(No Model.)

G. A. LAMBERT.

VEHICLE SHAFTS.

No. 497,378. Patented May 16, 1893.

Fig. 1.

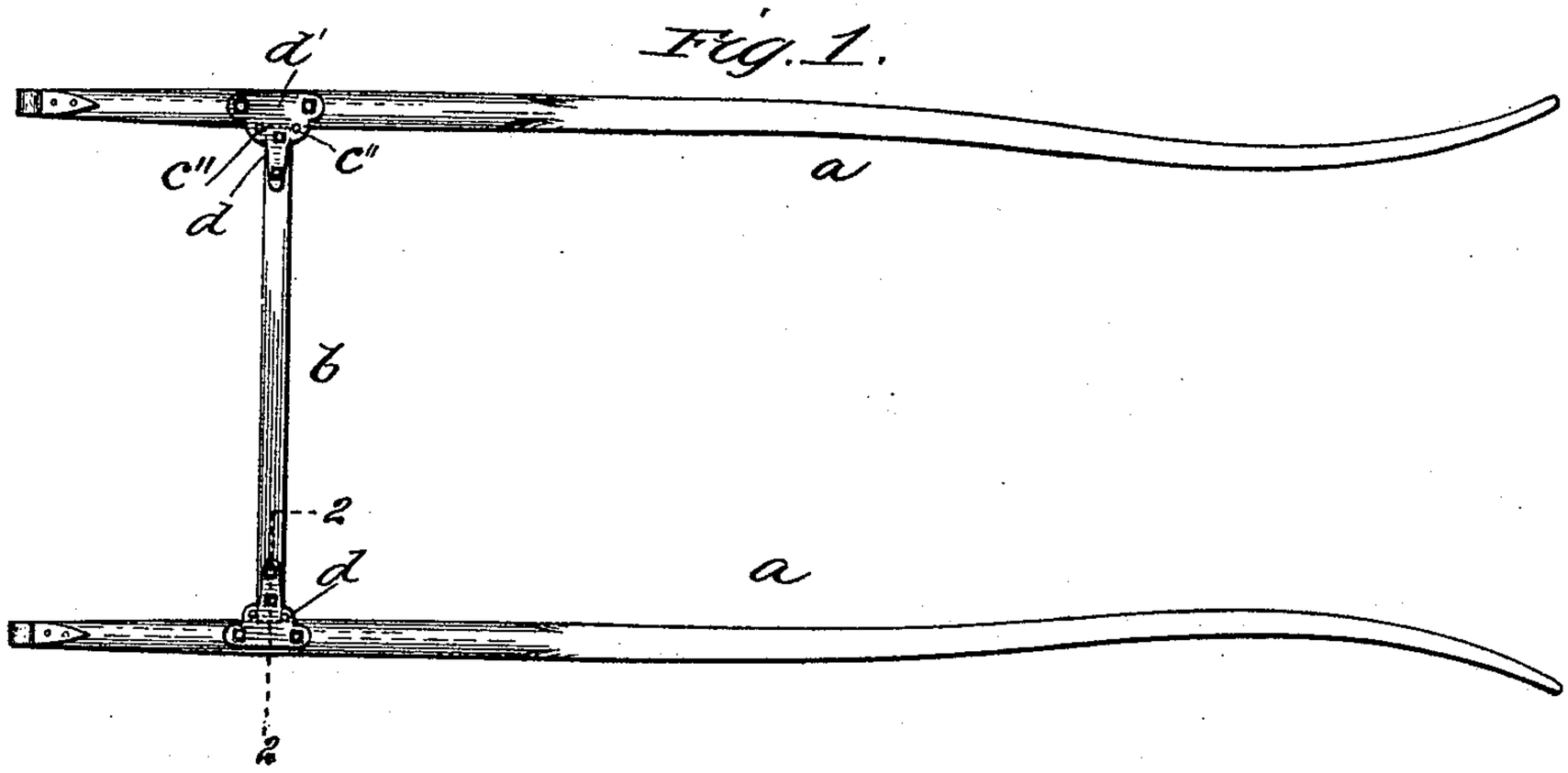


Fig. 2.

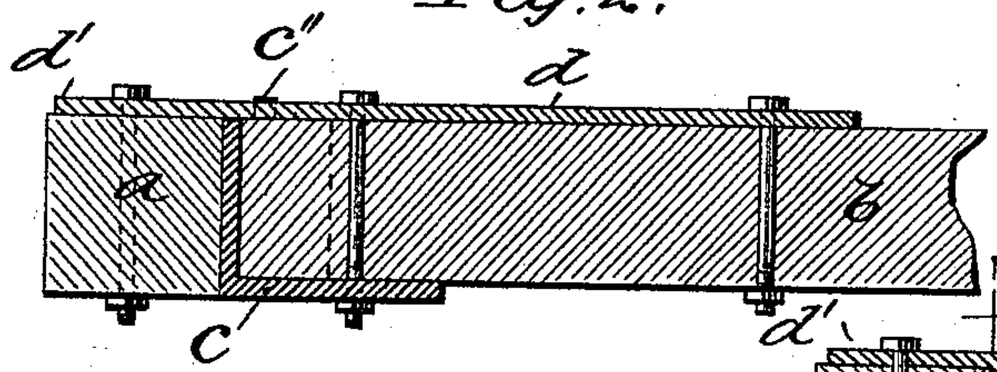


Fig. 4.

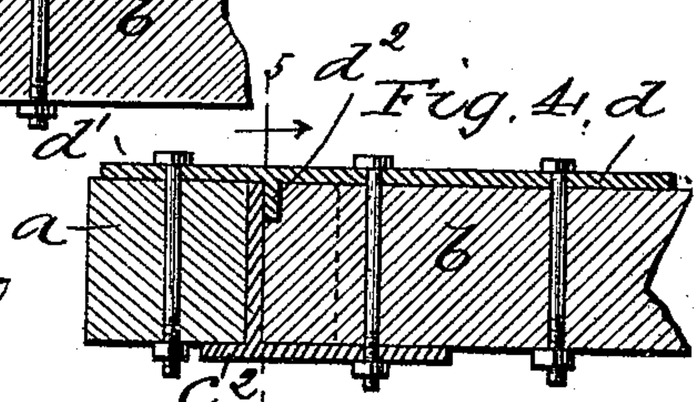


Fig. 4, d

Fig. 3.

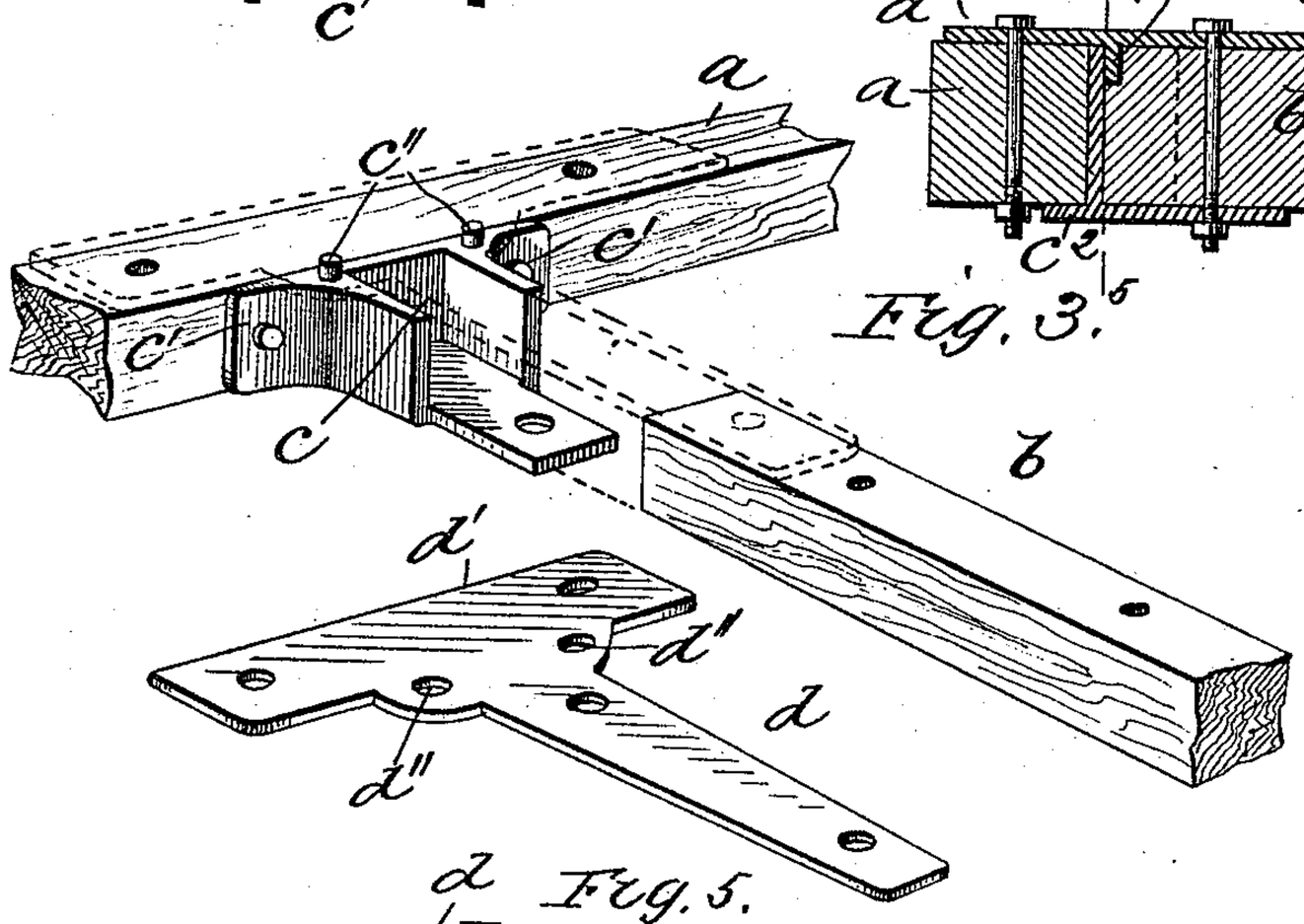
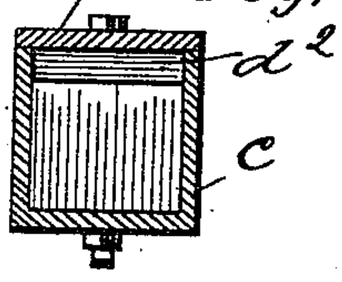


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE A. LAMBERT, OF DARKE COUNTY, OHIO.

VEHICLE-SHAFT.

SPECIFICATION forming part of Letters Patent No. 497,378, dated May 16, 1893.

Application filed November 5, 1892. Serial No. 451,111 (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. LAMBERT, a citizen of the United States, residing in the county of Darke and State of Ohio, have invented certain new and useful Improvements in Vehicle-Shafts, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and improved vehicle shafts; and it has for its object to provide shafts of simple construction which may be shipped or transported in a "knocked down" or separated condition, said shafts being so constructed that they may be readily secured together in position for use when desired.

The invention consists in providing improved means for detachably securing the shafts together, as will hereinafter appear.

In the drawings:—Figure 1 is a plan view of a pair of shafts constructed according to my invention. Fig. 2, is a sectional view on line 2—2 of Fig. 1; and Fig. 3, is a detail perspective view showing the parts separated. Figs. 4 and 5 are detail views of a modification.

Referring to the parts by letter *a* designates the shafts which may be of any suitable construction, and *b* the cross-bar which connects them near their rear ends. This cross-bar is connected at its ends to the shafts in such a manner that it may be readily detached therefrom, to facilitate packing the shafts for shipment, or in order to replace the cross-bar a shaft should either become broken. The fastening consists of a socket *c* which is open on its upper and inner sides, its bottom being extended as shown. This socket is secured to the inner sides of the shafts by bolts passing through the laterally extending flanges *c'*. These flanges *c'* are formed on the outer sides of the sockets, their outer faces being even with the outer faces of the sockets, in order that they may be securely bolted snugly to the inner sides of the shafts without mutilating said shafts. The ends of the cross-bar *b* are square and fit closely within the sockets *c*, and are secured therein by means of a T-shaped plate *d* which is removably bolted to the upper side of the shaft and the cross-bar, one or more of the bolts passing through the bottom of the socket, as shown in Fig. 2. Upwardly projecting pins or lugs *c''* *c''* are formed on the upper side of the socket, and apertures *d''* *d''* are formed in the plate *d* to receive said projections. This construction facilitates the proper placing of plate *d* over the joints between the socket, shaft, and end of the cross-bar; and if found desirable, these pins may be made to project above the plate *d*, and after the parts are assembled they may be riveted, to aid in securing the plate in position.

If it is found desirable the sockets *c* may be removably secured to the shafts, as is evident.

From the foregoing it will be readily understood that I provide a simple device which will enable manufacturers to shift shafts in a "knocked-down" or separated condition, thereby effecting a great saving in shipping space, and enabling them to be shipped in convenient and easily handled packages; said device being so constructed that by its use the shafts are more easily manufactured, it doing away with the mortising and tenoning which are usual in the ordinary method of securing the parts together, and it also insures a very secure fastening together of the parts.

In Figs. 4 and 5 is shown a slightly modified form of the socket *c* and plate *d*. As shown in these figures the socket *c* is formed with a lip c^2 which extends outwardly from the bottom of the socket, under the shaft *a*, which aids in preventing the displacement of the socket; and the top plate *d* is formed with the downwardly extending lip or plate d^2, which is seated in a notch formed in the end of the cross-bar at the upper edge thereof, said lip extending across the bar *d* and fitting snugly between the vertical side walls of the socket *c* as shown clearly in Fig. 5. In this construction the pins *c''* and apertures *d''* are dispensed with, the lip d^2 serving for the same purpose.

If desired the pins *c''* may be formed on the top plate *d* and register with holes formed in the socket, as will be readily understood.

Having thus fully described my invention, what I claim is—

1. A vehicle shaft consisting of a pair of shafts, detachable sockets secured to the inner sides of these shafts, said sockets being open on their upper sides, a cross-bar remov-

ably secured at its ends in these sockets, and plates removably secured on the upper side of the cross-bar at the ends thereof, said plate extending over the upper side of the socket and the adjoining portion of the shafts and being removably secured thereto, substantially as described.

2. A vehicle shaft consisting of a pair of shafts, sockets secured to the inner sides thereof and provided on their upper sides with upwardly projecting pins or lugs, a cross-bar removably secured in the sockets, plates secured over the ends of the cross-bar and the upper side of socket, and the adjoining portions of the shafts, said plate having apertures to receive the projections on the upper side of the socket, substantially as described.

3. A vehicle shaft consisting of a pair of shafts, detachable sockets secured to the inner sides of these shafts, a cross-bar removably secured in these sockets, a plate secured on the upper side of the cross-bar and the upper side of the adjoining portion of the shaft, a projection on one of the plates extending into a recess in the other, substantially as described.

4. A vehicle shaft consisting of a pair of shafts provided with thill couplings at their rear ends, a cross-bar, and means for removably securing said cross-bar to the shafts, said means consisting of sockets *c* formed with the flanges *c'*, their bottoms being extended as shown, T-shaped plates, as *d*, secured removably over the ends of the cross-bar and the adjoining portion of the shafts, a projection on either the plate or the socket and an opening in the other to receive said projection substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. LAMBERT.

Witnesses:

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