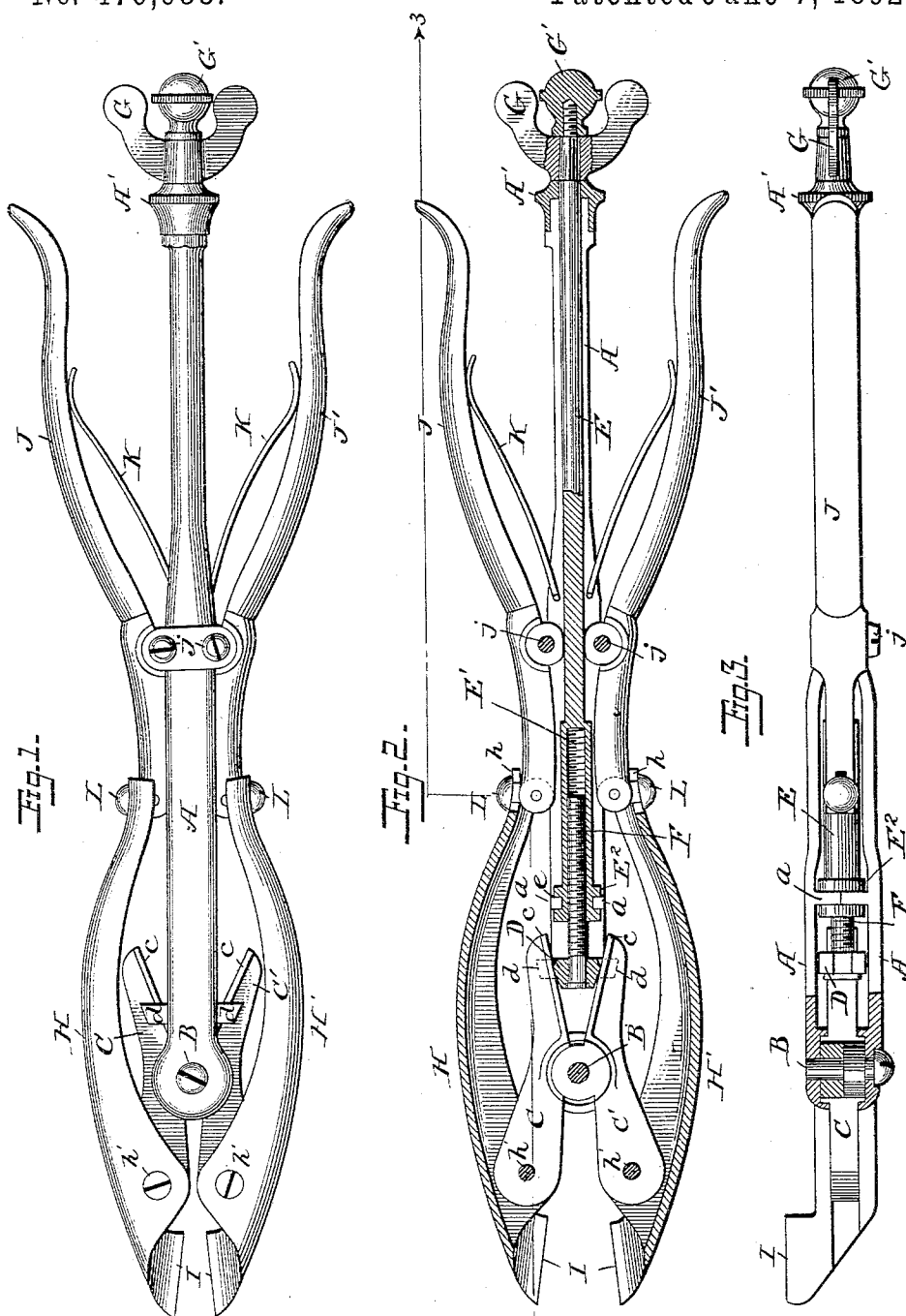


(No Model.)

D. M. SCHEFFER.
VETERINARY DENTAL FORCEPS.

No. 476,688.

Patented June 7, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

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VETERINARY DENTAL FORCEPS.

SPECIFICATION forming part of Letters Patent No. 476,688, dated June 7, 1892.

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To all whom it may concern:

Be it known that I, DAVID M. SCHEFFER, a citizen of the United States, residing at New Castle, in the county of Henry and State of Indiana, have invented certain new and useful Improvements in Veterinary Dental Forceps, of which the following is a specification.

My invention relates to a veterinary dental forceps; and it consists in a forceps having the features of construction, arrangement, and mode of operation substantially such as is illustrated, and more particularly described hereinafter.

Referring to the accompanying drawings, Figure 1 is a plan view of a forceps embodying my invention. Fig. 2 is a longitudinal horizontal section of the same; and Fig. 3 is a longitudinal section on the lines 3 3, Fig. 2.

One of the objects of my invention is to provide a forceps which shall be adapted to operate on any-sized tooth, from the smallest splinter to the largest molar tooth, of an animal; and to this end I provide means whereby the gripping-blades or cutting parts may be adjusted with relation to each other in a manner more particularly hereinafter set forth.

Another object is to provide means whereby when the tooth is gripped the blades can be rocked or given a reciprocating or what may be termed a "seesaw" motion, which will operate to twist the tooth in its socket or loosen it for the purpose of extraction or will enable the blades to cut off a large tooth with the least exertion and in the quickest and most satisfactory manner.

Another object of the invention is to so arrange the parts of the forceps that it may be used either side up and the proper motion be imparted to the parts, thereby enabling the operator to operate upon any tooth in any location and avoid danger of injuring his hands by coming in contact with the other teeth or of injuring the mouth of the animal.

Other objects and advantages of my invention will be apparent from the following description, wherein I have set forth the preferred embodiment of my invention.

The forceps are provided with a central bar or rod A, which is made hollow through a portion of its length, the other portion being bi-

furcated and having the bifurcated ends united by a screw B. While the central rod or body A of the forceps may be made in one piece, in order that the forceps may be readily taken apart for the purpose of cleaning, adjustment, or repairs I preferably make the body portion A in two parts, they being secured together by the pivot-pin B, and a cap or sleeve piece A', fitting over the reduced portions of the rear ends. Mounted on this screw as a pivot are the adjusting-levers C C', their rear portions being arranged with relation to each other at an angle and being provided with ribs or flanges c. These levers are arranged to be operated to approach and recede from each other by some suitable means, and I have shown in the present instance a wedge-shaped block D, arranged to move between the inclined faces of the levers and having laterally-extending jaws d, arranged to slide over the flanges c. In this way the levers C C' may be adjusted with proper relation to each other and securely held from movement on their pivots, the incline block holding them apart by pressing against their inclined faces, while the jaws connected to the block and moving therewith prevent their opening beyond a certain distance by bearing against the outer surfaces of the flanges c. This block is adapted to be moved in and out with relation to the levers by suitable adjusting mechanism, and I have shown in the present case a rod E as passing through the handle A, the forward portion of which E' is hollowed out and screw-threaded and arranged to receive a screw F, the head of which passes through the block D and is secured therein. In order to prevent longitudinal movement of the rod E with relation to the handles, the forward portion is formed with a head E², having a groove e, which operates between two lugs or projections a, extending inward from the bifurcated ends of the handle A. The outer end of the rod E is provided with a thumb-screw or lever G, fixed on the end of the rod, which is squared to receive the same, and held in position by a thumb-nut G'. From this arrangement it will be seen that by turning the rod E by means of the thumb-screw or lever G the wedge-

shaped block is caused to approach and recede from the pivot B of the levers C C' and their outer ends are caused to approach and recede from each other positively, and when once adjusted are securely held in that position.

Pivotally mounted on the adjusting-levers C C' are the cutting-levers H H', the forward ends of which carry the jaws or cutters I, which may be of any desired shape or construction, depending upon the purpose for which they are to be used. The rear ends of these levers extend backward along the handle or bar A, and are in turn pivotally connected to the hand operating-levers J J', which latter levers are supported upon the bar A by pivots, preferably supported in offsets formed integral with the side pieces of the handle or bar, although, of course, these offsets or bearings may be separate and applied thereto. The levers J J' are normally supported in their outer positions by springs, as K, which are shown as flat bar-springs, secured to the bar A and bearing on the inner sides of the levers J J'.

The connecting-pivots L between the levers H and J must be arranged to allow for a longitudinal movement of the levers with relation to each other, and I have shown more clearly in Fig. 2 the connection as consisting of a stud pivotally mounted in the levers J and J' and having a head bearing on the outer surface of the levers H and H', while the neck of the stud passes through a slot h in the rear ends of the levers H H', thus permitting a freedom of movement of the levers with relation to each other and allowing the further adjustment of the levers H H' with relation to each other by means of the levers C and C'. The levers H and H' are preferably made of forged metal, being rounded or hollow on their inner side, as shown in Fig. 2, and the sides are extended, as shown at H', on either side of the levers C C', and are united thereto by the pivot-pins h' passing through the sides of the levers H and the lever C. In this way I provide a simple, cheap, but very substantial, construction for the levers H H', enabling them to be operated by the levers J J' under great pressure without danger of bending or breaking.

Such being the preferred construction of my device, it is evident that the details may be varied somewhat without departing from the spirit of my invention, and I therefore do not limit myself to the precise construction and arrangement of parts shown in the drawings, and described herein.

The operation of the device will be readily understood from the above, and it will be seen that by turning the screw-rod E the incline block D can be moved longitudinally, so as to adjust the position of the levers C C' with regard to each other, and enable the grippers or blades to adapt themselves to the size of the tooth being operated upon. Thus they

can be brought quite closely together by simply forcing the inclined block near the pivot-pin B, and will then form a fulcrum for the levers H H'. On the contrary, by drawing the block D away from the pivot-pin the levers C C' are distended, carrying the levers H H' with them and enabling the blades to grasp a tooth of much larger size. When the forceps have been properly adjusted for the size of the tooth and placed in position, the operator grasps the levers J J' and draws them toward the bar A, and this in turn rocks the levers H H' in a manner readily understood, so that the grippers or blades are given a rocking action on the tooth, which will tend to loosen it in its socket or enable its being readily cut off, the blades operating in a sort of seesaw motion upon the sides of the tooth. It will thus be seen that the grippers or blades are given a very powerful action, the pressure on the levers J being multiplied many times, and, being rocked at the same time, I have found that they readily and effectively remove the largest tooth. It will further be understood that while the grippers or blades are operated to rock and cut the tooth the screw may be operated, and by means of the inclines will cause the blades to approach each other during the process of cutting, so that if necessary the tooth can be cut smoothly and completely away. In giving the rocking or seesaw motion to the tooth, both levers J J' may be operated, or, if desired, only a single one need be operated, thereby permitting its motion to one of the levers H H', while the other forms a stationary bearing-surface. This also aids in preventing any danger to the operator or the animal, as the forceps may be adjusted to either side or other portion of the mouth of the animal and applied directly to the tooth without bringing the hands of the operator in dangerous proximity to the mouth or without liability to injure the other teeth of the animal.

By the combination of the three systems or pairs of levers the least amount of force is necessary to be exerted upon the levers J J' to enable the grippers or blades to operate effectively, and by properly adjusting or setting the levers C C' the blades are readily brought into a position to most effectively operate on the tooth, whatever may be its size.

What I claim is—

1. A veterinary dental forceps comprising a bar or handle, hand-levers pivotally mounted on said bar, a second set of levers carrying gripping jaws or blades connected to the first set of levers, and means for adjusting the said second set of levers, substantially as described.

2. A veterinary dental forceps comprising a bar or handle, a pair of levers pivotally mounted thereon, a second pair of levers carrying gripping-jaws pivotally connected to the first pair of levers, and a pair of levers

connected to said gripping-levers and pivotally mounted on the handle, substantially as described.

3. In a veterinary dental forceps, a handle
5 having a pair of adjustable levers pivotally mounted therein, means for positively adjusting the relation of said levers, and a pair of levers carrying gripping-jaws pivotally mounted in said adjustable levers, substantially as described.

4. A veterinary dental forceps comprising three systems of levers, one set being connected to the handle and forming the fulcrum for the second set, which is pivotally connected thereto, and are provided with cutters, and the third set being adjustably connected to the cutting-levers and pivotally mounted on the handle, substantially as described.

5. In a veterinary dental forceps, a handle
20 composed of two parts suitably joined together and bifurcated at their forward end, a screw-rod passing through the handle, fixed against longitudinal movement, but free to rotate therein, a pair of adjustable levers mounted
25 in the handle, a block for adjusting said levers, and a screw connecting said block to the screw-rod, substantially as described.

6. In a veterinary dental forceps, the combination, with the hollow handle, of a pair of
30 levers pivotally mounted therein, the levers having inclined faces provided with flanges, and an incline block moving between the inclined faces of the levers and provided with jaws embracing the flanges, and an adjusting

device whereby the block may be moved with
relation to the levers, substantially as described.

7. In a veterinary dental forceps, the combination, with the handles, adjusting-levers pivotally mounted therein, an incline block
40 for adjusting said levers, a screw-rod passing through the handle, a screw connecting the block to the handle, and means for turning the screw-rod, substantially as described.

8. In a veterinary dental forceps, the combination, with the levers provided with jaws, of the operating-levers mounted on the handles and a stud pivotally mounted in the end of the operating-levers, the neck of which is adapted to enter a slot in the rear portion of
50 the cutting-levers, substantially as described.

9. In a veterinary dental forceps comprising the handle, a pair of adjustable levers mounted therein and forming a movable fulcrum, a pair of cutting-levers pivoted to the
55 adjusting-levers, a pair of operating-levers mounted on the handle and connected to the cutting-levers, a screw-rod passing through the handle, and an incline block connected to said screw-rod and arranged to adjust the adjusting-levers, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID M. SCHEFFER.

Witnesses:

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HARRIET R. BROWN.