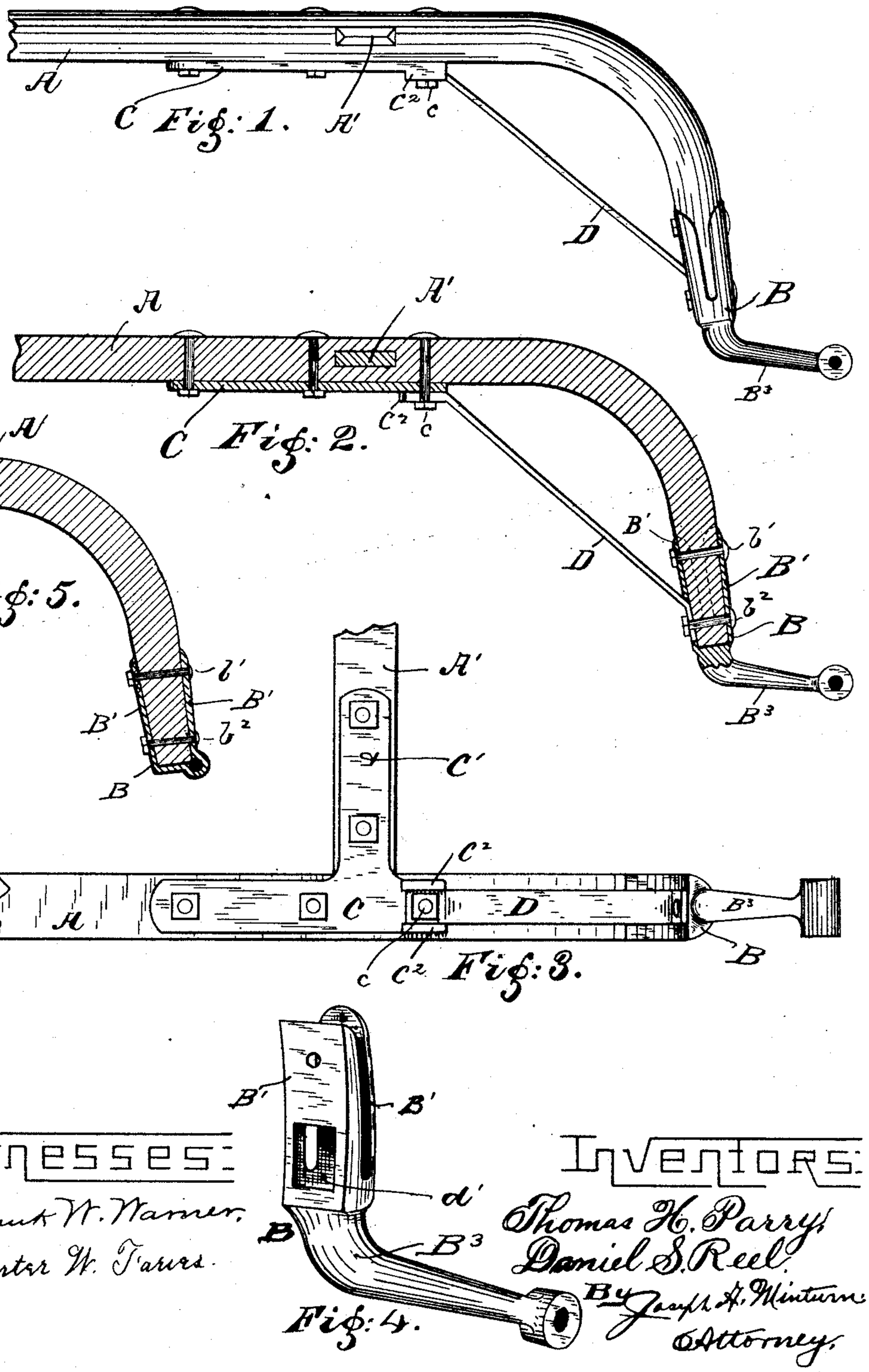
(No Model.)

T. H. PARRY & D. S. REEL.

VEHICLE SHAFT IRON.

No. 458,978. Patented Sept. 1, 1891.



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UNITED STATES PATENT OFFICE.

THOMAS H. PARRY AND DANIEL S. REEL, OF INDIANAPOLIS, INDIANA.

VEHICLE SHAFT-IRON.

SPECIFICATION forming part of Letters Patent No. 458,978, dated September 1, 1891.

Application filed November 28, 1890. Serial No. 372,932. (No model.)

To all whom it may concern:

Be it known that we, THOMAS H. PARRY and DANIEL S. REEL, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Vehicle Shaft-Irons; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in shaft-irons for vehicles, and especially to improvements in the irons for that part of the shaft known as the "heel," the object of the invention being to provide a heel-iron of such construction as will be cheap to manufacture, that may be readily and securely fitted to shaft-heels of varying curvature, and that will afford a stronger and more durable construction than heretofore employed.

The object is also to afford a construction in which the pulling strain will be on a more direct line that is obtainable in constructions heretofore employed.

With these objects in view the invention consists in certain novel features in the construction of the parts, substantially as hereinafter described, and particularly pointed out in the claims.

Figure 1 represents in side elevation a shaft ironed at the heel in accordance with this invention; Fig. 2, a central vertical section of same; Fig. 3, an under side view of same, showing only one shaft and part of cross-bar; and Fig. 4, a perspective view of socket-iron; Fig. 5, a modification in which the socket is constructed of strap-iron bent around the end of the heel.

Similar letters refer to similar parts throughout the several views.

In the drawings, A represents the shaft, which will be of usual material and of usual shape.

A′ represents the cross-bar of the shaft.

B represents the iron that embraces the end of the shaft and connects the shaft and axle.

C represents the strengthening-plate at the junction of the cross-bar with the shaft, and D the truss-bar, having bent ends *d d*.

The socket B will preferably be made of malleable iron cast in one piece and in tubular or such other form as will correspond in cross-section with the shaft, which will be inserted in said socket. The construction shown in the drawings, Fig. 4, is partially tubular or U-shaped in cross-section.

In practice it is preferable to have the socket bifurcated or cut away at its sides, as shown in Figs. 1 and 4, partially on account of the saving in material and the cheapening of the cost of manufacture, but principally because the two shaft-grasping arms formed thereby, being somewhat flexible, may be pressed so as to make a tight fit around the shaft without special dressing of the shaft, as would otherwise be required, and the arms by this construction may also be pressed to some extent into the wood, which will materially tend to prevent lateral or longitudinal displacement. The shaft will be secured therein by bolts b' and b^2, extended through the arms B′ and through the intervening shaft. It is obvious that the sides of the socket might be constructed to entirely incase the end of the shaft, and therefore it is not desirous to limit the invention to a bifurcated socket. The lower end of the iron B will be formed into a neck B^3, which will be projected horizontally to the rear and terminate at a suitable distance in a head having a horizontal transverse hole *d* therethrough, by which the shaft is pivotally secured to the axle in the usual manner. The arms of the socket extend only a short distance up the heel, leaving the balance of the heel free and unincumbered.

The strengthening-plate C is preferably T shape and constructed of malleable or wrought iron, and is secured by rivets or bolts to the shaft at the point of intersection with the cross-bar. The stem C′ of the T will be placed so as to underlie the cross-bar, to which it is fastened in the usual manner. The side edge of the rear arm of the plate C will be flanged at C^2 to form a seat for the end of the truss-bar D, which will fit between the flanges. The truss-bar and plate are secured to the shaft at this point by the bolt *c*. This truss-bar D extends from the plate C across the curve of the heel to the end of the shaft, where it will be bolted either against the metal socket or to the shaft itself by projecting it through a suitable slot *d′* in the socket,

as shown in the drawings. This construction is preferable, as the sides of the slot form a seat for the bar and make the contact between iron and wood, which gives better results than when the contacting-faces are both iron.

The construction, as above described, forms a truss in which the pulling strain is removed from the curved shaft and exerted on the bar in nearly a direct line from the whiffletree to the axle.

It has been customary heretofore in ironing vehicle-shafts to extend a strap along the inside curve of the heel the entire distance from the end of the heel to a point at or near the intersection of the cross-bar. In nearly every case, owing to the variation of the curvature of the heel, (there being no two bends exactly alike,) the strap had to be fitted specially to correspond, and much time was required and consequent expense incurred in ironing shafts in this manner. This strap was fastened to the shaft by bolts passing through both parts, which were greatly weakened by the holes required.

By the construction shown in the present invention the variation in the curvature of the heel is immaterial, as the irons may be readily adjusted to any variation in the curvature. The socket on the end of the shaft prevents splitting of the end and the trussed construction gives a direct draft and a very rigid and substantial shaft. It is evident that the truss-bar D might be fastened directly to the shaft at its upper end without contacting with the plate C.

Fig. 5 shows a modification in which a strap-iron is bent in U shape around the end of the heel and provision made for the attachment with the axle directly to the strap without the intervention of the neck.

We claim—

1. The combination, with a vehicle-shaft, a plate secured thereto forward of the heel thereof and flanged at the rear end to form a seat, and a heel-tip secured to the rear end of said shaft, said heel-tip being bifurcated at its upper end, forming arms to engage the end of the shaft, and one of said arms being formed with an opening, said heel-tip also having at its rear end a transverse opening by which it is secured to the axle of the vehicle, of a truss-rod reaching across the bend in the shaft and having bent ends, one of which is located within the seat formed in said plate and the other passed into said heel-tip through the opening in the arm thereof and held in place thereby.

2. The combination, with a vehicle-shaft and a heel-tip rigidly secured to the rear end thereof and having forwardly-projecting flexible arms engaging opposite sides of said shaft, one of said arms having an opening therein, said heel-tip also having at its rear end a laterally-extending opening by which it is secured to the vehicle-axle, of a truss-bar reaching across the bend of the shaft and having its rear end inserted within said opening in the arm of the heel-tip and held in place thereby, and means securing the forward end of said truss-bar to said shaft.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS H. PARRY.
DANIEL S. REEL.

Witnesses:
JOSEPH A. MINTURN,
FRANK W. WARNER.