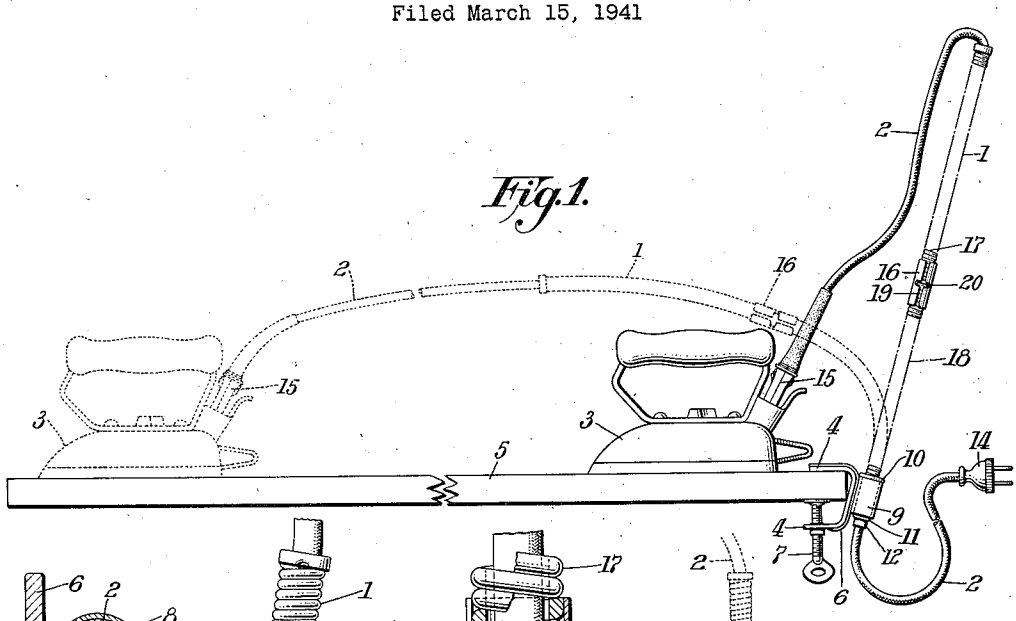
June 30, 1942. C. ROLL 2,288,108

ELECTRICAL CONDUCTOR SUPPORT

Filed March 15, 1941

Fig. 1.



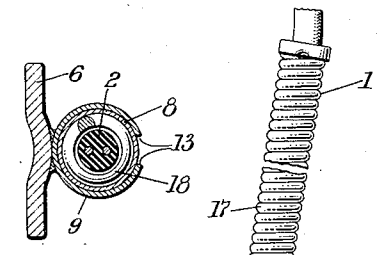




Fig. 8.




Fig. 2.

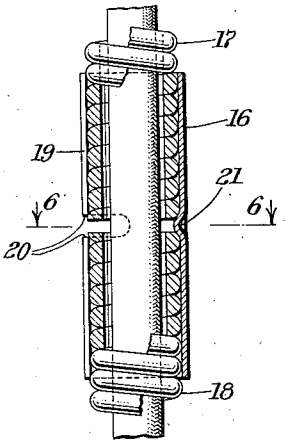



Fig. 5.

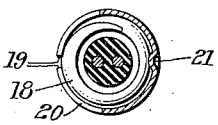



Fig. 6.

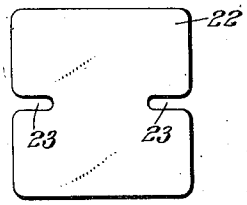



Fig. 7.

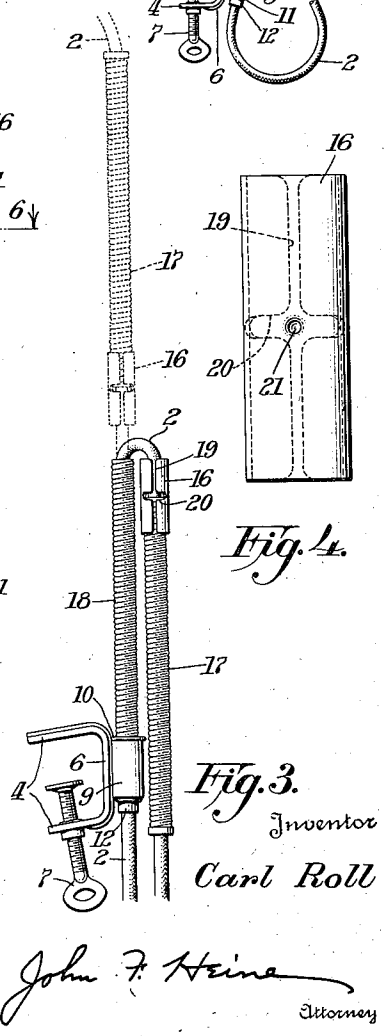



Fig. 3.




Fig. 4.

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2,288,108

# UNITED STATES PATENT OFFICE

2,288,108

## ELECTRICAL CONDUCTOR SUPPORT

Carl Roll, Union, N. J., assignor to The Singer Manufacturing Company, Elizabeth, N. J., a corporation of New Jersey

Application March 15, 1941, Serial No. 383,473

1 Claim. (Cl. 287—78)

This invention relates to electrical conductor supports and particularly to the type which provides a tubular staff carried by a fixed support having a flexible electrical conductor cord passing through and guided by the staff for connecting an electric iron or other portable electric device to an electric supply terminal.

More specifically, this invention is an improvement over the electrical conductor support shown and described in the patent to W. O. Langille, No. 2,214,696, dated September 10, 1940.

The prior art sleeve, exemplified by the coupling ferrule shown and described in the aforesaid patent, while satisfactory in many respects, requires a nicety of fit that imposes such tolerance limitation on the interfitting parts as to result in high production cost. Further, no provision has been made in the prior art device for compensating the natural wear of the inter-engaging parts, nor is the device adaptable to connect elements having any considerable difference in diameter.

It is an object of this invention to provide a connecting sleeve for an electrical conductor cord support, which is an improvement over the prior art in that it provides resilient clamping means for joining separable sections thereby obviating the need for close tolerances to maintain a firm fit.

Another object of this invention is to provide an improved connecting sleeve for a conductor cord support, in which the normal wear of the parts is taken up by the natural resilient action of the sleeve itself.

A further object of this invention is to provide a connecting sleeve of the type disclosed in which the frictional grip exerted by one end thereof is, to a sufficient degree, independent of the frictional grip of the other end, whereby axially separable sections differing considerably in diameter may be detachably coupled together.

It is another object of this invention to provide an improved resilient sleeve member which is simple, inexpensive and rugged, and affords a quick, convenient and positive means for detachably joining the separable sections of a collapsible conductor support for an electric flatiron.

With the above and other objects in view, as will hereinafter appear, the invention comprises the arrangement of parts hereinafter set forth and illustrated in the accompanying drawing of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

The several features of the present invention will be clearly understood from the following detailed description and accompanying drawing in which—

Fig. 1 is a side elevation of an ironing board with my improved conductor-support secured thereto, the support being shown in one position in full lines and parts of the support being shown in a different position by dotted lines.

Fig. 2 is an enlarged broken side elevation of the conductor support having its sections coupled together by an external sleeve embodying the invention.

Fig. 3 is a side elevation showing, in full lines, the conductor support collapsed to place the separable sections thereof side by side, and, in dotted lines, the conductor support in coupled position.

Fig. 4 is an enlarged elevation of the improved sleeve member.

Fig. 5 is an enlarged vertical elevation, partly in section, showing the conductor-support elements coupled by the external sleeve.

Fig. 6 is a transverse section on the line 6—6 of Fig. 5.

Fig. 7 is a plan view showing the blank from which the sleeve is formed.

Fig. 8 is a transverse section on the line 8—8 of Fig. 2.

In the embodiment illustrated, my improved conductor support comprises a resilient tubular upright staff 1, which guards, guides and keeps taut a flexible electrical conductor cord 2, carried within said staff, for connecting an electric iron 3 or other portable eletric appliance to an electric supply terminal.

The staff 1 is carried, at its lower end, by a bracket 6 which may be secured to an ironing board 5, or other support, said staff being normally upright but resiliently deflectible at its upper end whereby to maintain the conductor cord 2 taut by taking up slack therein as the electric iron 3 is moved back and forth upon the ironing board 5.

The bracket 6 is formed with jaws 4 which cooperate with the clamping screw 7 to fasten said bracket in place on the ironing board. The staff 1 has its lower end fastened to the bracket 6 by being capped by a metal thimble 8 which fits within a tubular socket 9, spot-welded to the inclined side of the bracket 6. The thimble 8 has its upper edge 10 bent outwardly to engage the upper edge of the socket 9 and its lower edge 11

bent inwardly to receive an insulated wearing bushing 12.

By retracting the thimble 8 from the socket 9 and slipping the conductor cord 2 through an axial slot 13 in the wall of the socket 9, as shown best in Fig. 8, the staff 1 may be entirely detached and removed from the bracket 6.

The electrical conductor cord 2 is provided with a detachable terminal connector 14 for connecting to an electrical supply terminal such as a wall outlet and with a detachable connector 15 for attaching to the electric iron 3 or other electrical appliance.

The staff 1 is jointed at the middle by a detachable coupling sleeve 16 to make it separable into an upper longitudinal section 17 and a similar lower longitudinal section 18. Each of these sections comprises a tubular helical spring wire sheath having lateral resiliency whereby said staff will bend to yield additional conductor cord 2 when and in the direction needed and, at the same time, exert sufficient restoring force to take all slack out of the cord and prevent kinking thereof.

The detachable coupling sleeve 16 is formed from spring sheet-metal and comprises a cylindrical tube having a longitudinal slit 19 along one side and a circumferential transverse slot 20 intersecting said slit at a point midway between the ends of the tube. This construction provides springy tubular sections or resilient lips on both sides of the transverse slot whereby each section may yield independently of the other to grip the separable sections 17 and 18 in frictional engagement whereby to join them into the integral staff-like structure 1. The internal upsprung diameter of the coupling sleeve 16 is less than the external diameter of the separable sections 17 and 18 to insure that the sleeve yields and is tensioned inwardly against the separable sections when the parts are fitted together.

The springy sections yield radially of the sleeve to provide diametrical resilience, but the sleeve is stiff enough to afford a rigid joint to hold the separable sections joined as a single integral resilient staff.

A centering dimple 21, pressed radially inwardly into the wall of the sleeve 16 at a point diametrically opposite the transverse intersecting slot 20, serves as a stop to limit the depth to which the separable sections 17 and 18, may be inserted within the sleeve 16, as is best shown in Figs. 5 and 6.

The sleeve blank 22, Fig. 7, is punched from flat sheet metal stock and contains the notches 23 which, when the blank is formed, become the single transverse slot 20. The dimple 21 is pressed in during the forming operation.

It is to be understood that the resilient lips formed by the longitudinal slit and the transverse slot provide flexible gripping elements for the sleeve 16 which yield radially independently of one another to adapt said sleeve to receive, in frictional socket-engagement, pairs of separable elements 17 and 18, the diameters of which vary both absolutely and relatively.

This radial resiliency has a further economy in taking up much of the natural diametrical wear of the engaging parts, thereby extending the useful life of the device and insuring a better fit over a longer time.

A convenience feature is also provided by this sleeve construction due to the fact that the longitudinal slit affords a view of the interior of the sleeve whereby it may be readily and definitely ascertained when the separable sections have been fitted therein to their full allowable depth to thereby utilize the entire supporting power of the sleeve at all times.

It is evident, of course, that the connecting sleeve requires no fastening means, and is interchangeable end for end, which facilitates the initial assembly and general use of the conductor supporting device.

When the staff is disjointed, as shown in Fig. 3, by detaching the coupling sleeve 16 from either section 17 or 18, the elements of the conductor support remain strung upon the conductor cord thus keeping said support intact and the elements thereof in proper relative position for quick and easy coupling when its service is again required. In the position shown in Fig. 3, the staff sections folded side by side afford a natural support for winding on the unsheathed portion of the conducting cord, thus providing a compact bundle for storage or transportation.

The sleeve construction herein illustrated and described is particularly desirable from a production standpoint in that no so-called machine finishing is required and, as there are no turned parts, the device may be substantially entirely manufactured on a punch press.

The invention which is described herein may be embodied in various ways which will be within the scope thereof as defined by the appended claim.

Having thus set forth the nature of the invention what I claim herein is:

In an electrical conductor support having a resiliently deflectible staff member composed of generally cylindrical separable sections formed from helical-wound wire, means to connect said sections comprising a tubular connecting sleeve formed with a longitudinal dividing slit and a transverse slot intersecting said slit to provide at the ends of said sleeve independently-yielding cylindrical terminal portions having lengths greater than and unsprung internal diameters less than the external diameters of said separable sections.

CARL ROLL.