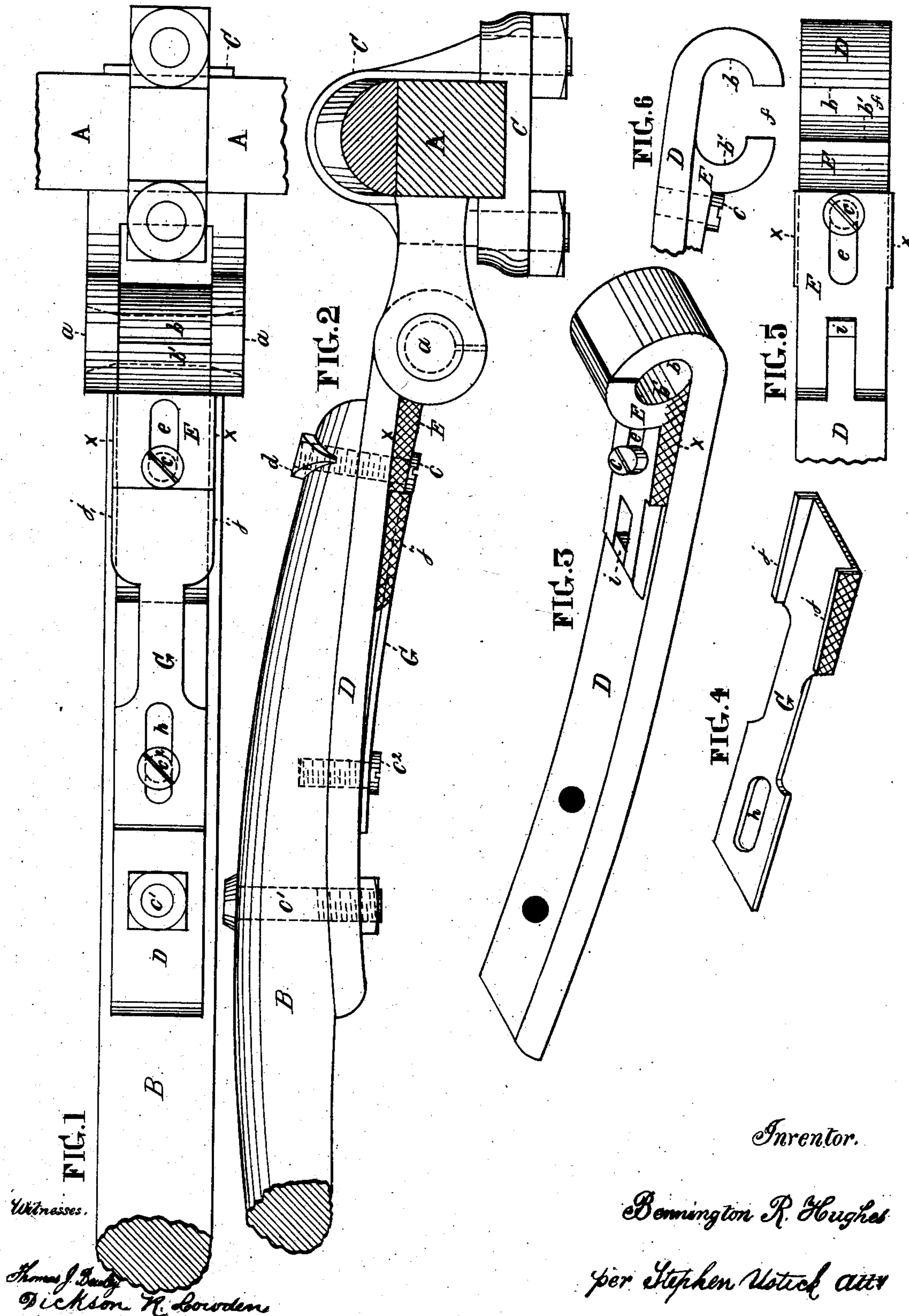


(No Model.)

B. R. HUGHES.
THILL COUPLING.

No. 244,900.

Patented July 26, 1881.



UNITED STATES PATENT OFFICE.

BENNINGTON R. HUGHES, OF HOLMESBURG, PHILADELPHIA, ASSIGNOR OF
ONE-FOURTH TO THOMAS BRADFELD, OF PHILADELPHIA, PA.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 244,900, dated July 26, 1881.

Application filed May 31, 1881. (No model.)

To all whom it may concern:

Be it known that I, BENNINGTON R. HUGHES, a citizen of the United States, residing at Holmesburg, in the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Shaft and Pole Couplings for Carriages, of which the following is specification.

10 The nature of my invention consists of a coupling-strap which has an adjustable cap combined with it and with a shaft or pole of a carriage in such a manner as to effect an expeditious attachment and detachment of the shaft from the carriage, as hereinafter fully described.

15 In the accompanying drawings, which make a part of this specification, Figure 1 is a bottom view of the rear end of the shaft B, a portion of the front axle, A, and the coupling devices. Fig. 2 is a side elevation of the same. Fig. 3 is a perspective view of the coupling-strap D from the under side, the strap being turned bottom upward and the spring G being removed. Fig. 4 is a perspective view of the spring G. Fig. 5 is a bottom view of a portion of the strap D, having the cap E pushed backward far enough to form a space, *f*, to admit of the bearing being brought into connection with the joint-pin *a* preparatory to pushing the cap forward to form a close connection of the two parts *b b'* of the bearing. Fig. 6 is an edge view of the same.

20 Like letters of reference in all the figures indicate the same parts.

25 A represents a section of a front axle of a vehicle; B, the rear end of a shaft; C, a clip connected with the axle in the usual manner; and D a coupling-strap bolted to the section of the shaft.

30 Instead of the strap being made in a single piece with a solid eye, as in the usual manner, it has an adjustable cap, E, which has a semicircular bearing, *b'*, which is combined with the semicircular bearing *b* in the head of the strap, to form a whole concentric bearing for the joint-pin *a*, as seen in Fig. 3. The cap E is held in connection with the strap D by means of the screw-bolt *c*, which is provided with a

nut, *d*, which clasps the rounded upper side of the shaft B, the bolt having the twofold function of confining the cap to the strap and the latter to the shaft at this end of the strap, which is fastened at the other end in the usual manner by the bolt *c'*. The cap E has a slot, *e*, through which the bolt *c* passes, to admit of the adjustment of the cap to the joint-pin *a*, and also to admit of its being drawn backward when the bolt *c* is slackened to form a vertical opening, *f*, of the joint in the bearing, as seen in Figs. 5 and 6, so as to admit of coupling the shaft with the clip C without withdrawing the joint-pin *a*. When the connection is made the cap is pushed forward to its place and confined by tightening the bolt *c*. For the purpose of forming this connection of the cap with the strap D in a substantial manner it is made of considerable length and of plate form, and fitted to the face of the strap, as represented, and is tapered at its front end for the purpose which will presently appear.

35 G is a spring, the heel of which is confined to the strap D by means of the screw *c*², the resilient end of the spring bearing upon the tapered end of the cap E to bear the cap backward into connection with the joint-pin *a* before it is confined by means of the bolt *c* to the strap, and also to keep said end firmly in connection with the strap. The spring is adjusted in its longitudinal direction by means of the slot *h*. The rear end of the cap E is maintained in its true lateral position by means of the slot *e*, fitting in the lug *i*, which projects from the contiguous side of the strap D. The resilient end of the spring E has turned-up flanges *j j*, as seen in Fig. 4, to preserve its true lateral position, the flanges fitting as guides against the edges of the cap E, as seen in Figs. 1 and 2. The edges of the cap are roughened at *x x*, for assisting in holding it in manipulating it, and the outer sides of the flanges *j j* are also roughened for the like purpose.

40 It will be seen that by making the coupling-strap D in two pieces, in the manner described, the bearings *b b'* may always snugly fit the joint-pin *a*, as the wear is readily taken up, and thereby the rattling is avoided, which rattling is incidental to the ordinary mode of

coupling with a solid eye, without some counteracting device, and by thus maintaining a steady connection the lateral wear of this end of the strap will be very slight, and may be
5 compensated for by slightly hammering the ends of the joint-pin *a*, to draw the connecting-cheeks of the clip *C* slightly nearer together. This mode of connection has another important advantage over the connection of the straps
10 having solid eyes, as the shafts may be very quickly attached and detached by means of the sliding movement of the caps *E*—a great desideratum when the shifting or detachment of the shafts becomes necessary for want of room
15 for housing or storing of the carriage.

I claim as my invention—

1. The combination of the cap *E*, having a

slot, *c*, strap *D*, and shaft *B*, the cap and strap being fastened to the shaft by means of the bolt *c*, substantially in the manner and for the
20 purpose above described.

2. The combination of the spring *G* with the strap *D* and cap *E*, having its front end tapered, as described, for pressing the cap backward to bring its bearing *b'* into connection
25 with the bearing *b* of the strap and the joint-pin *a* preparatory to its being bolted fast to the strap, and also for holding its front end firmly in connection with the strap, substantially as described.

BENNINGTON R. HUGHES.

Witnesses:

THOMAS J. BEWLEY,
STEPHEN USTICK.