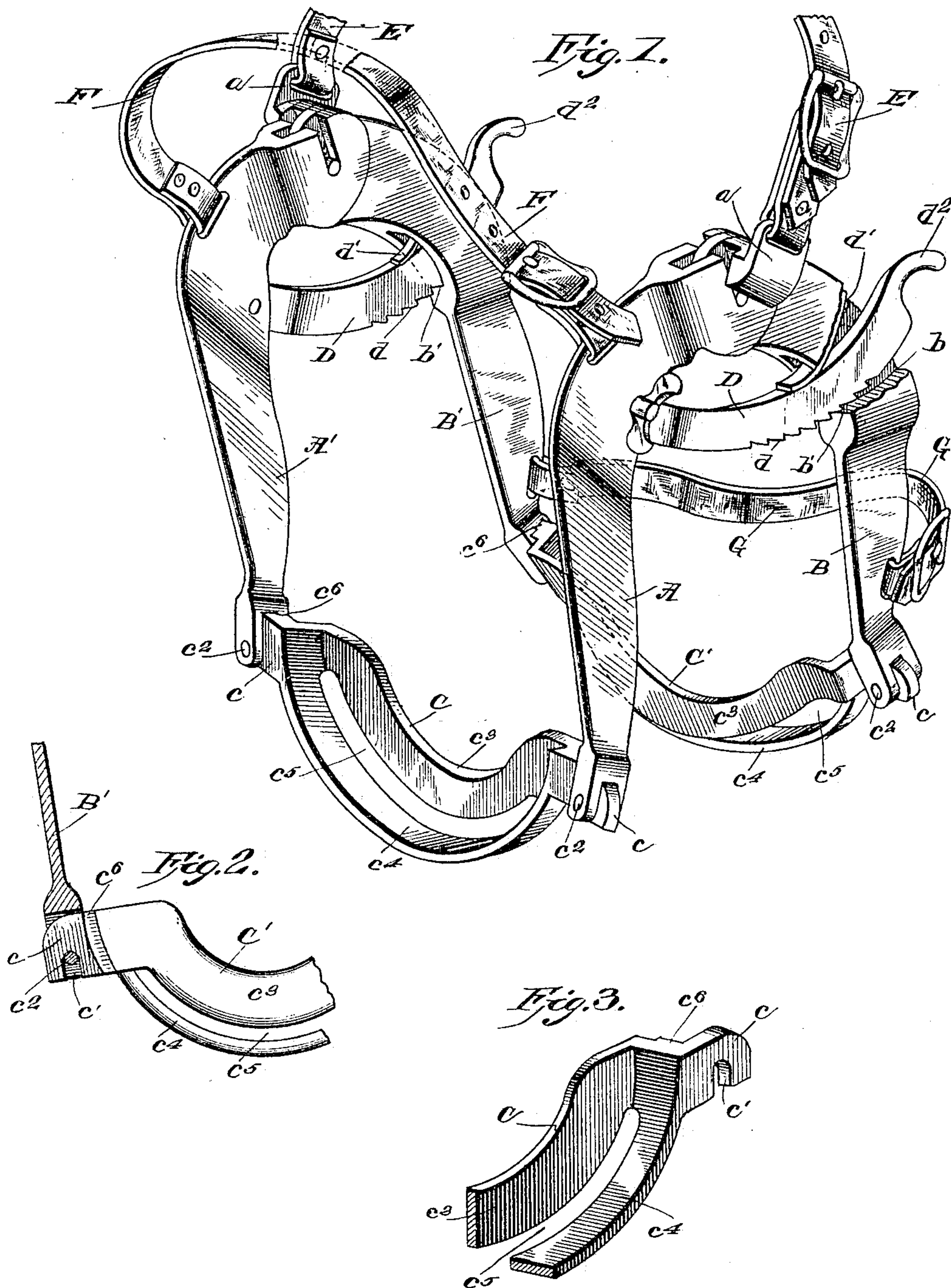


No. 801,710.

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I. C. CARSTENSEN.
VETERINARY MOUTH SPECULUM.
APPLICATION FILED MAR. 3, 1905.



WITNESSES:
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INGWART CARL CARSTENSEN, OF OAKESDALE, WASHINGTON.

VETERINARY MOUTH-SPECULUM.

No. 801,710.

Specification of Letters Patent.

Patented Oct. 10, 1905.

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To all whom it may concern:

Be it known that I, INGWART CARL CARSTENSEN, a citizen of the United States, and a resident of Oakesdale, in the county of Whitman and State of Washington, have invented an Improved Veterinary Mouth-Speculum, of which the following is a specification.

My invention is an improvement in mouth-speculums which are particularly adapted for use in veterinary surgery or dentistry for holding open an animal's mouth and preventing the jaws closing while the operation proceeds.

The details of construction, arrangement, combination, and operation of parts will be understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the speculum, a portion of the head-strap being omitted. Fig. 2 is partly a sectional view including a portion of the lower-teeth-engaging plate. Fig. 3 is a perspective view of a portion of the front-teeth-engaging plate.

The speculum proper comprises two pairs of jaws A A' and B B', which are jointed together at their upper ends and provided with locking-bars D D' for holding them spaced apart at their free ends, also upper and lower teeth-engaging plates C C', which are connected with the free ends of the aforesaid jaws. The speculum is provided with a head-strap E, adapted to pass over the head of the horse whose mouth is to be treated, and a strap F, which passes over the nose of the animal, and a third strap G, that passes under the chin. As shown in Fig. 1, the head-strap is attached to ears *a*, arranged at the pivot of the two pairs of jaws, and the nose-strap F is attached to the front jaws A B at a point not far removed from the joints of the jaws, while the chin-strap G is applied at a point adjacent to the lower ends of the rear or lower jaws A' B'. The teeth-engaging plates C C' are practically duplicates, each being constructed upon a curve corresponding as nearly as practicable to the curve of the incisor-teeth of a horse and having laterally-projecting ears *c*, that are provided with notches *c'*, (see Figs. 2 and 3,) the latter being adapted to engage pivots or bolts *c''* in the slotted ends of the respective jaws. Each teeth-engaging plate C C' is formed as to its body portion of two curved bars *c''* and *c'''*, arranged as to their transverse axes at right angles to each other and separated by a narrow

slot *c''*. When the instrument is applied to a horse's mouth, the front curved edge of the bar *c''* will rest upon the grinding-surfaces of the incisors and the front bar *c'''* will be in contact with the front or enamel surface of the teeth, the cutting edges of the incisors projecting into the slot *c''*. By this improved construction—to wit, the provision for reception of the incisor-teeth without allowing contact of their enamel edges with the metal—I avoid all danger of cracking, breaking, or otherwise injuring the enamel, which is the most prominent defect of speculums of this class and which has led many veterinary surgeons to advise discarding the use of all mouth-speculums whatever.

The upper ends of the two sets of jaws A A' and B B' are curved inward or toward each other, as shown in Fig. 1, and are detachably yet firmly connected by a hook-and-pin joint. It will be seen that such inward curvature of the jaws provides due space between their lower portions, even when nearly closed, for dental and other operations in the mouth of a horse. In other words, when the speculum is applied to a horse's mouth and his jaws separated more or less thereby ample space is provided between the shanks of the two pairs of jaws for access to the mouth of the animal on the side thereof.

A further improvement consists in providing the respective pairs of jaws with engaging rack-bars D D', which are arranged below the pivots or joints of the jaws, as shown. The racks D D' are pivoted at one end to the front jaws A A', and their opposite or free ends project through slots *b*, formed in the opposite jaws B B', and the lower sides of the curved racks are provided with ratchet-teeth *d*, that engage shoulders *b'* of the jaws B B', while a plate-spring *d'* bears downward upon the racks, so as to hold them normally engaged with the said shoulders. The free ends of the racks D D' are formed as handles *d''*, the same curving downward, so that pressure may be conveniently applied to them in an upward direction when required for overcoming the tension of the springs *d'*, and thus freeing the racks from engagement with the jaws B and B' for the purpose of closing the jaws more or less. Thus the racks D D' are arranged below the jaw pivots or joints, and yet at such distance from the teeth-engaging plates as not to interfere with side operations on the mouth of the animal. This arrangement is particularly advantageous in that it

brings the racks lower than usual in this class of speculums, so that they can be more conveniently manipulated than is practicable if arranged above the pivots in the usual way,
5 and a further advantage is obtained in respect to weight and cost of the speculum as a whole.

It will be understood that the jaws A A' and B B' are held from undue lateral divergence or separation by the nose and jaw straps
10 F and G, and they are prevented from closing inward too far by shoulders c^6 , which are formed on the teeth-engaging plates C C' at points adjacent to the hooked lugs c , so that in practice the said shoulders abut the inner
15 sides of the jaws, as will be understood by reference to Figs. 1 and 2.

What I claim is—

1. The improved veterinary mouth-speculum, comprising two sets of jaws and plates
20 connecting their lower ends, the said plates

being separated by a slot and curved corresponding to the curvature of the jaw of a horse or other animal, one plate being arranged for bearing against the grinding-surface of the incisor-teeth and the other for contact with the outer or enamel side of said
25 teeth, while the points or edges of the teeth project into the said slot, substantially as described.

2. In a veterinary mouth-speculum, a teeth-
30 engaging member formed of two similarly-curved members c^3 , c^4 , the same being formed integrally and separated by a narrow slot and curved corresponding to the curvature of an animal's jaw, substantially as described.

INGWART CARL CARSTENSEN,

Witnesses:

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