

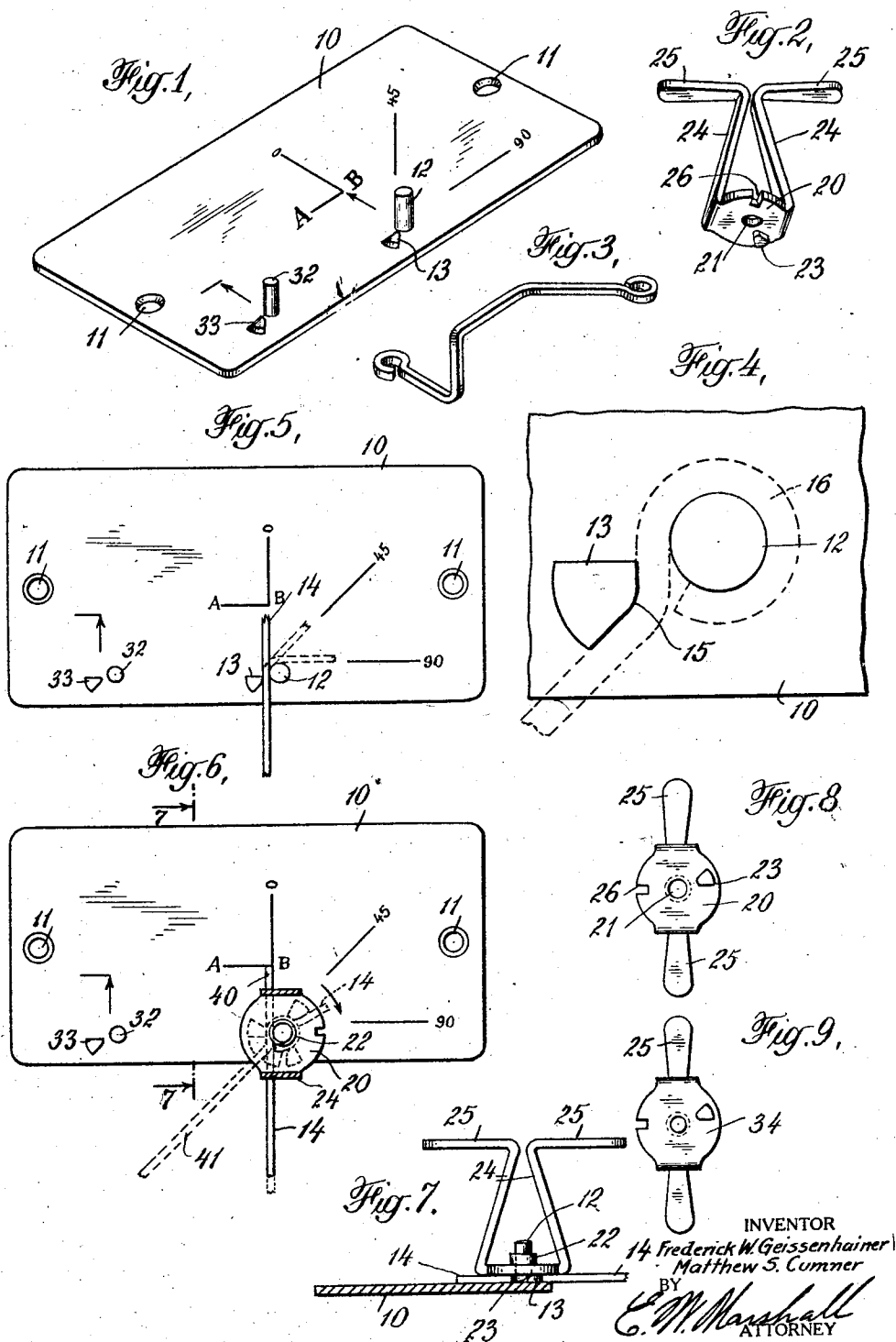
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BUS BAR BENDER

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UNITED STATES PATENT OFFICE.

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BUS-BAR BENDER.

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This invention relates to devices for bending metal and particularly to devices for bending bus bars or similar structures.

As is well known, most wireless apparatus utilizes bus bars or wire that is rectangular in cross section and the device hereinafter described was developed particularly for the purpose of providing a simple means for forming eyes or bends of any desired shape in wires or bus bars of the character described.

The invention, therefore, has for its salient object to provide simple and practical means for bending bus bars into the desired shape.

Another object of the invention is to provide a device of the character described that can be economically manufactured and that will be compact in construction and thus take up a minimum amount of space.

Further objects of the invention will appear from the following specification taken in connection with the drawings, which form a part of this application, and in which—

Fig. 1 is a perspective view of the plate on which the bus bars or wires are bent.

Fig. 2 is a perspective view showing a device used in conjunction with the plate for bending the bus bars.

Fig. 3 is a perspective view of a bus bar having bends of various forms therein.

Fig. 4 is an enlarged top plan view of the plate showing a bus bar having formed therein an eye.

Fig. 5 is a top plan view of the plate shown in Fig. 1 illustrating different forms of bends that can be placed in the wire.

Fig. 6 is a top plan view showing the plate and the bending device illustrating the method of using the device, the bending device being shown in section.

Fig. 7 is a sectional elevation taken substantially on line 7—7 of Fig. 6.

Fig. 8 is a bottom plan view of a bending device, and

Fig. 9 is a bottom plan view of another bending device adapted for use in forming a different size of eye in the wire or bus bar.

The invention briefly described consists of a plate on which a wire or bus bar to be bent is placed and a bending device adapted for use with the plate to engage and bend the wire. The plate has a pin projecting upwardly therefrom and a lug spaced from the pin a distance sufficient to permit the plac-

ing of the wire or bus bar between the pin and the lug. The bending device has an opening therein or a sleeve adapted to fit over the pin and a lug adapted to engage one edge of the bus bar and swing the bus bar around the pin of the plate thus forming a bend of any desired shape therein. The bending device has handles thereon to facilitate the rotation of this device. In the particular form of the invention illustrated, the plate has a pair of pins and lugs thereon adapted for use in forming different sizes of eyes in the bus bar and different bending devices are used with these two different sets of plate elements. Further details of the invention will appear from the following description.

Referring particularly to Fig. 1, there is shown a plate 10 having perforations 11 therein adapted to receive screws for securing the plate to a supporting member. The plate 10 has a pin 12 secured thereto and projecting upwardly therefrom and has a lug 13 formed thereon and spaced from the pin 12 a distance sufficient to permit the insertion of a bus bar 14 between the pin and the lug (see Fig. 5).

The lug 13 is preferably formed by punching upwardly the metal of the plate and this lug as shown in Fig. 4 has a curved edge adapted to give the desired contour to the bus bar when the bus bar is bent around to form an eye 16 therein.

The bus bar 14 is first placed on the plate between the pin 12 and the lug 13 and if an eye is to be formed therein, the end of the bus bar on the plate is so placed as to register with the line A—B. This length of bus bar will be sufficient to form an eye such as that shown in Fig. 4. If a 45 degree bend is to be formed in the bus bar, the bending device hereinafter described will be rotated until the bent end of the bus bar coincides with the 45 degree line on the plate. In the same way, the end of the bus bar will be rotated to coincide with a 90 degree line if a 90 degree bend is to be placed therein.

The bending device is shown particularly in Fig. 2. This device has a base 20 provided with a central aperture 21 from which there extends upwardly a sleeve 22. The aperture 21 and sleeve 22 are so dimensioned as to fit over the pin 12. The base 20 also has formed thereon a depending lug 23

spaced from the aperture 21 as shown in Figs. 2, 8 and 9.

The bending device has upwardly extending portions 24 on the upper ends of which are formed laterally extending handles or ears 25. The base 20 may also have formed therein a notch 26 which may be used to receive the bus bar and place a twist therein, if desired.

The pin 12 and lug 13 on the plate and the bending device shown in Figs. 2 and 8 can be used to form one size of eye in the bus bar, the size of the eye being determined by the diameter of the pin 12. There is also shown on the plate a pin 32 and lug 33 for forming a different size of eye and Fig. 9 illustrates at 34 a bending device adapted for use in conjunction with the pin 32 and lug 33. It will be understood that other sizes of pins and bending devices may be provided also, if desired.

The method of using the device to form an eye in a bus bar or wire is illustrated particularly in Fig. 6. The bus bar 14 is first placed in the position on the plate shown in full lines with its inner end 40 registering with the line A—B. The bending device is then placed on the pin 12 with the lug 23 on the base 20 of the bending device disposed to the left of the bus bar and as shown in Fig. 6, abutting the lug 13 on the plate. The bending device is then rotated in a clockwise direction as far as possible and thus forms the eye 16 in the bus bar and bends the bus bar to the position shown at 41 in dotted lines in which the bar is disposed radially with respect to the center of the eye 16.

From the foregoing description it will be seen that a simple, practical and inexpensive device has been provided for forming eyes or bends of any desired shape in metallic elements such as wire, bus bars and so forth.

Although one specific embodiment of the invention has been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claims.

What we claim is:

1. In a bending device, a base plate, a round pin projecting upwardly therefrom, a lug on said plate spaced from said pin a distance substantially equal to the width of the material to be bent and a tool provided with a flat portion having an opening for receiving said pin and having a lug depending therefrom and similarly spaced from said opening and engageable with the element to be bent.

2. In a bending device, a base plate, a round pin projecting upwardly therefrom, a lug on said plate spaced from said pin a distance substantially equal to the width of the material to be bent, a tool having a substantially flat base provided with an opening for receiving the pin of the plate and having a lug projecting downwardly therefrom and similarly spaced from said opening for engaging the element to be bent.

3. In a bending device, a base plate, a round pin projecting upwardly therefrom, a lug on said plate spaced from said pin a distance substantially equal to the width of the material to be bent, a tool having a substantially flat base provided with an opening for receiving the pin of the plate and having a lug projecting downwardly therefrom and similarly spaced from said opening for engaging the element to be bent, said tool having portions extending upwardly from the base and laterally extending handles formed thereon.

4. In a bending device, a base plate, a round pin projecting upwardly therefrom, a lug on said plate spaced from said pin a distance substantially equal to the width of the material to be bent and a tool having a flat portion provided with an opening for receiving said pin and having a lug similarly spaced from said opening and engageable with the element to be bent, said plate having a mark thereon to indicate the position of the inner end of the element to be bent when an eye is to be formed in said element.

5. In a bending device, a base plate, a round pin projecting upwardly therefrom, a lug on said plate spaced from said pin a distance substantially equal to the width of the material to be bent and a tool having a flat portion provided with an opening for receiving said pin and having a lug similarly spaced from said opening and engageable with the element to be bent, said plate having marks radially disposed about said pin to indicate the positions to be taken by the element in which bends are to be made when said element is bent to predetermined angles.

6. In a bending device, a base plate, a round pin projecting upwardly therefrom, a lug on the plate spaced from said pin, a tool having a flat base, a sleeve formed from the metal of said base and a lug projecting from the opposite side of said base and adapted to engage and bend the element to be bent.

In witness whereof, I have hereunto set my hand this 29th day of February, 1924.

FREDERICK W. GEISSENHAINER.

In witness whereof, I have hereunto set my hand this 29th day of February, 1924.

MATTHEW S. CUMNER.