June 1, 1954

W. K. BOHON

BELT SPLICER

2,679,888

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2 Sheets-Sheet 1

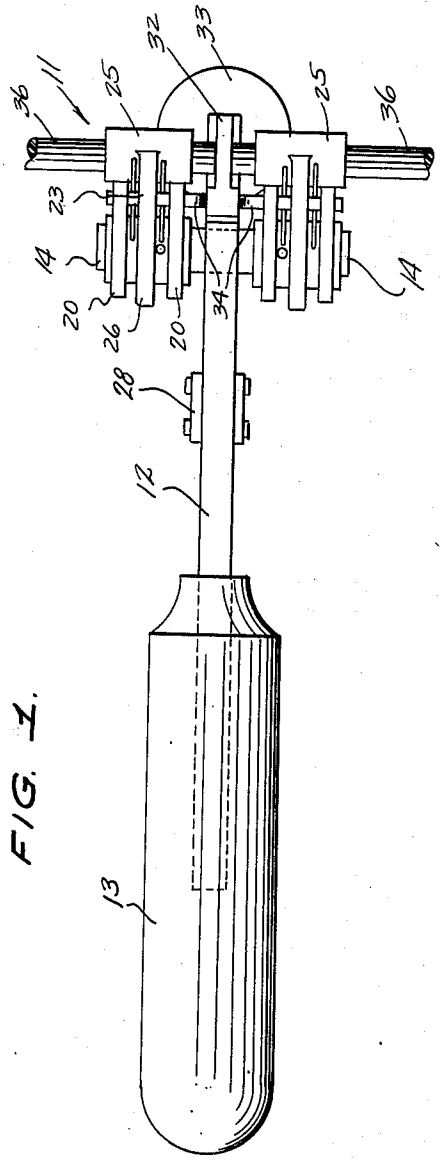


FIG. 1.

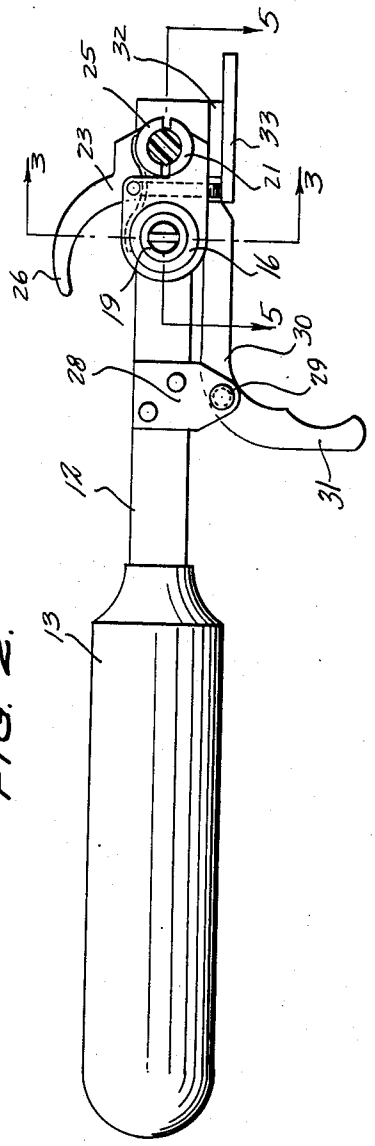


FIG. 2.

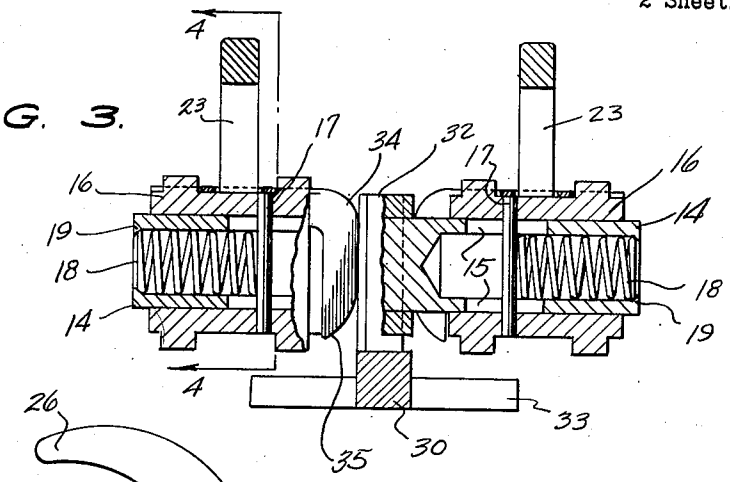
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FIG. 3.



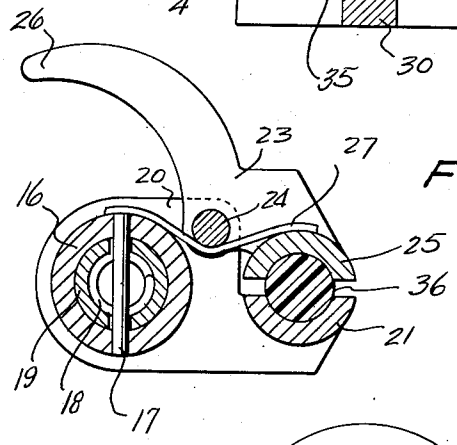
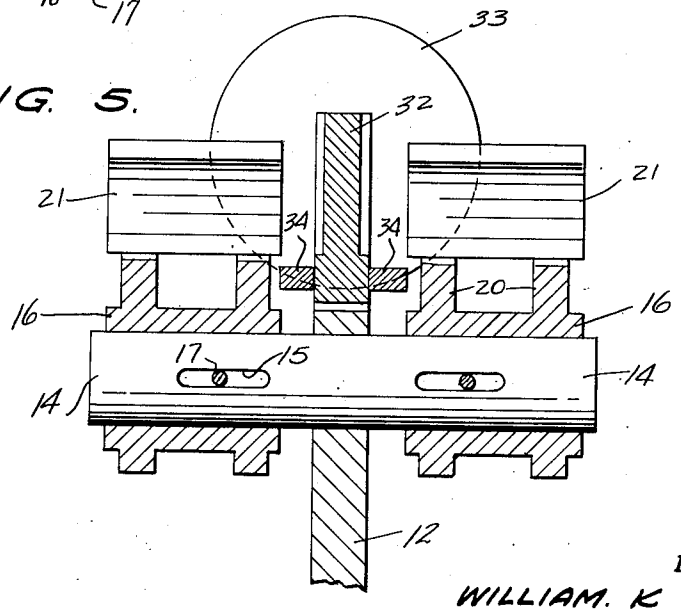


FIG. 4.

FIG. 5.



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BELT SPLICER

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Application February 6, 1953, Serial No. 335,493

3 Claims. (Cl. 154—42)

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This invention relates to belt splicing devices, and more particularly to an improved device for splicing plastic belts.

The main object of the invention is to provide a novel and improved splicing device for splicing together the ends of plastic belts, said device being simple in construction, being easy to manipulate, and providing a secure and smooth joint between the ends of a plastic belt spliced by means of the device.

A further object of the invention is to provide an improved plastic belt splicing device which involves inexpensive components, which is sturdy in construction, which is compact in size, which is easy to manipulate, and which permits the user to accurately splice the ends of a plastic belt together so that said ends are accurately aligned and securely joined.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a top plan view of an improved plastic belt splicing device constructed in accordance with the present invention.

Figure 2 is a side elevational view of the belt splicing device of Figure 1.

Figure 3 is an enlarged transverse vertical cross sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a cross sectional detail view taken on the line 4—4 of Figure 3.

Figure 5 is an enlarged horizontal cross sectional view taken on the line 5—5 of Figure 2.

Referring to the drawings, the belt splicing device is designated generally at 11 and comprises an elongated main supporting bar 12 having a handle 13 secured to its rear end. Secured to the forward end of the supporting bar 12 are the respective transverse tubular shaft elements 14, 14, said shaft elements being in alignment with each other on opposite sides of the supporting bar 12 and being each formed with the elongated longitudinal, vertically aligned slots 15, 15 as shown in Figure 3. Designated respectively at 16, 16 are sleeve members which are slidably mounted on the respective tubular shaft elements 14, 14, said sleeve members 16 being nonrotatably secured on the shaft elements by transverse pin elements 17 secured to the sleeve elements and extending through the respective pairs of slots 15, 15, as shown in Figure 3. Designated respectively at 18, 18 are coiled springs which bear between inwardly upset end portions 19, 19 on the outer ends of the shaft elements 14, 14 and on the respective transverse pins 17, 17, biasing the sleeve elements 16, 16 inwardly towards each other.

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The respective sleeve elements 16, 16 are formed with the parallel forwardly directed arms 20, 20 to which are integrally secured the respective transversely aligned, semi-cylindrical, upwardly facing bottom jaw elements 21, 21. Pivoted between the upper portions of each pair of arms 20, 20 is a lever element 23, said lever element being supported on a transverse pin member 24 extending through the arms 20, 20, and each lever being formed at its forward end with the downwardly facing, semi-cylindrical, concave top jaw element 25 which is disposed in opposing relationship to a respective jaw element 21, as shown in Figure 4. Each lever 23 is formed with the handle portion 26, whereby the associated top jaw element 25 may be elevated by rotating the handle portion 26 counterclockwise, as viewed in Figure 4. The levers 23 are biased clockwise, as viewed in Figure 4, by respective leaf springs 27 which extend under the transverse pin elements 24 of the respective levers and which have one arm engaging the top surface of the associated top jaw element 25 and the other arm engaging the top surface of the adjacent sleeve element 16, whereby the springs 27 bias the top jaw elements 25 downwardly toward the opposing bottom jaw elements 21.

Designated at 28 is a depending bracket member secured to the intermediate portion of the support bar 12, and pivoted at 29 to said bracket member for rotation in the vertical plane of the bar member 12 is the arm 30. Arm 30 is formed at its rear end with a depending handle element 31 and is formed at its forward end with the vertical, rectangular upstanding plate element 32 which is of substantial height. Integrally secured to the bottom edge of the plate element 32 is the horizontally extending, generally circular plate element 33 which is of substantial mass and which is a good heat conductor. Similarly, the upstanding plate element 32 is a good heat conductor, both the elements 32 and 33 being preferably integrally joined and being of suitable heat conducting metal.

Rigidly secured to the respective sleeve elements 16 are the respective inwardly extending, depending cam elements 34, 34, said cam elements having the curved edges 35 which are cammingly engageable by the rear marginal portion of the plate member 32 responsive to elevation of said plate member to the position thereof shown in Figure 2. The position of Figure 2 is obtained by rotating the lever 30 from an initial

position wherein the handle 31 extends adjacent the handle 13 in a counterclockwise direction to the position of Figure 2, wherein the handle 31 extends substantially at right angles to the support element 12.

In using the device, the respective belt segments to be joined, shown at 36, 36, are gripped between the respective pairs of opposing jaw elements 21, 25, the plate member 32 being in the position of Figure 2, whereby the ends of the belt segments 36, 36 may abut the opposite surfaces of the plate member 32. As above explained, the position of Figure 2 is obtained by rotating the handle 31 counterclockwise to spread apart the respective sleeve elements 16, 16 because of the camming action of the plate member 32 against the respective cam elements 34, 34. With the belt segments gripped in the device in the manner shown in Figure 1, the plate member 33 is heated by any suitable source of heat, such as an alcohol lamp or the like, until the ends of the belt start to fuse. When the ends of the belt are in a softened, fusible condition, the source of heat is removed and the handle 31 is pulled rearwardly toward the handle 13, causing the plate member 32 to be lowered and releasing the respective sleeve elements 16, 16 for movement towards each other by the action of the springs 18, 18. This allows the ends of the belt segments 36, 36 to come together and to be fused in an accurately aligned relationship. As soon as the belt splicer has cooled the belt may be removed by rotating the handle elements 26 of the upper jaw members 25 counterclockwise, as viewed in Figure 4, to release the belt segments, whereby the belt may be removed from the splicing device.

While a specific embodiment of an improved plastic belt splicer has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. A plastic belt splicer comprising an elongated main support member, opposing transverse shaft elements secured to the forward end portion of said support member, respective transversely aligned, forwardly extending, upwardly concaved bottom jaws slidably secured to said shaft elements, respective downwardly facing concave jaw elements pivoted to the bottom jaws in opposition thereto, spring means urging said top jaw elements grippingly toward the bottom jaws, additional spring means urging the bottom jaws inwardly toward the vertical plane of said support member, an arm pivoted to said support member for rotation in said vertical plane, a heat-storing element secured to said arm, an upstanding vertical abutment plate on said arm above the heat-storing element, and respective, inwardly extending cam elements on the bottom jaws engageable by said abutment plate to cam the bottom jaws away from said vertical plane responsive to the elevation of said abutment plate between the cam elements.

2. A plastic belt splicer comprising an elongated main support member, a handle secured on the rear end of said support member, opposing transverse shaft elements secured to the forward end portion of said support member, respective transversely aligned, forwardly extending upwardly concave bottom jaws slidably secured to said shaft elements, respective downwardly facing concave top jaw elements pivoted to the bottom jaws in opposition thereto, spring means urging said top jaw elements grippingly toward the bottom jaws, additional spring means urging the bottom jaws inwardly toward the vertical plane of said support member, an arm pivoted to said support member for rotation in said vertical plane below the support member, a horizontal heat-storing element secured to said arm below said bottom jaws, an upstanding vertical abutment plate on said arm above the heat-storing element, and respective inwardly extending cam elements on the bottom jaws engageable by said abutment plate to cam the bottom jaws away from said vertical plane responsive to the elevation of said abutment plate between the cam elements.

3. A plastic belt splicer comprising an elongated main support member, a handle secured on the rear end of said support member, opposing transverse tubular shaft elements secured to the forward end portion of said support member, respective transversely aligned, forwardly extending concave bottom jaws slidably mounted on said shaft elements, respective pin elements secured to said bottom jaws and extending through said shaft elements, said shaft elements being formed with longitudinal slots receiving said pin elements, respective downwardly facing concave top jaw elements pivoted to the bottom jaws in opposition thereto, spring means urging said top jaw elements grippingly toward the bottom jaws, additional spring means in the shaft elements engaging said pin elements and urging the bottom jaws inwardly toward the vertical plane of said support member, an arm pivoted to said support member for rotation in said vertical plane below the support member, a horizontal heat-storing element secured to said arm below said bottom jaws, an upstanding vertical abutment plate on said arm above the heat-storing element, and respective inwardly extending cam elements on the bottom jaws engageable by said abutment plate to cam the bottom jaws away from said vertical plane responsive to the elevation of said abutment plate between the cam elements.

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