

No. 685,710.

Patented Oct. 29, 1901.

E. W. CANNON.  
VETERINARY MOUTH SPECULUM.

(Application filed Oct. 28, 1897.)

(No Model.)

2 Sheets—Sheet 1.

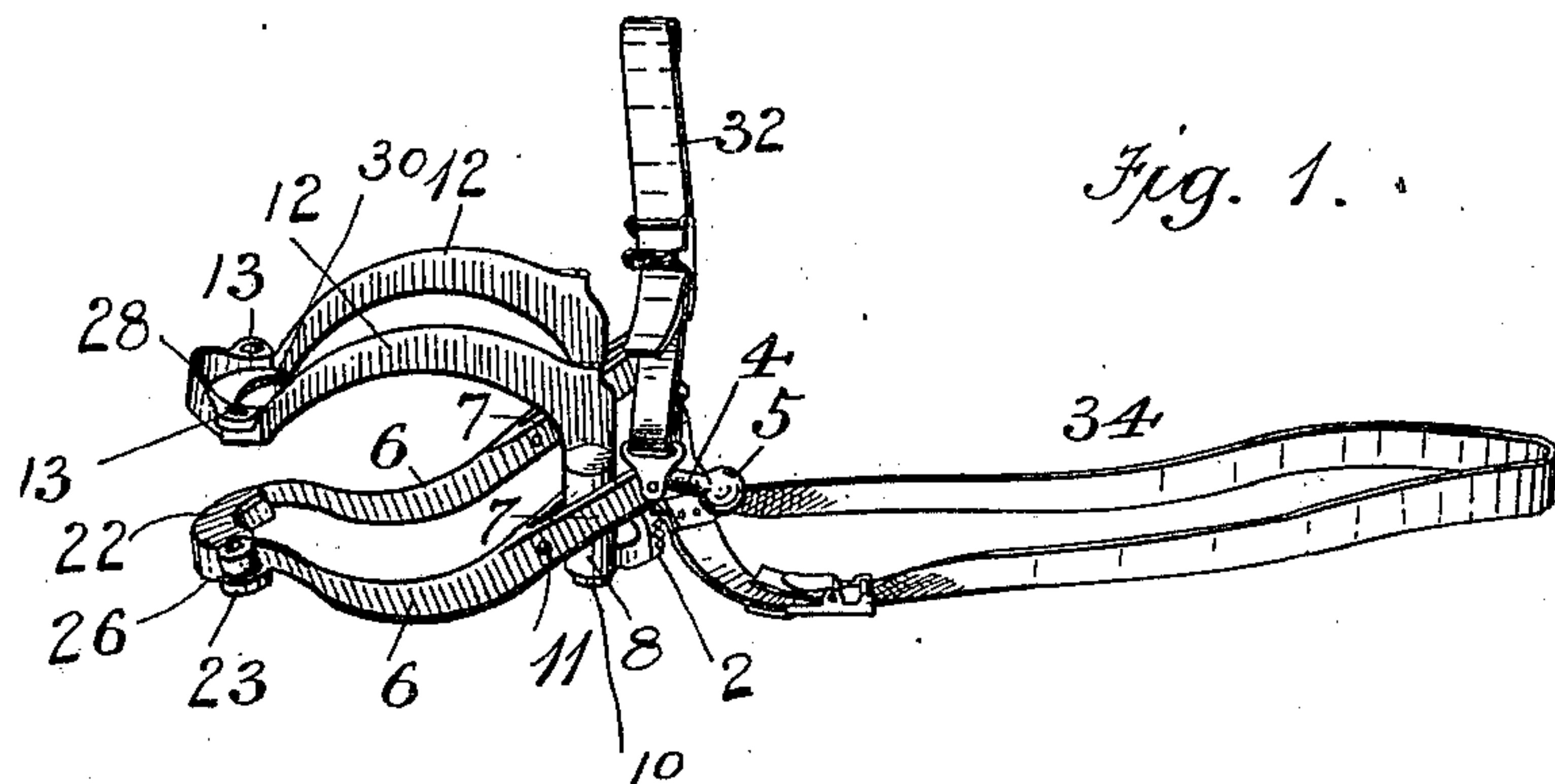


Fig. 1a

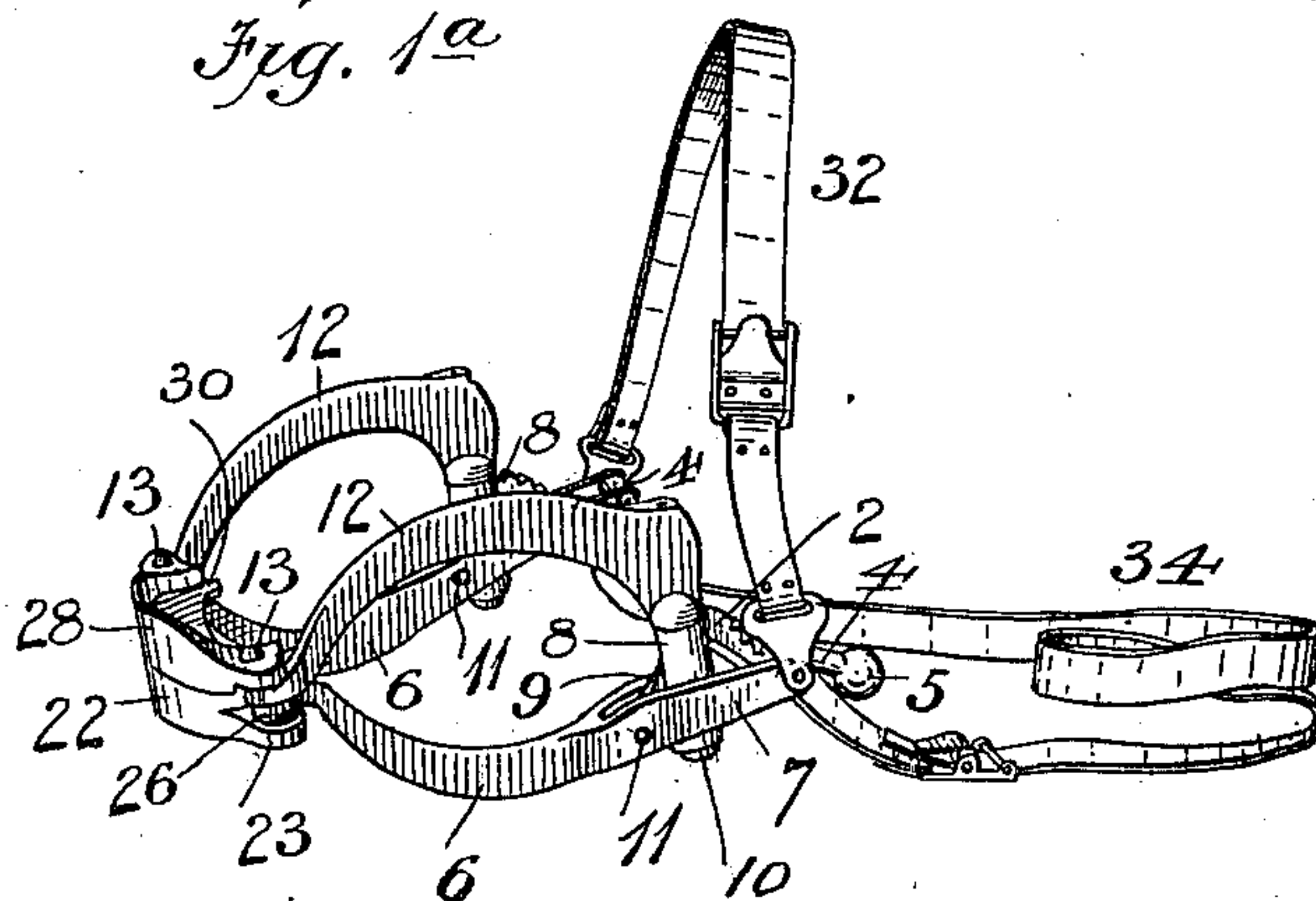
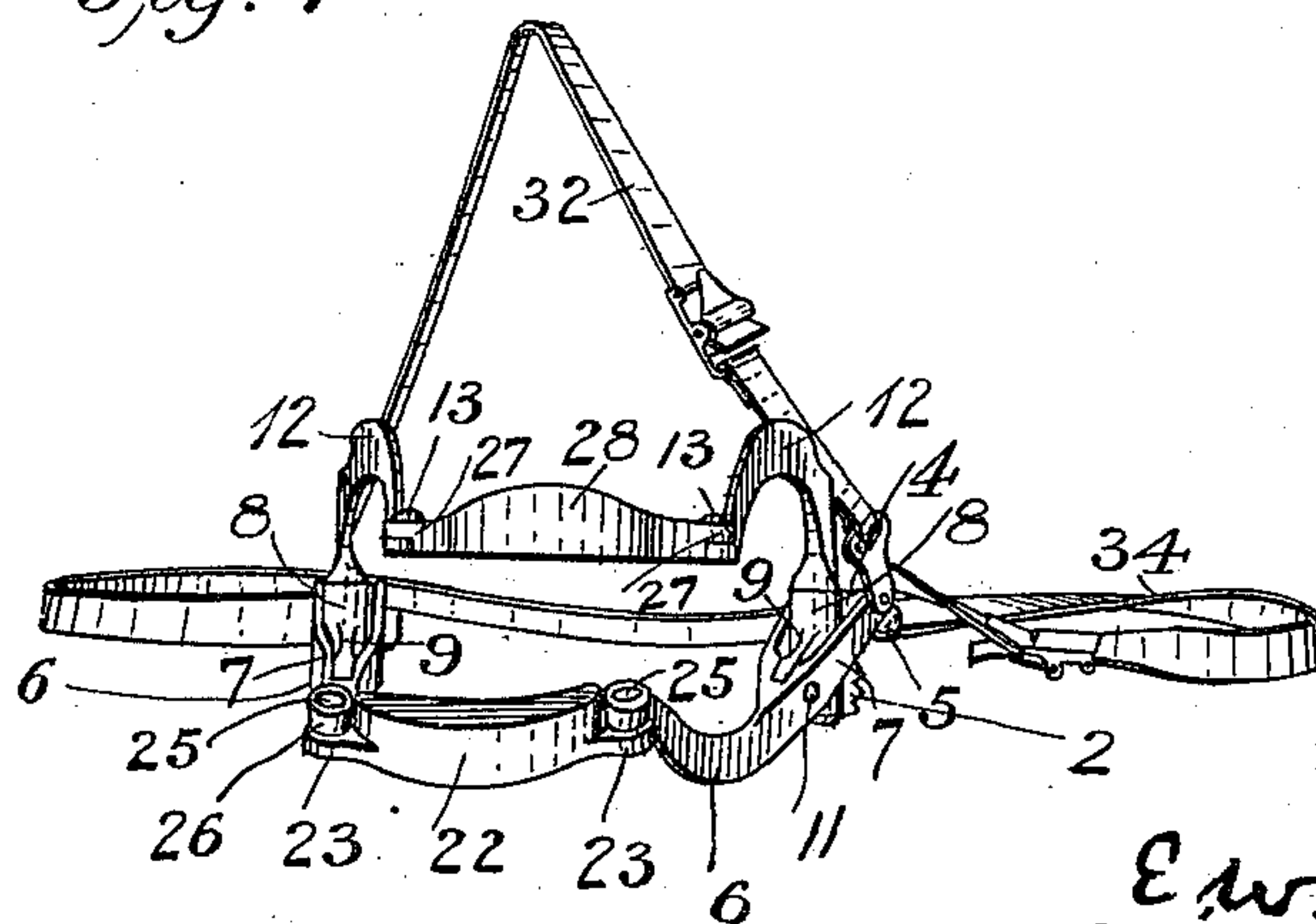


Fig. 1b



Witnesses  
Frank L. Ourand.  
Giles T. Moore.

Inventor  
E. W. Cannon  
by C. S. Sturtevant,  
Attorney

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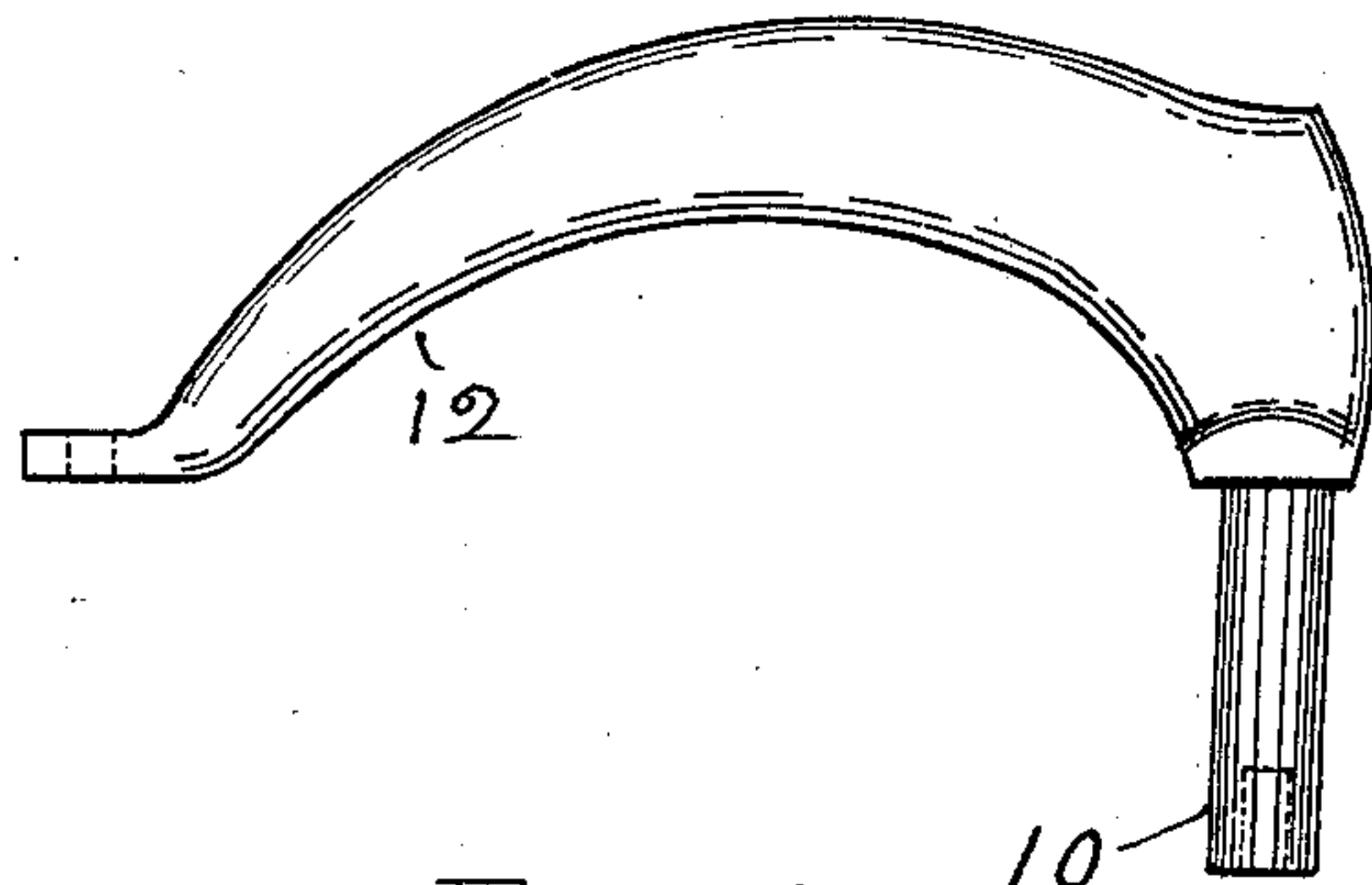


FIG. 2

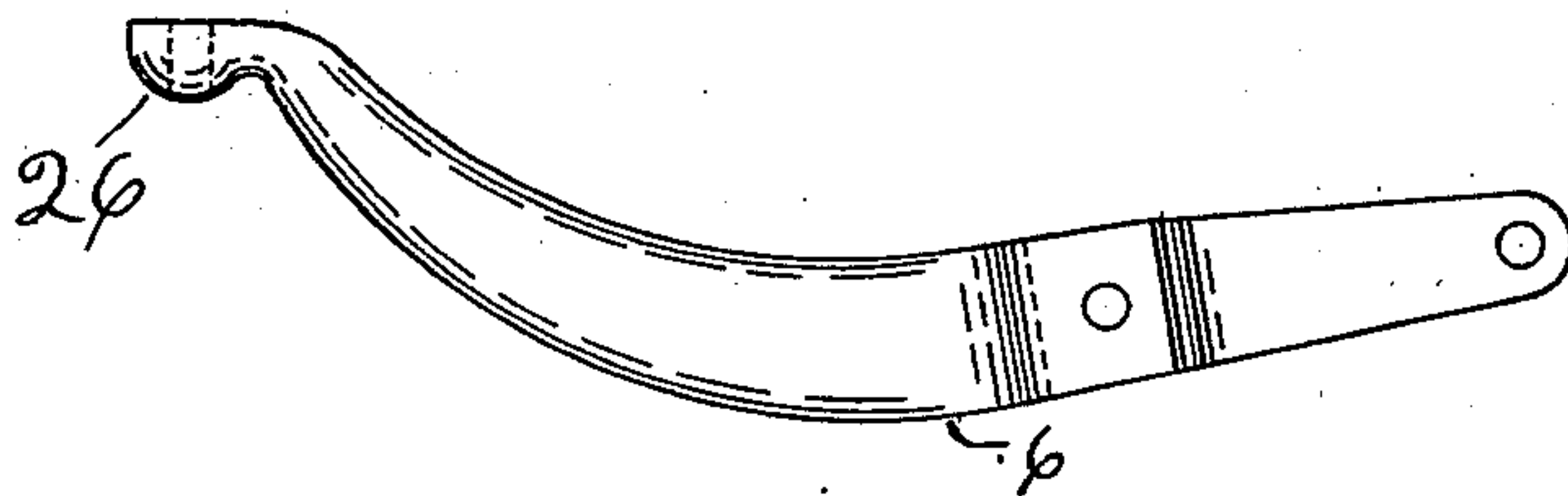


FIG. 3

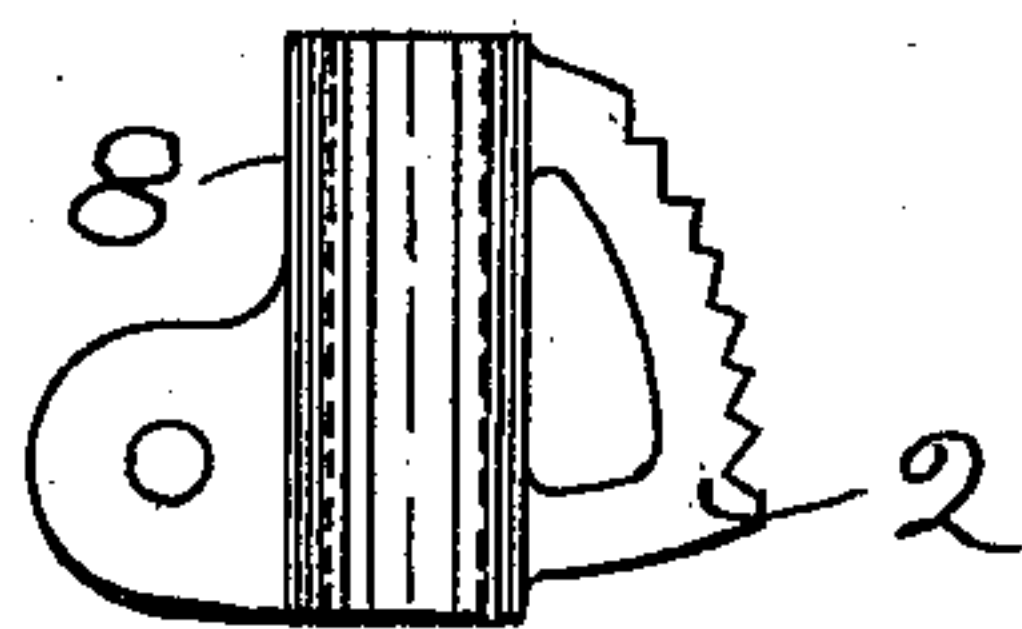


FIG. 4

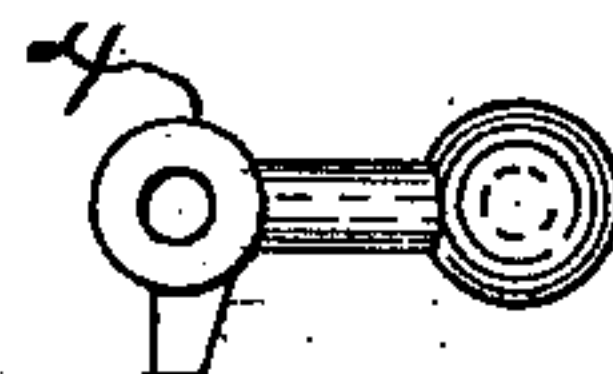


FIG. 5

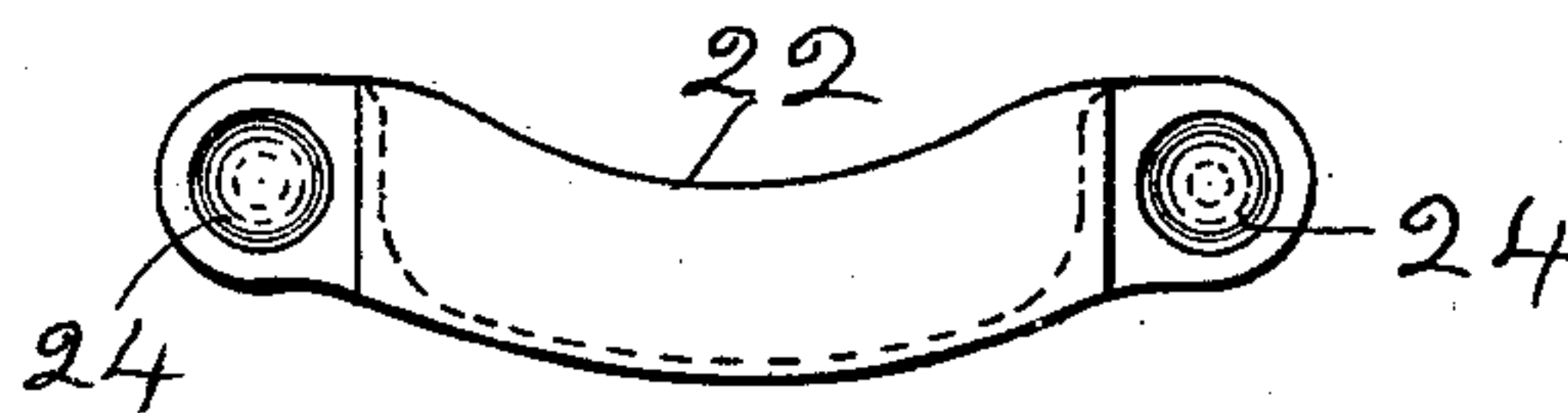


FIG. 6

WITNESSES—

M. M. Tuttle.

A. M. Tuttle

INVENTOR—

Edward W. Cannon

By C. B. Tuttle atty



# UNITED STATES PATENT OFFICE.

EDWARD W. CANNON, OF BOSTON, MASSACHUSETTS.

## VETERINARY MOUTH-SPECULUM.

SPECIFICATION forming part of Letters Patent No. 685,710, dated October 29, 1901.

Application filed October 28, 1897. Serial No. 656,715. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD W. CANNON, of Boston, county of Suffolk, Commonwealth of Massachusetts, have invented certain Improvements in Veterinary Mouth-Speculums, of which the following, read in connection with the accompanying drawings, is a specification.

This invention relates to that class of speculums used in holding open the mouths of horses during dental and surgical operations.

The principal object of the invention is to provide a speculum in which the members are so connected as to allow lateral movement of the speculum-jaws, so that the animal may move his lower jaw naturally, and thus be freed from the annoyance a rigid speculum always imparts.

A further object is to provide such a speculum with a bottom tooth-bearing plate having a free rocking movement by means of ball-and-socket connections with the lower side bars in order that it may adjust itself automatically to the pitch or inclination of the teeth in different mouths.

These objects I accomplish by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side perspective of the improved speculum with the jaws open. Fig. 1<sup>a</sup> is a similar view, the jaws being closed. Fig. 1<sup>b</sup> is a front view of the speculum in its open position with the lower members moved laterally. Fig. 2 is a side elevation of an upper side bar. Fig. 3 is a similar view of a lower side bar. Figs. 4, 5, and 6 are details of the socket carrying the ratchet, the gravity-pawl, and the bottom tooth-bearing plate, respectively.

The lower arched side bars 6 6 are forked at their rear ends, as shown at 7 7, to receive the vertical tubular sockets 8, provided with forwardly-extending apertured ears 9, by which the sockets are pivoted in the forward ends of the forks on the transverse horizontal pivots 11. The rear edges of the sockets 8 are provided with curved racks 2, engaged by pawls 4, pivoted in the rear open ends of the forks 7, the said pawls having rearwardly-projecting weighted arms 5, which hold their toes to the racks and allow them to yield as the bars 6 are swung down to their open posi-

tion without making the sharp clicking sound which so startles high-strung horses.

The forward ends of the side bars 6 at their under sides are formed with convexities 26, and these convex ends are vertically apertured. The lower tooth-bearing plate 22 is provided at its ends with vertically-apertured ears having concave sockets 24, in which rest the convexities 26 of the arms 6, so that ball-and-socket joints are formed, vertical pivots 25 being employed to connect said parts.

The upper arched side bars 12 are provided at their rear ends with downwardly-projecting pivot-posts 10, which turn freely in the socket 8, in which they are held by upsetting their lower ends. The upper tooth-bearing plate 28 is provided with vertically-apertured ears 27, pivotally connected to the forward ends of the side bars 12 by means of the vertical pivots 13. The ends of the plate 28 are provided with stop-shoulders 30, which limit the inward movement of the rear ends of the side bar 12.

The pivots 13 and 25 allow the width of the speculum between the sides to be adjusted for different animals. The pivots 11 allow the upper and lower jaws of the speculum to be opened and closed, and the sockets 8 and pivots 10, together with ball-and-socket joints 24 26, allow of lateral movement of the parts forming the lower jaw of the speculum, so as to conform to the natural lateral movement of the animal's lower jaw. Therefore the two jaws of the speculum may be said to be connected at their rear ends by a universal joint.

The speculum is held in place by the usual nose-strap 32 and head-strap 34, both of which are shown connected to the rear forked end of the lower side bar.

The freedom of movement allowed the animal causes him to remain far more quiet when the speculum is in place than where his lower jaw was held rigid against lateral movement, as heretofore. Moreover, the stop-shoulders 30 hold the rear ends of the side arms far enough apart to prevent outside pressure against the massiter muscles, thus enabling the free and unobstructed operation upon the upper molars, which is impossible where these muscles are compressed from the outside.

Having thus described my invention, what



I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the upper speculum-jaw, of a vertically and horizontally movable lower jaw universally jointed at its rear ends to the rear ends of the upper jaw; whereby the animal is allowed to move the lower jaw laterally as well as to close the same; substantially as described.
2. A mouth-speculum comprising upper and lower side bars, having the pivoted upper and lower tooth-bearing plates, vertically-rocking sockets pivoted to the rear ends of one pair of side bars, vertically-extending pivot-posts projecting from the rear ends of the other pair of arms into said sockets, whereby lateral movement of the arms relative to each other is provided in addition to their vertical movement, and means for holding the arms in their adjusted position, substantially as described.
3. The combination of the lower side bars, the lower tooth-plate pivoted to the front ends thereof, vertically-rocking sockets pivoted at the front sides to the rear ends of said arms and each having a curved rack on its rear side, and pawls pivoted to the arms in rear of the racks and in engagement therewith, with the upper side bars having depending pivot-posts at their rear ends entering side pivoted sockets, and the upper tooth-plate at the

front ends of said upper arms, substantially as described.

4. The combination with the upper and lower side bars having a universal pivotal connection at their rear ends to permit of vertical as well as horizontal movement, and means for locking the arms in their open position, of an upper tooth-plate pivoted to the front ends of the upper arms and a lower tooth-plate having ball-and-socket connections at the ends with the front ends of the lower arms, substantially as described.

5. The combination with the upper and lower side arms having vertical and horizontal pivotal connections at their rear ends to permit of vertical and horizontal movement of the lower arms, and means for locking the arms open, of an upper tooth-bearing plate pivoted to the front ends of the upper arms and having stops limiting the inward movement of said arms, and the lower tooth-bearing plate pivoted to the front ends of the lower arms, substantially as described.

Signed at Lynn this 17th day of September, A. D. 1897.

EDWARD W. CANNON.

Witnesses:

C. B. TUTTLE,  
M. M. TUTTLE.