

C. C. BRADLEY.  
THILL COUPLING.

No. 485,368.

Patented Nov. 1, 1892.

Fig. 1.

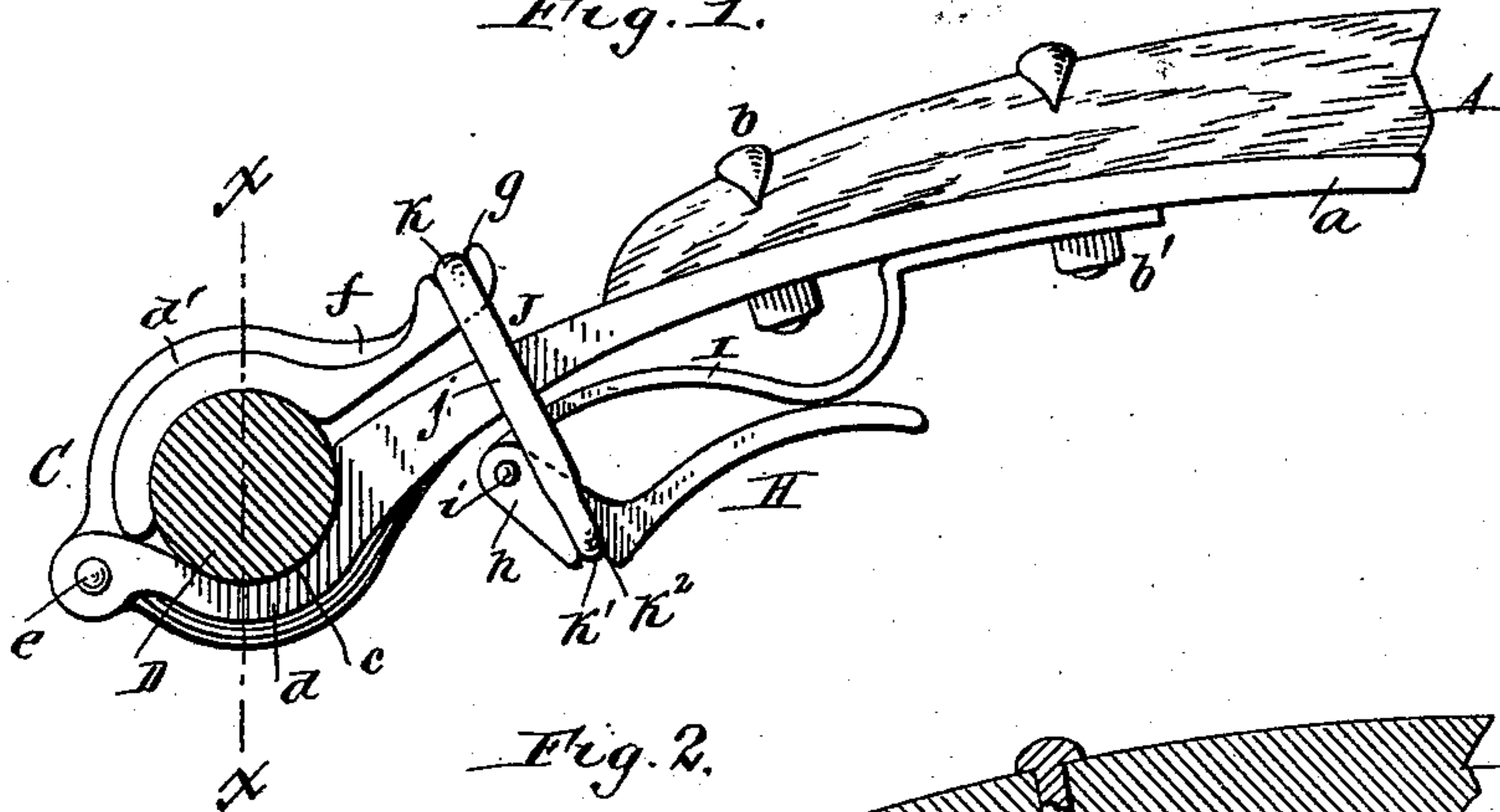


Fig. 2.

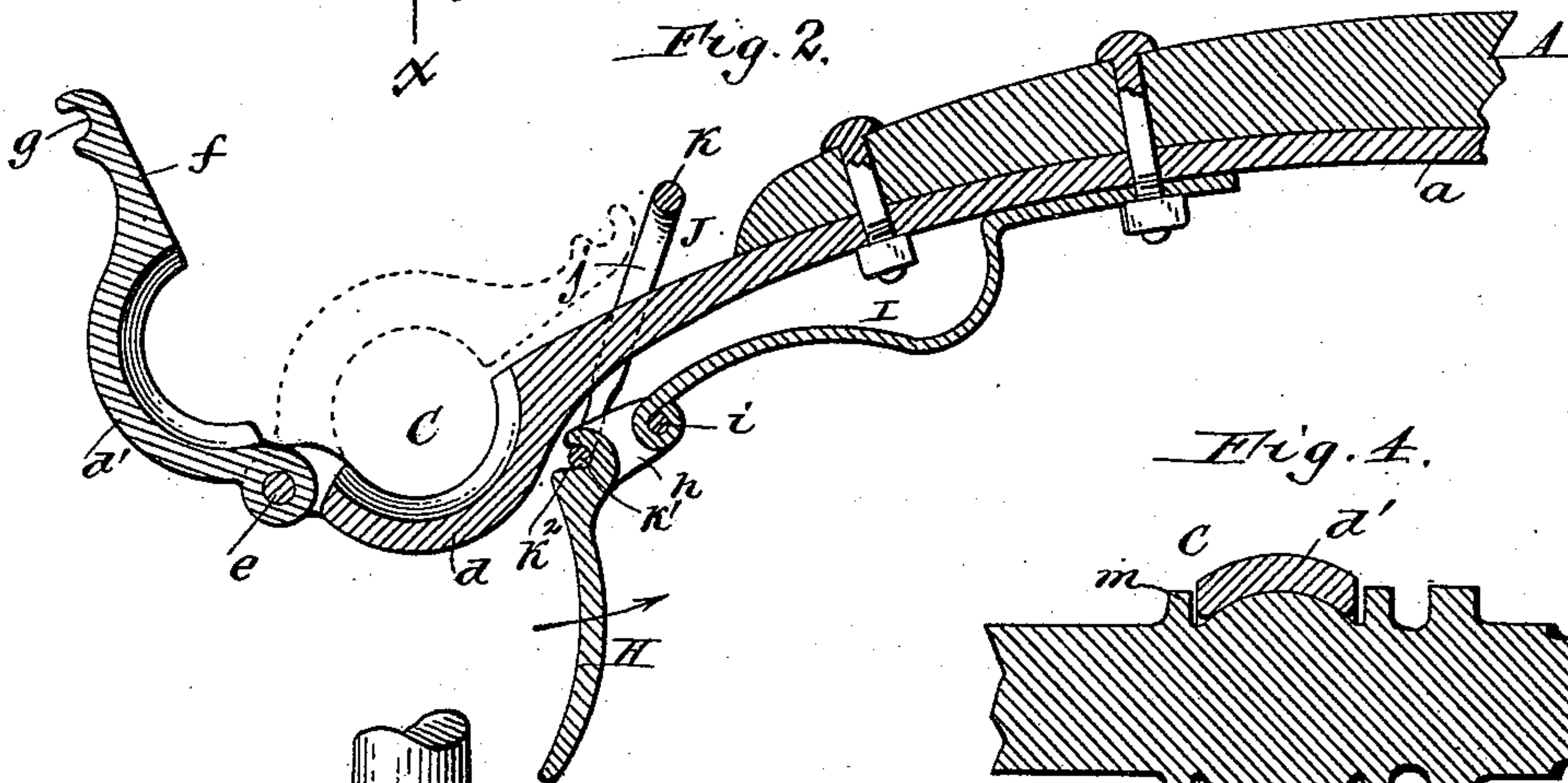


Fig. 4.

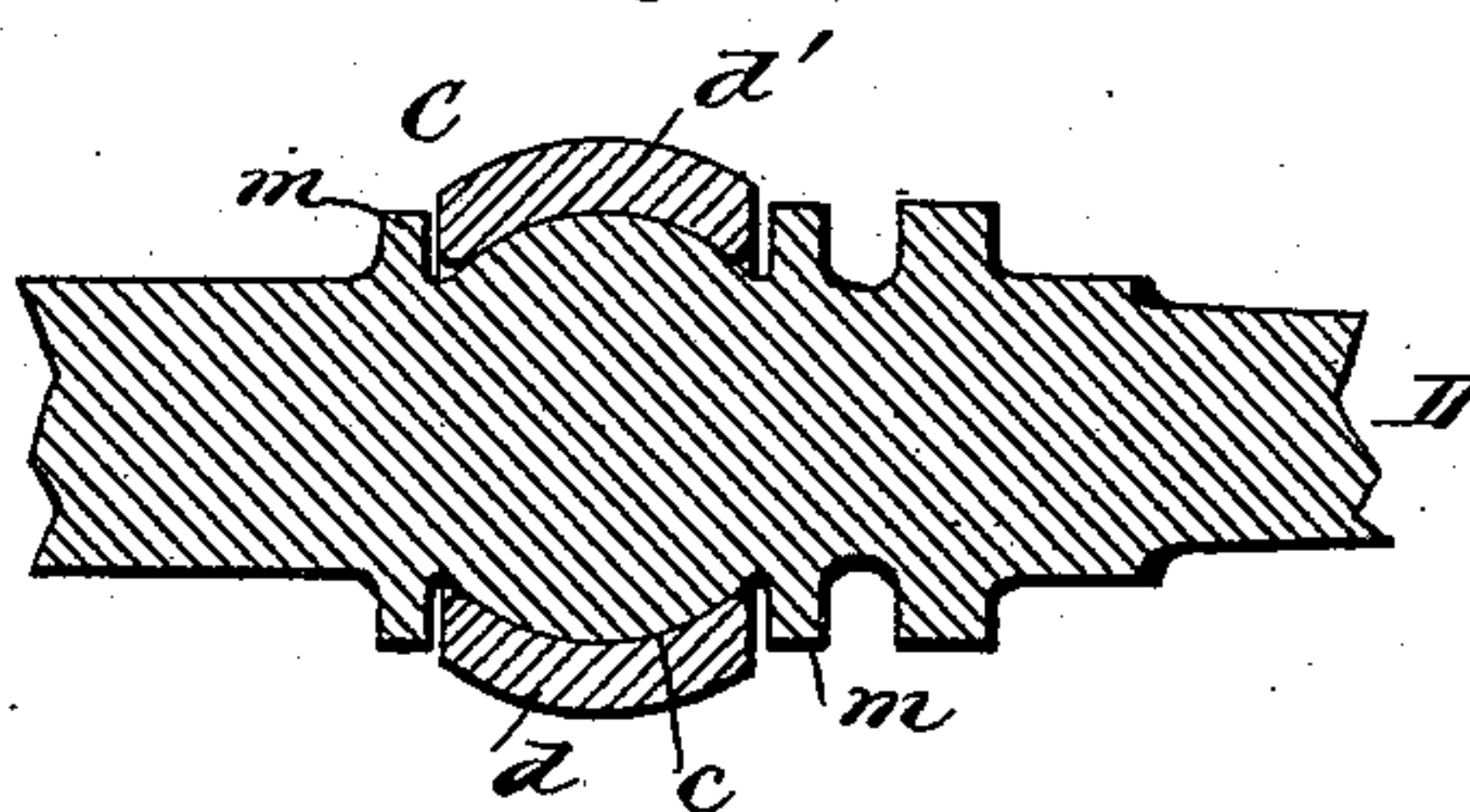


Fig. 3.

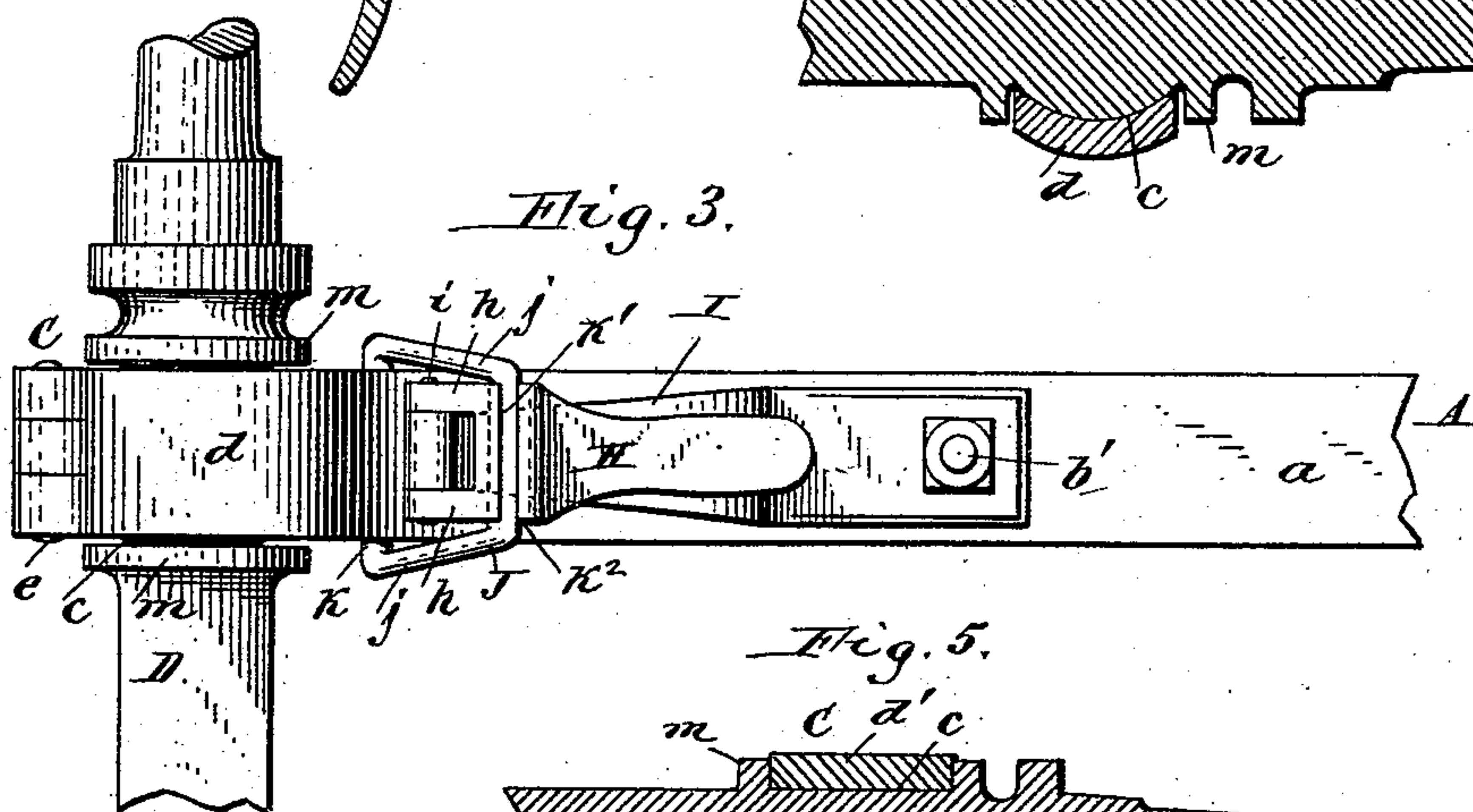
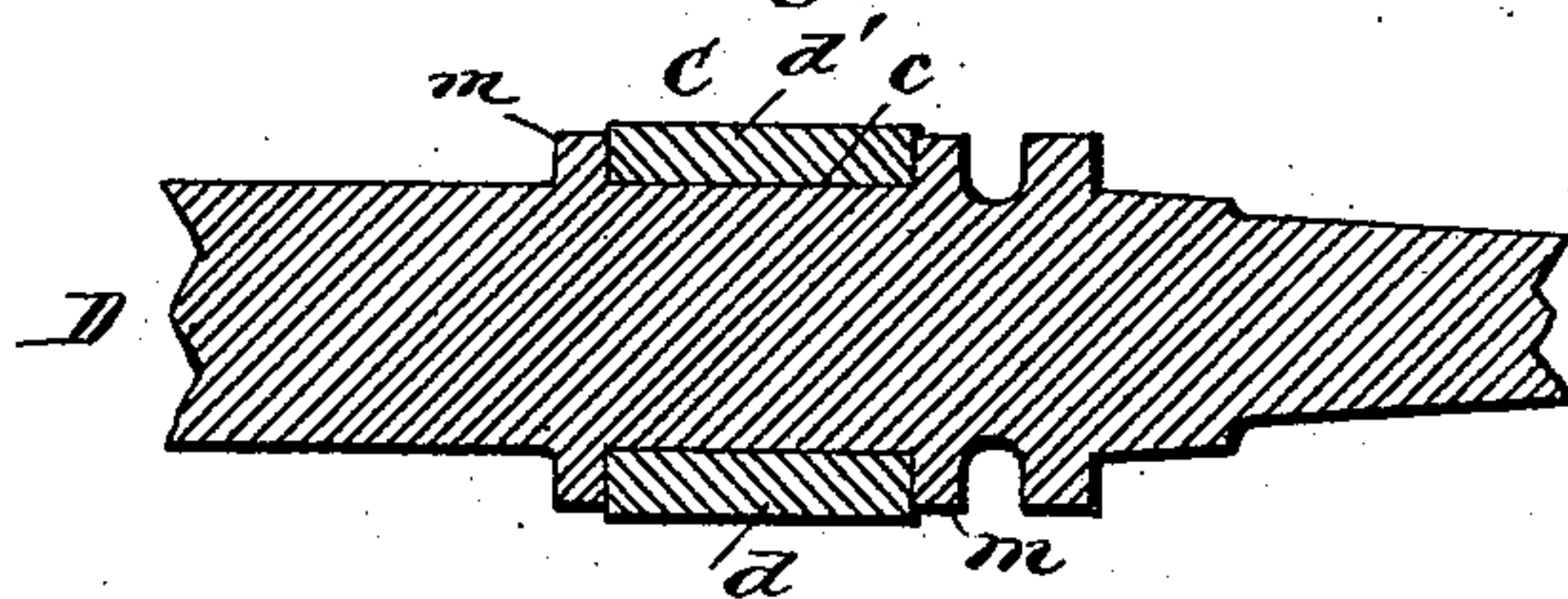


Fig. 5.



Witnesses:

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Attorneys.

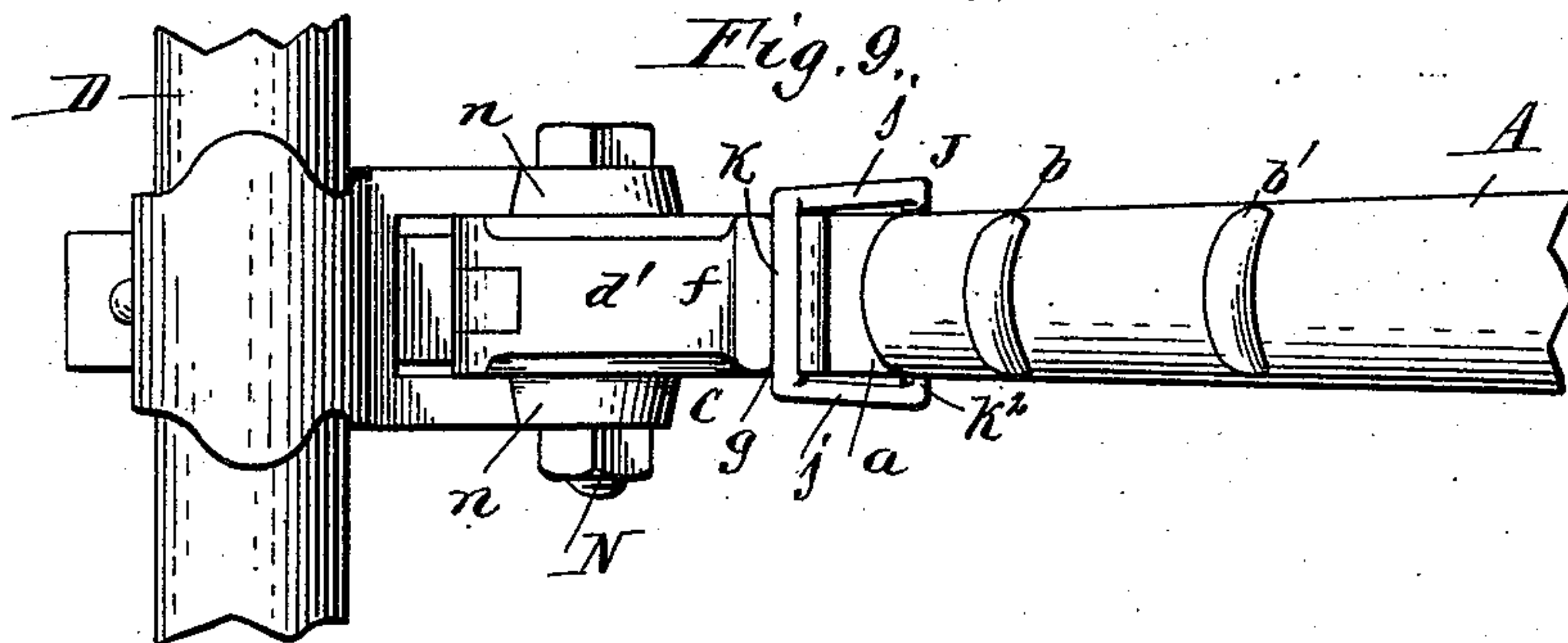
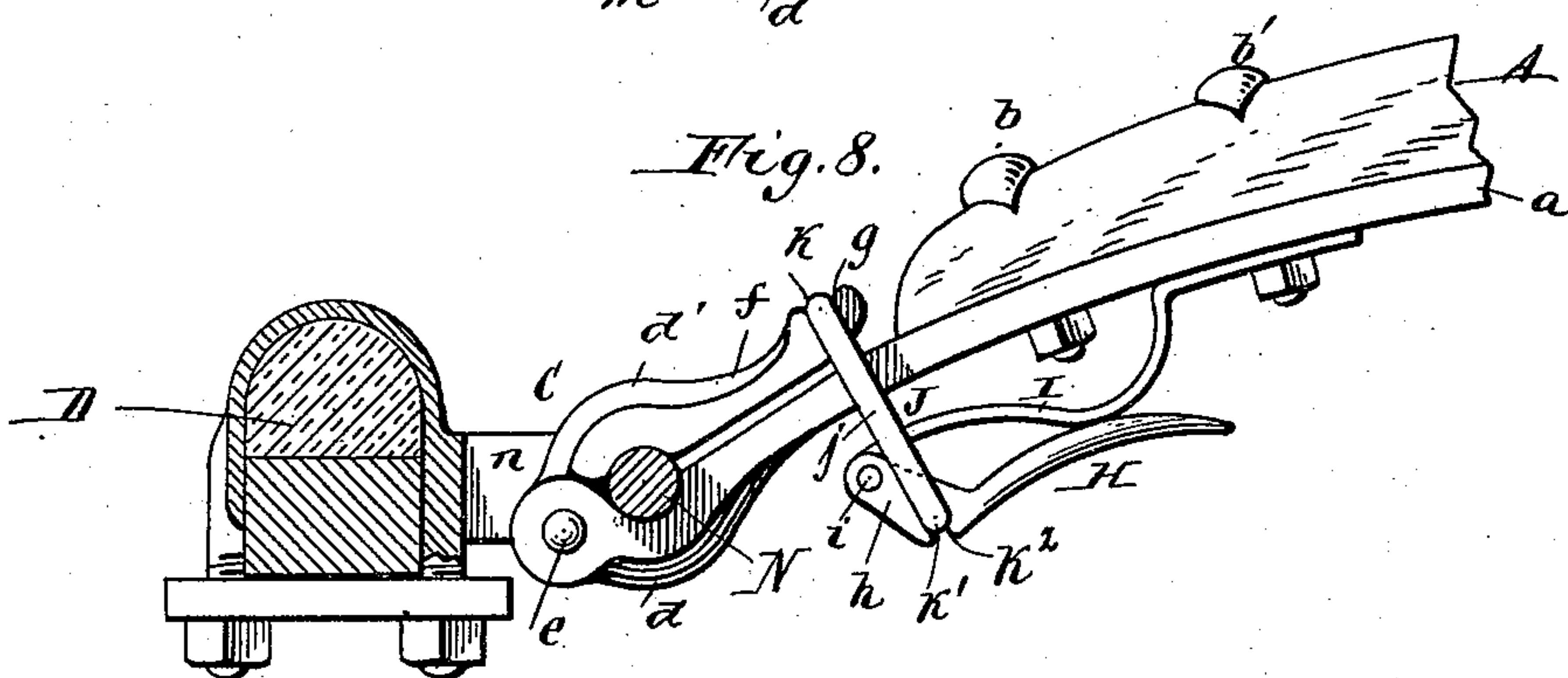
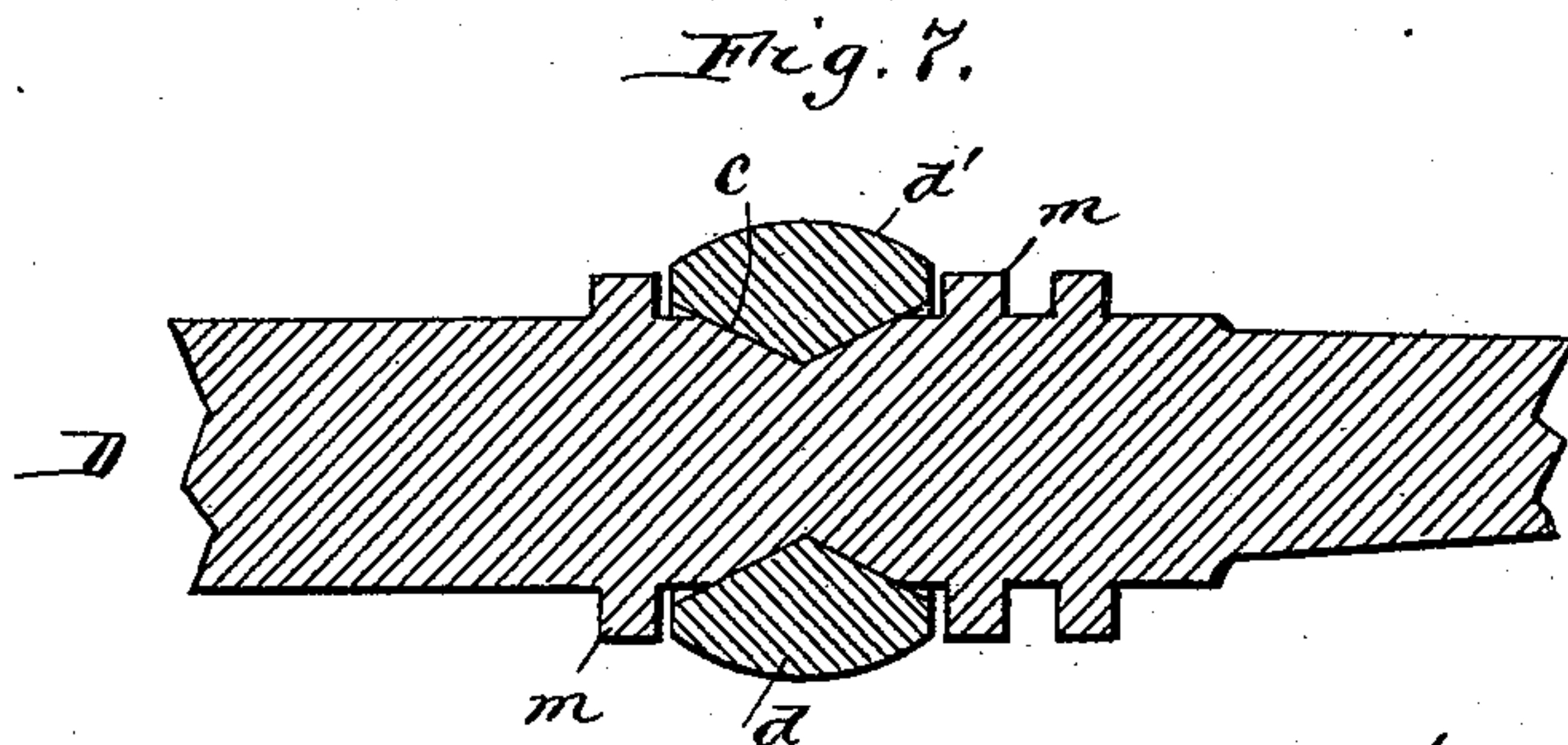
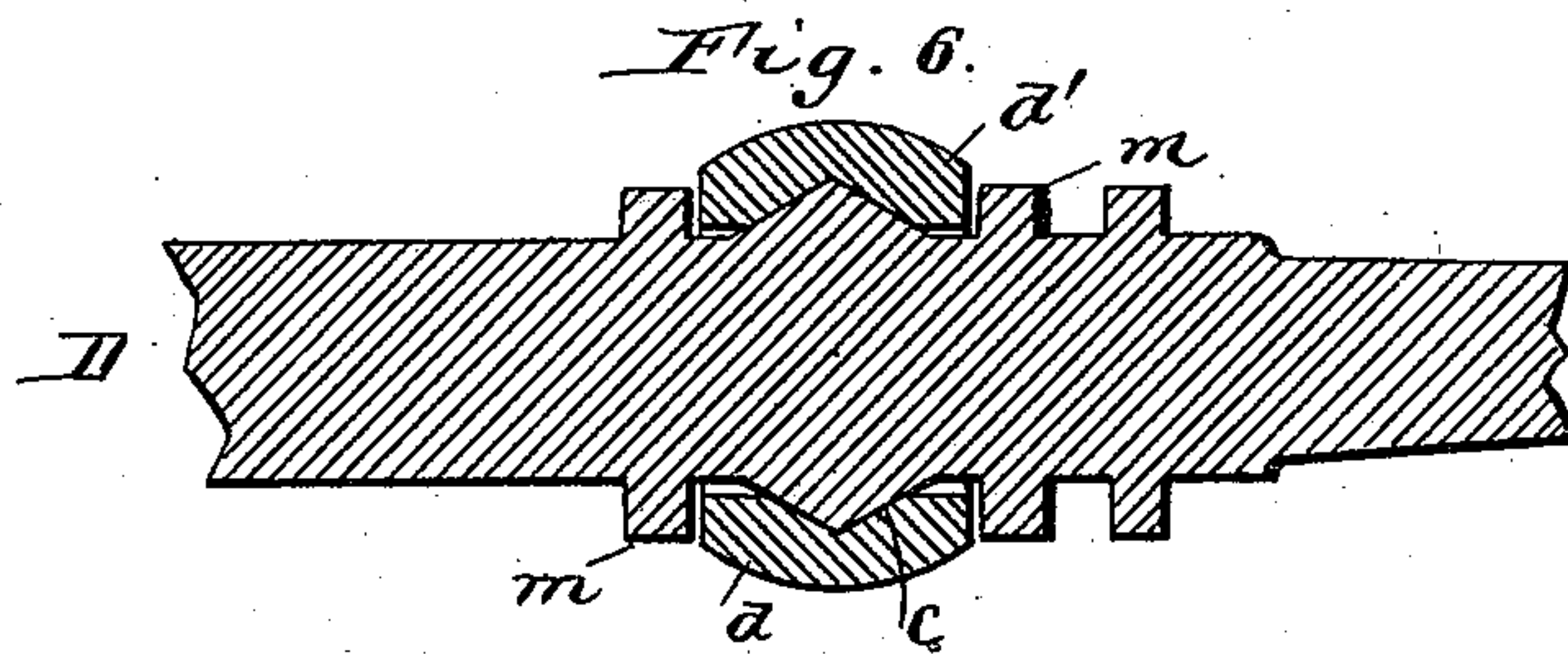
(No Model.)

2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

CHRISTOPHER C. BRADLEY, OF SYRACUSE, NEW YORK.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 485,368, dated November 1, 1892.

Application filed July 13, 1891. Serial No. 399,270. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTOPHER C. BRADLEY, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Thill-Couplings, of which the following is a specification.

This invention relates to a thill-coupling in which the draft or thill eye is divided and provided with a clamping device whereby the operations of attaching the thills to the vehicle or detaching the same therefrom can be quickly performed.

The object of my invention is to provide a thill-coupling of this character which can be quickly and conveniently manipulated, which is composed of few parts, is safe in use, and can be manufactured at small expense.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of my improved thill-coupling and connecting parts, showing the same in a coupled position. Fig. 2 is a longitudinal section thereof, showing the parts in an uncoupled position. Fig. 3 is a bottom plan view of the thill-coupling and connecting parts in a coupled position. Fig. 4 is a vertical section of the draft-eye and axle in line *x x*, Fig. 1. Figs. 5, 6, and 7 are similar views showing modified forms of the journal on the axle to which the draft-eye is attached. Fig. 8 is a side elevation, partly in section, showing a modified construction of the thill-coupling. Fig. 9 is a top plan view thereof.

Like letters of reference refer to like parts in the several figures.

A represents the rear end of a thill, and *a* the thill-iron, secured to the under side thereof by bolts *b b'*. This thill-iron is provided at its rear end with a divided eye C, which embraces a journal *c*, formed on the axle D. The divided eye consists of a lower section *d*, which is formed integral with the rear end of the thill-iron, and an upper movable section *d'*, which is pivoted with its rear end to the rear end of the lower section *d* by a transverse pin *e*. The front portion of the upper eye-section is provided with a lip *f*, projecting forwardly over the thill-iron and provided with a transverse groove *g* in its upper side.

H represents a clamping-lever, whereby the

movable section of the draft-eye is drawn toward the fixed section and both sections are drawn against the journal on the axle. This clamping-lever is arranged underneath the thill-iron and is provided at its fulcrum end with two ears *h h*.

I represents a tension-spring, whereby the sections of the draft-eye are yieldingly held in contact with the journal and the wear between these parts is taken up. This spring consists of a curved steel plate which is secured with its front end to the under side of the thill-iron by the fastening-bolt *b'* and has its body portion bent downwardly and then upwardly toward the lower section of the draft-eye. The rear end of the tension-spring is arranged between the ears of the clamping-lever and pivotally secured thereto by a transverse pin *i*, thereby forming a yielding fulcrum-support for the clamping-lever.

J represents a loop, whereby the upper eye-section is detachably connected with the clamping-lever. This loop consists of two upright bars *j j*, arranged on opposite sides of the thill-iron, and cross-bars *k k'*, arranged, respectively, above and below the latter. The lower cross-bar *k'* of the loop is arranged in a transverse groove *k<sup>2</sup>*, formed in the lower side of the clamping-lever near its pivot. This cross-bar can turn in the groove of the lever and is preferably prevented from becoming detached from the lever by closing the edges of the groove over the cross-bar by a cold-shut or in any other suitable manner. The upper cross-bar *k* of the loop rests loosely in the transverse groove *g* in the lip of the upper eye-section, so that the loop can be detached therefrom.

The journal on the axle, which is embraced by the draft-eye, is preferably made of convex-spherical form, and the bearing portions of the draft-eye sections are made of concave-spherical form, as represented in Figs. 1 to 4, whereby a slight lengthwise rocking movement of each draft-eye on its journal is permitted, which enables the two draft-eyes to adjust themselves within certain limits of their journals and compensates for any inaccuracies in the relative position of the draft-eyes and their journal-supports. This spheri-



cal form of the draft-eyes and their supports also causes the draft-eyes to center themselves on their supports and prevents lengthwise movement of the draft-eyes on their supports. A similar result is produced by forming each journal with a tapering ridge rising from each end of the journal toward its middle and the draft-eye with a correspondingly-shaped cavity, as represented in Fig. 6. It is obvious, however, that the thill-coupling can be applied to a journal having a V-shaped annular groove, as represented in Fig. 7, or to a straight cylindrical support, as represented in Fig. 5.

The axle is preferably provided on opposite sides of its draft-eye journals with collars *m*, whereby the lengthwise movement of the draft-eyes upon the axle is prevented when the straight form represented in Fig. 5 is used, and whereby the rocking movement of the draft-eyes upon their supports is limited when the spherical form represented in Figs. 1 to 4 is used.

When it is desired to couple the thills to the axle, the clamping-lever is released and the loop is disengaged from the upper part of the draft-eye, as represented in Fig. 2. The lower part of the draft-eye is then placed against the lower side of the journal on the axle, and the upper part of the eye is swung forward over the journal, as represented in dotted lines in Fig. 2. The loop is then applied to the upper part of the eye and the clamping-lever is tightened, whereby the loop is drawn down and the parts of the eye are tightened against the journal. When the point at which the loop is attached to the clamping-lever has passed in front of the pivot by which the clamping-lever is attached to the tension-spring, the latter holds the lever locked against its under side, as represented in Fig. 1. In this position of the parts the spring exerts a constant pressure upon the divided draft-eye, thereby preventing rattling and automatically taking up any wear of the parts. Instead of applying the draft-eyes to journals formed on the axles, as represented in Figs. 1 to 7, they can be applied to the ordinary coupling-bolts *N*, which are secured in ears *n*, formed on the clips, as represented in Figs. 8 and 9.

I claim as my invention—

1. The combination, with the thill-iron provided with a rearwardly-projecting rigid eye-section and a movable eye-section hinged to the rear end of the rigid section, of a loop detachably connected with its upper end to the front end of said movable section, a clamping-lever connected with the lower end of said loop, and a tension-spring secured at its front end to the thill-iron and pivotally attached at its rear end to said clamping-lever, substantially as set forth.

2. The combination, with the thill-iron provided with a rearwardly-projecting rigid eye-section, of a movable eye-section hinged to the rear end of said rigid eye-section and provided at its front end with a lip, a loop detachably connected with its upper end to said lip, a clamping-lever connected with the lower end of said loop, and a tension-spring secured at its front end to said thill-iron and pivotally connected at its rear end to said clamping-lever, substantially as set forth.

3. The combination, with the axle provided with a journal, of a thill-iron provided with a rearwardly-projecting rigid eye-section and a movable eye-section hinged to the rear end of the rigid section, both sections embracing said journal, a loop detachably connected at its upper end with the front end of the movable eye-section, a clamping-lever connected with the lower end of the loop, and a spring which is secured to the thill-iron and to which the clamping-lever is pivoted, substantially as set forth.

4. The combination, with the axle provided with a journal having the middle of its bearing-surface arranged at a greater distance from the center of the axle than the end portions of the bearing-surface, of a thill-iron provided with a rigid and a movable eye-section having correspondingly-shaped bearing-surfaces, and a clamping device whereby the eye-sections are closed upon the journal, substantially as set forth.

Witness my hand this 29th day of June, 1891.

CHRISTOPHER C. BRADLEY.

Witnesses:

THEO. L. POPP,  
J. T. CLOUGH.