

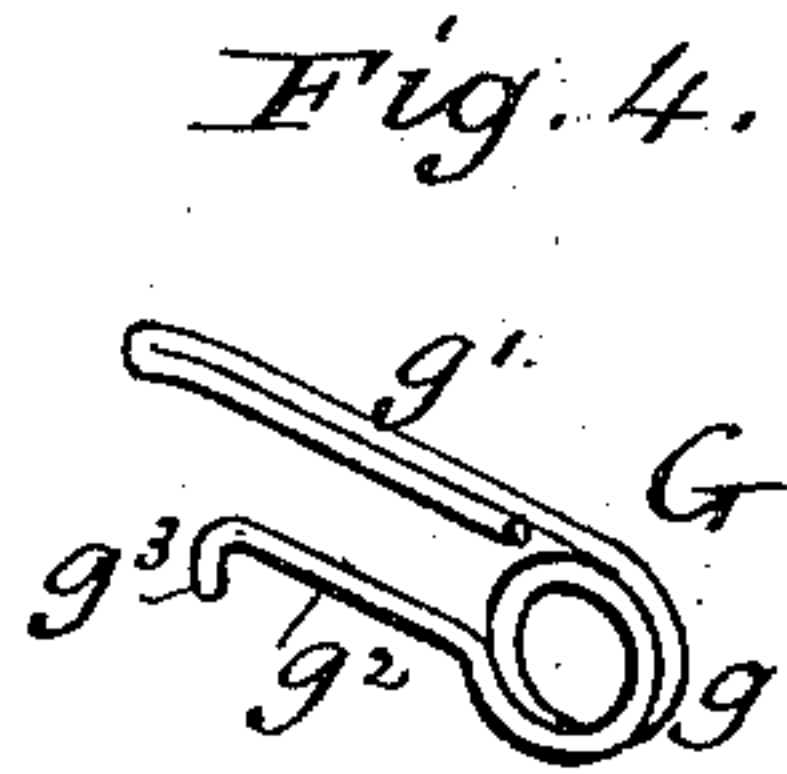
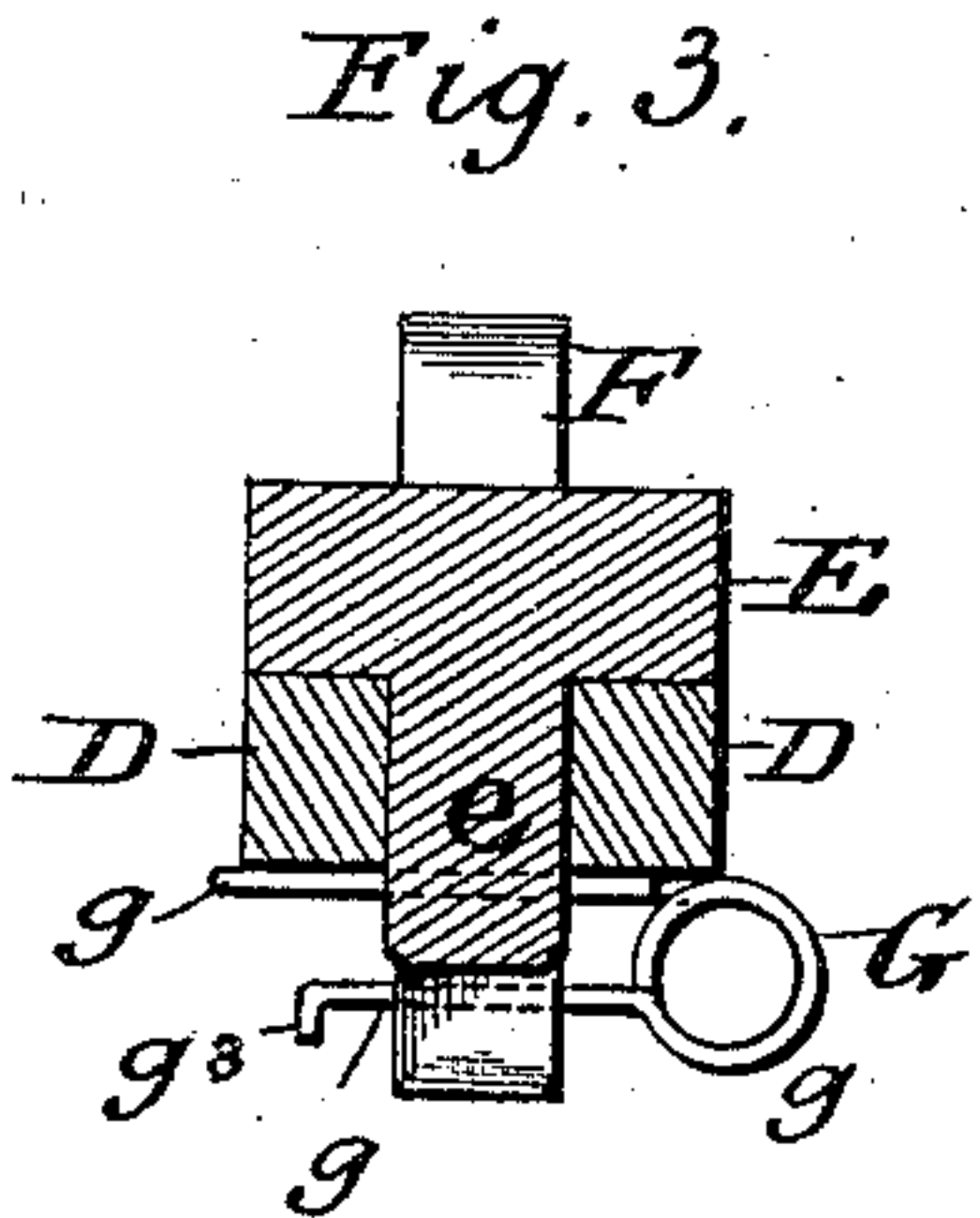
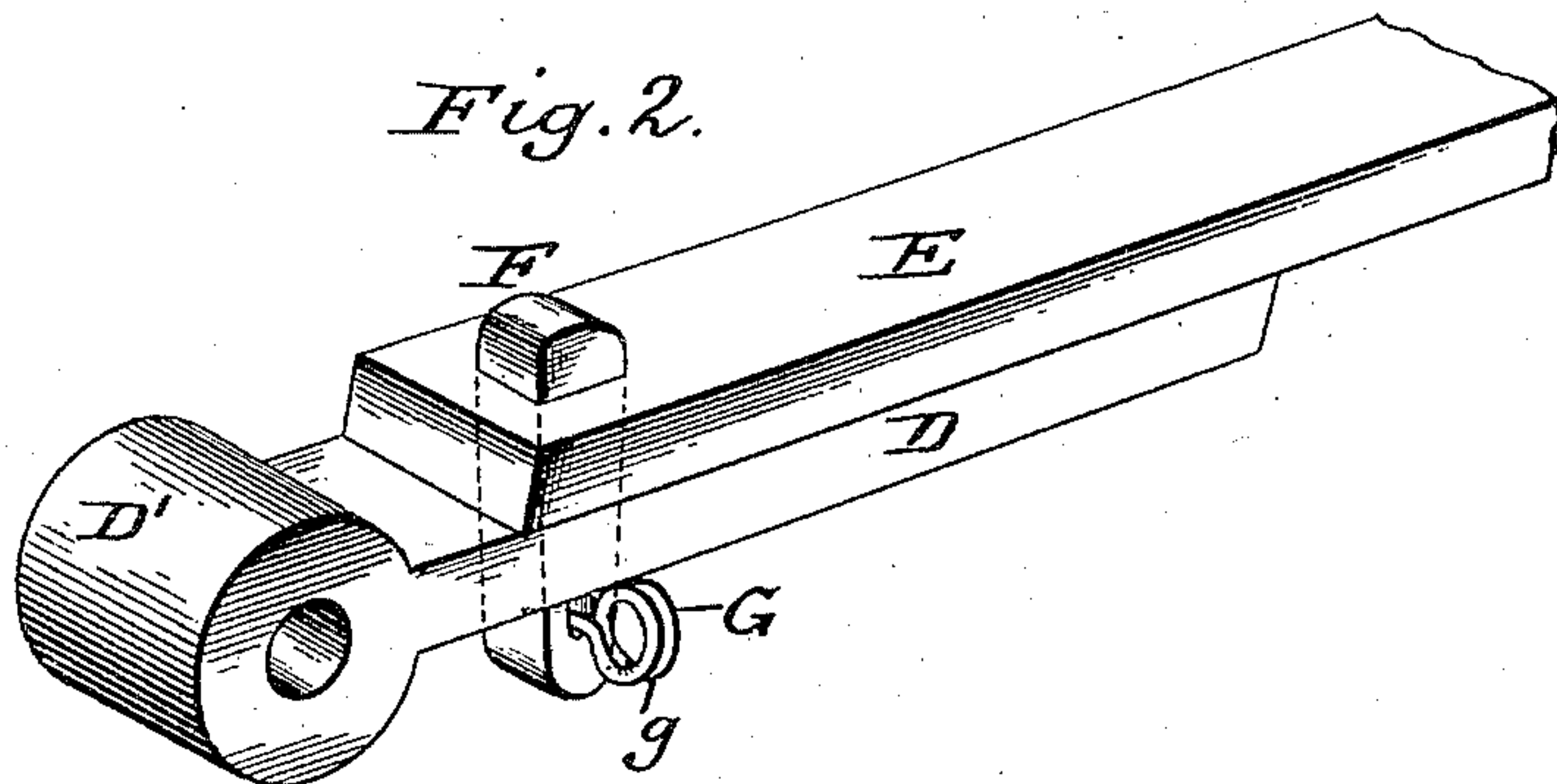
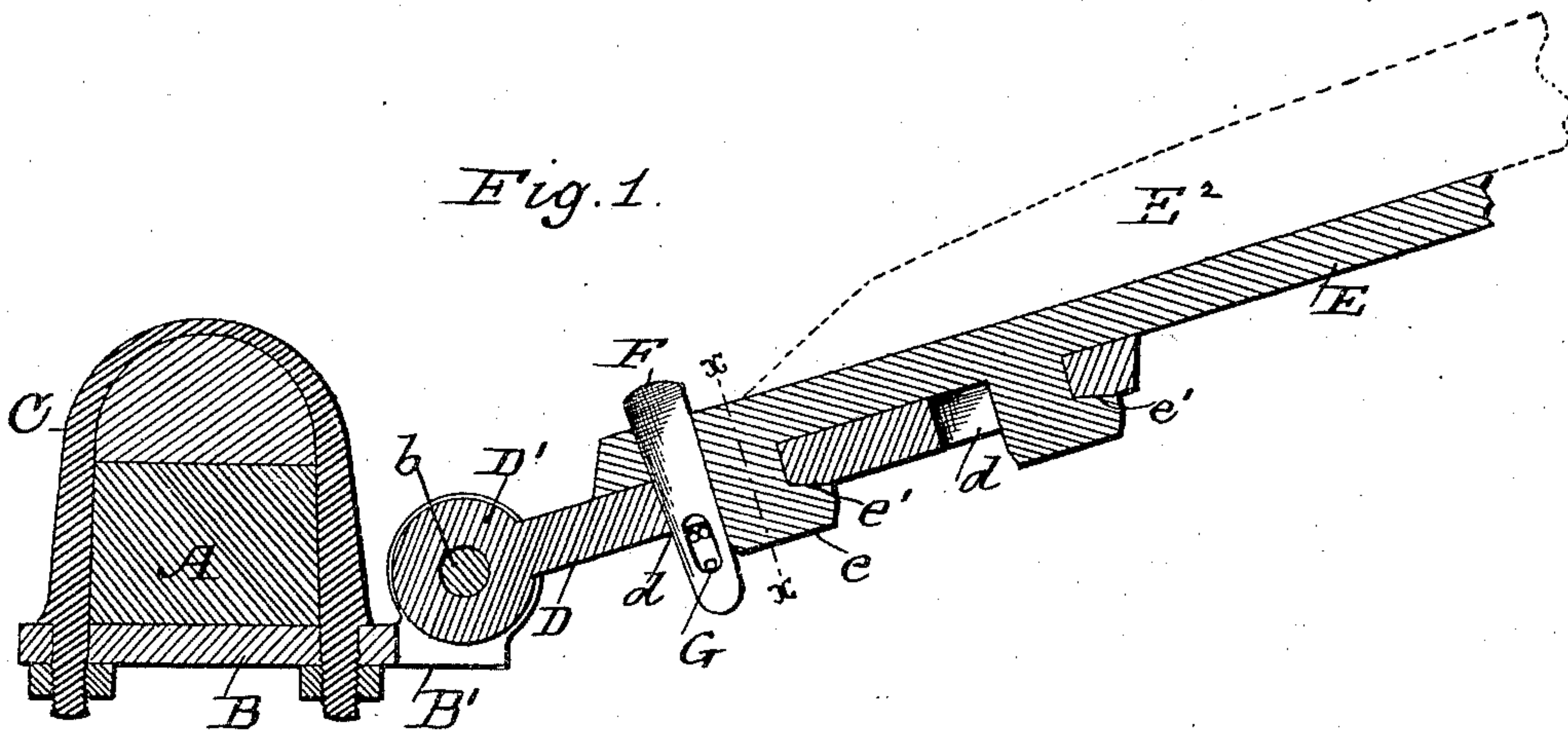
(No Model.)

W. DANNER & J. M. BILLING.

THILL COUPLING.

No. 312,823.

Patented Feb. 24, 1885.



Witnesses:
L. C. Hills
W. B. Masson

Inventors:
William Danner
Jacob M Billing
by E. E. Masson
attly.

UNITED STATES PATENT OFFICE.

WILLIAM DANNER AND JACOB M. BILLING, OF CANAL FULTON, OHIO.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 312,823, dated February 24, 1885.

Application filed March 17, 1884. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM DANNER and JACOB M. BILLING, citizens of the United States, residing at Canal Fulton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Thill-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section through a coupling constructed in accordance with our invention. Fig. 2 is a perspective view of the same detached from the draft-plate and clip. Fig. 3 is a transverse section taken on line *xx* of Fig. 1. Fig. 4 is a perspective view of a spring-key used in connection with the thill-coupling, and forming part of our invention.

Our invention relates to thill-couplings for buggy and carriage shafts or the tongues of vehicles; and the objects of our improvements are to provide simple and inexpensive means for promptly attaching to or detaching from the draft-plates of vehicles the shafts or pole thereof, and at the same time produce such a firm connection that there shall not be any rattling of the parts. We attain these objects by the device illustrated in the accompanying drawings, in which—

A represents the front axle of a vehicle, B one of the draft-plates, and C a clip connecting the latter with the axle. In this instance the draft-plate B is provided with lugs B', bored horizontally for the passage of the bolt, pin, or rivet *b*. Upon the bolt is mounted the eye D', formed at the end of a small rectangular plate or bar, D, so that the bolt *b* forms the connection between the draft-plate and the bar D, and hinges the latter to the lugs upon the draft-plate B; but said lugs may just as conveniently form a part of the clip C, as such a location is well known in the art. The bar D is provided with two slots, *d*, preferably of rectangular form, to receive two hooks, *e*, projecting from the under side of the thill-iron E. The inner surface of the hooks is slightly beveled at *e'*, to bear against a correspondingly beveled surface on the under side of the bar D, and adjoining the forward portion of the slots *d*, to draw the thill-iron tightly against the bar D, and to lock them firmly in this position a wedge, F, is introduced into the rearmost

slot *d*, against the rear of the back hook, *e*, the thill-iron being slotted vertically at that point for the passage of the wedge. It will easily be seen that this mode of uniting the thill-iron to the bar D forms a very firm and strong connection between the two. The number of hooks *e* projecting from the thill-iron may vary from one to three or more. The wood thills E² are secured to the thill-irons in the usual manner. The eye D' may be formed by bending a light bar in the middle of its length and bringing its ends together under the thill-iron E, where they will be clamped between the under side of the latter and the hooks *e* thereof, and any well-known means may be used to prevent rattling of the eye D' against the bolt *b* or against the lugs B'.

To retain the wedge F securely locked to the thill-coupling, a tongue of leather may be used and passed through the transverse hole *f* in the wedge; but we prefer the spring-key G, as it produces a constant downward or locking pressure upon the wedge. This key is formed of a short length of spring-wire bent over to form a single or a double coil at *g*, with its ends *g'* and *g''* substantially parallel. The end *g'* is bent sidewise against itself to present a broader bearing-surface, and the extremity of the end *g''* is bent downwardly at *g'''*, to form a stop and prevent the key from escaping accidentally out of the opening in the wedge, and, although quite secure when once placed in its seat, it is easily removed by a person compressing its ends together or pressing upon them adjoining to the coiled portion.

We reserve the right to broadly claim the spring-key in a separate application.

Having now fully described our invention, we claim—

1. As a new article of manufacture, a thill-coupling composed of the thill-iron E, provided with hooks projecting therefrom, the bar D, provided with slots to receive said hooks, and means, as set forth, for retaining the hooks in engagement with the slotted bar, substantially as described.

2. The combination of the thill-iron E, provided with hooks *e*, with the bar D, provided with slots *d* and an eye, D', at one end, and the wedge F, substantially as and for the purpose described.

3. The combination, with the draft-plate or

axle-clip of a vehicle and the bolt *b*, of the plate
D, provided with slots *d*, the thill-iron E, hav-
ing hooks *e* projecting from its flat side, and
the wedge F, passing through the thill-iron and
5 the plate D, substantially as and for the pur-
pose described.

4. The combination of the thill-iron E, pro-
vided with hooks *e*, and the bar D, provided
with slots to receive said hooks, with the wedge

F and spring wire key G, substantially as and 10
for the purpose described.

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

WILLIAM DANNER.
JACOB M. BILLING.

Witnesses:

WM. H. SUTTER,
A. J. KITTINGER.