

No. 736,915.

PATENTED AUG. 18, 1903.

F. D. DAVIES.  
SHAFT AND HARNESS SUPPORT.  
APPLICATION FILED APR. 1, 1903.

NO MODEL.

Fig. 1.

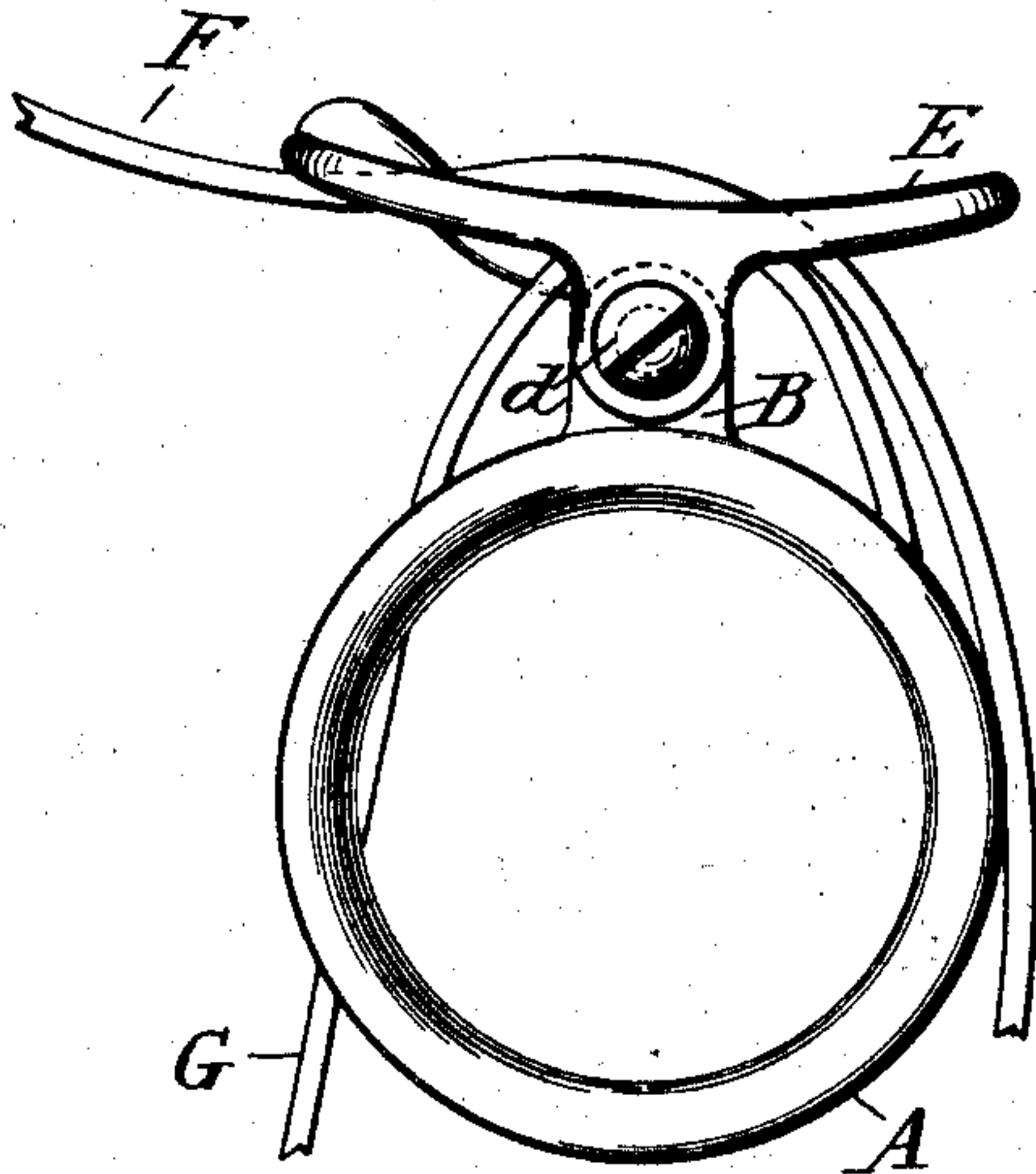


Fig. 2.

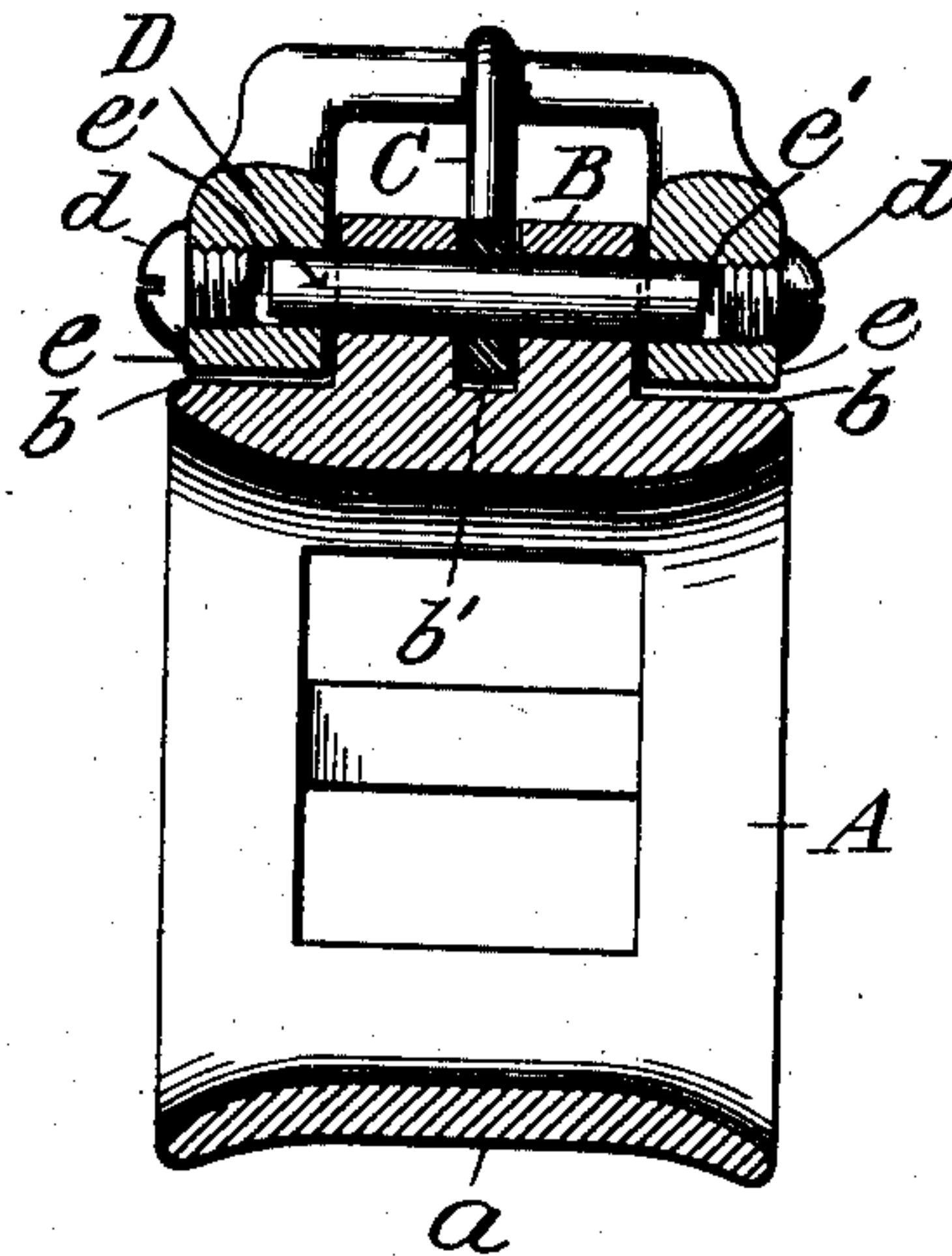
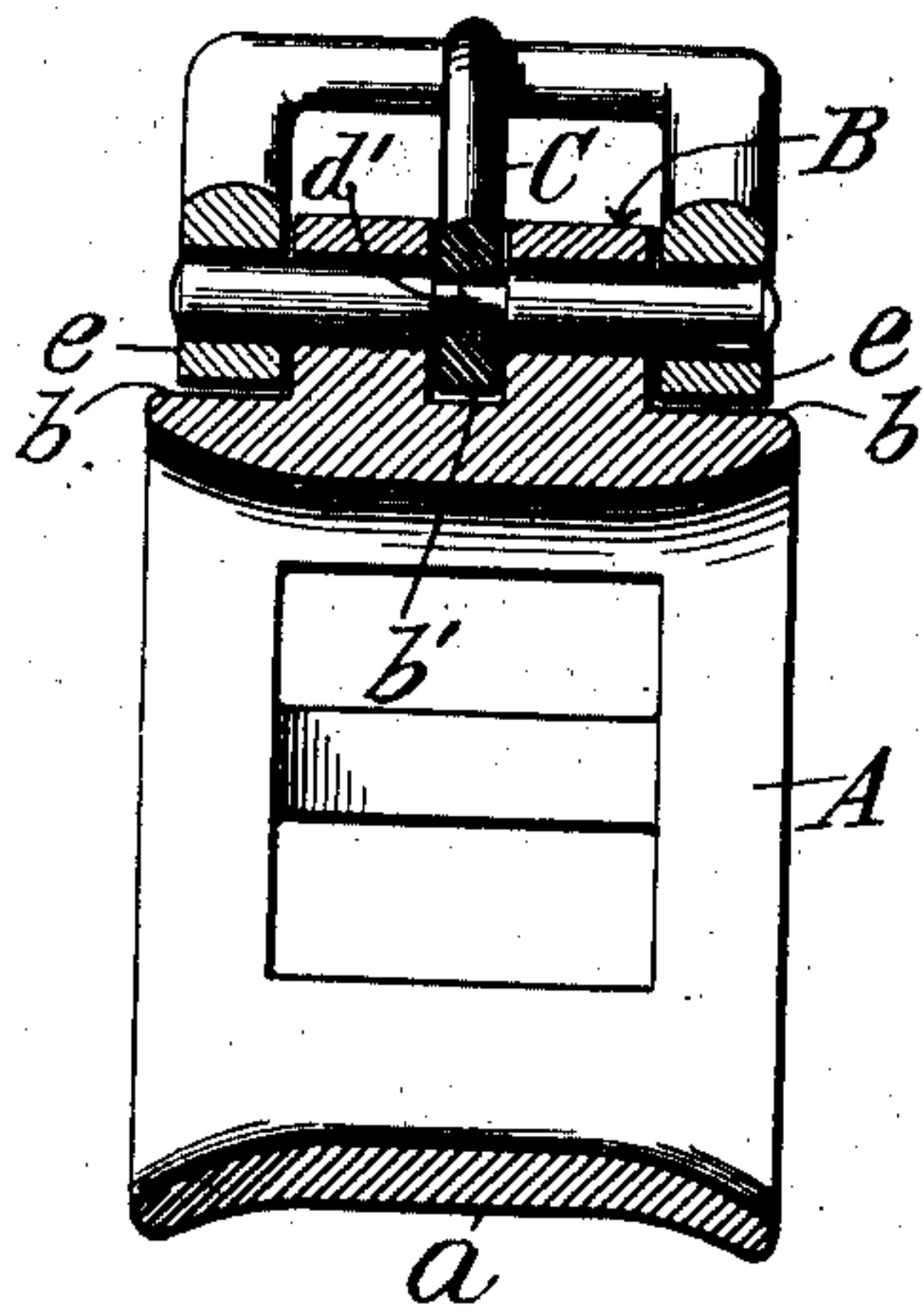


Fig. 3.



Witnesses  
Edward Howland,  
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By his Attorney J. W. Parker



# UNITED STATES PATENT OFFICE.

FREDERICK D. DAVIES, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO FREDERICK C. BONNY, OF BROOKLYN, NEW YORK.

## SHAFT AND HARNESS SUPPORT.

SPECIFICATION forming part of Letters Patent No. 736,915, dated August 18, 1903.

Application filed April 1, 1903. Serial No. 150,505. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK D. DAVIES, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Shaft and Harness Supports, of which the following is a specification.

This invention relates to improvements in tug-loops or carriage-shaft supporters, and the particular features of the invention thereof may be summarized as follows: first, means, in conjunction with a simple construction of tug-loop, whereby the bearings of a harness-buckle pivoted thereto are protected against undue frictional wear due to laterally-exerted strain upon said buckle; second, means whereby the pivotal connection between the buckle and tug-loop and which forms the mount for the buckle-tongue is rendered capable of free independent rotation within its bearings in both buckle and tug-loop, thereby minimizing frictional resistance between said members and lengthening their period of usefulness.

In brief, my invention comprises a tug-loop having a radial abutment upon its periphery provided with a central vertical recess to receive a buckle-tongue and having transverse apertures to receive a pivot member, said tongue being mounted upon said pivot, and with shoulder-bearing surfaces upon said loop exterior to and arranged at right angles to the side walls of said abutment, together with a buckle comprising a substantially rectangular frame having centrally-disposed side lugs arranged to straddle the aforesaid abutment, and said lugs having transverse apertures to receive part way therein the ends of the pivot member, the outer portions of said apertures being stoppered with screw-caps or the like to retain the pivot member thus freely journaled in its operative position.

In the drawings accompanying this application, Figure 1 is a side view of a tug-loop having a harness-buckle pivotally secured thereto. Fig. 2 is a cross-section thereof, and Fig. 3 is a cross-sectional view illustrating a modified form of pivotal connection.

In said figures, the letter A indicates the tug-loop, which receives the shaft or thill and

is preferably of circular form, being provided on its external periphery with a shallow concave groove *a* to more easily accommodate the strap that passes along a greater or less portion thereof. The tug-loop A is also provided upon its periphery with an abutment B, the said abutment extending therefrom at its center and leaving shoulder-bearing-surface portions *b b* at either side of said abutment, for a purpose to be described hereinafter. The said abutment B is provided with a central recess *b'*, within which is placed the inner end of a tongue C, and a pivot D is mounted freely within transverse apertures in said abutment and tongue end, serving to pivotally support the tongue therein.

A buckle, which is preferably composed of a rectangular frame E, is provided with the centrally-depending lugs *ee*, which latter are arranged to straddle the abutment B and are provided with apertures *e' e'*, within which the opposite ends of the pivot D are freely mounted when said apertures are conterminous with the apertures in the arms *ee*, thereby enabling the buckle to rock both upon and with said pivot.

The extremities of the lugs or arms *ee* are rounded concentrically with the pivotal bearings aforesaid and arranged so that their lower horizontal transverse surfaces bear against the shoulder-surfaces *b b*, presented upon the loop A. By this means a broad bearing contact is effected between the ends of the lugs or arms *ee* and the bearings *b b*, having the effect when a lateral strain is given the buckle to prevent oscillation of the latter, while reducing the strain and wear upon the pivot, and thereby avoiding the liability of rattling occurring between said pivot and its bearings.

To prevent disconnection of the several elements of the device through dislodgment of the pivot D, end caps or stoppers, as *d d*, are placed and secured, as by screwing, within the outer ends of the apertures *e' e'*, respectively, but the inner surfaces of said caps or stoppers *d d* terminating at a point within said apertures, respectively, out of binding or close frictional contact with the pivot D, whereby said pivot, while uniting the several elements of the device—viz., the loop, the



buckle, and the tongue—is freely rotatable independently of each of said elements, as also the latter are each freely rotatable or capable of a rocking movement independently of each other and of the pivot. The purpose of this feature of my invention being to avoid rapid wear, due to frictional resistance between the pivot and the several members with which it is in contact and which soon produces rattling between said parts, it will be readily seen that by rendering the pivot free to rotate this resistance is largely overcome, resulting in an extended period of usefulness for the device.

15 In the modification shown in Fig. 3 I provide the pivot D with an annular recess *d'* to support the tongue C, the bearing of the latter member being held between the annular shoulders formed by said recess, thus serving to retain the pivot against lateral displacement. In this form I may, if desired, dispense with the use of the caps or stoppers *d d*.

The buckle is adapted to receive the usual saddle-strap F and also the end of the usual girth-strap G, as shown in Fig. 1.

Having now described my invention, I declare that what I claim is—

1. In a shaft-tug, the combination with a loop, of a centrally-disposed peripheral abutment thereon having a recess to receive a tongue member, and a transverse aperture, shoulders upon said loop arranged, respectively, right angularly to opposite sides of said abutment, and a buckle having opposite depending arms arranged to straddle said abutment, said arms having transverse apertures adapted to aline with the apertures in said abutment, a tongue seated in said recess having a bearing alined with both said apertures, a freely-turnable pivot-pin rotatably mounted in said apertures and said bearing, and means whereby said pivot-pin is retained within said apertures and said bearing, said arms terminating each in a broad transverse bearing-face, parallel to and in frictional contact with the said shoulders, respectively, and said bearing-surfaces being concentric to the pivotal bearings to permit a rocking movement of the buckle.

2. In a shaft-tug, the combination with a loop, a centrally-disposed peripheral abutment thereon having a recess to receive a tongue member, and a transverse aperture, of a buckle having depending arms to straddle said abutment, said arms having transverse apertures adapted to aline with said first-mentioned aperture, a tongue seated in said recess having a bearing alined with both

said apertures, a pivot rotatably mounted in the transverse apertures in said abutment and arms and the bearing in said tongue, and caps or stoppers closing the apertures in the arms to prevent dislodgment of the pivot.

3. In a shaft-tug, the combination with a loop, of a centrally-disposed peripheral abutment thereon having a recess to receive a tongue member, and a transverse aperture, shoulders upon said loop arranged, respectively, right angularly to opposite sides of said abutment, and a buckle having opposite depending arms arranged to straddle said abutment, said arms having transverse apertures adapted to aline with the apertures in said abutment, a tongue seated in said recess having a bearing alined with both said apertures, a freely-turnable pivot-pin whose ends are rotatably mounted in the apertures in said arms, and whose intermediate portion is rotatably mounted in the apertures in said abutment and the bearing in said tongue, and means whereby said pivot-pin is retained within said apertures and said bearing, said arms terminating each in a broad transverse bearing-surface, parallel to and in frictional contact with the said shoulders, respectively, and said bearing-surfaces being concentric to their pivotal bearings to permit a rocking movement of the buckle.

4. In a shaft-tug, in combination, a tug-loop having a central, recessed abutment, a tongue seated in said recess, and transverse bearings formed in said abutment and tongue, a buckle having depending side arms straddling said abutment, and transverse bearings in said arms, together with a pivot-pin whose opposite ends are seated in the bearings in said arms, respectively, and whose intermediate portion is seated in the bearings in said abutment and tongue, said pivot-pin being freely turnable in all said bearings, and means preventing dislodgment of said pivot-pin.

5. The combination with a tug-loop of a harness-buckle and a tongue therefor having bearings respectively, and a pivot-pin seated in said bearings, being freely turnable therein, whereby said members are connected and each member and said pivot-pin is capable of independent rotation, and means preventing dislodgment of said pivot.

In witness whereof I have hereunto affixed my signature, this 31st day of March, 1903, in the presence of two subscribing witnesses.

FREDERICK D. DAVIES.

Witnesses:

L. E. BROYLES,

FREDERICK C. BONNY.