placed. By means of the longitudinal adjustment of said screw bars having different lengths may be accommodated.

I am aware that a device for bending and swaging carriage-clips consisting of a base-block, two side die-blocks hinged to said base-block, and a plunger operating with said base and die blocks is not new, and therefore disclaim such device broadly.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. The hereinbefore-described dies for forming carriage-clips, in which the improvement consists, mainly, in a groove corresponding to the size and shape of the head of a clip formed in the face of the lower die or base block, and registering with similar grooves in the pivoted side dies, which have a right-angle abutment upon the face of said lower or base die, whereby the external angles of the head of the clip are filled out and defined, and the surplus metal, if any is present, is forced out, in the forms of fins, from the inner angles over the plane face of said lower die, in a convenient position for being trimmed off, substantially as and for the purpose specified.

2. As an improvement in dies for forming carriage-clips, the combination, with a base-die, A, two hinged or pivoted side dies, B, and a plunger, C, of springs F, projecting from said side dies, or equivalent means, whereby said side dies are closed by the downward movement and reach their bearings in advance of said plunger, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of June, 1880.

WILLIAM PEARCE.

Witnesses:

GEO. S. PRINDLE,
NORMAN A. BARNES.