

(No Model.)

J. A. DONALDSON.
HORSE DETACHER.

2 Sheets—Sheet 1.

No. 594,334.

Patented Nov. 23, 1897.

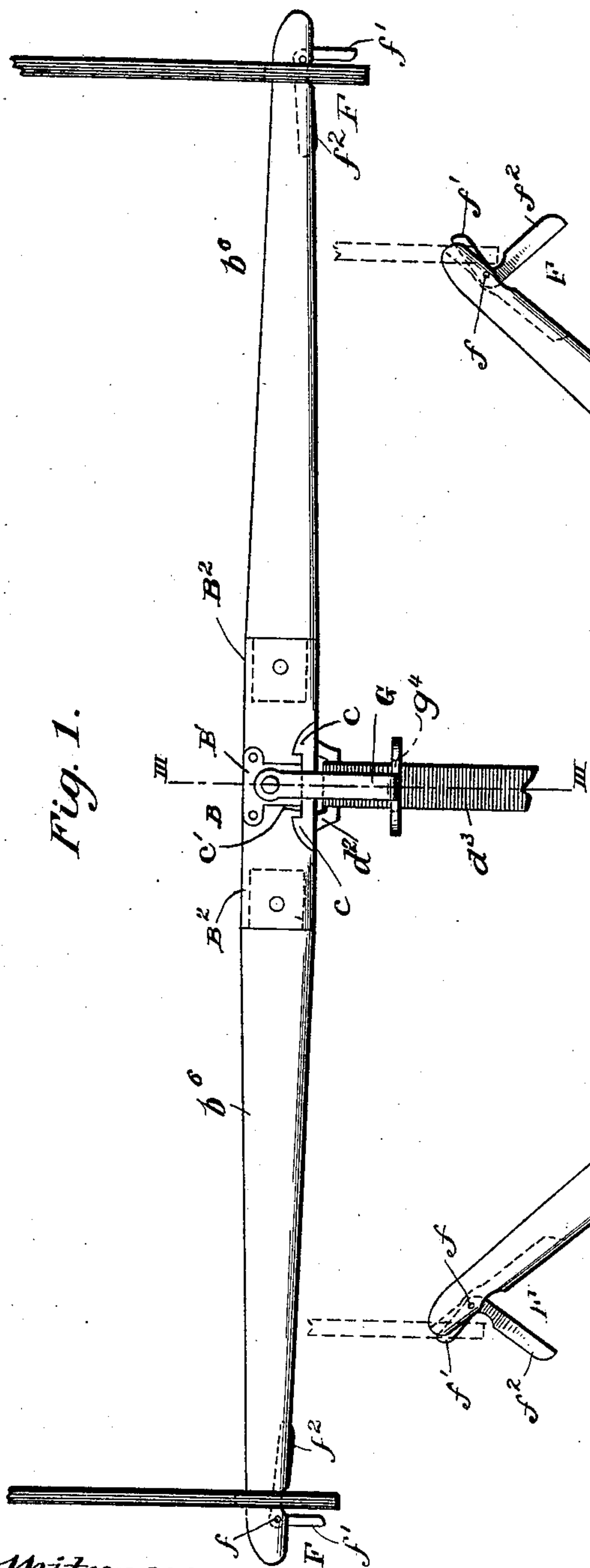


Fig. 1.

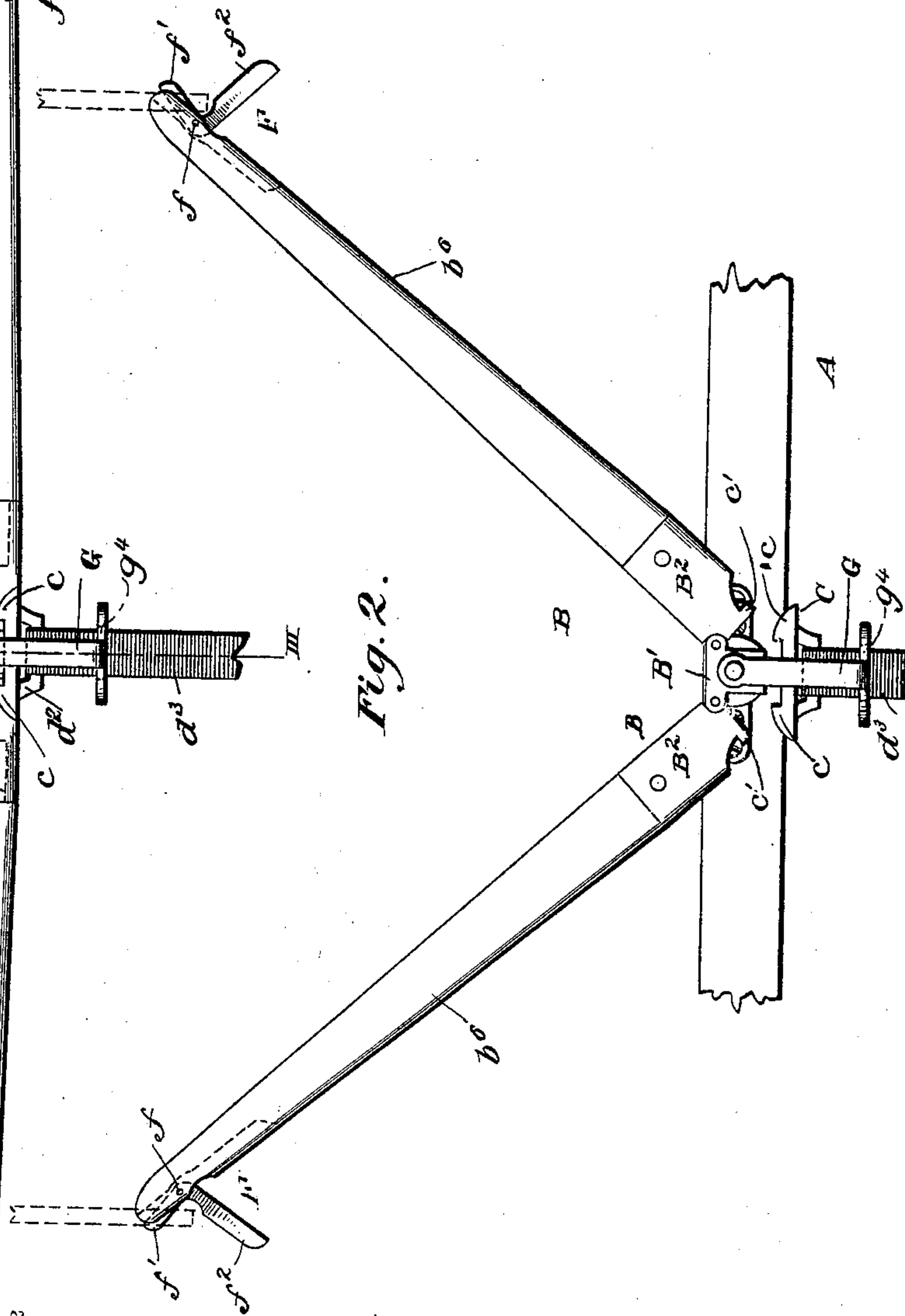


Fig. 2.

Witnesses.

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2 Sheets—Sheet 2.

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Fig. 3.

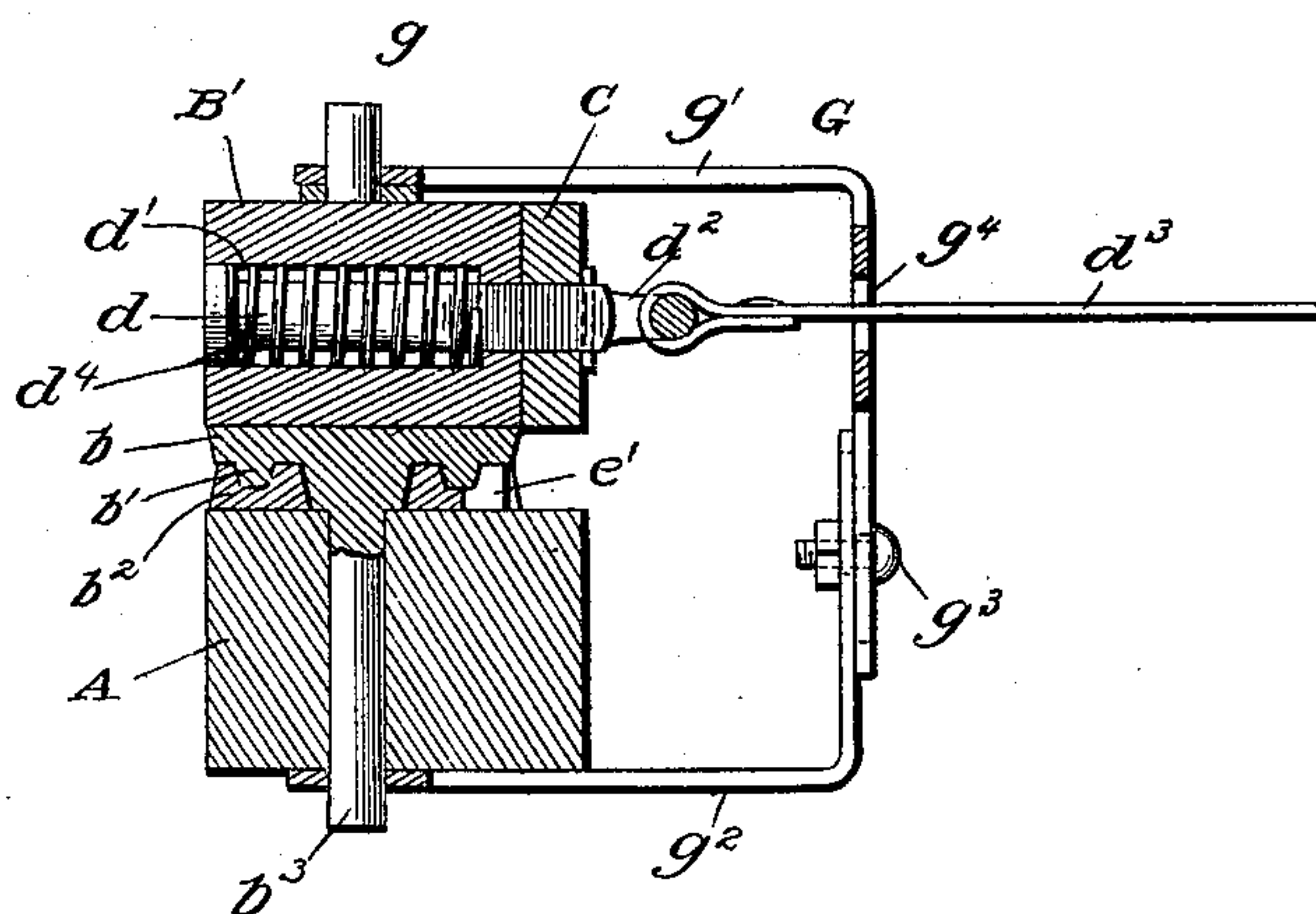


Fig. 4.

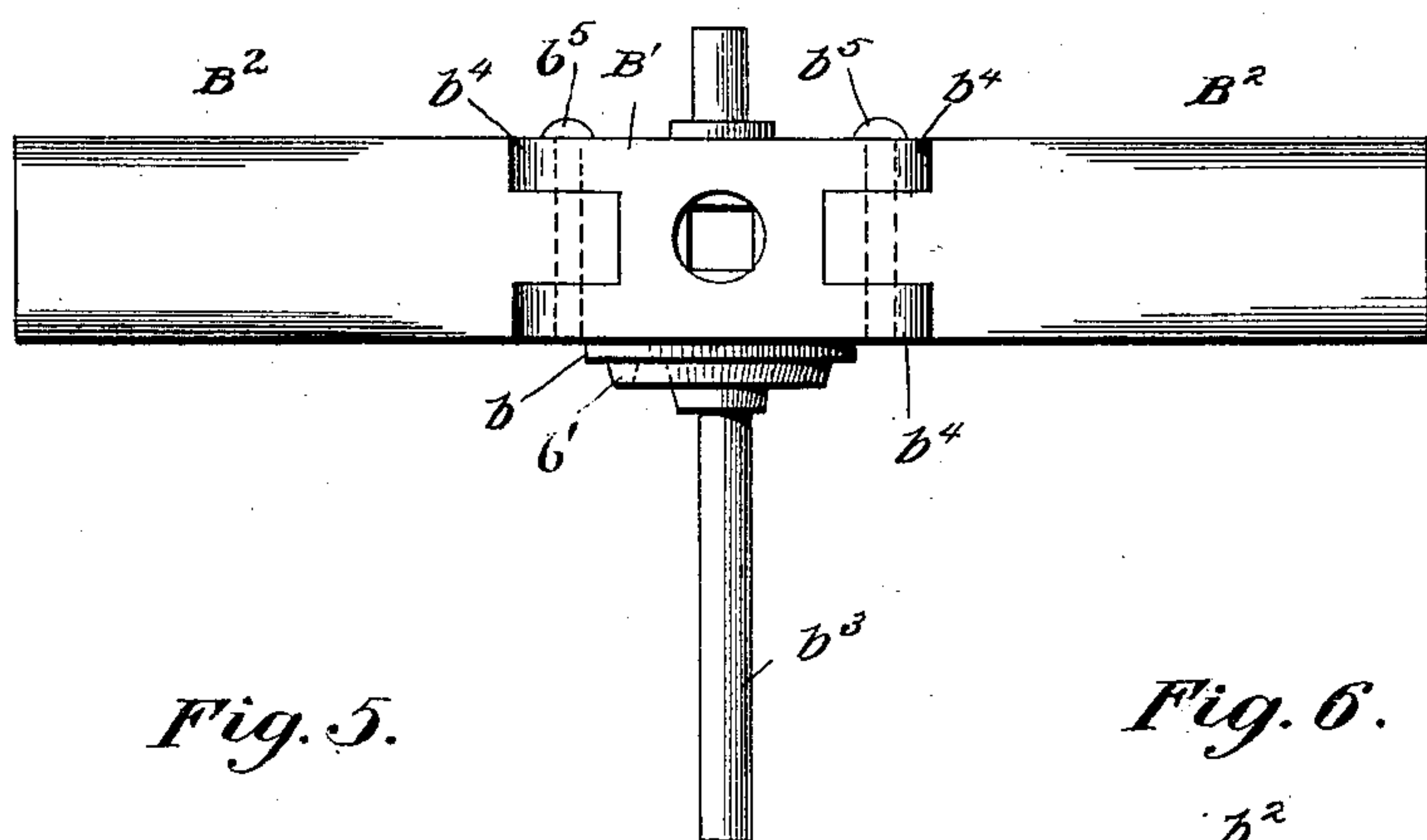


Fig. 5.

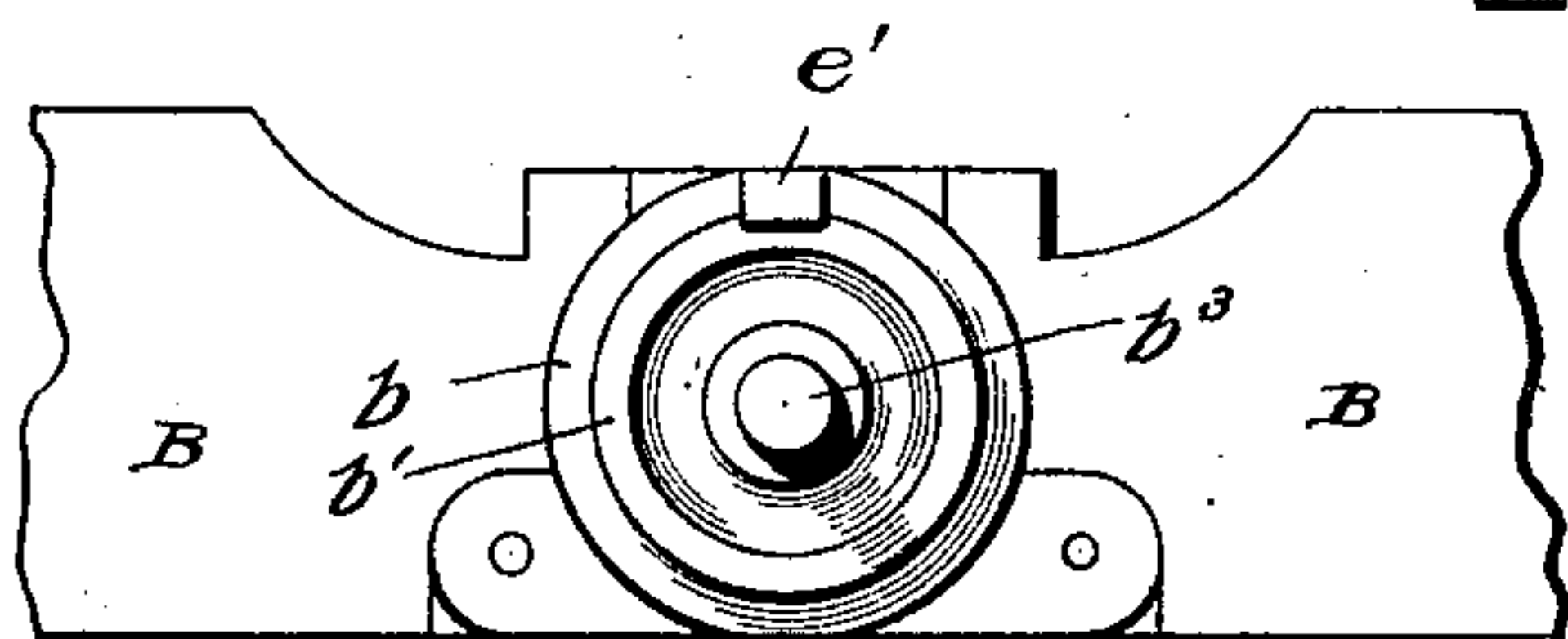
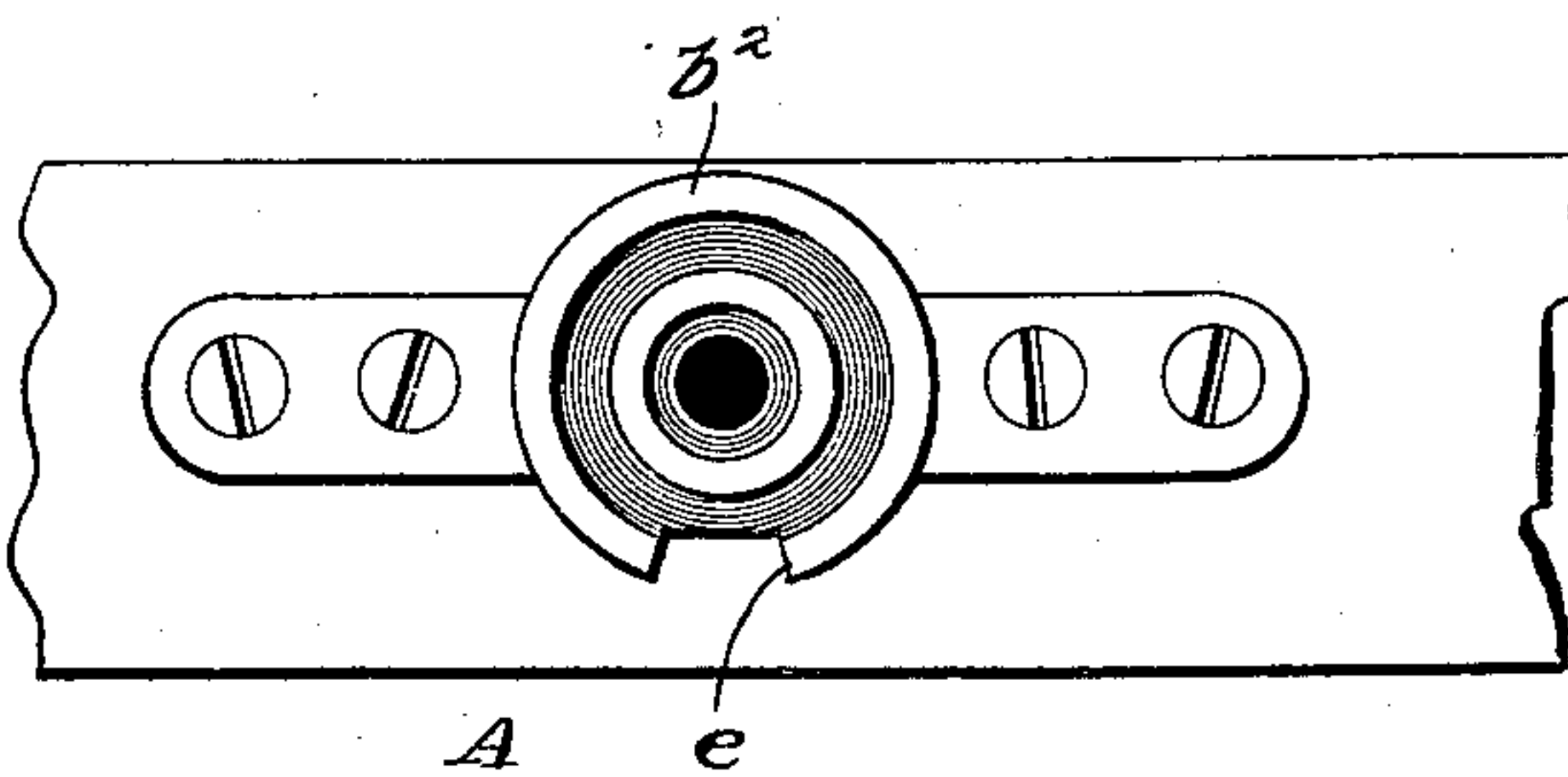


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES A. DONALDSON, OF GREENVILLE, PENNSYLVANIA.

HORSE-DETACHER.

SPECIFICATION forming part of Letters Patent No. 594,334, dated November 23, 1897.

Application filed January 16, 1897. Serial No. 619,483. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. DONALDSON, a citizen of the United States, residing at Greenville, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Horse-Detachers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to horse-detachers, but more particularly to a safety-singletree for detaching the horse from carriages and other vehicles.

The primary object of my invention is to provide a detaching device adapted to readily receive the traces and to hold the same in engagement therewith, yet permitting the ready and easy removal of the traces in hitching or in detaching a horse, thereby lessening the time required and overcoming the difficulties usually encountered and at the same time affording means for permitting the traces to be automatically detached in case of a runaway or other accident.

A further object is to provide a simple, efficient, and inexpensive horse-detaching device which may be readily applied to various vehicles.

With these and other objects in view the invention consists in the construction and combination of the several parts, substantially as hereinafter described, and more particularly pointed out in the claims at the end of the description.

Referring to the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of a singletree embodying my invention, illustrating a portion of the traces in their normal position. Fig. 2 is a plan view of the singletree with the members released and partially folded to permit the traces to be automatically slipped therefrom. Fig. 3 is a vertical sectional view taken on the line III III of Fig. 1. Fig. 4 is a detail front elevation of the journal or union piece and the hinged or pivoted socket-pieces. Fig. 5 is a fragmentary underneath plan view of the parts shown in Fig. 4, and Fig. 6 is a detail plan view of the bearing or socket for the

union or journal piece attached to the usual cross-bar.

In the drawings, A may designate the usual cross-piece, to which the whiffle or single tree B may be attached. This singletree may comprise two members or sections pivoted or hinged at their inner ends to a union or journal piece B' on opposite sides thereof and in such manner that their outer ends may fold or be drawn forward and inwardly. The journal or union piece may be of any suitable material and may have a plate *b*, attached to or formed integrally therewith, provided with one or more annular ribs or ledges *b'*, projecting downwardly therefrom and adapted to fit in an annular groove or grooves in a bearing piece or plate *b*², which latter may be rigidly attached to the cross-bar by means of screws passing through lugs or flanges projecting outwardly therefrom or in any other suitable manner. A bolt or stem *b*³ may depend or project from the plate *b*, or may be secured to or formed integrally with the journal or union piece, and is adapted to pass through an aperture in the cross-bar A to assist in guiding the union-piece while oscillating or rotating in the bearing piece or plate *b*².

At *b*⁴ are projections or lugs extending outwardly from the union or journal piece on opposite sides thereof, preferably at its forward portion, and forming a recess in which a tongue or projection formed by recessing a portion of the socket-piece B² is adapted to fit, said lugs or projections of the union and socket pieces being provided with apertures through which a bolt or pintle *b*⁵ may pass, so as to hinge or pivot the union and socket pieces together. The socket-pieces may have their inner ends at the rear of the hinged or pivoting point thereof adapted to abut and bear against the outer sides of the union-piece when in its normal position in order to form a firm and suitable bearing-surface therefor. Each socket-piece may have a recess in its outer end, in which is fitted and rigidly secured by a bolt or otherwise a wooden bar *b*⁶, the socket-pieces and bars forming the members or sections of the singletree, to the outer end of which the traces may be attached.

For the purpose of rigidly holding the members or sections of the singletree in position

for moving the vehicle and to permit the outer ends of said members to fold or move inwardly I preferably provide a catch C, having projecting outer ends forming lips c , adapted to fit into recessed portions of the socket-pieces B^2 and engage projections or lugs c' thereon, so as to rigidly hold the members of the singletree in their normal position when thus engaged. This catch may fit loosely upon a bolt d , so as to tilt or rock slightly in a horizontal plane, and said bolt may have its body portion passed through an aperture in the union or journal piece B' , said union-piece being preferably provided with a recess d' , Fig. 3, in which the head of the bolt may readily slide, the other end of the bolt being preferably polygonal and fitting similarly-formed apertures in said union-piece and catch and may be provided with a pin or projecting portion in its end to prevent the catch from slipping off or being removed therefrom. An eye d^2 may be secured to or formed integrally with the catch or latch C, to which the end of a suitable connection or a strap d^3 may be secured and which extends rearwardly to within convenient reach of the driver, so that by pulling said connection the catch will be disengaged from the projections on the socket-pieces B^2 , though other means for releasing the catch may be employed, if desired. Within the recess d' of the union-piece may be arranged a spring d^4 , interposed between the head of the bolt d and the bottom of said recess in order that the catch may be automatically returned to its normal position when the strap or connection is released.

The bearing-piece b^2 may be provided with a suitable recess or opening e , in which may fit a projection or lug e' , projecting from the plate b or from the union-piece, as desired. The recess or opening e is somewhat larger than the lug or projection e' in order that the rotary or oscillatory movement of the union-piece may be limited, though it is obvious that the opening or slot may be formed in the plate b or in the union-piece and the projection e' arranged upon the bearing-piece b^2 . By this means the usual straps for limiting the movement of the singletree may be dispensed with.

In order that the traces may be held upon the outer ends of the bars b^6 , I may provide a tongue F, pivoted, as at f , within a recess formed in said bars. The tongue F may have two arms f' and f^2 , arranged at an angle to each other, (preferably substantially at right angles,) so that when the tongue is thrown or swung on its pivot to the position shown in Fig. 2 the ends of the traces may be readily slipped over the bars b^5 and the arm of the tongue f' and may engage the arm f^2 and force the same to the position shown in Fig. 1. In this latter position the draft or pull of the traces will hold the arms f^2 in the recesses and will effectually prevent the removal or disengagement of the traces from the singletree; but when the catch C is released by

pulling upon the connection d^3 the draft of the traces will cause the bars b^5 or the members of the singletree to fold inwardly, as shown in Fig. 2, and simultaneously therewith will exert a lateral pressure upon the arms f' , so as to force the same to the position shown in Fig. 2, so that the traces will readily slip from the end of said bars or members.

A clevis G may be provided with apertures in its outer ends adapted to fit over the end of the bolt or stem b^3 and a stem or bolt g , extending upwardly from the union-piece in alignment with the bolt b^3 , to assist in holding said union-piece and cross-bar together. This clevis may be substantially U-shaped and may comprise two members having overlapping ends provided with slots or a series of apertures through which the bolt g^3 may pass in order to secure various adjustments and to permit said clevis to fit various sizes of cross-bars and singletrees. An opening or slot g^4 may be provided in the member g' , adapted to serve as a guide for the connection or strap d^3 .

The operation of the invention will be readily understood from the foregoing description when taken in connection with the accompanying drawings. Assuming the parts to be in the position shown in Fig. 1, it will be seen that if the strap or connection d^3 be drawn or pulled upon by the driver or otherwise the catch C and the bolt d will be drawn rearward against the pressure of the spring d^4 and will disengage the ends of said catch from the projections c' on the socket-pieces B^2 . The draft or pull of the traces upon the ends of the members or bars b^5 will tilt the latter on their pivots and cause the same to fold inwardly, as shown in Fig. 2. This movement of the bars will cause the traces to slip laterally thereon, so as to engage the arms f' of the tongues F and throw the same to the position shown in this latter figure, so that the traces will automatically slip therefrom. By releasing the pull on the connection or strap d^3 the catch C will be forced to its normal position by the action of the spring d^4 , and when the bars b^5 are forced or thrown into the position shown in Fig. 1 the ends of said catch will engage the projections c' and will rigidly hold the sections or members until the catch is again released. I thus provide simple, efficient, and inexpensive means whereby the traces may be automatically detached therefrom in case of a runaway, accident, or otherwise, and which will rigidly hold and retain the traces in their proper position when in use.

I may employ in connection with this device a holdback similar to that shown in my pending application filed as of even date herewith, wherein is shown means adapted to permit the breeching or quarter strap to be automatically released, thereby permitting the entire unhitching of the horse from the vehicle, so as to prevent its destruction or injury thereto.

The invention is shown as applied to a singletree, but it is obvious that it may also be applied to double or triple trees.

It will be readily understood that any suitable material may be employed for the several parts and that various changes may be made, or that some of the parts may be dispensed with and others substituted therefor without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A detaching device comprising a union or journal piece adapted to be attached to the cross-bar or other portion of a vehicle, sections or members pivoted or hinged to the union-piece on opposite sides thereof so as to have their ends adjacent to the hinge abutting against the sides of said union-piece when in their normal position and to permit said sections to swing forward and inwardly on their pivots, a catch provided with lips fitting recesses and engaging projections on said members so as to rigidly hold said members in their normal position, or when disengaged permit them to swing inwardly on their pivots, and means for disengaging the catch, whereby the members, socket-piece and the catch are normally interlocked and rigidly held together, substantially as described.

2. A safety detaching device comprising a union or journal piece adapted to be attached to the cross-bar or other securing portion of a vehicle so as to swing or oscillate thereon, sections or members pivoted or hinged at the forward edge of said union-piece on opposite sides thereof and having their ends adjacent to the hinge abutting against the ends of said union-piece when in their normal position and to permit said sections to swing forward and inwardly on their pivots, a spring-retained catch slidably held on the union-piece and provided with lips fitting recesses and engaging projections on said members so as to rigidly hold the members in their normal position or when disengaged to permit them to swing inwardly on their pivots to permit the traces to automatically slip therefrom, and means for releasing said catch, whereby the members, socket-piece and the catch are normally interlocked and rigidly held together, substantially as described.

3. A horse-detacher comprising a union or journal piece adapted to be attached to the cross-bar or other portion of a vehicle, sections or members pivoted or hinged to said union-piece on opposite sides thereof, means adapted to engage said members or to be disengaged therefrom so as to rigidly hold said members in their normal position or to permit them to swing forward and inwardly on their pivots, and means arranged intermediate the ends of the members adapted to positively retain the traces on the members when in their normal position and to permit the traces to automatically slip off the ends of

said members when pulled or drawn upon and the ends of the members permitted to swing inwardly, substantially as described.

4. A safety detaching device comprising a union or journal piece adapted to be attached to a cross-bar or other projection of a vehicle so as to swing or oscillate thereon, sections or members pivoted or hinged to said union-piece on opposite sides thereof so as to swing forward and inwardly and adapted to have the traces attached thereto, means adapted to engage said members or to be disengaged therefrom so as to rigidly hold the members in their normal position or to permit them to swing or move on their pivots, and angular tongues arranged near the outer ends of said members adapted to permit the traces to be slipped over the ends thereof and held thereon when the traces are drawn upon and to permit them to be automatically disengaged from said members when the latter are released to permit their outer ends to swing inwardly, substantially as described.

5. A safety detaching device comprising a union or journal piece adapted to be attached to the cross-bar or other portion of a vehicle so as to swing or oscillate thereon, two sections or members pivoted or hinged at their inner ends to said union-piece on opposite sides thereof so as to swing forward and inwardly and adapted to have the traces attached thereto, a spring-pressed sliding bolt arranged in the union-piece, a catch loosely held on the said bolt and having its outer ends adapted to engage projections on the sections or members so as to rigidly hold said members in their normal position or to permit them to swing on their pivots, and a connection secured to the catch for releasing the members to permit the traces to be automatically disengaged therefrom when drawn or pulled upon, substantially as described.

6. In a horse-detacher, the combination with a union or journal piece adapted to be attached to the cross-bar or other portion of the vehicle so as to swing or oscillate thereon, of two members or sections each comprising a socket-piece pivoted or hinged to said union-piece on opposite sides thereof so as to swing forward and inwardly and a bar secured to and extending outwardly from the socket-piece adapted to have the traces attached thereto, a catch slidably held on the union-piece and having its outer ends engaging projections on the sections or members so as to rigidly hold said members in their normal position or to permit them to swing inwardly on their pivots, means for releasing said catch, and a spring tending normally to force the catch into engagement with said members, substantially as described.

7. In a horse-detacher, the combination with a union or journal piece adapted to be attached to the cross-bar or other portion of the vehicle so as to swing or oscillate thereon, of two members or sections each comprising a socket-piece pivoted or hinged to said union-

piece on opposite sides thereof so as to swing forward and inwardly and a bar secured to and extending outwardly from the socket-pieces adapted to have the traces attached thereto, a bolt slidingly held in the union-piece and provided with a head arranged to work in a recess in said union-piece, a spring arranged in the recess and interposed between the head of the bolt and the bottom of said recess, a catch loosely held upon the bolt and having its outer ends adapted to engage projections on the members or sections or to be disengaged therefrom so as to rigidly hold said members in their normal position or to permit them to swing on their pivots, and means for releasing said catch, substantially as described.

8. In a horse-detacher, a singletree comprising two pivotal members and means for holding said members in substantially the same straight line or to permit their outer ends to swing inwardly on their pivots, in combination with a tongue pivoted to each of the members, said tongue comprising two arms arranged at an angle to each other and adapted to permit the traces to be slipped over the ends of the members and be held thereon by the draft of said traces or to permit the automatic disconnection of the traces when the ends of the members of the singletree swing inwardly, substantially as described.

9. The combination with a whiffletree provided with an annular rib and a pendent stem or bolt integral with a portion of the whiffletree and having an enlarged head forming an annular groove between said head and the rib, of a plate having a central aperture in which the head of the bolt is adapted to fit and annular ribs fitting the groove and sur-

rounding the rib on the whiffletree, said bearing-plate having a recess or cut-away portion at one edge thereof, and a lug projecting from the whiffletree and engaging the recess so as to limit the oscillatory movement thereof, substantially as described.

10. The combination of a whiffletree provided with bolts or stems projecting outwardly on opposite sides thereof, one of which is adapted to pass through an aperture in the cross-bar or other securing portion of the vehicle, and a clevis comprising two members having one of their ends fitting over the bolts and their other ends adjustably secured together so as to fit various sizes of cross-bars and whiffletrees and to assist in retaining and holding the parts together, substantially as described.

11. The combination of a whiffletree provided with bolts or stems projecting outwardly on opposite sides thereof, one of which is adapted to pass through an aperture in the cross-bar or other securing portion of the vehicle, and a clevis comprising two members having one of their ends fitting over the bolts and their other ends overlapping and provided with slots through which a bolt may pass to adjustably hold said members together, said clevis being substantially U-shaped and provided with a slot or opening therein adapted to permit a strap to pass and be guided therein, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

J. A. DONALDSON.

Witnesses:

C. M. GEYER,
JOHN P. MURRAY.