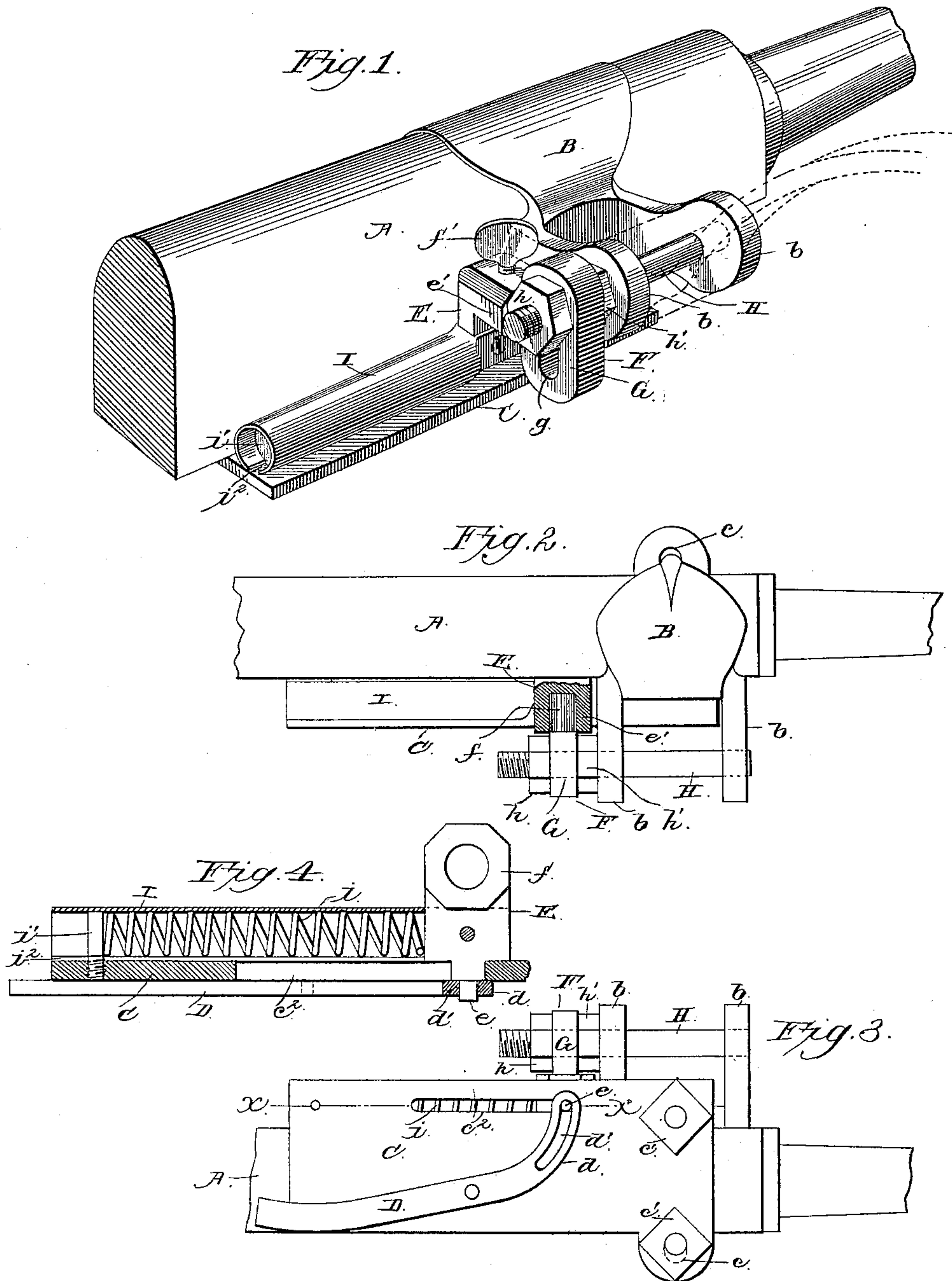


(No Model.)

F. R. CRUMBAKER.
THILL COUPLING.

No. 365,052.

Patented June 21, 1887.



Witnesses

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UNITED STATES PATENT OFFICE.

FRED RITCHARD CRUMBAKER, OF MENDON, MICHIGAN.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 365,052, dated June 21, 1887.

Application filed March 24, 1887. Serial No. 232,294. (No model.)

To all whom it may concern:

Be it known that I, FRED RITCHARD CRUMBAKER, a citizen of the United States, residing at Mendon, in the county of St. Joseph and State of Michigan, have invented new and useful Improvements in Thill-Couplings, of which the following is a specification.

My invention relates to improvements in thill-couplings, the objects being to couple and uncouple a thill or shaft very readily and quickly and to provide a simple, cheap, and durable device that can be applied to an axle having secured upon it clips of common shape and style, and which will form with said clips a perfect thill-coupling that will not rattle and the action of which will not be impeded by dust. These objects I attain by means of the construction and novel arrangement of parts hereinafter described, embraced in the appended claims, and illustrated in the accompanying drawings.

Figure 1 represents a perspective view of an axle with the invention attached. Fig. 2 represents a plan view of the same. Fig. 3 represents a reversed plan thereof. Fig. 4 represents a detail sectional view of the tube and contained spring.

Referring to the drawings, A designates an axle of a vehicle; B, a clip having the perforated lugs or ears *b b* of usual shape; and C, a base-plate for the clip, of peculiar construction. The said base-plate is wide directly under the clip and is provided near its rear edge with an engaging-slot, *c*, for the threaded rear end of the clip to pass through, the threaded front end passing through the usual circular opening. Thus, by means of the nuts *c' c'* engaging said ends below the base-plate, the latter and the clip can be fitted to axles of different thicknesses.

*c*² is a longitudinal slot in the base-plate C near its front edge, and D is a curved lever pivoted about centrally on said plate to the rear of the slot. The outwardly-curved arm *d* of said lever is provided with a longitudinal slot, *d'*, the outer end of which in the normal position of the lever lies below the outer end of the slot *c*², or the end thereof nearest the clip B.

E is a sliding bracket, having at the lower end of its vertical part the pin *e*, which passes through the slots *c*² and *d'*, and on its upper

end the outwardly-standing boss *e'*, provided with a recess for the reception of the stem *f* of the pivotal bolt-holder F. The said stem is secured farther in or out of the said recess by means of a set thumb-screw, *f'*, which passes through a threaded opening in the top of the boss and impinges upon it.

The oval head G of the bolt-holder is provided with the vertical slot *g*, through which passes the threaded end of the bolt H, the outer part of the stem of said bolt passing through the openings in the ears or lugs *b b* of the clip, and having the eye of the thill-iron pivoted upon it.

h h' are nuts, which respectively engage the bolt H to the inner and the outer sides of the head G, so as to hold it in place and adjust it farther in and out with relation to the clip.

I is a tube secured by front and rear arms to the vertical part of the bracket E, and standing inward parallel to the base-plate and immediately above the same. *i* is a coiled spring within said tube, bearing against the edge of the bracket E and against a disk, *i'*, rising from the upper surface of the base-plate and situated within the tube with its neck passing through the open part *i*² of the same near its bottom.

It is evident from the above that when the inner arm of the lever D is pulled backward the forward arm of the same will, by means of its slot and the pin *e* of the bracket E, move the latter inward along the axle and disengage the bolt H from the clip, so as to uncouple the thill pivoted thereon; but as the spring *i* must necessarily be compressed by this motion against the disk *i'*, the said spring upon releasing the lever D will cause the bolt to immediately return to its normal position, so that by these means the thill can be quickly and readily coupled and uncoupled. The spring, moreover, forces the nut *h'* against the side of the adjacent ear or lug of the clip, and thus keeps the joint from rattling. It is evident, also, that the bolts may be moved and secured higher or lower or inward or outward in the slot *g* to correspond with clips of different shapes. The head G can also be moved in and out upon the bracket E to suit shorter or longer lugs on the clips. Thus the device, while quite simple and cheap of construction, is durable and permits the thills to be coupled

and uncoupled with great readiness, and the coupling to be adapted, as described, to different axles and clips. The inner part of the base is cut away as much as possible to reduce its weight.

Having thus described my invention, I claim—

1. The combination, with the clip having the usual perforated ears between which to attach the thill and the base-plate secured to the thill, of the standard attached to the base-plate and provided with the recessed boss on its upper end, the bolt-holder having its stem adjustable in and out of said recess by means of the set-screw, substantially as described, and having a head provided with a vertical slot, the bolt passing through said slot and through the perforations in the ears of the thill, and the adjusting-nuts on said bolt, substantially as specified.

2. The combination, with the clip, the base-plate provided with the longitudinal slot, and the lever pivoted on the base-plate and provided with a longitudinal slot in its outer arm, of the bolt, the bolt-holder, the standard having said holder secured thereto and provided

with a pin standing downward through the slots in the base-plate and lever, the tube open at its lower part and secured at its outer end to the standard, and the spring in said tube bearing against the standard and against a projection rising from the base-plate, substantially as specified.

3. The herein-described thill-coupling, composed of the clip having the perforated ears *b*, the base-plate secured thereto and provided with the slots *c c'*, the lever pivoted on the base-plate and provided with the slot *d'*, the standard *E*, provided with the pin *e* and recessed boss *e'*, the bolt-holder provided with the stem *f*, made adjustable by the set-screw *f'* and the vertical slot *g*, the bolt *H*, the nuts *h h'*, the tube *I*, and spring *i*, all constructed and arranged substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRED RITCHARD CRUMBAKER.

Witnesses:

G. P. DONN,
GEORGE BENEDICT.