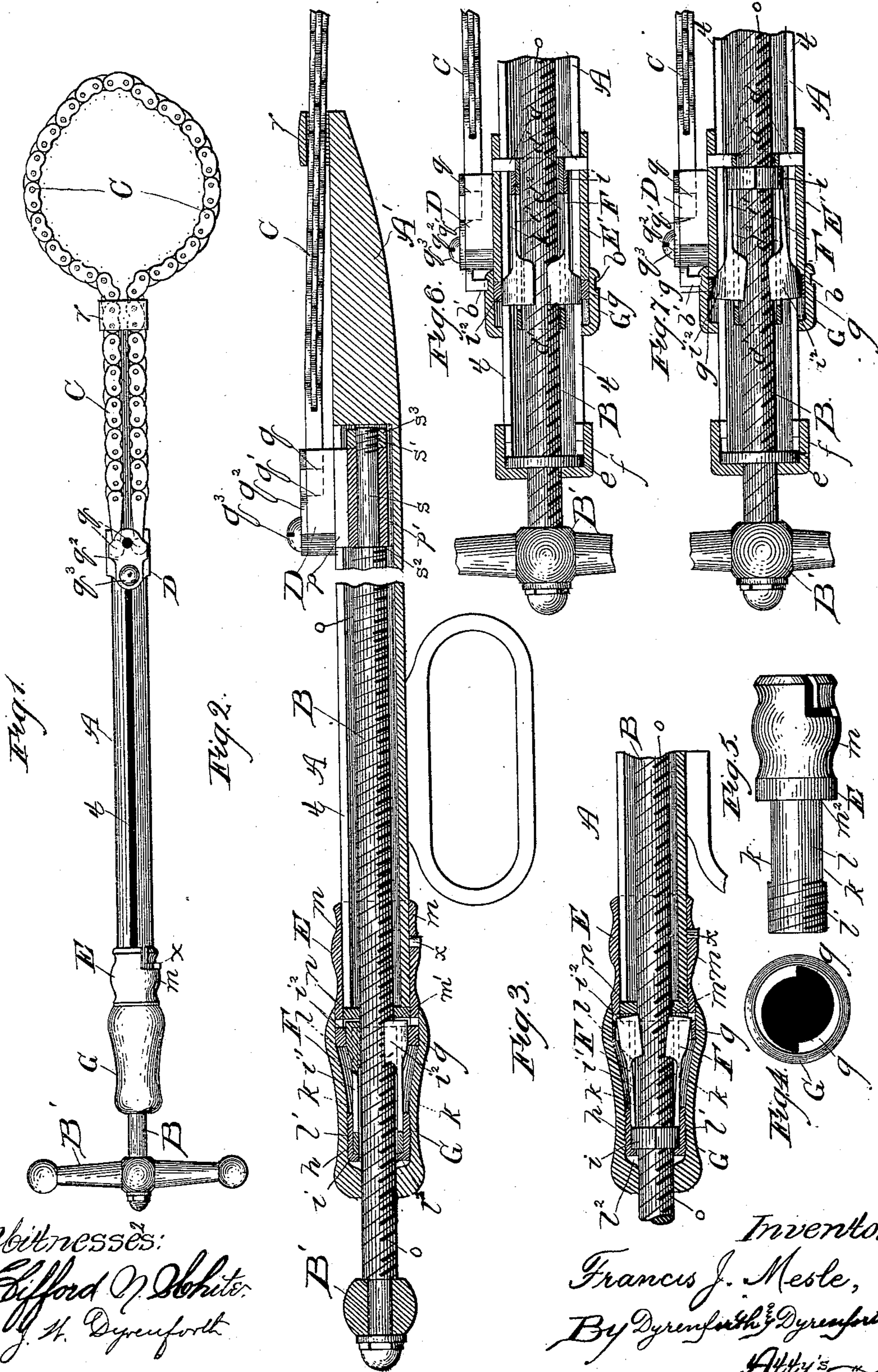


(No Model.)

F. J. MESLE.
ECRASEUR.

No. 421,082.

Patented Feb. 11, 1890.



Witnesses:
Clifford N. Schute,
J. H. Dyrenforth.

Inventor
Francis J. Mesle,
By Dyrenforth & Dyrenforth,
Attys.

UNITED STATES PATENT OFFICE.

FRANCIS J. MESLE, OF CHICAGO, ILLINOIS.

ECRASEUR.

SPECIFICATION forming part of Letters Patent No. 421,082, dated February 11, 1890.

Application filed November 26, 1889. Serial No. 331,611. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS J. MESLE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Ecraseurs, of which the following is a specification.

My invention relates to an improvement in ecraseurs generally, though intended more especially for use with such instruments in the practice of veterinary surgery.

The object of my invention is to provide an ecraseur in the use of which the surgical operation may be performed much more quickly, and therefore more safely and easily, than with the implements of a similar nature hitherto employed; and my invention consists in the general construction as well as in the details of construction hereinafter set forth and claimed.

In the drawings, Figure 1 is a view in elevation of an ecraseur embodying my improvement; Fig. 2, an enlarged broken sectional view taken on the line 2 2 of Fig. 1, looking in the direction of the arrows, the clamping-nut, however, being shown partly in elevation and in the condition of engaging the screw-thread of the rod; Fig. 3, a portion of the device substantially as illustrated in Fig. 2, but showing the clamping-nut altogether in elevation and out of engagement with the screw-threaded rod; Fig. 4, an end view of a detail; Fig. 5, another detail in side elevation, and Figs. 6 and 7 broken and partly sectional views showing a modified construction.

In the device shown in Figs. 1, 2, and 3, A represents a guide-tube having a solid end portion A', and provided with a slot *t*, extending throughout its hollow portion. Within the tube A is a rod B, of greater length than the hollow portion and of a diameter sufficiently less than the inner periphery of the tube to enable it to be readily reciprocated within the latter. Upon the rod B toward the end thereof which extends beyond the tube is a rigid handle B', and for a limited extent toward its opposite end the rod is reduced in diameter, as shown at *s*, which reduced portion is provided toward the extremity with a screw-thread *s'*.

The flat severing-chain C, of a construction hitherto common in ecraseurs, extends

through a head *r*, affording a guide at the end of the solid portion of the tube, and its ends, which are shaped to afford knobs *q*, rest in sockets *q'* of a block D, the knobs being held down by a swinging plate or escutcheon *q''*, fastened to the block by a set-screw *q'''*. The block D is provided on its under side with a reduced portion or neck *p*, which extends through and fits snugly but loosely in the slot *t*, and with a sleeve *p'*, which loosely surrounds the part *s* of the rod B between the screw-thread *s'* and shoulder *s''*, which latter is produced in the formation of the reduced portion. A nut *s'''* on the screw-thread *s'* operates to hold the sleeve upon the rod and loosely against the shoulder *s''*.

Extending the full length of the rod B between the shoulder *s''* and handle B' is a (preferably, for the sake of quickness) triple screw-thread *o*. At the open end of the tube A is a washer *n*, which operates to contract the opening, and which fits snugly but loosely over the threaded rod B to allow the latter to be slid readily through it.

E is a sleeve having an enlarged portion *m* and reduced portion or shank *l*, screw-threaded toward its end, as shown at *l'*. At the junction of the parts *m* and *l* of the sleeve an inner shoulder *m'* and an outer shoulder *m''* are produced, and at the extremity of the end portion *l'* of the shank is an inward-extending flange or stop *l''*. On opposite sides of the sleeve E, and extending through the latter from the screw-threaded part *l'* to the inner shoulder *m'*, are slots *k*.

F is an expansible and contractible clamping-nut, comprising a sleeve or collar portion *i* and normally outward-flaring spring-arms *i'*, provided with heads *i''*, having concave inner faces formed with triple screw-threads to fit the screw-threads of the rod B. The clamping-nut rests with its collar portion, which is capable of sliding loosely over the rod B, within the shank *l*, and its spring-arms extend through the openings *k* to cause the outer faces of its heads *i''* to project normally beyond the outer surface of the shank.

G is a shell or ferrule of flaring shape, as shown, to fit loosely around the rod B at one end and overlap at its other end the adjacent end of the part *m* of the sleeve E. The shell G is provided with an internal screw-thread,

as shown at *h*, to fit the thread of the part *l'*, and toward its flaring end it is formed with internal cam-faces *g*, which, when the shell is turned in one direction, bear against the heads 5 of the spring clamping-nut *F*, causing their threads to engage the threads of the rod *B*, and which, when the shell is turned in the opposite direction, allow the heads by the resili-
10 the rod. A pin *x* on the surface of the tube *A* and a bayonet-socket in the part *m* of the sleeve *E* enable those parts to be firmly but removably secured together, and the engage-
15 holds the shell *G* and sleeve *E* together.

In operation the shell *G* is first given a half-turn to the left to release the engagement of the clamping-nut with the threaded rod, thereby to enable the latter to be pushed 20 into the tube without turning, to cause the looped chain *C* to extend its full capacity beyond the guide *r*. The loop is then placed around the part to be severed and the rod drawn by means of the handle *B'* out of the
25 tube far enough to contract the loop tightly around the part. The shell *G* is then given a half-turn to the right to bring about engagement of the clamping-nut with the threads of the rod, when the surgical opera-
30 tion is performed in the usual way by turning the handle *B'* to draw in the loop.

In the construction above described the looped chain is distended and withdrawn by the reciprocation of the rod *B*, which in opera-
35 tion therefore causes a corresponding lengthening and shortening of the instrument. This feature, while considered immaterial or even desirable by some users, is by others thought to be undesirable, and therefore to
40 supply an ecraseur to those who may desire it wherein the rod shall be non-reciprocating and which shall at the same time contain my improvements I provide the construction shown in Figs. 6 and 7. In this device the
45 tube *A* has two slots *t*, the second slot extending along the under side, and at its open end it is provided with a perforated screw-cap *f*. The rod *B* is provided with a rigid collar *e*, of larger diameter than the inner
50 periphery of the tube *A*, which extends between the end of the tube and cap, and which, when the rod is turned, will rotate in the cap and prevent reciprocation of the rod. The block *D* is upon the sleeve *E*, which latter is
55 formed, as shown, without the reduced parts *l l'*. Instead of those parts, it has on its inner periphery rigid lugs *d d'*, which extend through to slide in the slots *t*, and which carry a sleeve *d'*, extending within the tube to sur-
60 round loosely the threaded rod *B*, and having longitudinal slots *d²*, corresponding in position with the slots *t*. The clamping-nut *F* is of substantially the same construction as that before described, its collar *i*, however,
65 being of slightly-larger diameter to fit tightly around the sleeve *d'* against the lugs *d*. The clamping-nut is thus caused to extend in the

contrary direction to that of the other device, and its spring-borne heads *i²* are arranged to play through the slots *t* and *d²*. The ferrule 70 *G*, which, as shown, may be much shorter than that of the other device, fits at one end snugly but loosely around the tube *A* to slide over the latter, and at its opposite end it overlaps the edge of the sleeve. Around this 75 overlapping end the ferrule is provided with a peripheral groove *b*, into which a finger *b'*, forming an integral part of the block *D*, extends, and thus operates to maintain the ferrule and sleeve together, while permitting to 80 the former independent rotation. On the inner periphery of the ferrule are cam-faces *g*, which are out of contact with the tube, but bear against the projecting heads of the clamping-nut. As in the other construction, 85 a half-turn of the ferrule alternately in contrary directions causes the cams to produce engagement and disengagement of the clamping-nut and threaded rod.

In the use of the modified construction, the 90 clamping-nut being disengaged from the rod, the ferrule *G* and sleeve *E*, with the clamping-nut, may be slid along the tube to expand or contract the loop of the chain, while, when by a half-turn of the ferrule, as described, the 95 nut is caused to engage the threaded rod, further contraction of the loop is effected by turning the rod by means of its handle *B'*, and thus causing the ferrule, sleeve, block, and nut to travel along the rod and tube. 100

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

1. In an ecraseur, the combination, with a slotted tube having a guide *r* at one end, threaded rod within the tube provided with 105 a handle, sliding block upon the tube, and looped severing-chain secured at its ends to the sliding block, of an expansible or contractible clamping-nut for the threaded rod and a ferrule *G*, engaging the said clamping-
110 nut and operated by turning to produce engagement and disengagement of the clamping-nut and rod, substantially as and for the purpose set forth.

2. In an ecraseur, the combination, with a 115 slotted tube having a guide *r* at one end, threaded rod within the tube provided with a handle, sliding block upon the tube, and looped severing-chain secured at its ends to the sliding block, of a non-rotary sleeve *E* 120 upon the tube, having a slotted reduced portion, an expansible and contractible nut *F* for the threaded rod supported by the sleeve, and comprising a collar *i*, spring-arms *i'*, and threaded heads *i²*, extending through the slot-
125 ted sleeve, and a rotary ferrule *G* about the sleeve, engaging the heads of the clamping-nut and operated by turning to produce engagement and disengagement of the clamping-nut and rod, substantially as and for the 130 purpose set forth.

3. In an ecraseur, the combination of a tube provided with slots *t* in different sides and a guide *r* at one end, threaded rod *B* within the

5 tube, provided with a handle, sliding block D upon the tube, looped severing-chain C, extending through the guide *r* and secured at its ends to the sliding block, and clamping means, substantially as described, extending through the slots *t* for producing engagement and disengagement of the sliding block with the threaded rod, substantially as and for the purpose set forth.

10 4. In an ecraseur, the combination of a tube provided with slots *t* in different sides and a guide *r* at one end, threaded rod B within the tube, provided with a handle, sliding sleeve E upon the tube, block D upon the sleeve, looped severing-chain C, extending through the guide

r and secured at its ends to the block, expandible and contractible clamping-nut F for the threaded rod, secured to the sliding sleeve and having heads *i*² extending through the slots, and a rotary ferrule G, secured to the sleeve, 20 provided with internal cam-faces *g*, engaging the heads *i*² and operated by turning to produce alternate engagement and disengagement of the clamping-nut with the rod, substantially as and for the purpose set forth.

FRANCIS J. MESLE.

In presence of—

J. W. DYRENFORTH,
T. L. MAY.