(No Model.)

J. REILLEY.

DIE FOR FORGING TRANSOMS FOR CAR TRUCKS.

No. 389,408. Patented Sept. 11, 1888.

Fig. 1.

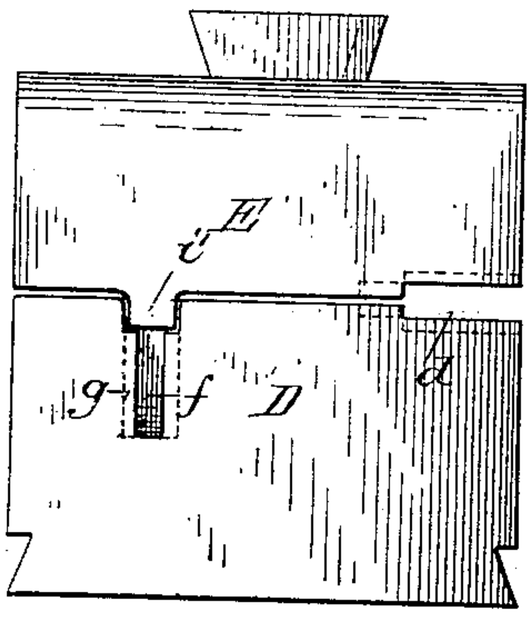


Fig. 2.

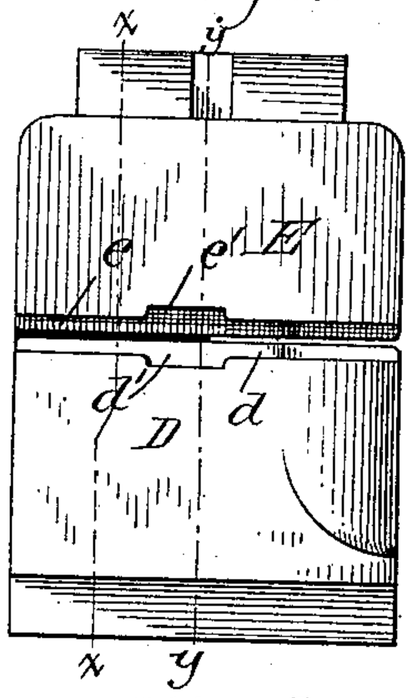


Fig. 3.

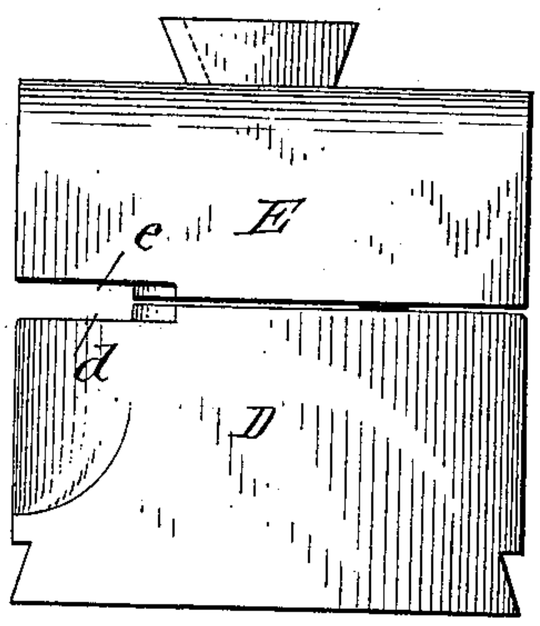


Fig. 4.

Fig. 5.

Fig. 6.

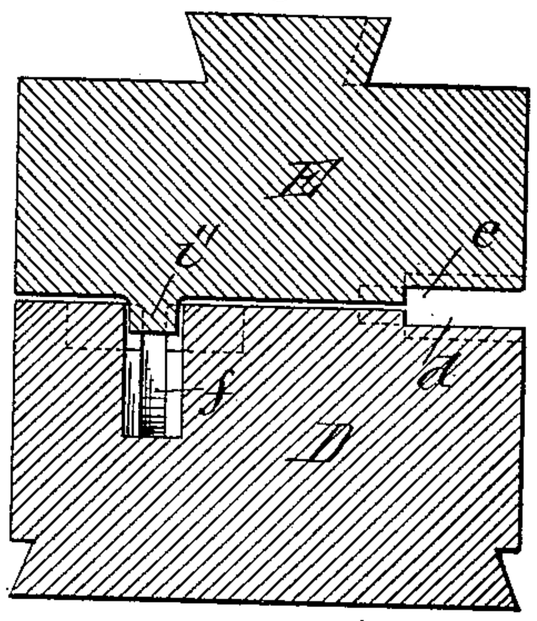


Fig. 7.

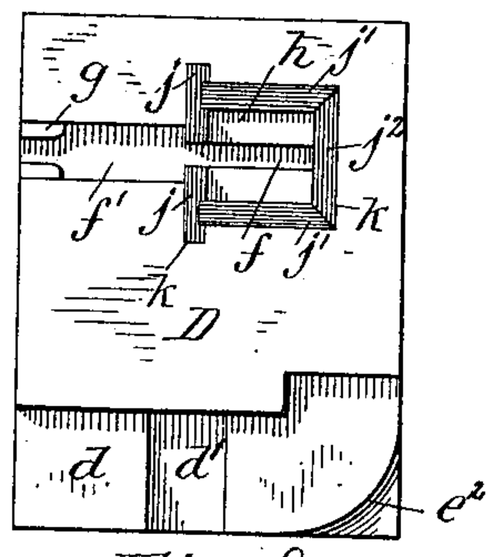


Fig. 8.

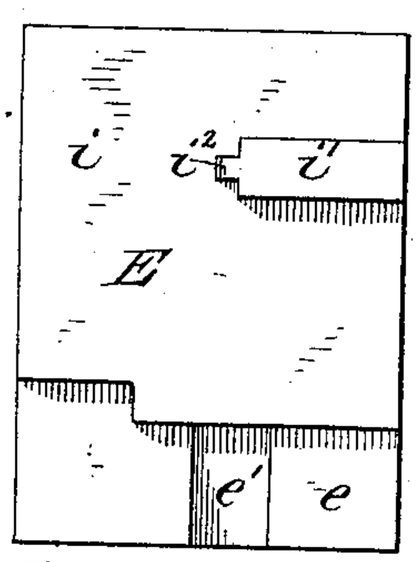
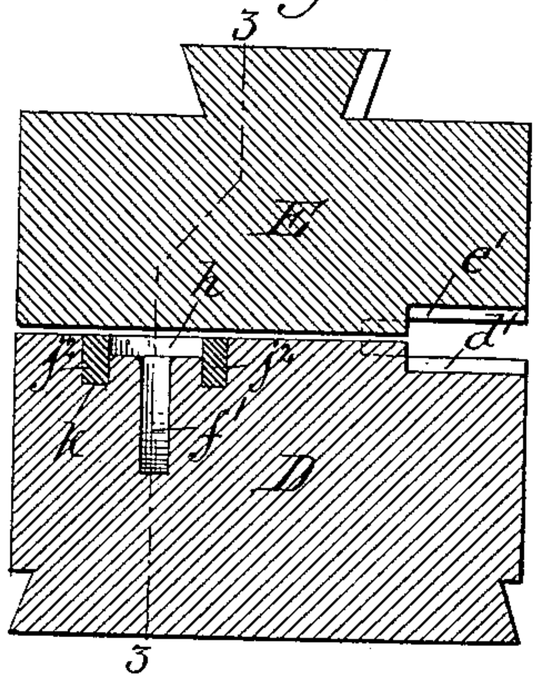
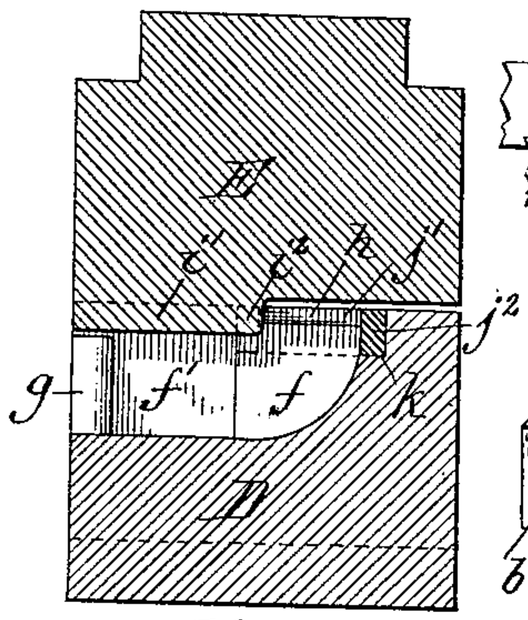


Fig. 13.





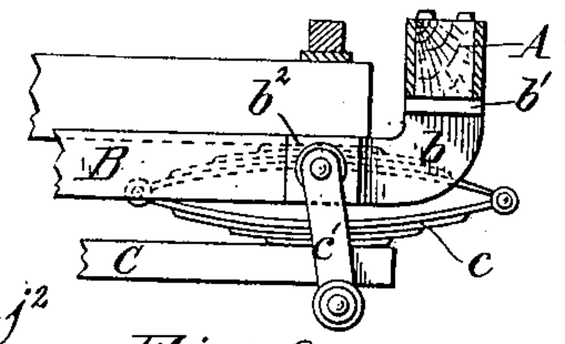


Fig. 10.

Fig. 9.

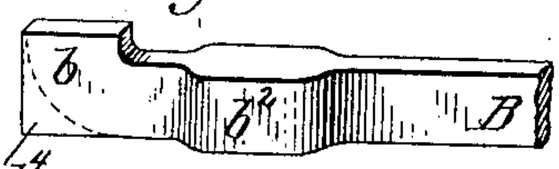
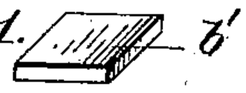


Fig. 11.



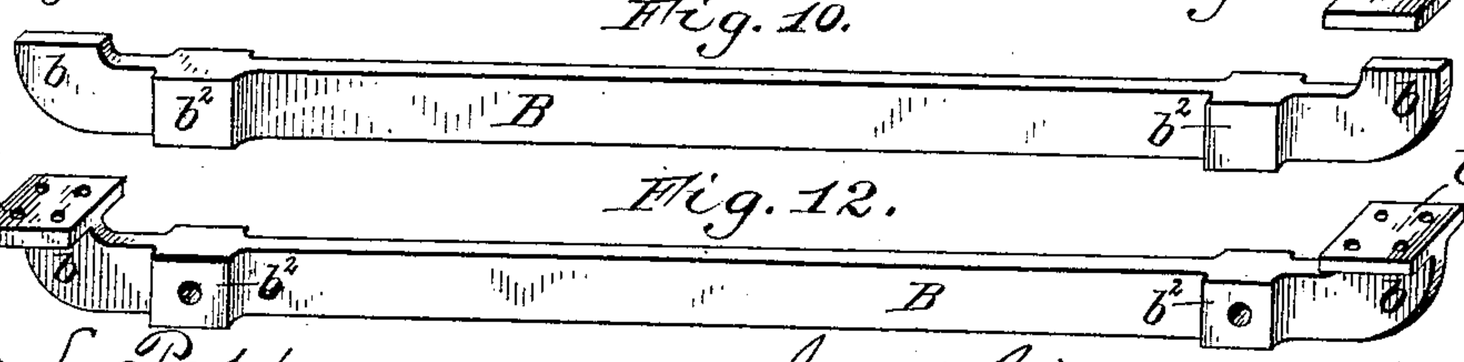


Fig. 12.

Witnesses:
Theo. L. Popp.
Geo. J. Buchheit Jr.

Inventor:
James Reilley
By Wilkens & Bonnell
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES REILLEY, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO THOMAS A. BISSELL, OF SAME PLACE.

DIE FOR FORGING TRANSOMS FOR CAR-TRUCKS.

SPECIFICATION forming part of Letters Patent No. 389,408, dated September 11, 1888.

Application filed July 21, 1888. Serial No. 280,650. (No model.)

To all whom it may concern:

Be it known that I, JAMES REILLEY, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Dies for Forging Transoms for Car-Trucks, of which the following is a specification.

This invention relates to dies for forging the parts of railway-car trucks commonly known as "transoms" or "cross-beams," and which consist of a transverse bar secured with its ends to the under sides of the longitudinal side timbers of the truck, and from which is suspended the bolster supporting the elliptical springs upon which the car-body rests.

The object of my invention is to construct a pair of dies whereby these transoms can be produced in less time and with less labor than heretofore and be finished in a superior manner.

The invention consists of the improvements, which will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of my improved dies. Fig. 2 is a side elevation thereof. Fig. 3 is a rear view of the same. Fig. 4 is a vertical section in line *x x*, Fig. 2. Fig. 5 is a top plan view of the lower die. Fig. 6 is a bottom plan view of the upper die or punch. Fig. 7 is a vertical section in line *y y*, Fig. 2. Fig. 8 is a vertical cross-section in line *z z*, Fig. 7. Fig. 9 represents a fragmentary perspective view of one of the blanks from which the transoms are formed. Fig. 10 is a perspective view showing the form of the transom before the end plates are welded on the same. Fig. 11 is a similar view of one of the end plates. Fig. 12 is a perspective view of the completed transom. Fig. 13 is a fragmentary sectional elevation of the car-truck, showing the location and arrangement of the transom and connecting parts.

Like letters of reference refer to like parts in the several figures.

A, Fig. 13, represents one of the longitudinal side timbers of a car-truck, and B represents the transom, oblong in cross-section, and provided at its ends with upwardly-projecting necks *b*, to which are secured flat horizontal plates *b'*. The latter are provided with holes for receiving the fastening-bolts, whereby the transom is secured to the under sides of the timbers A.

C represents the bolster, upon which the springs *c* rest, and which is suspended from the transom B by hangers *c'*, the transom being provided with perforated enlargements b^2 at the points where said hangers are attached, through which enlargements the connecting-bolts pass. Before being operated upon by the dies the transoms are forged to the form shown in Fig. 9, being a rectangular bar having the enlargements b^2 formed thereon in a rough and unfinished manner, and having its end portions made square and formed with the upwardly-projecting necks *b*.

D represents the lower stationary die, which is secured to the anvil of a steam or power hammer. The die D is provided on its upper side at or near one of its lateral edges with a depression, *d*, corresponding to the shape of the end portions of the transoms, and whereby one side of the transom is formed. *d'* is a rectangular groove or recess formed in the depressed portion *d* of the die, whereby one side of the enlargement b^2 is squared and finished.

E represents the punch or upper movable die, which is secured to the head of the power-hammer. The punch E is provided on its under side with a depression, *e*, having a rectangular recess, *e'*, corresponding in form to the depression and recess of the lower die, D, and arranged directly above the same, whereby the opposite side of the end portions of the transom is formed. In forging these end portions one end of the transom is placed with its side into the lower depression, *d*, of the lower die, and is operated upon by the punch E until the end of the transom has been properly finished. The square end b^4, Fig. 9, of the transom is then preferably rounded off by means of a cutting-tool applied to the transom while the same rests on the lower die, the adjacent corner of the latter being curved, as shown at e^2, Fig. 5, so as to serve as a guide for the cutting-tool. The opposite end of the transom is then placed between the dies and finished in a

similar manner. The transom now has the form shown in Fig. 10, with its ends curved and its enlargements squared, and is ready to receive the end plates, *b'*.

f represents a seat or socket formed in the upper side of the lower die, D, and adapted to receive the end of the transom and hold the same in an upright position, as represented in Fig. 8. The inner portion of the seat *f* is contracted and receives the curved end portion of the transom, the inner end of the seat being curved to conform to the shape of the end of the transom, as shown in Fig. 8. The outer portion, *f'*, of the seat *f* is enlarged and receives the enlargement b^2 of the transom.

g represents shoulders or stops arranged in the outer enlarged portion of the seat *f* and bearing against the outer edge of the enlargement b^2, so as to hold the transom in the seat *f* against longitudinal movement. The seat *f* is made of such a depth that the neck *b* of the transom will be depressed below the upper surface of the die a distance about equal to the thickness of the end plate, *b'*, when the transom is arranged in the seat.

h represents a shallow rectangular recess or depression formed in the upper surface of the die D above the contracted portion of the seat *f* and opening into the latter. This recess is made of the proper size to receive the end plate, *b'*, being so deep that when the plate rests upon the neck *b* of the transom the upper edge of the plate will project slightly above the surface of the die, so that when the punch strikes the plate it will press the same into the recess *h* until its upper edge is flush with the surface of the die. The upper die or punch is provided with a flat working-face, *i*, which strikes the upper surface of the end plate, *b'*, and with a projecting rib, *i'*, which enters the seat *f* and strikes the enlarged portion of the upper surface of the enlargement b^2 of the transom. The rib *i'* flattens the upper surface of the enlargement b^2, and is provided with a contracted end portion, i^2, which assists in finishing the inner curved edge of the neck *b* of the transom. Before placing the transom into the seat *f* it is reheated, and the end plate, which is also heated, is then placed into the recess *h* upon the neck *b* of the transom. The flat face *i* of the punch, striking the plate *b'*, gradually forces the same downwardly in its recess, and thereby welds the plate to the neck *b*. When the parts have been united, the other end of the transom is reheated and placed into the seat *f*, an end plate is placed in the recess *h*, and the welding operation repeated.

The edges of the recess *h* become worn and broken from time to time, and to enable these edges to be renewed without replacing the entire die the recess is provided with a lining of steel or other hard material, which consists of a number of removable bars, *j j' j²*, which are seated in sockets *k*, surrounding the recess. These bars are interlocked with each other, so as to remain in their proper position. In the construction represented in Fig. 5 of the drawings the short transverse bars *j* are provided with notches, in which the adjacent ends of the side bars, *j'*, engage, and the ends of these side bars and those of the transverse end bar, *j²*, are beveled and abut against each other. This lining is readily renewed by removing the worn bars and substituting new ones. The inner contracted portion, i^2, of the rib *i'* fits into the space between the inner ends of the steel bars *j*, thereby closing the recess *h* at this point and preventing the adjacent portion of the end plate from being pressed through said space in welding the parts.

By the employment of my improved dies the operations of forming the end portions of the transom and welding the end plates thereto are performed more expeditiously and at less cost than heretofore, and greater uniformity and a higher finish are given to the same.

I claim as my invention—

1. The herein-described dies for forging transoms for car-trucks, consisting of a lower die provided with a depression, *d*, and a recess, *d'*, corresponding to the form of one side of the transom, and an upper die or punch provided with a similar depression, *e*, and recess *e'*, corresponding to the other side of the transom, substantially as set forth.

2. The combination, with the lower die provided with a seat or socket adapted to hold the body or end portion of the transom and a recess or depression arranged at the upper end of said seat, adapted to receive the end plate of the transom, of the upper die or punch provided with a flat working-face arranged directly above the recess of the end plate, substantially as set forth.

3. The combination, with the lower die provided with a depression, *d*, and a recess, *d'*, corresponding to one side of the transom, a seat or socket, *f*, for holding the end of the transom in an upright position, and a recess, *h*, arranged at the upper end of said seat and adapted to receive the end plate of the transom, of the upper die or punch provided with a depression, *e*, and recess *e'*, corresponding to and arranged above the similar parts, *d d'*, of the lower die, and a flat working-face, *i*, arranged above the recess *h* of the end plate, substantially as set forth.

4. The combination, with the lower die provided with a seat, *f*, adapted to hold the end of the transom, and having an enlarged portion, *f'*, designed to receive the enlargement of the transom, shoulders or stops *g*, whereby the transom is held against longitudinal movement in its seat, and a recess or depression, *h*, arranged at the upper end of said seat for receiving the end plate, of an upper die or punch having a flat working-face, *i*, arranged above the recess of the end plate, and a rib or projection, *i'*, entering the enlarged portion *f'* of said seat, substantially as set forth.

5. The combination, with the lower die pro-

vided with a seat, *f*, of the end plate or recess *h*, arranged at the upper end of said seat and having a lining composed of removable interlocking bars of steel or similar material, substantially as set forth.

6. The combination, with the upper die, of the lower die provided with a depression, *d*, and recess *d'*, and having its corner rounded or curved to form a guide for a cutting-tool, substantially as set forth.

Witness my hand this 2d day of July, 1888.

JAMES REILLEY.

Witnesses:
CLAÉS BERGMAN,
C. F. GEYER.