No. 861,915. PATENTED JULY 30, 1907.

H. W. STRUSS.

WIRE TWISTING AND CUTTING TOOL.

APPLICATION FILED APR. 4, 1906.

Fig. 1.

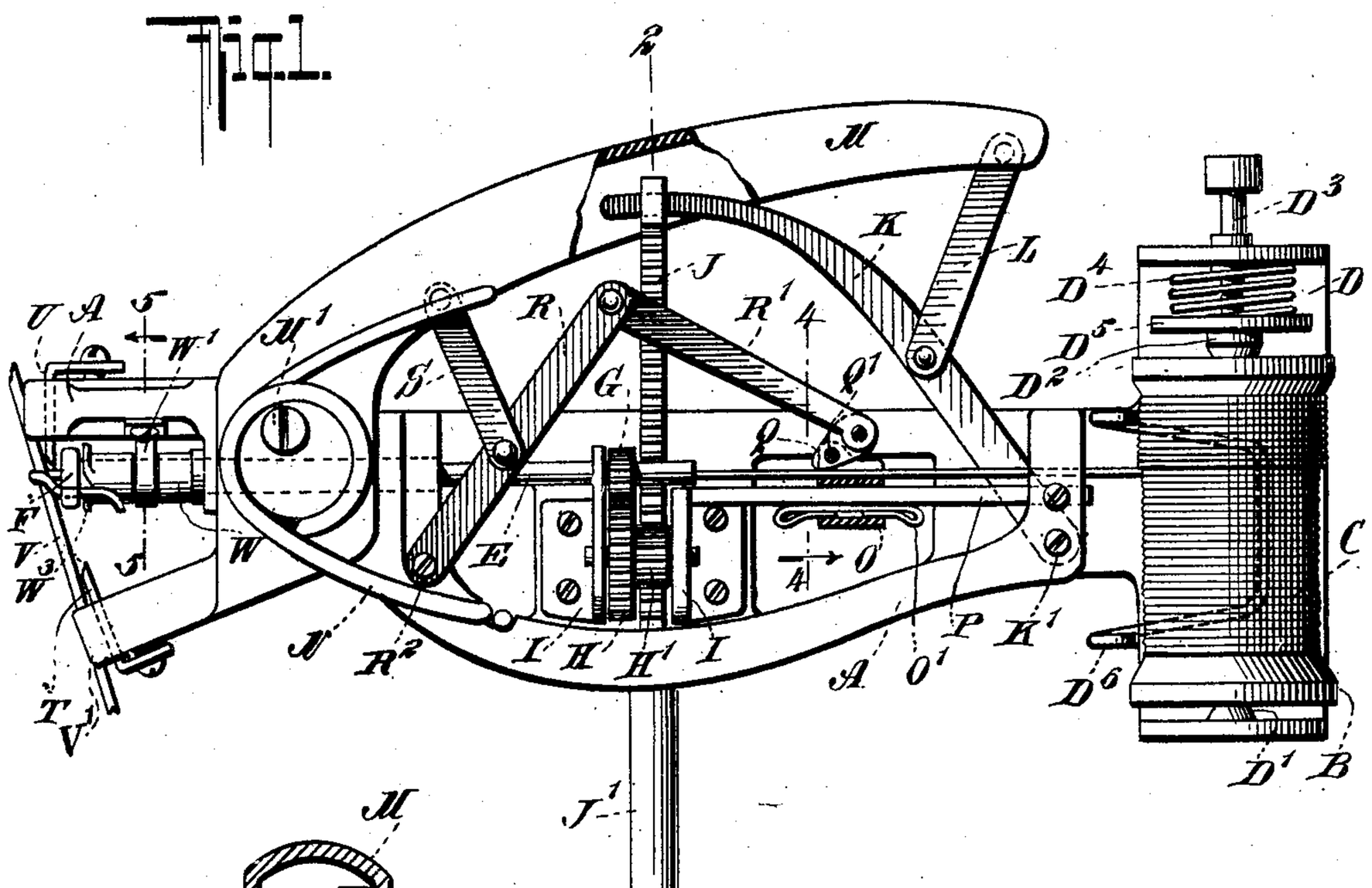


Fig. 2.

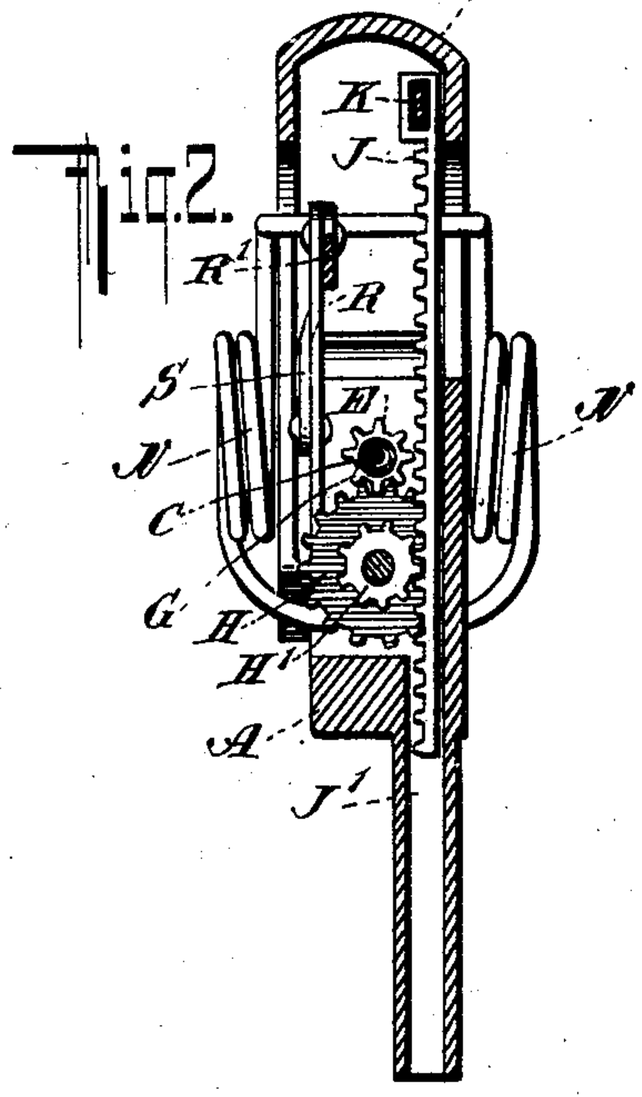


Fig. 3.

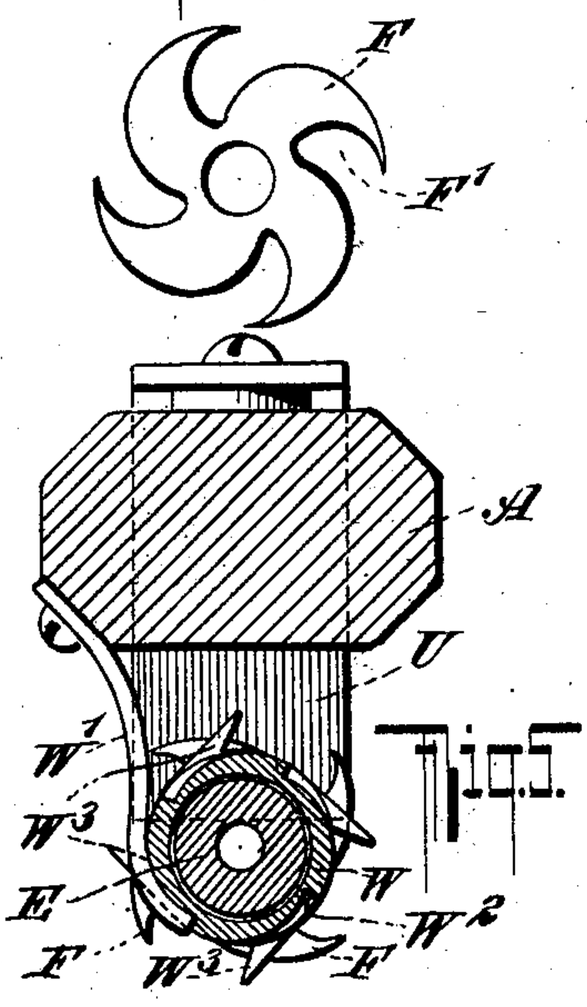


Fig. 4.

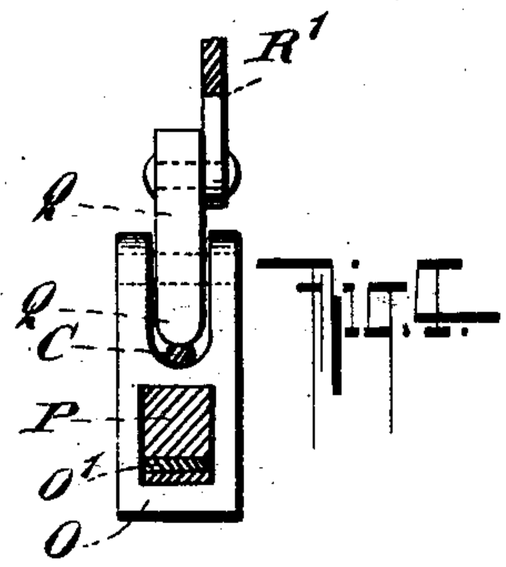
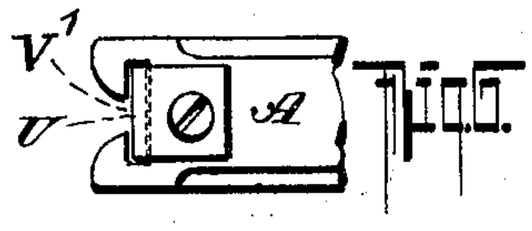


Fig. 5.



WITNESSES:

Julius Klauber

John Lotka

INVENTOR

Henry W. Struss

BY

Breese Kramer

ATTORNEYS

UNITED STATES PATENT OFFICE.

HENRY W. STRUSS, OF NEW YORK, N. Y.

WIRE TWISTING AND CUTTING TOOL.

No. 861,915. Specification of Letters Patent. Patented July 30, 1907.

Application filed April 4, 1906. Serial No. 309,757.

To all whom it may concern:

Be it known that I, HENRY W. STRUSS, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Wire Twisting and Cutting Tools, of which the following is a specification.

My invention relates to wire twisting and cutting tools, and has for its object to provide a tool of the designated kind which is effective and easy to handle and to manufacture.

My invention will be fully described hereinafter, and the features of novelty will be pointed out in the appended claims.

Reference is to be had to the accompanying drawings showing a specific embodiment of my invention, in which

Figure 1 is an elevation of my improved tool with parts broken away; Fig. 2 is a cross section on the line 2—2 of Fig. 1; Fig. 3 is an enlarged detail face view of the twisting tool; Fig. 4 is an enlarged detail section on the line 4—4 of Fig. 1; Fig. 5 is an enlarged detail section on line 5—5 of Fig. 1, and Fig. 6 is a partial plan view of the tool showing the end adapted to fit the article about which the wire is to be twisted.

A is a relatively stationary member on which is supported the spool B carrying the wire C. The spool B is secured in position on a frame D of the stationary member by means of a fixed stud D′ and a movable stud D^2 carried by a plunger D^3. A spring D^4 engaging the frame D and a disk D^5 secured to the plunger D^3 serve to keep the stud D^2 in engagement with the spool. It is to be understood that the spool is capable of rotation on the studs D′ and D^2 as the wire is consumed, and is prevented from rotating too freely by the spring D^6 which serves to maintain the wire under a tension.

The wire C passes from the spool B through an opening in the member A into and through a rotatable tube E which carries the twisting member F. The tube E also carries a pinion G which meshes with a gear H journaled on a suitable support I secured to the member A. To this gear H is secured another pinion H′ which meshes with a movable rack J. This rack J is suitably guided on the stationary member A and is slidably connected with a lever K pivoted at K′ to said stationary member. The said lever K is connected by means of a link L with the movable handle M which handle is pivoted at M′ to a convenient portion of the stationary member A. The axis of the twisting member F extends at a right angle to the handle pivot M′. Springs N serve to return and maintain the handle M in its open or normal position. A sliding member O is adapted to travel back and forth on a guide bar P, secured to the member A and extending parallel to the twister's axis. This sliding member O is held in frictional engagement with the guide bar P by means of a spring O′ and carries a dog Q pivoted to said sliding member O at Q′. This dog Q is connected by means of a link R′ with a lever R which is pivoted at R^2 to the stationary member A. A link S connects the lever R with the movable handle M. The movable handle M is provided with a projection to which is secured a knife T which coöperates with a second knife U carried by the stationary member A. The rotatable tube also carried an ejector sleeve W, which is free to turn with the tube in one direction under certain conditions to be more fully explained hereinafter, but is prevented from turning in the reverse direction by a spring W′, which engages notches W^2 in the body of said sleeve, which sleeve is further provided with teeth W^3, as clearly shown in Fig. 5.

In operation, the wire is passed through the tube E until its end projects the required distance beyond the end of said tube. The wire C is then bent around the article V and its end inserted into one of the spaces F′ of the twisting member F. During the forward turning of the twister, the wire end will work under one of the teeth W^3 of the sleeve W; this couples the sleeve W and the twisting member F together. The article V is arranged to be received in guide notches V′ of the handle M and the stationary member A, and is thus secured in proper working relation to the tool. The movable handle M is then depressed, which results in pushing the rack J downwardly and thus rotates the pinion H′ and the gear H, and through the medium of the pinion G also rotates the tube E, the twisting member F and the sleeve W. The wire is thus twisted around itself. A continued pressure on the handle M will bring the knife T into cutting relation with the knife U and thus cut the wire C just back of the twisted portion. As the handle M is depressed, the sliding member O will, through the medium of the lever R and the links R′ and S, be moved along the guide bar. It is to be understood that during this movement of the sliding member O the clamping end of the dog Q is pressed away from the wire and does not engage said wire but slides along the same. As the pressure on the handle M is now removed, the springs N will throw said handle M back to its normal position, during which return movement the dog Q will be pulled into clamping engagement with the wire C by means of the lever R and the links R′ and S; the wire will be gripped between the upper surface of the sliding member O and the dog Q and will be fed along a sufficient distance so that the operation just described may be repeated. The rack J is adapted to project into a protecting tube J′ secured to the member A, as the handle M is depressed. Meanwhile, during the return movement of the handle M to its normal position the sleeve W will be held against rotation by the spring W′, which engages one of the notches W^2 of the sleeve. Any cut ends of the wire which would otherwise remain in the spaces F′ are

withdrawn and thrown out by the teeth W³, thus obviating the danger of the tool becoming clogged.

My invention is useful in connection with the making of wire hat frames, although I do not wish to be construed as limiting myself to this use, as the invention is applicable wherever it is desired to twist and cut wire or similar articles.

Various modifications may be made without departing from the nature of my invention as defined in the claims.

I claim:

1. A wire-twisting tool, comprising two movably-connected members, a rotary twister and a wire-feed device both operated by the relative movement of said members, and a cutter adjacent to the twister.

2. A wire-twisting tool comprising two movably-connected members, a rotary twister and a wire-feed device both operated by the relative movement of said members, a cutter adjacent to the twister, and guides for positioning the said members relatively to the article to which the wire is to be applied.

3. A wire-twisting tool comprising two movably-connected members, a wire-guide, a feed device and a rotary twister for the wire, both operated by the relative movement of said members.

4. A wire-twisting tool comprising two movably-connected members, a rotatable wire-twister operated by the relative movement of said members, and a wire-feeding device operated by the relative movement of said members.

5. A wire-twisting tool comprising two movably-connected members, a tubular wire-guide and twister, a clamp-guide parallel with the said wire-guide, a feed clamp movable along said clamp-guide, and means operated by the relative movement of the two members, for rotating the wire-twister and moving the feed-clamp.

6. A wire-twisting tool comprising two movably connected members, a rotary wire-twister, a guide parallel with said twister's axis, a slide movable along said guide, a feed-clamp pivoted to the slide, an operating connection from said feed-clamp to said members, and another operating connection from the wire-twister to said members, whereby the relative movement of said members will rotate the twister and operate the feed-clamp and its slide.

7. A wire-twisting tool comprising two movably connected members, a rotary wire-twister, a guide parallel with said twister's axis, a slide movable along said guide, a spring arranged between the slide and one side of the guide, a feed-clamp pivoted to the slide on the opposite side of the guide, an operating connection from said feed-clamp to said members and another operating connection from the wire-twister to said members, whereby the relative movement of said members will rotate the twister and operate the feed-clamp and its slide.

8. A wire-twisting tool, comprising two pivotally connected members, a rotary wire-twister the axis of which extends at a right angle to the pivot connecting said members, and means for rotating the twister by the relative movement of said members.

9. A wire-twisting tool, comprising two pivotally-connected members, a rotary wire-twister the axis of which extends at a right angle to the pivot connecting said members, a wire-feeding device, and means for operating said device and the twister by the relative movement of said members.

10. A wire-twisting tool comprising two movably-connected members having guides for positioning the tool relatively to the article to which the wire is to be applied, a wire-twister adjacent to said guides, and means for operating the twister by the relative movement of said members.

11. A wire-twisting tool comprising a body, a rotary wire-twister thereon, an ejector located adjacent to the twister and capable of rotating therewith in one direction, and means for preventing rotation of said ejector in the opposite direction.

12. A wire-twisting tool comprising a body, a rotary wire-twister located thereon, and provided with teeth facing in one direction, a rotary ejector located adjacent to the twister and provided with teeth facing in a direction opposite to those of the twister, and means for producing relative rotation of the twister and ejector after the operation of the twister.

13. A wire-twisting tool comprising a body, a rotary wire-twister thereon, and a rotary ejector located adjacent to said twister.

14. A wire-twisting tool comprising two pivotally-connected members, a rotary wire-twister the axis of which extends at a right angle to the pivot connecting said members, a rack connected with said members and mechanism for rotating the twister by the movement of the rack, a guide extending parallel with the twister's axis, a wire feed device movable along said guide, and lever mechanism connecting said feed device with the two members of the tool.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

HENRY W. STRUSS.

Witnesses:
JOHN LOTKA,
R. ABERLI.