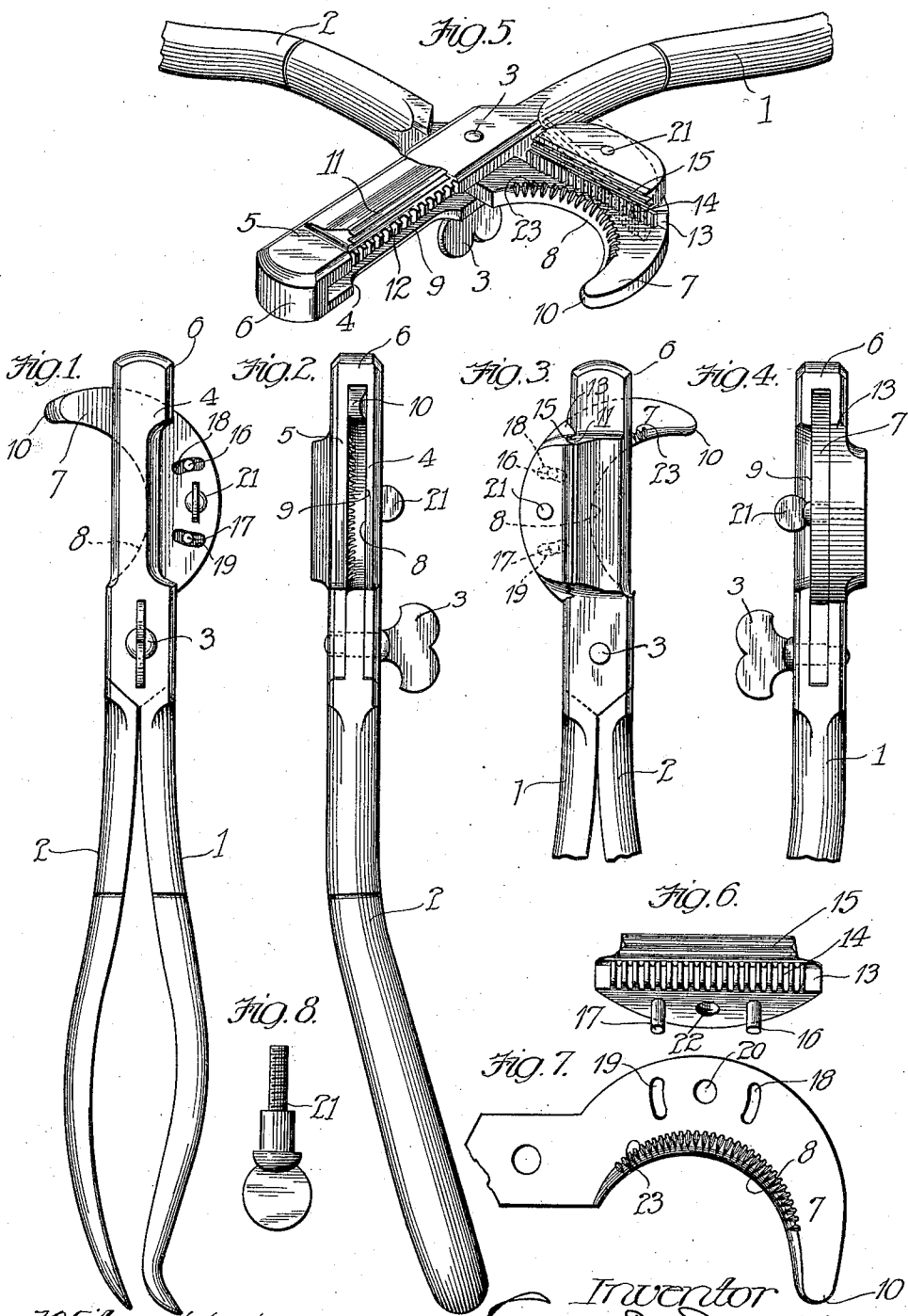


E. D. DOUGLASS.
EMASCULATOR.
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1,062,146.

Patented May 20, 1913.



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UNITED STATES PATENT OFFICE.

ERNEST D. DOUGLASS, OF CHICAGO, ILLINOIS, ASSIGNOR TO FRANK S. BETZ, OF HAMMOND, INDIANA.

EMASCULATOR.

1,062,146.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERNEST D. DOUGLASS, a citizen of the United States of America, and a resident of Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Emasculators, of which the following is a specification.

The main objects of this invention are to provide an improved construction for emasculators or similar instruments adapted for simultaneous crushing and cutting of animal tissues, and of the general type shown and described in my co-pending application No. 555,870, filed April 16, 1910, and having an improved arrangement of the crushing jaws whereby they will automatically assume such relative positions that the crushing operation will take place to best advantage without interfering with the cutting operation.

A specific embodiment of this invention is shown in the accompanying drawings, in which:

Figure 1 is a plan of the under side of the instrument with the jaws of the same closed. Fig. 2 is a front elevation. Fig. 3 is a top plan of the same, the handle ends of the lever being broken off. Fig. 4 is a rear elevation, the handle ends of the lever being broken off. Fig. 5 is a perspective view with the jaws open. Fig. 6 is a perspective view of the removable serrated jaw which is carried by one of the arms. Fig. 7 is a perspective view of one of the levers having a cutting edge, the handle end being broken off. Fig. 8 is a detail of the shouldered screw which secures the tiltable crushing jaw.

In the specific construction shown in the drawings, the operating levers 1 and 2 are pivotally connected together by means of a thumb screw 3. Each of the levers has its longer arm formed as a handle as usual in forceps and instruments of like character, and its shorter arm provided with a cutting jaw, and a serrated crushing jaw. The shorter arm of the lever 1 is slotted so as to form lower and upper members 4 and 5 united by a part 6 at the end of the arm. The shorter arm 7 of the lever 2 is formed in crescent shape and has a concave shearing or cutting edge 8 adapted to coact with the straight shearing or cutting edge 9 on the lower member 4 of the lever 1. The shorter arm 7 is curved, as stated, so that its extreme end 10 will pass between the upper

and lower members 5 and 4 in advance of its shearing or cutting edge 8. The upper member 5 has the inner edge thereof which faces the curved arm 7 of the other lever 2, serrated both longitudinally and transversely as shown respectively at 11 and 12 in Fig. 5.

The curved arm 7 carries a removable crushing jaw 13, shown by itself in Fig. 6, and has longitudinal and transverse serrations facing and coacting respectively with the longitudinal and transverse serrations on the upper members 5. 14 and 15 indicate respectively the transverse and longitudinal serrations. The removable jaw 13 carries a pair of dowel pins 16 and 17 which, when the jaw is in place, extend through the slotted openings or apertures 18 and 19 in the curved arm 7. The curved arm 7 also has an opening or aperture 20, centrally located between the openings 18 and 19, which receives the thumb screw or pivot 21. This screw has a shank passing through the central opening 20, and has threaded engagement with the opening 22 in the removable jaw 13, and is suitably shouldered to secure the removable jaw in place on the curved arm 7, and at the same time permit it to tilt freely on its pivot.

The curved inner edge of the arm 7 is beveled off slightly, and is slightly serrated on its upper side at 23, so that when the jaws are closed together, in the emasculating operation, that part of the cord or tissues, which is just above the point at which the same is severed, will be carried in between the upper member 4 and the removable jaw on the upper side of the curved arm, and will be crushed and held instead of being cut at this point between the lower edge of the member 4 and the upper side of the curved arm. The slots 18 and 19, in the curved arm 7, are arc shaped and are arranged circumferentially with respect to the pivot hole 20, to permit the removable jaw 13 to tilt and adjust itself automatically to the position and thickness of the cord or artery which is being crushed and cut, without interfering with the cutting operation. It will thus be noted that when the crushing jaws engage an interposed object, such as a cord or mass of tissues, the removable jaw 13 will rock on the pivot 21 and accommodate itself to the varying thickness of the tissues, so as to exert a substantially

equal pressure throughout the entire operative areas of the jaws. This tilting also enables the crushing jaws to yield relatively to each other, so as to prevent the tissues from interfering with the cutting operation, the yielding being, however, of such nature that the effectiveness of the crushing operation is in no sense reduced. The dowel pins serve as guides to the tilting of the jaw 13, and also serve as limit stops to limit the amount of pivotal movement of said jaw.

The arrangement of the longitudinal and transverse serrations, with respect to each other, is not broadly claimed herein but is more fully described and claimed in the pending application hereinbefore mentioned.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

1. In an instrument of the class described, the combination of a pair of operating levers movable toward and away from each other and provided with coacting cutting edges and coacting crushing jaws located at one side of said cutting edges, said crushing jaws being provided with opposed sets of transverse serrations and opposed sets of

longitudinal serrations, the transverse serrations being located between the longitudinal serrations and the cutting edges, and one of said jaws being pivotally mounted on its respective lever on an axis transverse to the cutting edge and located substantially midway between the ends of its crushing face.

2. In an instrument of the class described, the combination of a pair of operating levers movable toward and away from each other and provided with coacting cutting edges and coacting crushing jaws located at one side of said cutting edges, said crushing jaws being provided with opposed sets of transverse serrations and opposed sets of longitudinal serrations, the transverse serrations being located between the longitudinal serrations and the cutting edges and lying in a different plane from that of said longitudinal serrations, and one of said jaws being pivotally mounted on its respective lever on an axis transverse to the cutting edge and located substantially midway between the ends of its crushing face.

Signed at Chicago this 23d day of September 1912.

ERNEST D. DOUGLASS.

Witnesses:

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EDWIN PHELPS.