Jan. 21, 1936. I. JACOEL 2,028,610

CABLE SPLICER

Filed July 27, 1934 2 Sheets-Sheet 1

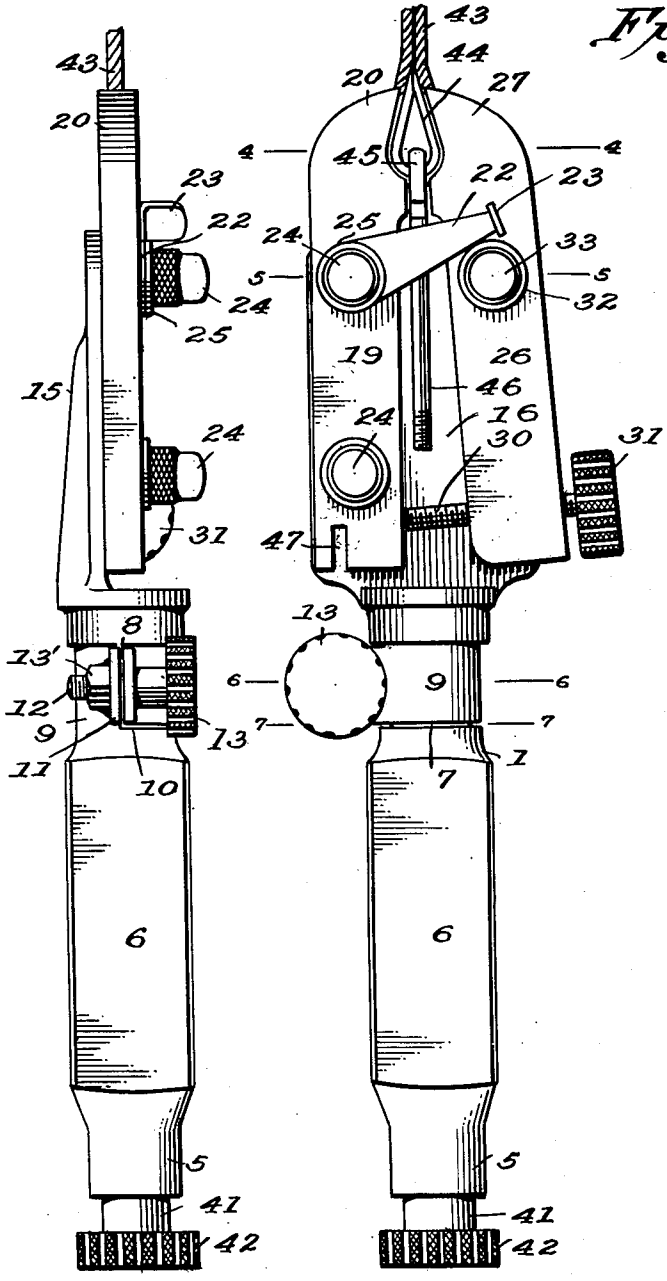
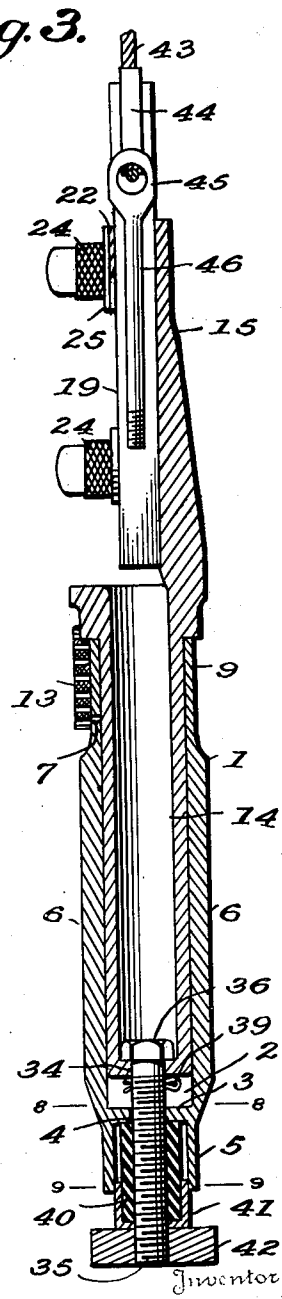


Fig. 2.

Fig. 1.

Fig. 3.



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Attorneys

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Fig. 4.

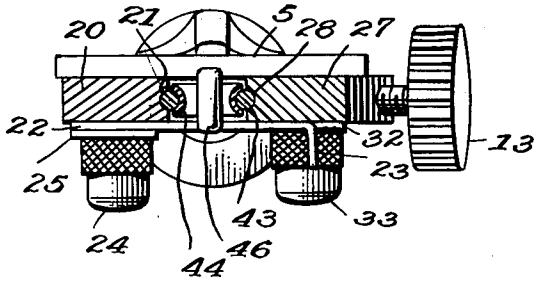


Fig. 8.

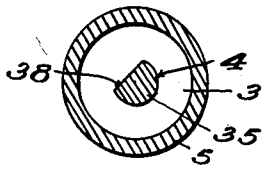


Fig. 9.

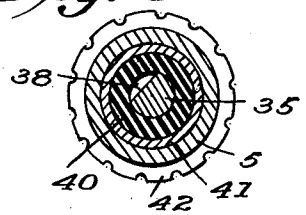


Fig. 5.

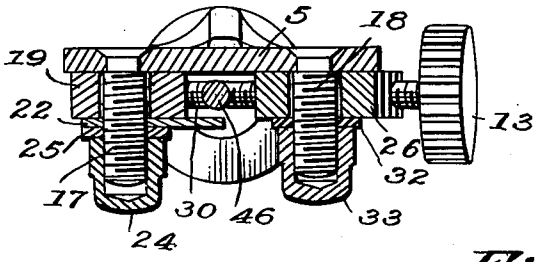


Fig. 11.

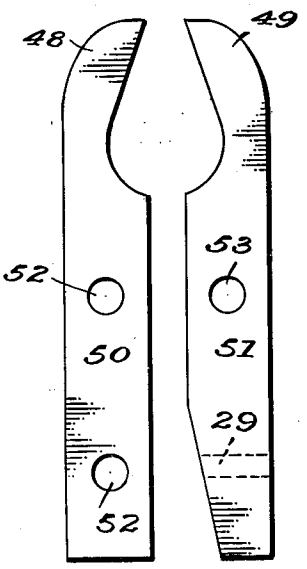


Fig. 10.

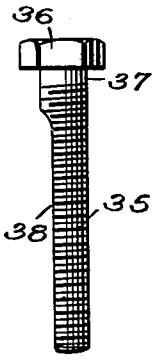


Fig. 6.

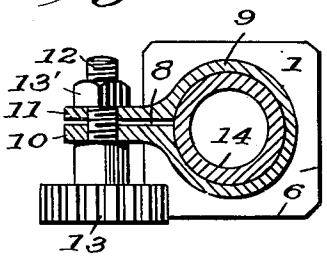
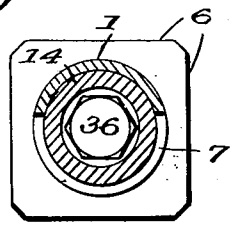


Fig. 7.



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UNITED STATES PATENT OFFICE

2,028,610

CABLE SPLICER

Isidore Jacoel, Norfolk, Va.

Application July 27, 1934, Serial No. 737,312

10 Claims. (Cl. 140—121)

My invention relates to new and useful improvements in a cable splicer and has for its principal object the provision of a device of the character described adapted for practical and rapid execution of splices on cables of various kinds and especially those used on modern aircraft construction.

Another object of the invention consists in the provision of a cable splicer including a handle portion adapted to be clamped in a vise or the like and a clamping member rotatably mounted relative to the handle, means being provided to resist rotation of the clamping member relative to the handle and to overcome the torque of the cable.

A further object of the invention resides in the provision of readily removable and replaceable clamping jaws, whereby different jaws may be used for different sized cables, the jaws further being formed and adapted for use in splicing or wrapping either flexible or non-flexible cables.

With the above and other objects in view, which will appear as the description proceeds, my invention consists in the novel details of construction, and arrangement of parts, described in the following specification and illustrated in the accompanying drawings, and while I have illustrated and described the preferred embodiments of the invention, as they now appear to me, it will be understood that such changes may be made as will fall within the scope of the appended claims.

In the drawings:—

Fig. 1 is a front elevation.

Fig. 2 is a side elevation.

Fig. 3 is a transverse vertical section.

Fig. 4 is a horizontal section on the line 4—4 of Fig. 1.

Fig. 5 is a horizontal section on the line 5—5 of Fig. 1.

Fig. 6 is a horizontal section on the line 6—6 of Fig. 1.

Fig. 7 is a horizontal section on the line 7—7 of Fig. 1.

Fig. 8 is a horizontal section on the line 8—8 of Fig. 3.

Fig. 9 is a horizontal section on the line 9—9 of Fig. 3.

Fig. 10 is a detail showing in elevation the screw for connecting the clamping member to the handle; and

Fig. 11 is a detail showing a slightly modified pair of clamping jaws.

In carrying out my invention I provide a handle indicated at 1 which has an elongated recess 2 extending from one end and closed at the opposite end by the wall or partition 3 having a semicircular opening 4, as shown more particularly in Fig. 8 of the drawings, for a purpose which will be later brought out. A flange or sleeve 5 extends outwardly from the wall or partition 3 and exteriorly the handle is formed with the flat portions shown at 6 adapted to be engaged by a vise or the like. Adjacent its upper end, above the flattened portions 6, the handle is formed with the horizontal inwardly directed slit or slot shown at 7 while a vertically extending slit or slot is shown at 8, more particularly in Fig. 2 of the drawings, and leading to the slot 7 thereby forming a yieldable portion 9, an outwardly directed lug 10 being formed on the end of the yieldable portion formed by the vertically extending slit or slot 8 and a corresponding outwardly directed lug or projection 11 is formed on the opposite edge of the slit or slot 8. A screw 12 having the finger engaging head 13 extends through openings in the lugs or projections 10 and 11 and receives a nut 13' so that by turning the screw, by engagement of the enlarged head 13, the yieldable portion 9 may be drawn inwardly to clamp the post or rod 14, received in the opening 2 of the handle 1, and forming a part of a clamping member to be described, the engagement of the yieldable portion 9 with the post or rod 14 acting to resist rotation of the clamping member relative to the handle 1.

The post or rod 14 is elongated in shape, as shown more particularly in Fig. 3 of the drawings, and extending from the outer end thereof is a plate or extension indicated at 15 provided with the flat surface 16 from which projects vertically spaced aligned screws 17, adjacent one side edge, and a single screw 18 adjacent the opposite side edge. Received on the vertically spaced aligned screws 17 is the arm portion 19 of a clamp jaw 20 formed in its inner edge with a groove 21 as shown more particularly in Fig. 4 of the drawings. Pivotally mounted on the upper screw 17 is a plate or arm 22 formed on its free end with an outwardly directed flange or projection 23 forming a finger grip for operating the plate or arm. The arm 19 is secured on the screws 17 by means of the cap nuts 24, the inner edges of which engage the washers 25.

Pivotally mounted on the single screw 18 is the arm 26 of the clamping jaw 27, this clamping jaw 27 being formed in its inner edge with a groove 28 corresponding to the groove 21 in the clamping jaw 20. Adjacent its inner end the arm 26 is formed with a screw threaded opening

similar to the opening 29 shown in Fig. 11 of the drawings and in which is threaded the screw 30 having the enlarged head portion 31 by means of which the screw may be operated, it being noted by reference more particularly to Fig. 1 of the drawings that the inner end of the screw 30 engages the inner edge of the arm 19 of the clamping jaw 20 and as the screw 30 is rotated the arm 26 will be swung on its pivot screw 18 to move the clamping jaw 27 towards or away from the clamping jaw 20. As noted more particularly in Fig. 1 of the drawings the pivoted plate or arm 22 is adapted to be swung to overlie the space between the inner edges of the arms 19 and 26, for a purpose which will be later brought out, and the lower edge of the plate or arm will engage a washer 32 which engages the outer face of the arm 26 and in turn is engaged by the cap screw 33 received on the screw 18.

The inner end of the post or rod 14 is formed with an opening 34, and through which extends the screw 35 having the head portion 36. The screw, adjacent the head portion 36 is round, as shown at 37 while the remaining portion is flattened as shown at 38. The rounded portion 37 of the screw passes through the opening 34 of the post or rod 14 while that portion of the screw having the flattened surface 38 passes through the semi-circular opening 4 of the wall or partition 3 of the handle 1. This construction prevents rotation of the screw relative to the handle. A cotter pin is shown at 39 and extends transversely through an opening formed in the screw 35 at the end of the post or rod. This cotter pin prevents sliding movement of the screw in the end of the post or rod. Surrounding the screw 35, and positioned within the flange or sleeve 5 of the handle 1 is a flexible sleeve or packing 40, preferably of rubber, the inner end of this sleeve or packing 40 engaging the wall or partition 3 as shown more particularly in Fig. 3 of the drawings. A metal cap 41 is received on the outer end of the sleeve or packing 40 and is engaged by a nut 42 received on the screw. As the nut 42 is adjusted it will flex the packing to a greater or less degree and this packing normally tends to force the nut 42 and screw 35 outwardly to tightly engage the head 36 of the screw with the end of the post or rod 14 and thereby acting as a resistance against rotation of the rod or post relative to the handle 1.

At 43 I have shown a section of cable to be spliced and, as shown, a loop is provided in which is received a thimble 44. This thimble encloses or surrounds a part of the circumference of the cable while the remaining circumference thereof will be received within the grooves 21 and 28 of the clamping jaws 20 and 27 as shown more particularly in Fig. 4 of the drawings. As shown more particularly in Fig. 1 of the drawings the screw 30 will be operated to securely clamp the end of the cable with the thimble within the clamping jaws, and it will be noted that a sufficient portion of the circumference of the strands of the cable is exposed outside of the groove of the thimble to permit the clamping jaws to properly force the cable into tight engagement with the thimble. In other words if the jaws of the clamping members engaged the thimble itself as distinguished from the cable the clamping engagement would be limited and the proper clamping action prevented. Connected to the thimble 44, by the eye 45, is a turnbuckle rod 46 which while splicing or wrapping extends parallel between the inner edges of the arms 19 and 26 of the clamping jaws and is prevented from swinging outwardly from the face of the plate 15 by the arm or plate 22 as will be readily apparent by reference to Fig. 1 of the drawings.

The arm 19 of the clamping jaw 20 is shown as provided with a notch 47 which is used as a gauge for determining the proper clamping jaws to be used with a particular diameter of the cable. The cable of proper diameter may be received in the notch 47 and thus the proper clamping jaws to be used determined.

In Fig. 11 of the drawings I have illustrated a slightly modified pair of clamping jaws shown at 48 and 49 these jaws including the arms 50 and 51 having the openings 52 and 53 respectively adapted to be received on the screws 17 and 18 extending from the plate 15.

It is thought that the construction and operation will be clearly understood from the above detailed description. It will be seen that I have provided a device whereby either flexible or non-flexible cables may be spliced or wrapped and in which there are readily removable and interchangeable clamping jaws adapted for use on cables of various sizes. At the same time the clamping jaws are carried by a member rotatable relative to a handle portion and when the handle portion is clamped in a vise or the like the jaws or carrying member may be turned or rotated slowly with respect to the handle as the splicing or wrapping takes place means are provided to resist the turning or rotating action to prevent the twisting cable from causing the jaws to fly back as the work progresses, this means including the yieldable portion 9 adjusted by the screw 12 to engage the post or rod 14 and the flexible sleeve 40 and screw 35 adjusted by the nut 42. Non-flexible cables are generally wrapped instead of spliced. For this operation it requires a clamp with strong jaws and by providing the readily removable and interchangeable jaws, as previously described, my device is adapted for use in splicing flexible cables or in wrapping non-flexible cables. The shapes of the clamping jaws match exactly the form of the thimble, within the loop of the cable, thereby facilitating operation and permitting a high grade of workmanship.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is—

1. A device of the character described including a handle having a flexible portion, a member carried by the handle and rotatable relative thereto, the member being engaged by the flexible portion of the handle which tends to resist rotation of the member relative to the handle, and clamping jaws carried by the member.

2. A device of the character described including a handle having a flexible portion, a member carried by the handle and rotatable relative thereto, the member being engaged by the flexible portion of the handle which tends to resist rotation of the member relative to the handle, and clamping jaws detachably carried by the member.

3. A device of the character described including a handle portion, a member carried by the handle portion and rotatable relative thereto, adjustable means engageable with the handle and rotatable member for resisting rotation of the member relative to the handle, and clamping jaws carried by the member.

4. A device of the character described including a handle having a flexible portion, a member carried by the handle and rotatable relative thereto, means for adjusting the flexible portion of

the handle to regulate engagement thereof with the rotatable member to tend to resist rotation of the member relative to the handle, and clamping jaws carried by the member.

5. A device of the character described including a handle, a member carried by and rotatable relative to the handle, a screw carried by the rotatable member and extending through the end of the handle, a flexible sleeve surrounding the screw and engageable with the end of the handle, and a nut received on the screw and engageable with the opposite end of the flexible sleeve, and clamping jaws carried by the rotatable member.

6. A device of the character described including a handle portion, a member carried by the handle and rotatable relative thereto, said member having a flat face portion, projections carried by the member and extending horizontally from the face thereof, and clamping jaws carried by the projections.

7. A device of the character described including a handle portion, a member carried by the handle and rotatable relative thereto, said member having a flat face portion, projections carried by the member and extending horizontally from the face portion thereof, and clamping jaws detachably mounted on the projections.

8. A device of the character described including a handle portion, a member carried by the handle portion and rotatably mounted relative thereto, a stationary jaw carried by the member, a pivotally mounted jaw carried by the member, means for adjusting the pivotally mounted jaw relative to the stationary jaw, and a pivotally mounted plate adapted to span the space between the jaws.

9. A device of the character described including a handle portion, a member carried by the handle portion and rotatably mounted relative thereto, a stationary jaw carried by the member, a pivotally mounted jaw carried by the member, means for adjusting the pivotally mounted jaw relative to the stationary jaw, and a pivotally mounted plate adapted to span the space between the jaws and overlie the outer faces thereof.

10. A device of the character described including a handle portion and readily detachable and interchangeable clamping jaws for clamping wire or cable of various diameters, certain of the jaws being provided with a notch adapted for use as a gauge for determining the particular jaws to be used with a wire or cable of a particular diameter.

ISIDORE JACOEL.