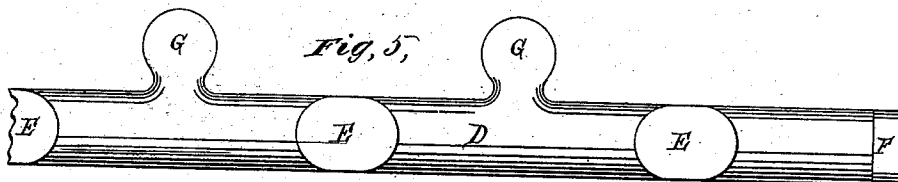
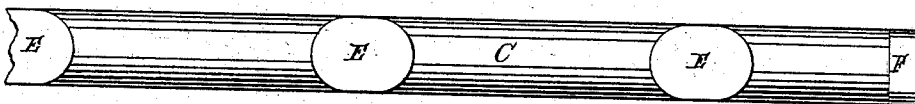
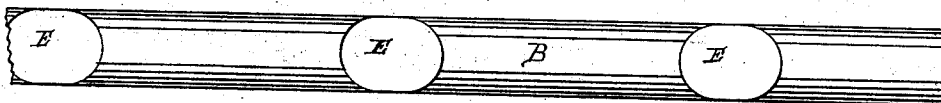
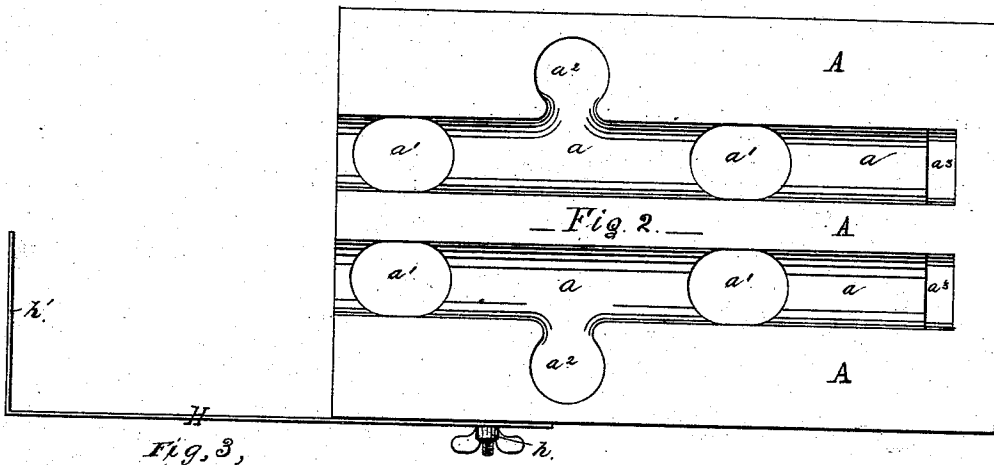
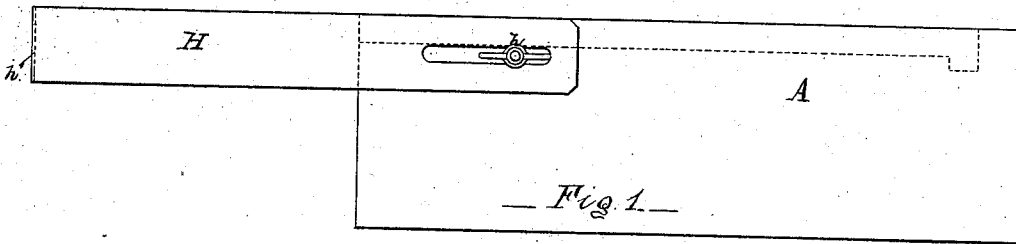


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Dies for Forming Fifth-Wheel Blanks.
No. 221,886. Patented Nov. 18, 1879.



Witnesses.
Walter Allen
Geo T Smallwood Jr.

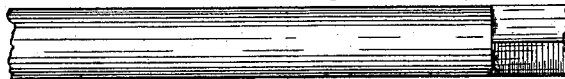
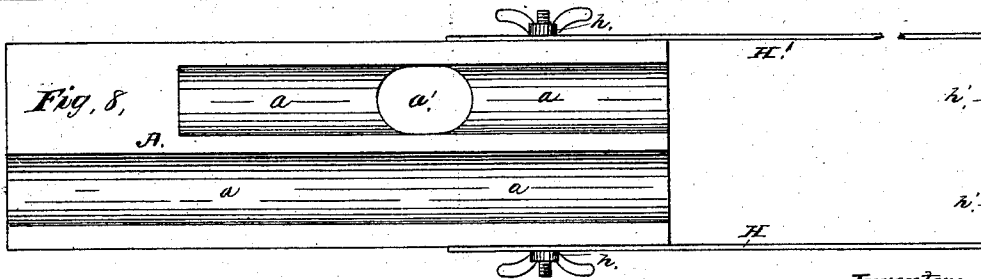
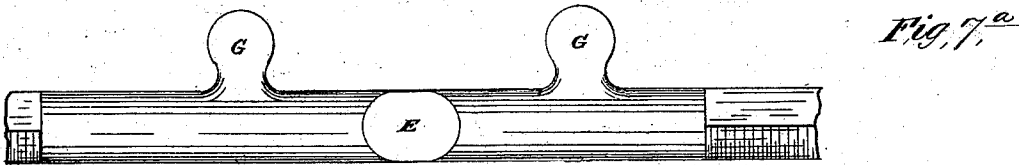
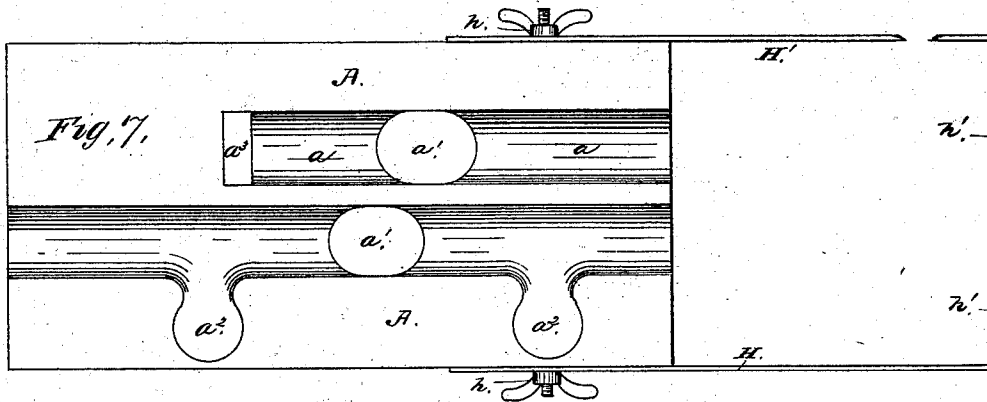
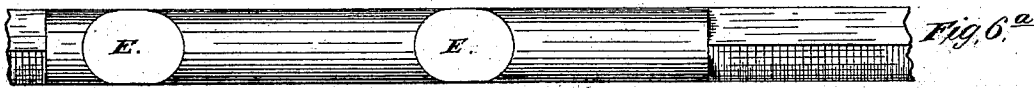
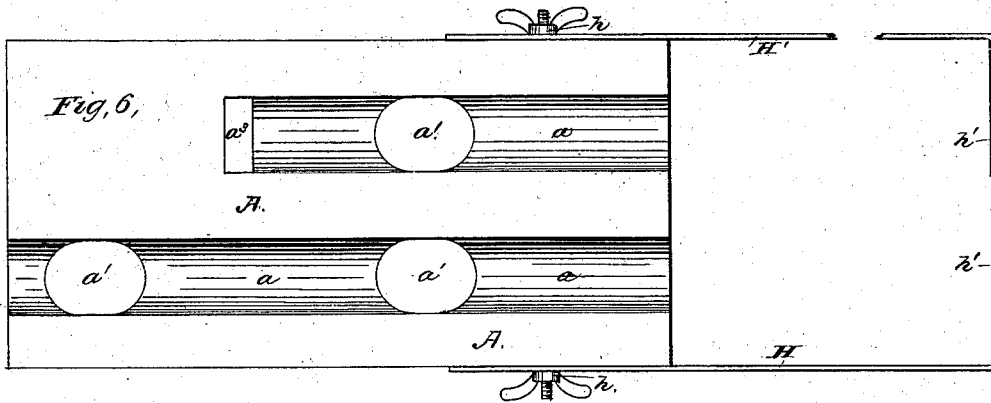
Inventor.
Darius Wilcox
By Knight & Allen

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Attest:

Walter Allen
Geo. P. Smallwood, Jr.

Inventor:

Darius Wilcox.

By Knights atty.

UNITED STATES PATENT OFFICE.

DARIUS WILCOX, OF DERBY, ASSIGNOR TO WILCOX & HOWE, OF
BIRMINGHAM, CONNECTICUT.

IMPROVEMENT IN DIES FOR FORMING FIFTH-WHEEL BLANKS.

Specification forming part of Letters Patent No. **221,886**, dated November 18, 1879; application filed
May 10, 1879.

To all whom it may concern:

Be it known that I, DARIUS WILCOX, of Derby, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Swaging-Dies for forming iron suitable for the manufacture of fifth-wheels for carriages; and I hereby declare the following to be a full description of the same.

This invention has for its object the formation of a die of cast-steel or other suitable hard metal, in the working-face of which is formed a trough or groove, and at suitable points along the sides or bottom of the said groove are placed such enlargements or pockets as are required to form the swaged pieces into the form sought, an adjustable gage being also used to guide and direct the bar being formed into its proper longitudinal position with reference to the die or form.

The invention will be readily understood by reference to the accompanying drawings, of which Figure 1 is a side elevation of one of the improved dies, showing also the attached gage for the measurement of the piece being formed. Fig. 2 is a plan of the same. Figs. 3, 4, and 5 are plans of portions of the swaged blanks. Figs. 6, 7, and 8 are plans of dies of modified form for the successful swaging of the center and ends of the blank. Figs. 6^a, 7^a, and 8^a are plans of blanks partially swaged in the dies shown in Figs. 6, 7, and 8, respectively.

The block A, of which the die is formed, is made of some suitable hard metal, such as cast-steel or chilled iron, and it will have one or more grooves, *a*, in its face. At suitable points along these grooves there will be formed flat-bottomed pockets *a'*, sunk to a greater depth or of a different general form than the rest of the groove *a*, so as to form the desired elevations or spots on the finished bars. In like manner there will, whenever or wherever required, be side pockets, *a*², formed in the metal A at the side of the groove *a*, so as to form corresponding lugs or projections on the sides of the finished bars. There will also be, if so desired, pockets *a*³ at the ends of the groove *a*, for the formation of lugs or projections on the ends of the finished bars, and these pockets *a*³ may, if desired, be fashioned so as to form the end of the finished bar into any required or ornamental shape.

In general use, the bottom of the groove *a* will be made concave, so as to form the finished bar convex on the outside; but the particular form may be varied so as to suit circumstances or fancy, and is no essential feature of the invention.

In like manner the pocket *a*³ will ordinarily be flat-bottomed and have vertical sides; but these particular forms, like those of the pockets *a'*, constitute no essential feature of the invention.

The side pockets, *a*², are intended for the formation of side lugs on the finished bar in cases where lugs are required for the accommodation of bolts for the attachment of connecting-pieces, such as reach-irons, and for this purpose they may be given any desired contour or form; but these side pockets may or may not be formed in any particular die, as circumstances may require. In like manner the end pockets, *a*³, may be used or not, as desired.

The method of using these dies is to take a properly-formed blank, heated, of course, to the requisite degree, and have an attendant hold it over the groove of the die, when a flat die (not shown) fixed to the face of an overhanging hammer is brought down with a smart blow on the top of the heated blank, thereby driving it into the groove *a* and all the pockets (*a'* *a*² *a*³) there may be in the die, thus forming the finished bar into the shape desired and given to it by the conformation of the die A.

The intention is to construct the die so that the depth of the groove and its pockets will just equal the thickness of the finished piece, and the result of this will be a smoothly-finished and swaged piece, except the surplus metal pressed out in the form of fins, which must necessarily be trimmed off after it is taken from the dies.

In Figs. 3, 4, and 5 are represented finished bars B C D, each of which has the projecting spots E, formed by the pockets *a'*, and the bars C D have finished end lugs, F, made by the pockets *a*³, while the bar D alone shows the side lugs, G, made by the pockets *a*².

In order to insure the correct length of the finished piece, I employ one or more gages, H, attached adjustably to the side of the die-

block A, and capable of reversal thereon by means of the set-screw *h*, which passes through a longitudinal slot in the said gage-piece. An end stop, *h'*, (shown best in Fig. 2,) projects horizontally from the said gage-bar H, (which is simply a rigid elbow-bar,) and extends at least as far as the center of the groove *a*, so that a bar or blank properly formed, placed in or over the said groove, will have its outer end rested against the said stop *h'* of the gage H, while any excess of the proper length of the blank will overlap the inner end of the groove *a* and be cut off, or nearly so, by being pressed out into a thin fin by the descending blow of the hammer; but if any diminution should exist in the length of the blank, the blow of the hammer will elongate the piece so as to fill the form.

The gage is especially necessary in swaging the final end of the blank. It may be used also in swaging the first end; but this is not so necessary.

In operating with the die shown in Fig. 2, the preliminary blank is first forged with projections for the lugs G G at the required distance apart. The first end is then placed in the die either with or without the use of a gage. The first end having been swaged, the gage-abutment *h'* is set accurately at the required distance from the end *a*³ of the second groove. The swaged end being then set against this abutment *h'*, the second end of

the blank will be accurately swaged to the required length and form, the surplus metal being pressed out in the form of fins at the end *a*³ and at the sides.

In using the dies shown in Figs. 6, 7, and 8, the central part of the blank is first swaged in the groove shown extending through from end to end of the die. Suppose the blank to be for a fifth-wheel of twelve inches diameter, the first gage, H, if used, may be set about twelve and one-half inches from the longitudinal center of the die. The center of the blank having been swaged, the second gage, H', is adjusted with its abutment-elbow *h'* distant from the end *a*³ of the groove, say, twenty-five inches, or whatever may be the required length of the blank. The ends are then successively swaged in the short groove.

Having described my invention, I claim—

1. A blank for manufacturing fifth-wheels having projecting spots and side lugs, as and for the purpose set forth.
2. The dies, constructed as described, for swaging fifth-wheel blanks with projecting spots and side lugs.
3. The slotted adjustable gages H H', in combination with the die A, for swaging fifth-wheel blanks, as and for the purposes set forth.

DARIUS WILCOX.

Witnesses:

M. RANDOLPH,
I. P. HOWE.