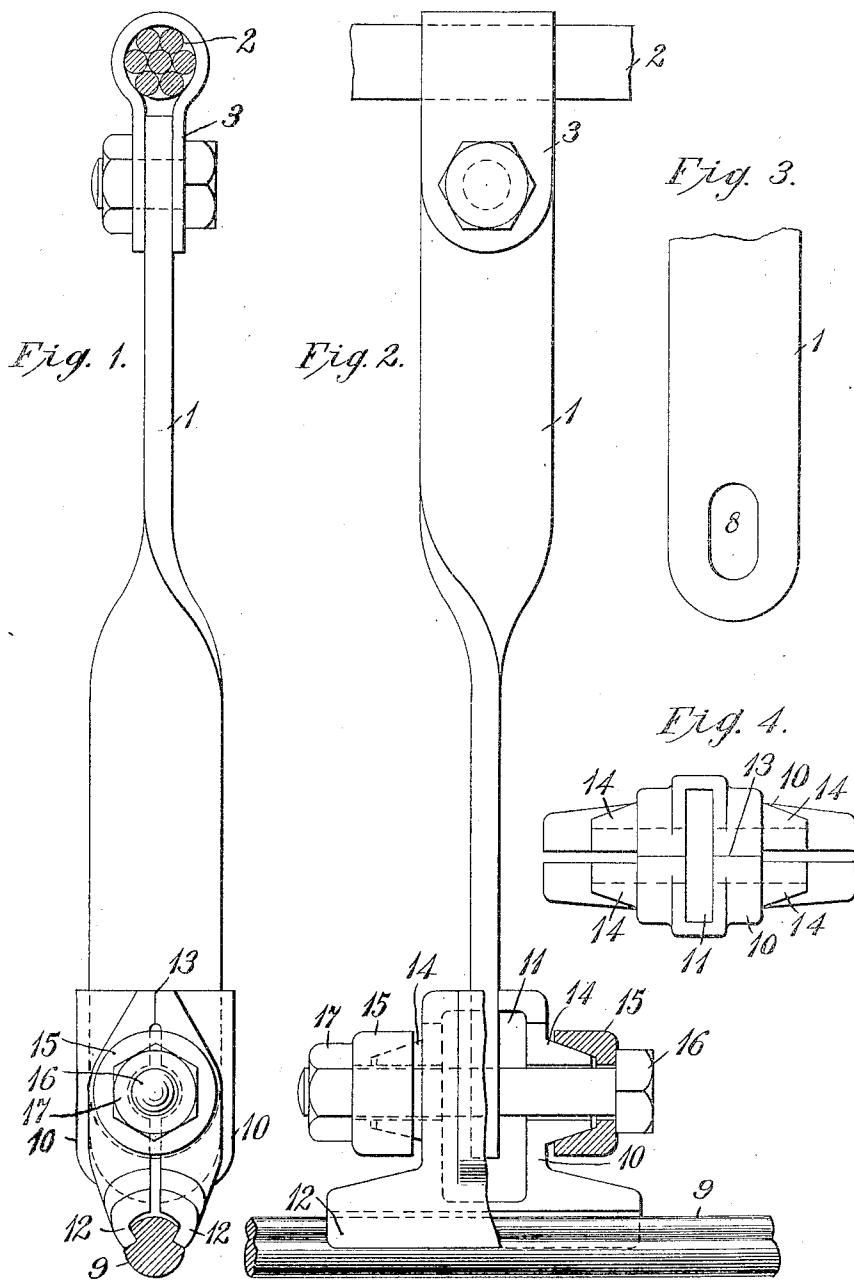


W. SCHAAKE.
HANGER FOR ELECTRICAL CONDUCTORS.
APPLICATION FILED JULY 28, 1909.

958,834.

Patented May 24, 1910.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 5.

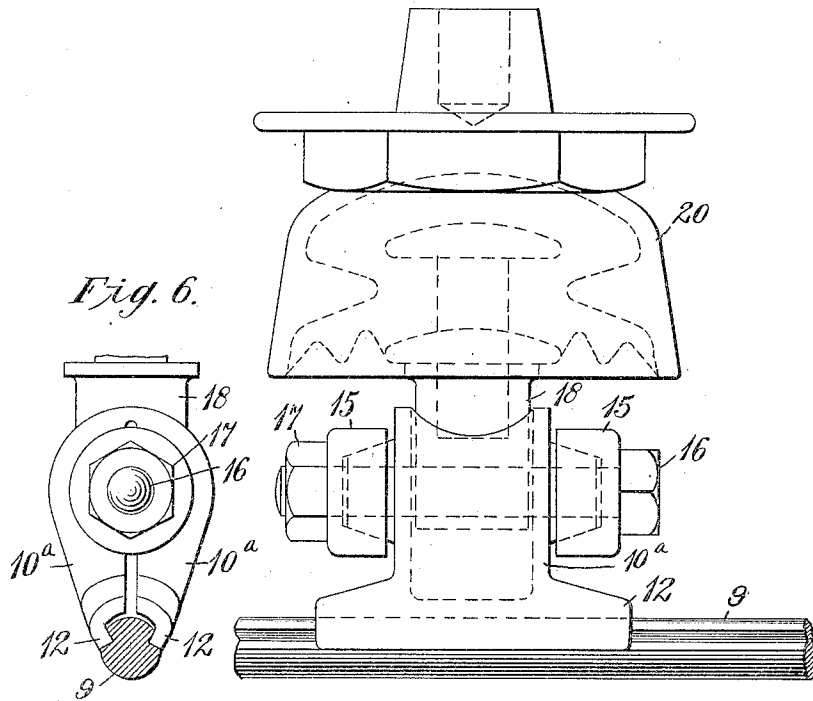


Fig. 6.

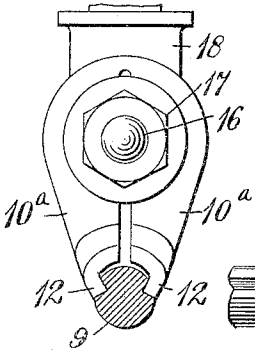


Fig. 7.

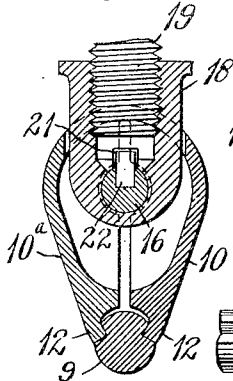
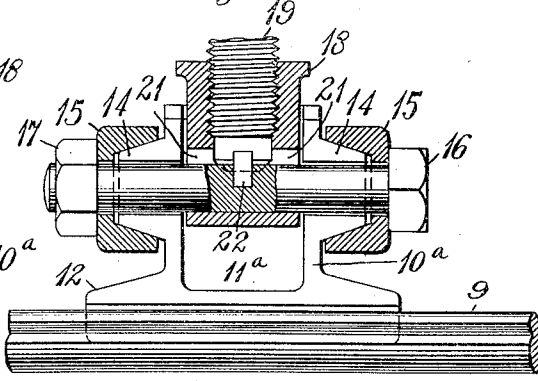


Fig. 8.



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HANGER FOR ELECTRICAL CONDUCTORS.

958,834.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed July 23, 1909. Serial No. 510,001.

To all whom it may concern:

Be it known that I, WILLIAM SCHAAKE, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Hangers for Electrical Conductors, of which the following is a specification.

My invention relates to hangers for electrical conductors and particularly to hanger clamps for gripping the suspended conductor.

The object of my invention is to provide a simple, compact and serviceable hanger, the parts of which may be cheaply manufactured and readily assembled.

In the accompanying drawing, Figure 1 is an end elevation of a hanger embodying my invention, the messenger cable and trolley conductor being shown in section. Fig. 2 is a view, partially in side elevation and partially in section, of the parts shown in Fig. 1. Fig. 3 is a side elevation of a portion of the lower end of a hanger rod or bar and Fig. 4 is a plan view of the complementary gripping members shown in Figs. 1 and 2. Fig. 5 is a side elevation of a modified form of hanger which is adapted for use in mines, tunnels, etc. Fig. 6 is an end elevation of the clamp shown in Fig. 5, and Figs. 7 and 8 are vertical sections, at right angles to each other, of the clamp shown in Figs. 5 and 6.

In the design of apparatus for use in suspending trolley conductors for railway service, it is desirable to employ a structure which may be cheaply manufactured and readily assembled, and which shall securely support the trolley conductor in proper relation to the other parts of the system without danger of accidental release or disarrangement.

The structure which I have devised and which is illustrated in the accompanying drawing, is specially advantageous by reason of its full compliance with all of the above specified conditions.

Referring first to Figs. 1 to 4 of the drawings, the upper end of the hanger rod 1, which may be of any desired form in cross-section and of suitable dimensions, is attached to a messenger cable 2 by means of a

clamp 3 in accordance with well understood practice. The lower end of the rod 1 is provided with a hole 8, which, as indicated in Fig. 3, is of oblong shape, for a purpose to be hereinafter specifically described, but which may be of circular form if desired. The clamp for fastening the trolley wire 9 to the hanger rod 1 comprises two complementary gripping members 10 formed as castings and having complementary recesses which together constitute a central chamber 11. The lower end of each member 10 is in the form of a gripping jaw 12 of such form as to engage a corresponding groove in the trolley conductor 9 though it obviously could be made of such form as to grip a trolley conductor of circular form in cross-section, if desired. The upper portion of each member 10 projects inwardly slightly beyond the inner face of the other portions of the member to form a fulcrum engagement of the members at the points 13, and each member has a pair of oppositely projecting semi-tubular bosses 14 the outer faces of which are of frusto-conical form, and fitted upon these complementary bosses are caps 15 the interior surfaces of which are of frusto-conical form. The lower end of the rod 1 projects into the chamber 11 through the openings in the tops of the members 10 and a bolt 16 projects through the caps 15, the hollow bosses 14 and the hole 8 in the rod 1 and is provided with a nut 17 at the end opposite its head.

It will be readily understood that, when the parts are assembled, as indicated in Figs. 1 and 2, the jaws 12 may be caused to firmly and securely grip the trolley conductor 9 by turning the nut 17 upon the bolt 16 in the proper direction. Since the caps 15 will thus be forced toward each other upon the bosses 14, and, by reason of the frusto-conical surfaces of the said parts, the gripping members will be drawn toward each other, the engagement at the points 13 serving as a fulcrum around which the gripping members will turn sufficiently to insure the proper gripping action.

The configuration and arrangement of the parts of the clamp are such as to insure the desired gripping action without any tendency to breaking or unduly straining any

of the parts, and, what is extremely advantageous from a manufacturing standpoint, all of the parts, except the bolt, may be castings which require no machine work, and therefore, the device may be cheaply manufactured as well as expeditiously assembled for service. A further advantage in the structure shown and described resides in the fact that the bolt which is utilized for clamping the gripping members together is also utilized for attaching the trolley conductor to the hanger rod.

In case provision for material vertical movement of the trolley conductor with reference to the messenger cable is not desired, the hole 8 in the bar may be made of circular form and only slightly larger in diameter than the bolt 16.

Referring now particularly to Figs. 5 to 8 of the drawings, which illustrate a modification intended for use in mines, tunnels, etc., the principal elements of the structure are, in all essential particulars, like the corresponding elements shown in the preceding figures and are given the same reference characters. Reference may therefore be had to the preceding portions of the specification for a description of such parts. In the modification illustrated in the figures of the drawings just referred to, the clamp members 10^a are so formed as to provide an approximately circular top opening into which projects a cup-shaped member 18 provided with an internal screw-thread to receive the screw threaded portion 19 of a hanger bolt which is mounted in a suitable insulator 20 of the skirt type, the said insulator being attached by suitable means to an overhead supporting structure, (not shown). The lower end of the cup-shaped member 18 is provided with a transverse hole to receive the clamping bolt 16, and its sides are provided with channels 21 to permit of the passage of a pin 22 which is inserted in a suitable recess in one side of the bolt 16 in order to prevent rotation of the bolt, as the nut 17 is turned to force the jaws of the clamp members into engagement with the trolley conductor 9. It will be noted that the structure just described is, in nearly all essential particulars, like that shown in Figs. 1 to 4, it being merely modified, as regards the form and dimensions of the hanger rod and the parts directly cooperating therewith, in order to adapt the structure to the different relations in which it is employed.

Minor variations in the form and ar-

range ment of the parts are to be understood as within the scope of my invention.

I claim as my invention:

1. A clamp comprising two complementary gripping members having outwardly projecting complementary bosses provided with inclined surfaces, caps for said bosses and a bolt for drawing said caps toward each other.

2. A clamp comprising two complementary gripping members having oppositely projecting bosses of frusto-conical shape, caps having frusto-conical interior surfaces, and a bolt for drawing said caps toward each other upon said bosses.

3. A trolley wire hanger comprising a hanger rod or bar having a hole in its lower end, a pair of complementary gripping members forming a chamber into which the said end of the hanger rod or bar projects and provided with laterally projecting frusto-conical bosses, caps fitting over said bosses and a bolt projecting through said caps and bosses and the hole in said hanger rod or bar.

4. In a trolley conductor hanger, the combination with a hanger bar or rod provided with an aperture in its lower end, of a pair of complementary gripping members having engaging upper ends and forming a chamber into which the apertured end of said rod or bar projects and provided with laterally projecting frusto-conical bosses, caps having frusto-conical interior surfaces to engage said bosses, and a bolt projecting through the caps and bosses and the aperture in said hanger bar or rod for drawing the caps toward each other and clamping the gripping members against the trolley conductor.

5. The combination with a hanger rod or bar provided with an aperture in its lower end, of a pair of complementary gripping members spaced apart except at their upper ends and provided with laterally projecting bosses having inclined surfaces, a pair of caps having inclined inner surfaces to fit the surfaces of said bosses, and a bolt projecting through the caps, the bosses and the aperture in the lower end of the hanger rod or bar for drawing said members into gripping engagement with the trolley conductor.

In testimony whereof, I have hereunto subscribed my name this 22nd day of July, 1909.

WILLIAM SCHAAKE.

Witnesses:

THEODORE VARNEY,
B. B. HINES.