

D. WILCOX.
Dies for Forging Offsets or Stay-Ends for Carriages.
 No. 144,375. Patented Nov. 4, 1873.

FIG. 1.

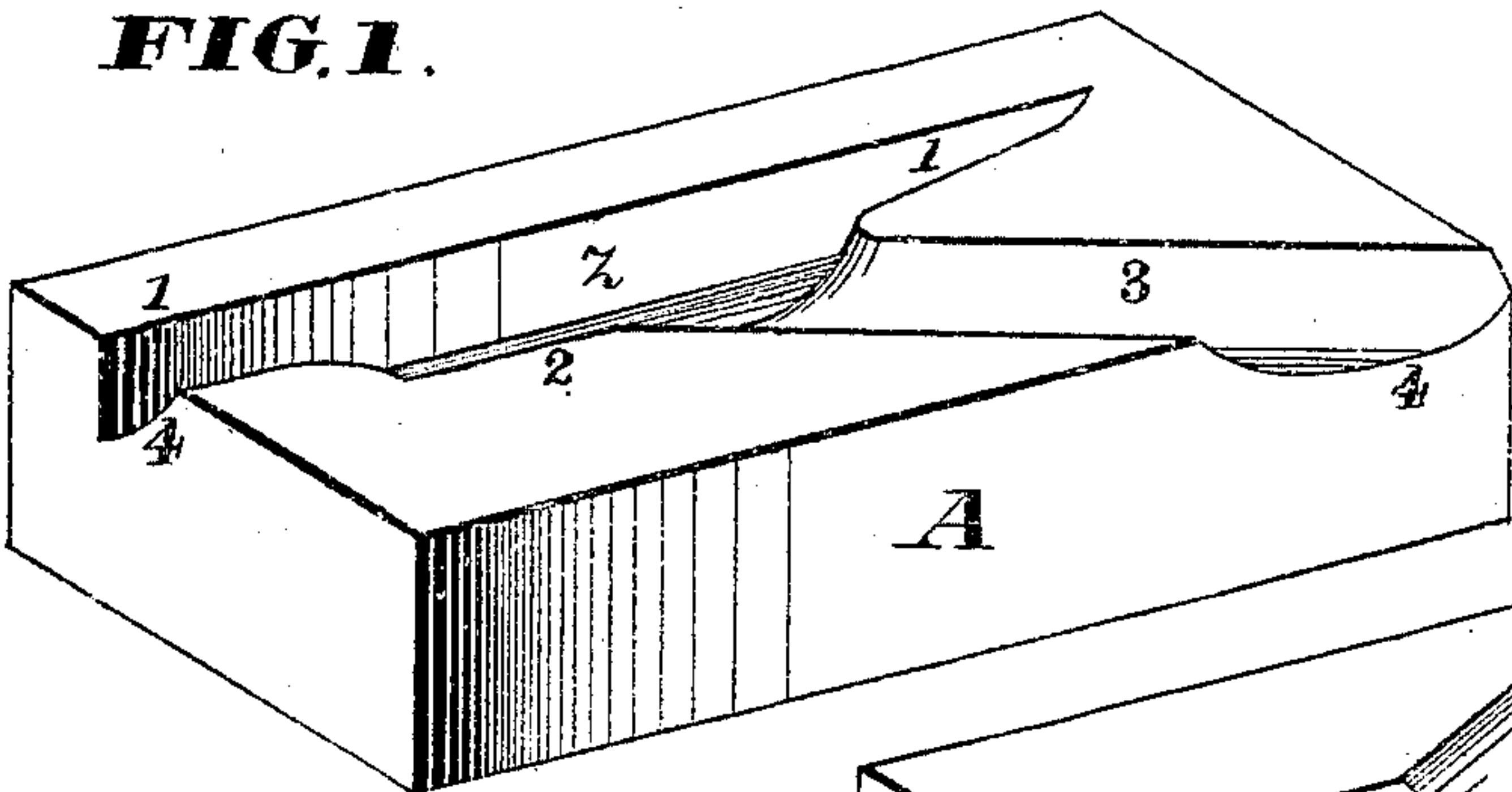


FIG. 2.

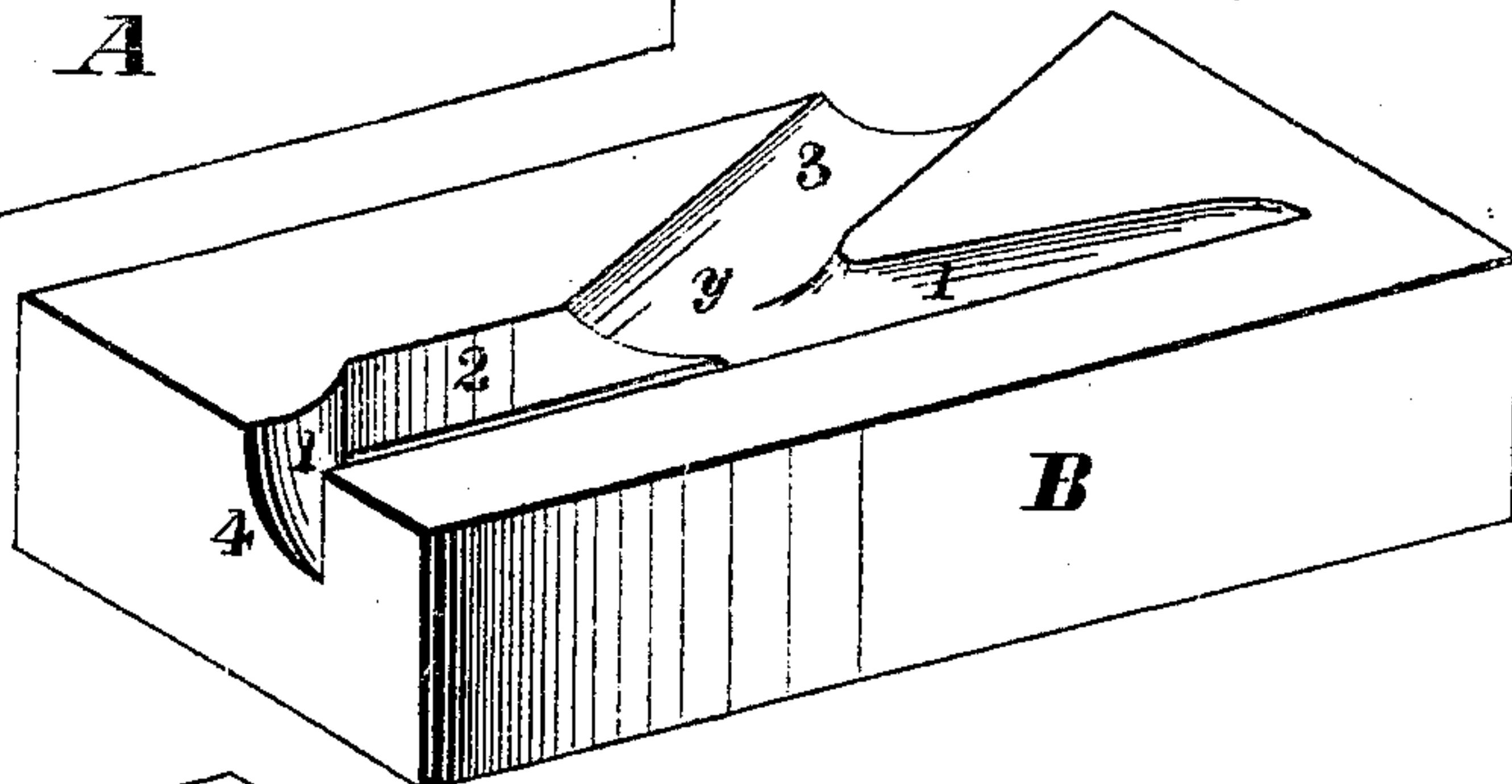


FIG. 3.

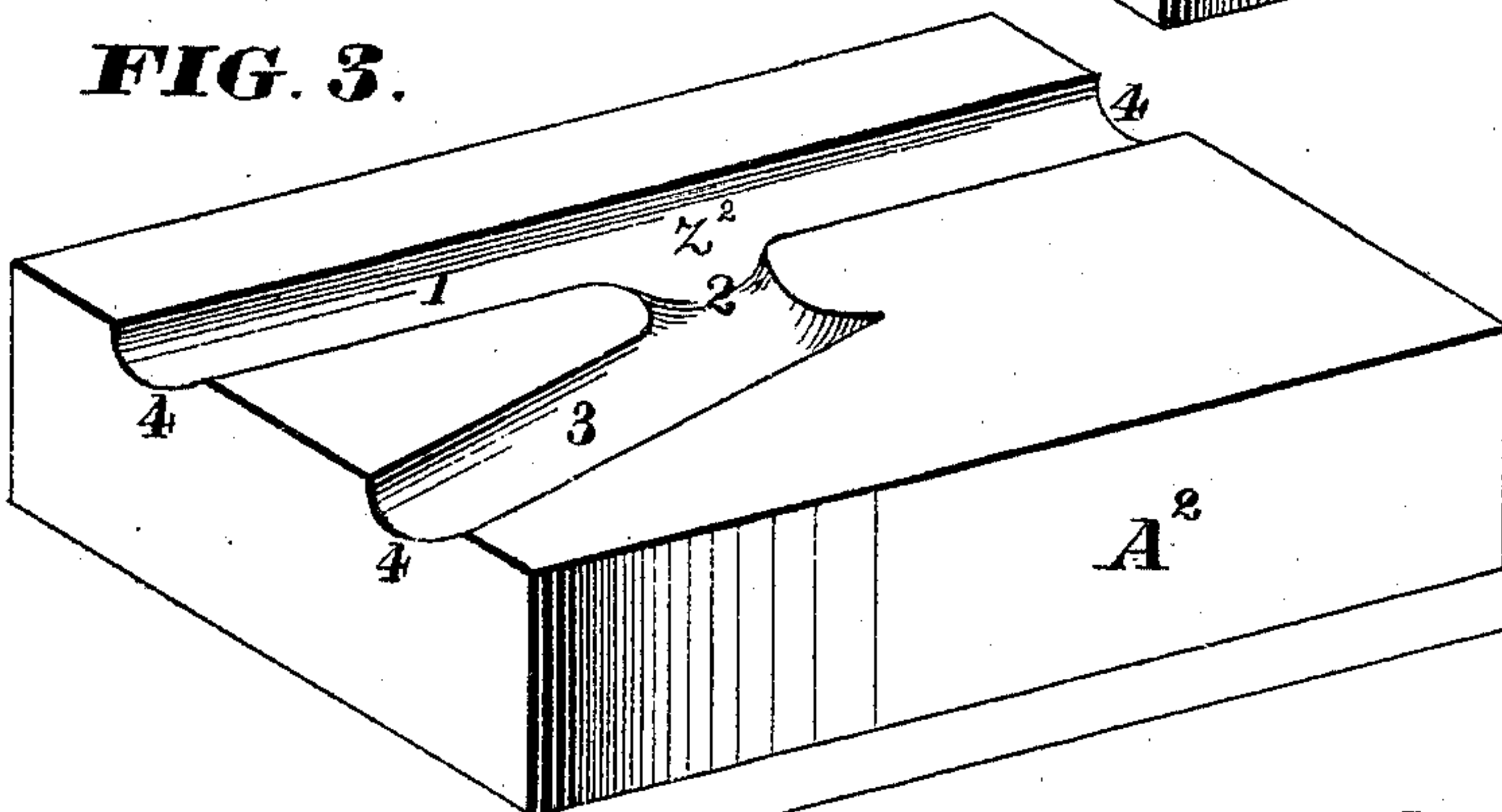
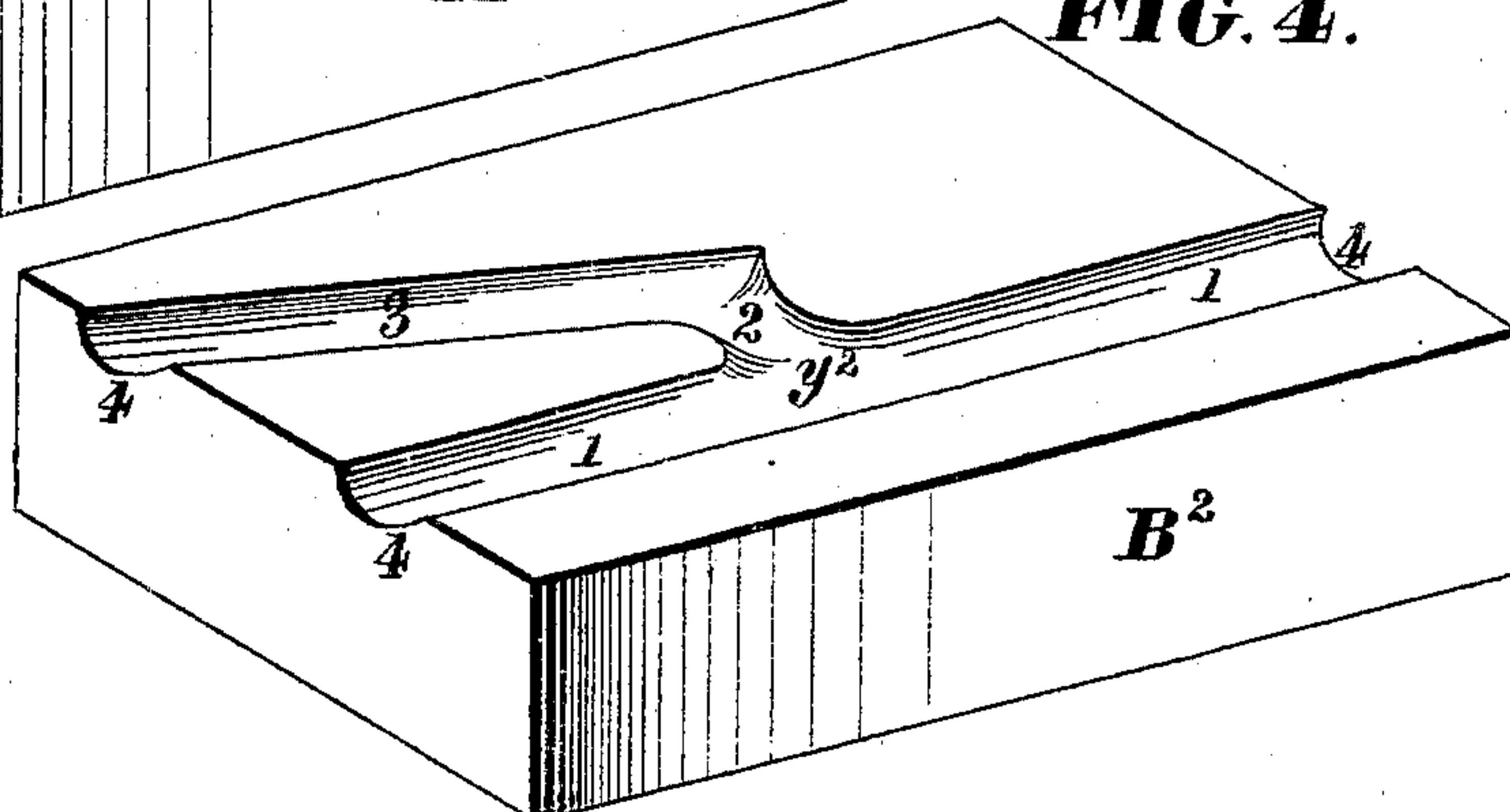


FIG. 4.



WITNESSES.

Jas. L. Swin
Walter Allen

INVENTOR:

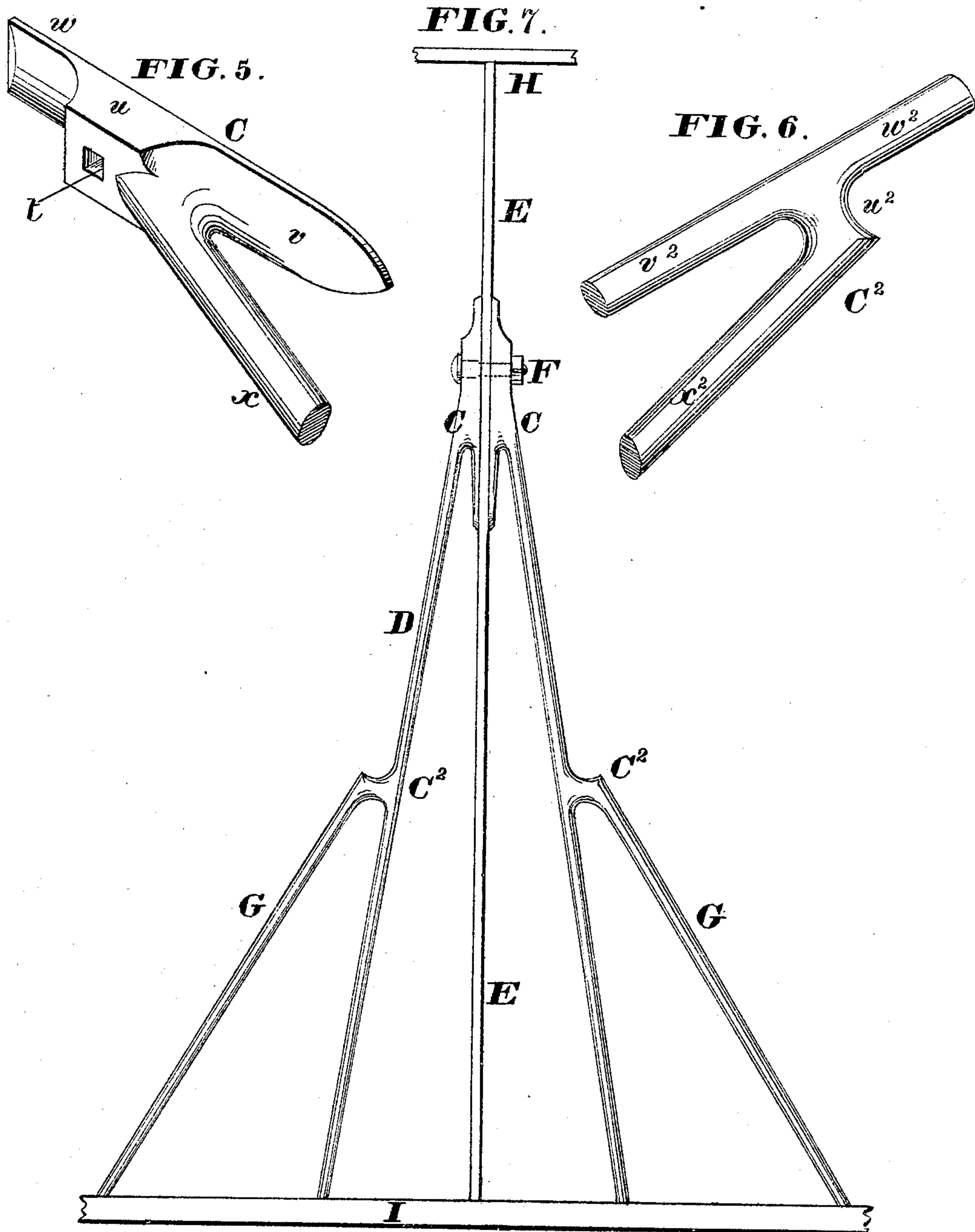
Darius Wilcox
 By *Knights* Attorneys.

D. WILCOX.

Dies for Forging Offsets or Stay-Ends for Carriages.

No. 144,375.

Patented Nov. 4, 1873.



WITNESSES:

Gas. L. Ewin
Walter Allen

INVENTOR:

Darius Wilcox
By *Wright & Co.* Attorneys.

UNITED STATES PATENT OFFICE.

DARIUS WILCOX, OF BIRMINGHAM, CONNECTICUT.

IMPROVEMENT IN DIES FOR FORGING OFFSETS OR STAY-ENDS FOR CARRIAGES.

Specification forming part of Letters Patent No. 144,375, dated November 4, 1873; application filed October 22, 1873.

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 the Manufacture of Offsets or Stay-Ends for Carriages, of which the following is a specification:

This invention relates to means for making what are known in the carriage-hardware trade as "offsets" for use in "ironing" carriages and other vehicles; and it relates primarily to the manufacture of those offsets which constitute "stay-ends" in the running-gear of vehicles. The invention consists in two-part dies, or pairs of dies, in which the different offsets may be stamped, struck, or swaged to the required shape at a single operation.

The dies are horizontal, and the matrical recesses are formed one-half in the upper die and one-half in the lower die. The pieces are consequently struck edgewise, and the fins are so formed as to facilitate their removal.

Figure 1 is a perspective view of the lower member of a two-part offset-die. Fig. 2 is a perspective view of the upper member of the same die inverted. Figs. 3 and 4 are like views, respectively, of the parts of a die for forming a different pattern of offset. Fig. 5 is a perspective view of the offset produced by the first pair of dies, Figs. 1 and 2. Fig. 6 is a like view of the product of the second pair of dies, Figs. 3 and 4. Fig. 7 is a plan view of a portion of the running-gear of a carriage, illustrating the employment or application of the different offsets represented.

To carry out this invention, a pair of swaging-dies, A B, or a two-part die divided in a horizontal plane, is first constructed by any approved process. Counterpart matrical recesses $z y$, of the required shape, are formed in the faces of the respective dies, so that one-half of the matrix shall be in the lower die and one-half in the upper die. Roughly-forged blanks are introduced between the dies, and struck or stamped edgewise within the same in a drop or press. A neatly-swaged offset, C, of a given pattern, adapted to be thus manufactured with the utmost uniformity and cheapness, is the product. The general form of offset, to whose manufacture this invention pri-

marily relates, is illustrated in Fig. 5, and at C in Fig. 7. It is designed for application to the front ends of stays or main stays D, to embrace the sides of the reach E, and to receive a bolt, F. An offset, C, of this form consists of three arms or branches, $x w v$, and a union, u , through which latter a hole, t , is punched to receive the bolt. In a pair of offsets this hole will be either square in one and round in the other, or either square or round in both, as required, to receive the bolt. In this form of offset the lateral branch, x , has a welding end, by which it is attached to the stay; and the front end is similarly adapted for welding to the iron that extends along each side of the reach to the head-block.

Another form of offset, (represented at C² in Figs. 6 and 7, which is required for the arrangement of stays represented in the latter figure,) consists of three branches, $x^2 w^2 v^2$, each having a weld end, and united by a union, u^2 , which requires no perforation. An offset of this form is employed to attach the front end of each supplemental stay G to the main stay D. The branches of this form of offset would of course, in every case, be of the same shape (round or square) as the stays; and the shapes of the several parts of the different forms of offset require to be correspondingly varied. The angle at which the lateral branch, x , is set will also vary to suit different styles of vehicle.

The offsets above described constitute illustrations of the preferred application of this invention. The essential features of an offset as herein referred to are, a union, u , which constitutes the offset proper, and three branches, two of which, $w v$, may be in line; the other, x , is termed the lateral branch, and projects from the outer extremity of the union, and always terminates in a weld end. It is understood that the shape of the respective parts is variable.

The matrical recesses $z y$ in the two-part die or pair of dies A B, (represented in Figs. 1 and 2,) are adapted to produce the form of offset, C, illustrated in Figs. 5 and 7.

Figs. 3 and 4 represent a modified die or pair of dies, A² B², having matrical recesses $z^2 y^2$, adapted to produce the form of offset, C², illustrated in Figs. 6 and 7. Each matrical recess consists of a straight, or nearly straight,

longitudinal depression, 1, to form the two branches *w v* of the offset, which are in line, or nearly so; a lateral enlargement, 2, of this depression, to form the union *u* of the offset; and a straight depression, 3, extending at the proper angle from this enlargement 2, to form the lateral branch, *x*. The ends of at least two of the branches of the offset are preferably allowed to protrude from the dies, the corresponding parts 4 of the matrical recesses opening through the edges of the dies, as illustrated. All the weld ends are allowed to protrude thus, as illustrated in Fig. 3. This constitutes an effective provision for the escape of the surplus metal, while it lessens the strain on the dies. Some of the surplus metal escapes, also, as fins, between the dies. Owing to the form of the dies, these fins are readily

removed, the corners and most exposed portions of the offsets being perfected in the dies.

In Fig. 7, H represents the head-block of a carriage, and I the hind axle.

The invention is not applicable exclusively to offsets or stay-ends for running-gear; but offsets for any use may be manufactured according to this invention with like beneficial effects.

The following is claimed as new, namely:

The dies herein described, constructed and operating substantially as specified, for forging offsets or stay-ends for carriages, in the manner set forth.

DARIUS WILCOX.

Witnesses:

S. M. GARDNER,
EZRA AUSTIN.