

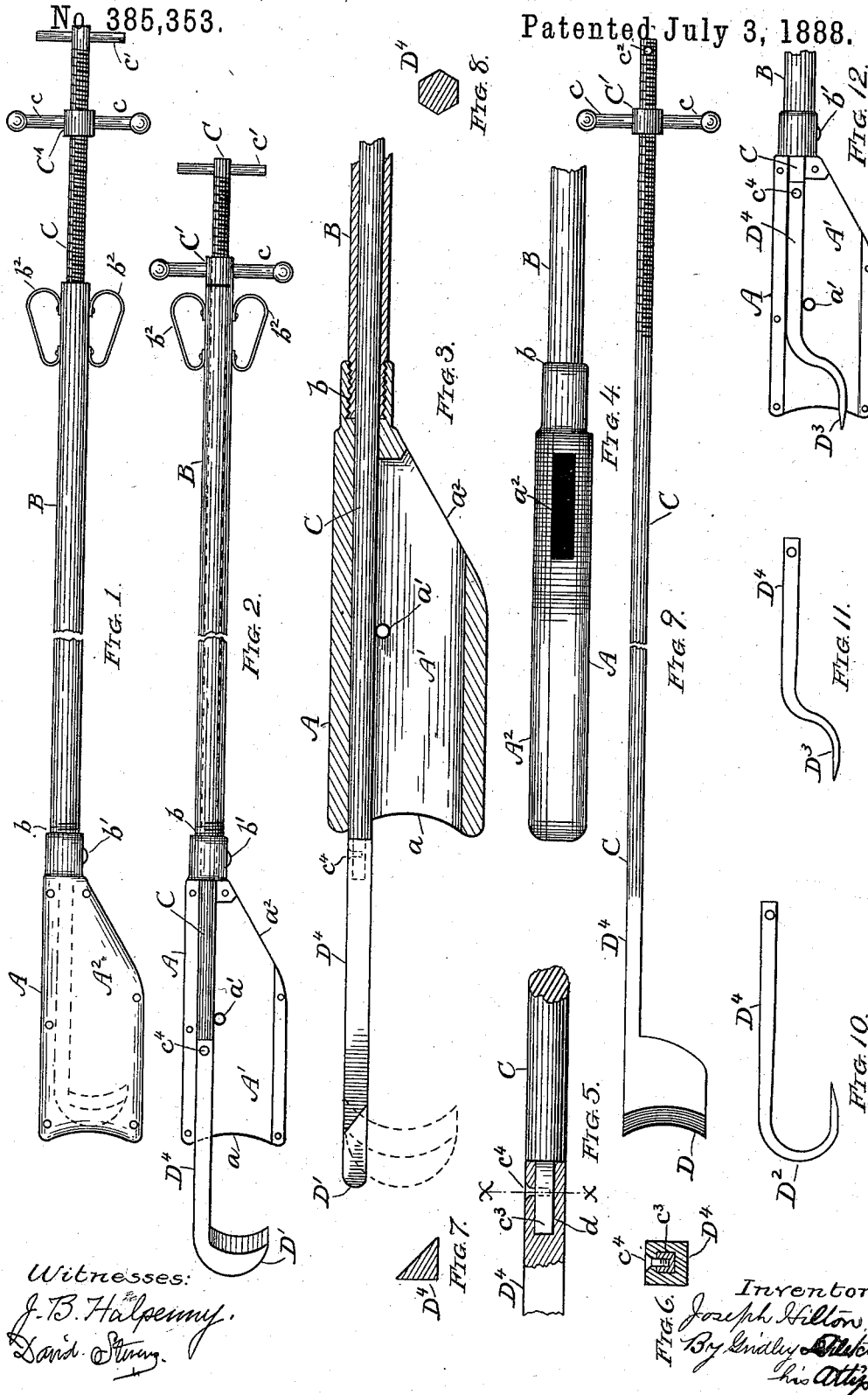
(No Model.)

J. HILTON.

VETERINARY SURGICAL INSTRUMENT.

No. 385,353.

Patented July 3, 1888.



UNITED STATES PATENT OFFICE.

JOSEPH HILTON, OF AURORA, DAKOTA TERRITORY, ASSIGNOR OF ONE-THIRD TO CHARLES E. SAYRE, OF CHICAGO, ILLINOIS.

VETERINARY SURGICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 385,353, dated July 3, 1888.

Application filed March 9, 1888. Serial No. 266,679. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HILTON, of Aurora, in the county of Brookings and Territory of Dakota, have invented certain new and useful Improvements in Veterinary Surgical Instruments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side view of said instrument, showing a knife inclosed within the shield. Fig. 2 is a like view showing the cap removed from the instrument and the knife partially protruded from the shield. Fig. 3 is an enlarged longitudinal sectional view of the shield and a portion of the handle, the knife being fully protruded and turned at right angles to the plane of the shield. Fig. 4 is an edge view of a like portion of the shield. Fig. 5 is a detail view of a portion of the handle and a part of the shank of one of the operating-instruments, the latter being partially in section to show the manner of connecting the two. Fig. 6 is a transverse sectional view of the same upon the line *x x*, Fig. 5. Fig. 7 is a transverse sectional view of the shank of an instrument, showing a modified form of construction. Fig. 8 is a like view showing a still further modification. Fig. 9 is a view of a chisel, representing the handle and shank in one piece. Fig. 10 shows a hook to be used in connection with said shield. Fig. 11 shows a spike for a like purpose; and Fig. 12 is a detail view showing said spike in position in the shield, the cap of the latter being removed.

Like letters of reference indicate like parts in the different figures.

The object of my invention is to provide a veterinary obstetrical instrument consisting of a shield in conjunction with a series of interchangeable operating-instruments, the whole to be so constructed as to enable the various cutting or other surgical operations to be performed in connection with veterinary obstetrical work with safety, rapidity, and ease.

A further and more specific object is to enable the surgeon to know the exact angle which the cutting or other implement bears

when protruded to the shield, and to provide means whereby said position may be maintained.

To this end my invention consists in certain forms of construction and certain combinations of elements, as hereinafter more particularly described, and definitely pointed out in the claims.

Referring to the drawings, A represents a flat oblong metallic shield, preferably formed from malleable iron and provided with a hollow portion or chamber, A', Figs. 3 and 12, for the reception of the various implements which may be inserted therein, as hereinafter stated. Said shield may be formed in one piece; but I prefer to construct it with a removable cap, A². The shield is provided with a straight tubular handle, B, in substantial alignment with one edge of said shield, and which may be either formed integral therewith or made detachable therefrom; but I prefer to construct it in the latter way. I have therefore shown said handle tapped into the shield at *b* and secured from turning by means of a set-screw, *b'*.

Attached to the sides and near the end of the straight handle B, and preferably in the same plane with the flat shield A, are handles *b² b²*, which are intended to enable the shield to be held in any desired position.

C is a rod intended to fit loosely within the tube B, and is made considerably longer than said tube for the purpose of protruding the working-instrument from and withdrawing it into the shield, as hereinafter stated. There may be as many rods C as there are operative instruments, in which case the instrument-shank may be made integral with the rod, as shown in Fig. 9, in which D represents a cutting-instrument in the form of a chisel; but I prefer to make each operating-instrument detachable from the rod, as shown in Figs. 2 and 3. A considerable portion of the upper end of the rod C is screw-threaded, and a nut, C', having handles *c* rigidly formed thereon, is adjusted upon said thread to serve in operating the instrument, as hereinafter stated. When said instrument is detachable, I provide a cross-bar, *c'*, Fig. 1, upon the end of the rod C, by which to adjust the operating-instrument

to do its work, though a simple perforation may be used, as at c^2 , Fig. 9, for the insertion of a rod.

D^1 , Figs. 2 and 3, represents a hook-shaped knife adapted to fit and be inclosed within the shield, as indicated in dotted lines in Fig. 1. The edge of said knife is beveled, as shown, so as to shear across the edge a of the shield when drawn therein, and said shield edge is curved inwardly, substantially as shown.

D , Fig. 9, as stated, represents a chisel; D^2 , Fig. 10, a hook; and D^3 , Figs. 11 and 12, a "repelling-spike." Each of said instruments, which I term the "operating-instruments," when referred to separately from the shield, with which they constitute the "instrument" as a whole, is provided with a polygonal-shaped shank, D^4 , preferably square in cross section, (see Fig. 6,) though it may be triangular or hexagonal, as in Figs. 7 and 8, or otherwise formed to prevent it from turning when in engagement with the socket of the shield. Within said shank is formed a square or polygonal socket, d , Fig. 5, adapted to receive a corresponding pintle, c^3 , and said shank is rigidly secured in place by means of a set-screw, c^4 , or said connection may be made in any well-known way, whereby the shank may be well secured to the rod.

Within the shield and adjacent to the shank I place a stud, a' , Figs. 2, 3, and 12, to form a support for the shank upon that side in operating the instrument, and thus relieve the joint from unnecessary strain. A slot, a^2 , Figs. 2, 3, and 4, is formed at the heel of the shield to enable it to be cleaned.

The operation of said device is as follows: The knife or other operating-instrument being inclosed within the shield, as in Fig. 1, the latter is inserted to the position required, when the operating-instrument is protruded to the extent shown in Fig. 3, or so that the entire polygonal shank will be without the shield. The rod C is then turned in the direction desired to perform its function—as, for example, in the manner shown in Fig. 3—when it is drawn back far enough to permit the square shank to enter the shield-socket, which it fits.

This position may be determined by that of the cross-bar c' . The nut C' may then be turned,

and, as it bears against the end of the tube B , a powerful cut may be made thereby sufficient to sever bones or cartilage. At the same time it is obvious that the polygonal shank will prevent the knife from turning out of its proper course. It is obvious that it would not always be necessary to turn the instrument, as stated, out of the plane of the shield; but it is one of the important advantages thereof that this may be done when necessary. The knife, hook, or other operating-instrument being directed away from the tissue which it is desired to protect, it is obvious that it may be protruded without injury thereto, while with the knife acting directly in conjunction with the part a of the shield the hardest substances may be severed with ease. In conjunction with the spike D^3 , adjusted substantially as in Fig. 12, the shield may be employed as a repelling-instrument, and may be used without slipping and without danger. Said instrument is simple, cheap, and effective, and may be employed with the utmost safety in the various operations to which it is adapted.

Having thus described my invention, I claim—

1. A veterinary surgical instrument having a flat shield the body of which is extended laterally from the line of the handle, in combination with a series of interchangeable operating-instruments extending laterally from the line of the shank, substantially as shown and described.

2. A veterinary surgical instrument having a flat shield the body of which is extended laterally from the line of the handle, in combination with a series of interchangeable operating-instruments extending laterally from the line of the shank, each of said instruments having its said shank constructed in a polygonal shape with the shield conforming thereto, while the handle thereof is round, substantially as shown and described.

In testimony whereof I have signed this specification, in the presence of two subscribing witnesses, this 5th day of March, 1888.

JOSEPH HILTON.

Witnesses:

D. H. FLETCHER,
J. B. HALPENNY.