

D. WILCOX.

Dies for Forging Stay-Ends for Carriages.

No. 154,573.

Patented Sept. 1, 1874.

FIG. 2.

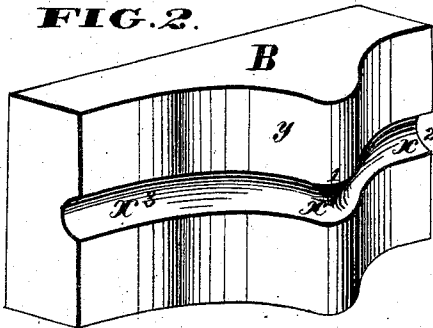


FIG. 3.

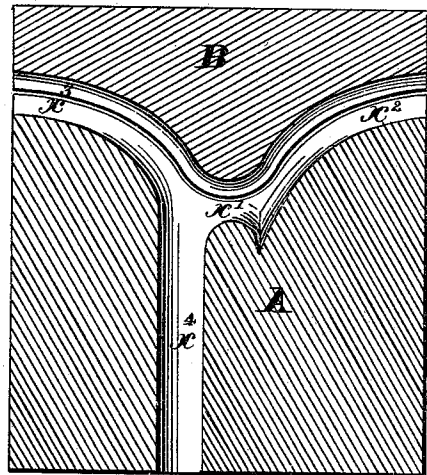


FIG. 1.

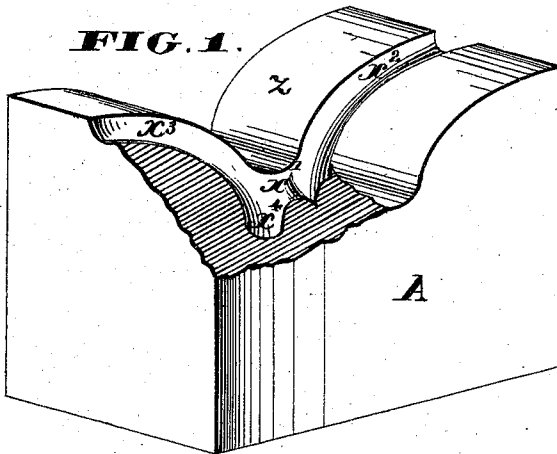
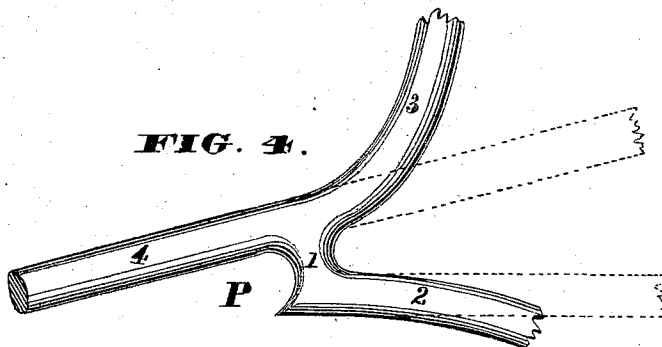


FIG. 4.



WITNESSES:

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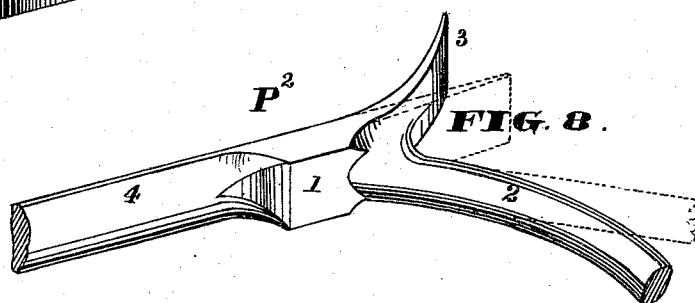
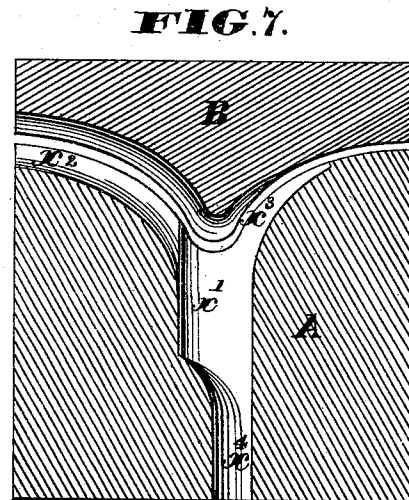
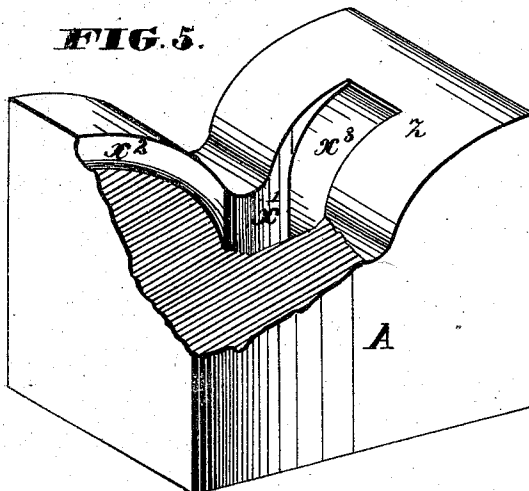
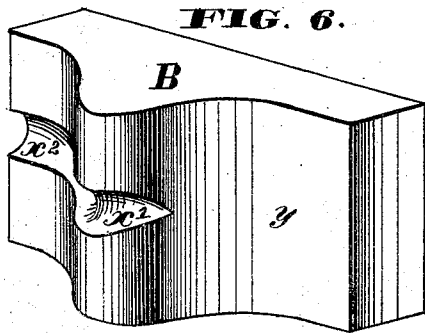
Darius Wilcox
By Knight Bros Attorneys.

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FIG. 9.

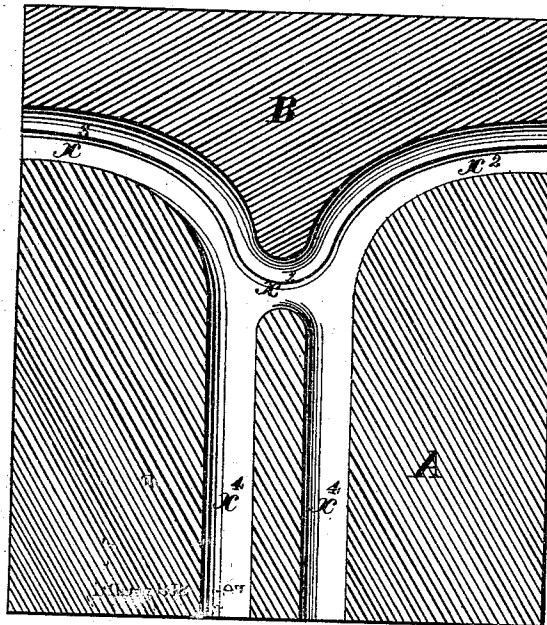
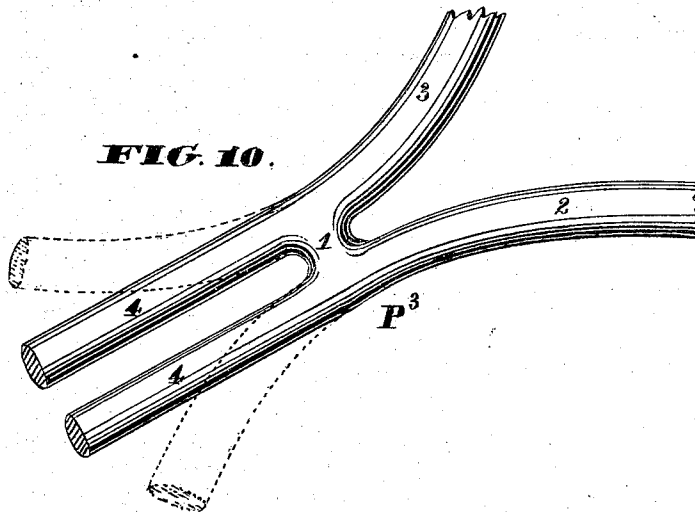


FIG. 10.



WITNESSES

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UNITED STATES PATENT OFFICE.

DARIUS WILCOX, OF BIRMINGHAM, CONNECTICUT.

IMPROVEMENT IN DIES FOR FORGING STAY-ENDS FOR CARRIAGES.

Specification forming part of Letters Patent No. 154,573, dated September 1, 1874; application filed February 19, 1874.

CASE A.

To all whom it may concern:

Be it known that I, DARIUS WILCOX, of Birmingham, in the county of New Haven, Connecticut, have invented a new and useful Improvement in Dies for Forging Offsets or Stay-Ends, of which the following is a specification:

This invention relates to the manufacture of that class of carriage-hardware known as offsets, or stay-ends and stay-centers, and to the manufacture of those particular offsets or stay-ends which have three ends or limbs.

The invention consists in dies for forging or striking these articles endwise into shapes approximating those which they are finally to assume. The ends or limbs of each piece, with the offset proper, are formed in a curved plane on which the dies separate. The other limb or limbs are formed in a vertical recess or recesses. The piece is finished by trimming off the fins and bending or straightening such of the ends or limbs as require this.

Figures 1 and 2 are perspective views of the separated members of a pair of dies illustrating this invention. Fig. 3 is a vertical longitudinal section of the same united. Fig. 4 is a perspective view of the product of these dies. Figs. 5 and 6 are perspective views of the separated members of a second pair of dies, illustrating a modification. Fig. 7 is a vertical longitudinal section thereof. Fig. 8 is a perspective view of their product. Fig. 9 is a vertical longitudinal section of a third pair of dies, illustrating another modification. Fig. 10 is a perspective view of their product.

Like letters refer to corresponding parts in the several figures.

A pair of dies, A B, constructed according to this invention, may be described as follows: The dies may be of iron or steel, and manufactured by any approved process. The face z of the lower die A may be level in transverse section. In longitudinal section (see Figs. 3, 7, and 9) it is depressed in the middle and curved upwardly from this point to its ends, to approximate to the plane of the face of the offset proper 1, with the lateral arm 2 and corresponding limb 3 at one end of the offset or stay-end, which may be of either

of the forms represented by Figs. 4, 8, and 10, or of other analogous forms. The face y of the upper die B is, of course, simply the reverse of that of the lower die. To give shape to those parts of the offsets or stay-ends which are to be struck in this plane, recesses $x^1 x^2 x^3$, of proper shape, corresponding with the parts 1, 2, and 3 of the product, as before described, are formed in the contiguous faces of the dies. Where the parts are round or approximately round, the recesses are formed one-half in each die. Where a part (3) is flat, its recess is preferably formed wholly in the lower die, as illustrated in Fig. 7. In either case the fins are formed on the edges of the article, and can readily be trimmed off. To give shape to the limb or limbs 4 at the opposite end of the offset or stay-end, a vertical recess or recesses, x^4 , are formed in the lower die by a perforation or perforations extending downward from the offset-recess x^1 .

In the product P (illustrated in Fig. 4) all the parts are round in cross-section, and all its ends are weld-ends, the arm 2 serving, in this form, to attach a branch stay to a main stay.

In the product P², Fig. 8, the offset proper 1 is enlarged to receive a bolt-hole; the ends 2 and 4 are flat to embrace the reach, and only the arm 2 and end 4 have weld-ends—the former for attaching a main brace, and the latter for attaching a plate to extend to the head-block.

The product P³, Fig. 10, which is termed a "stay-center," corresponds in shape with P, Fig. 4, differing only in the duplication of its end or limb 4. Each end is a weld-end, and this form is employed to unite the ends of four stays. The weld-ends are allowed to protrude at the ends of their recesses in these, as in dies for this purpose previously patented by me. This facilitates the disposition of surplus metal.

In using a pair of these dies, a rough blank is prepared and dropped into the recess of the lower die. The upper die is then applied, and the forging is completed by pressure or blows on the upper die. The product is then re-

moved from the dies, the fins are trimmed off, and the ends are bent or straightened to the required form, as illustrated in Figs. 4, 8, and 10, which represent in full lines the products as trimmed but unbent, the shapes as completed by bending being indicated by dotted lines.

Each or either of the dies herein described may be formed in two or more parts, to facilitate their manufacture, the sections to be keyed together for use. The lower or bottom die, for instance, has thus been made in halves.

The forms of offset or stay-end herein described constitute no part of this invention.

The following is claimed as new, namely:

The dies herein described for forging offsets or stay-ends by striking them endwise, substantially in the manner set forth.

DARIUS WILCOX.

Witnesses:

S. M. GARDNER,

GUSTAVE WIEDEMANN.