G. W. WELCH.

SUPPORT AND GUARD FOR TELEPHONE WIRES.

APPLICATION FILED SEPT. 14, 1915.

1,181,708.

Patented May 2, 1916.

2 SHEETS—SHEET 1.

Fig. 1

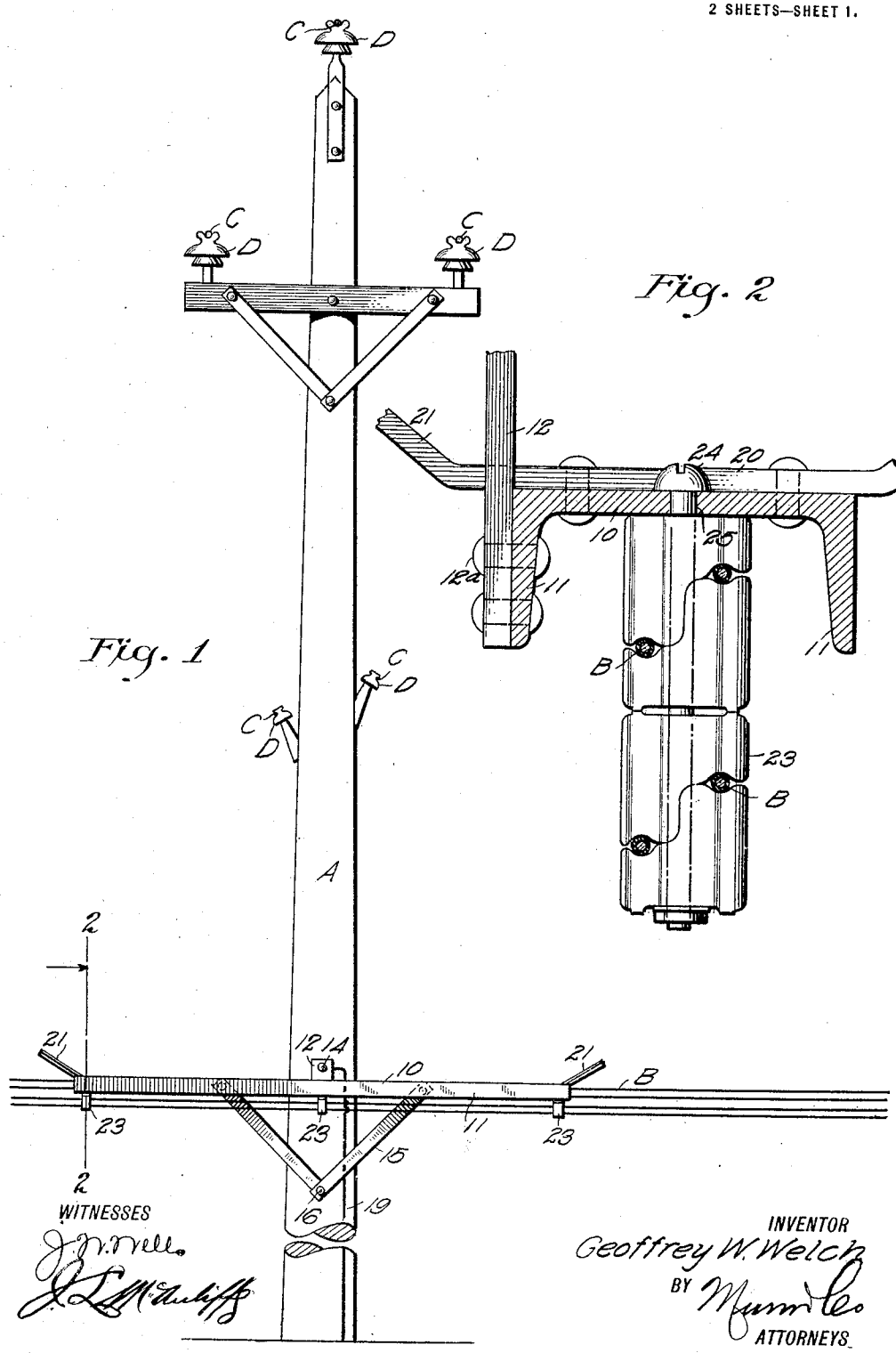



Fig. 2




WITNESSES

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Fig. 3

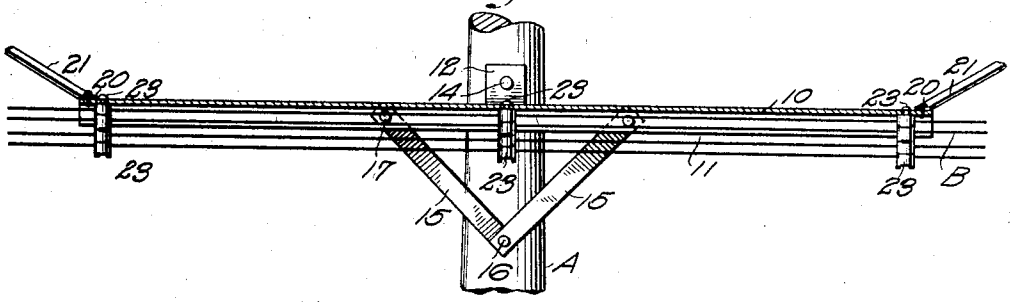



Fig. 4

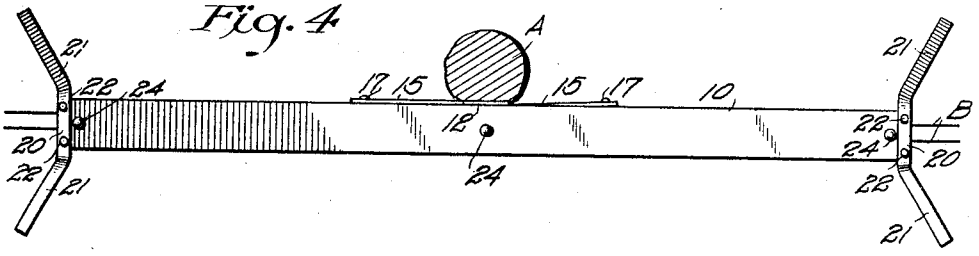



Fig. 5

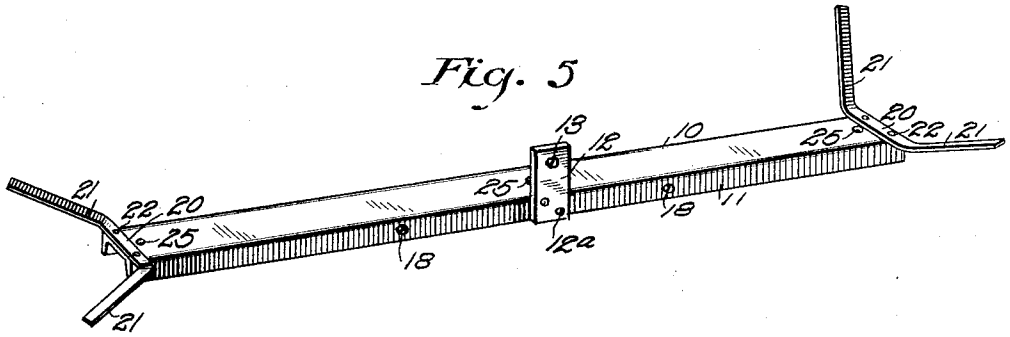
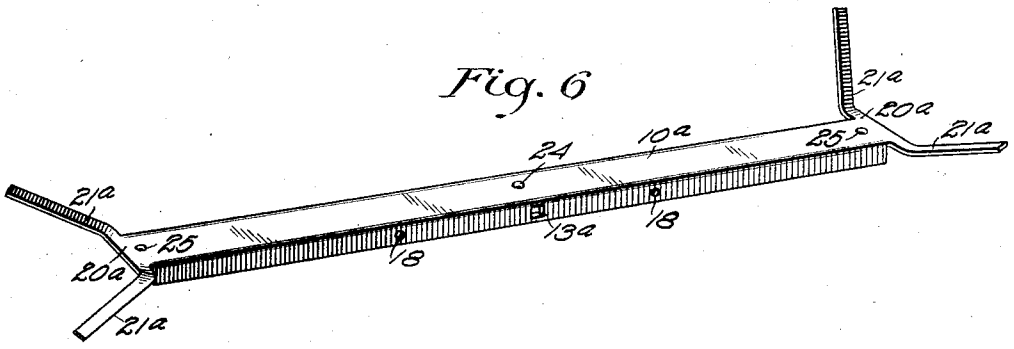



Fig. 6




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# UNITED STATES PATENT OFFICE.

GEOFFREY WHEATON WELCH, OF DECORAH, IOWA.

## SUPPORT AND GUARD FOR TELEPHONE-WIRES.

1,181,708. Specification of Letters Patent. Patented May 2, 1916.

Application filed September 14, 1915. Serial No. 50,577.

*To all whom it may concern:*

Be it known that I, GEOFFREY W. WELCH, a citizen of the United States, and a resident of Decorah, in the county of Winneshiek and State of Iowa, have invented a new and Improved Support and Guard for Telephone-Wires, of which the following is a full, clear, and exact description.

My invention relates to a means for the support and protection of telephone wires crossing under high voltage electric transmission lines, the purpose being to prevent the broken high voltage wires from making contact with the telephone wires.

In carrying out my invention, use is made of a metallic bar or structural shape presenting a depression or channel disposed at the underside of the bar when the device is in position on a pole or the like. Provision is made for securing and insulating telephone wires at the underside of the bar, and at the ends of the bar, elements are provided to engage a fallen wire, whereby to prevent endwise slipping of the fallen wire from the said bar in a manner to have contact with the telephone wires beyond the ends of the bar. In connection with the channel bar or equivalent element, means is provided also for attaching a ground or earthing wire and provisions made for the fastening of the channel bar onto a pole or the like and properly bracing the same.

The invention will be more particularly explained in the specific description following.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a side elevation of my improved support and guard for telephone wires showing the same applied to a pole of known form, equipped with means to support high voltage electric transmission lines above the telephone wires; Fig. 2 is an enlarged cross section on the line 2—2 of Fig. 1; Fig. 3 is a longitudinal vertical section of my improved support and guard showing the same in position on a pole; Fig. 4 is a plan view; Fig. 5 is a perspective view of the support and guard; and Fig. 6 is a view similar to Fig. 5 but illustrating a slightly different form.

In carrying out my invention in accordance with the illustrated example, a channel bar 10 is provided, having means whereby to secure it in position on a pole A so that the channel or depression of the bar will be at the underside, thereby presenting the flanges 11 of the bar, at each side of telephone wires B and with the top of the bar 10 above and covering the said wires B. The bar 10 thus constitutes an effective guard and protector for the telephone wires from contact with high tension wires C here indicated as supported on the pole A above the telephone wires B, by known forms of insulators D. In Figs. 1 to 5 I have shown bar 10 as provided with a bracket plate 12, secured thereto by rivets $12^a$, and provided with a bolt-hole 13, for receiving a securing bolt 14. In lieu of the bracket 12, a square bolt-hole, $13^a$, may be provided in a side flange of the channel bar as illustrated in the modification Fig. 6. In addition braces 15 may be provided, secured at their lower meeting ends by a bolt 16, to the pole A, the upper divergent ends of the braces being fastened by bolts or the like 17, to a flange of the channel bar, there being provided bolt-holes 18 in the channel bar for the purpose. The bolt 14 may serve for the connection of one end of a ground wire 19 indicated in Fig. 1.

The length of the bar 10 is such as to receive any broken wire C dropping from any of the insulators D so that direct downward contact of the broken wire with the telephone wires B will be guarded against. In order to prevent a wire from slipping endwise from the bar 10 and contacting with the telephone wires beyond the said bar, elements 21 are provided at the ends of the bar 10. In the construction shown in Figs. 1 to 5, these elements 21 are in the form of diverging horns constituting the ends of cross bars or plates 20, which are separately secured as by bolts or rivets 22 to the top member of the bar 10. In the form shown in Fig. 6, the element, $20^a$, carrying the horns $21^a$, is integral with the channel bar $10^a$. The elements 21 or $21^a$ extend in opposite directions at the side of the bar 10 and preferably are disposed slightly in an outward direction as well.

It will be readily understood that any approved means for insulating the telephone wires from the bar $10^a$ and suspending the same, may be employed. I have illustrated a known form of sectional insulators at 23, held by depending bolts 24 to receive which,

suitable bolt-holes 25 are formed in the top member of the channel bar 10.

It will be clear from the foregoing that the improved guard will effectively protect the telephone wires from physical or electrical contact with the high tension wires above if any of the latter break, and indeed, practical tests have demonstrated the effectiveness of the invention. The construction is light and easily installed and does not impose undue strains upon the structure or pole; it is simple and inexpensive to construct, requires no special tools or fittings, and can be made from standard structural shapes. The improved guard does not interfere in any way with the operation of the protected telephone wires and its open underside allows free inspection at all times and facilitates the installation or changing of the telephone wires. Usually no cutting of the telephone wires is necessary to install them in the guard. The depending flanges of the channel bar serve to conduct moisture away from the telephone wires and their insulating supports 23, and serve as additional protection against the broken high voltage wires being swung by the wind into contact with the telephone wires. Also, the construction interposes a strong grounded metallic shield between the protected telephone wires and the high voltage wires which greatly reduces the cost of installing "protection" at a given point, and reduces the loading of the supporting pole. The protection is not affected by accumulations of sleet, ice or snow, and it is found that such accumulations do not overload the supports.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A support and guard for telephone wires, including a channeled element, means to secure the same to a support with the channel at the underside and its side flanges depending, and means depending from the top of the said element between side flanges to afford insulated support to telephone wires within the planes of the side flanges.

2. A support and guard for telephone wires, including a channeled element, means to secure the same to a support with the channel at the underside and its side flanges depending, and means depending from the top of the said element between side flanges to afford insulated support to telephone wires within the planes of the side flanges, there being guard elements at the ends of the side element and projecting outwardly therefrom at opposite sides.

3. A support and guard for telephone wires, including an elongated inverted channel-element having means whereby to secure the same to a support, and depending means to suspend telephone wires from the top member of the said element between the depending flanges thereof.

4. A support and guard for telephone wires, including an elongated channel-element presenting its channel and side flanges at the underside, means whereby to secure said element to a support, and depending wire-supporting insulators on said element disposed in the channel thereof.

5. A support and guard for telephone wires, including an elongated channel-element presenting its channel and side flanges at the underside, means whereby to secure said element to a support, said means affording connection for a ground wire, and depending wire-supporting insulators on said element and disposed in the channel thereof.

6. A support and guard for telephone wires, including a channel-element, means whereby to secure the same to a support with its channel and side flanges at the underside, and means in said channel to suspend telephone wires, there being guard members on said channel-element at the ends and rising therefrom to prevent a broken wire if falling on said element, from slipping endwise therefrom.

7. A support and guard for telephone wires, including a channel-element, means whereby to secure the same to a support with its channel and side flanges at the underside, and means in said channel to suspend telephone wires, there being guard members on said channel-element at the ends and rising therefrom to prevent a broken wire if falling on said element, from slipping endwise therefrom, the said end members being disposed at opposite sides of the channel element.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEOFFREY WHEATON WELCH.

Witnesses:
A. M. SHERRY,
W. M. EDMUNDS.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**