

No. 662,595.

Patented Nov. 27, 1900.

J. W. HAYNES.  
TROLLEY WIRE SUSPENSION.

(Application filed Mar. 10, 1900.)

(No Model.)

Fig. 1.

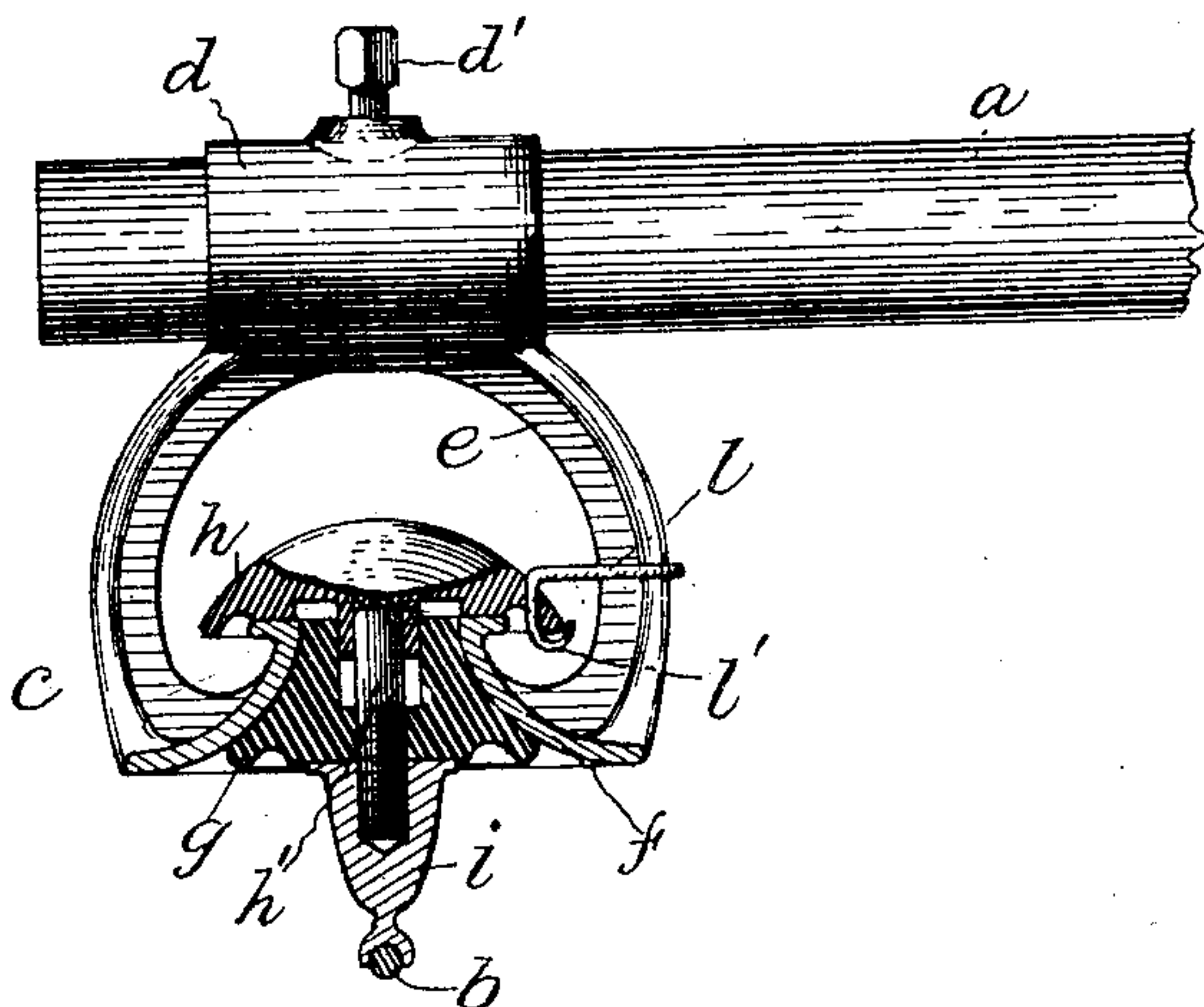
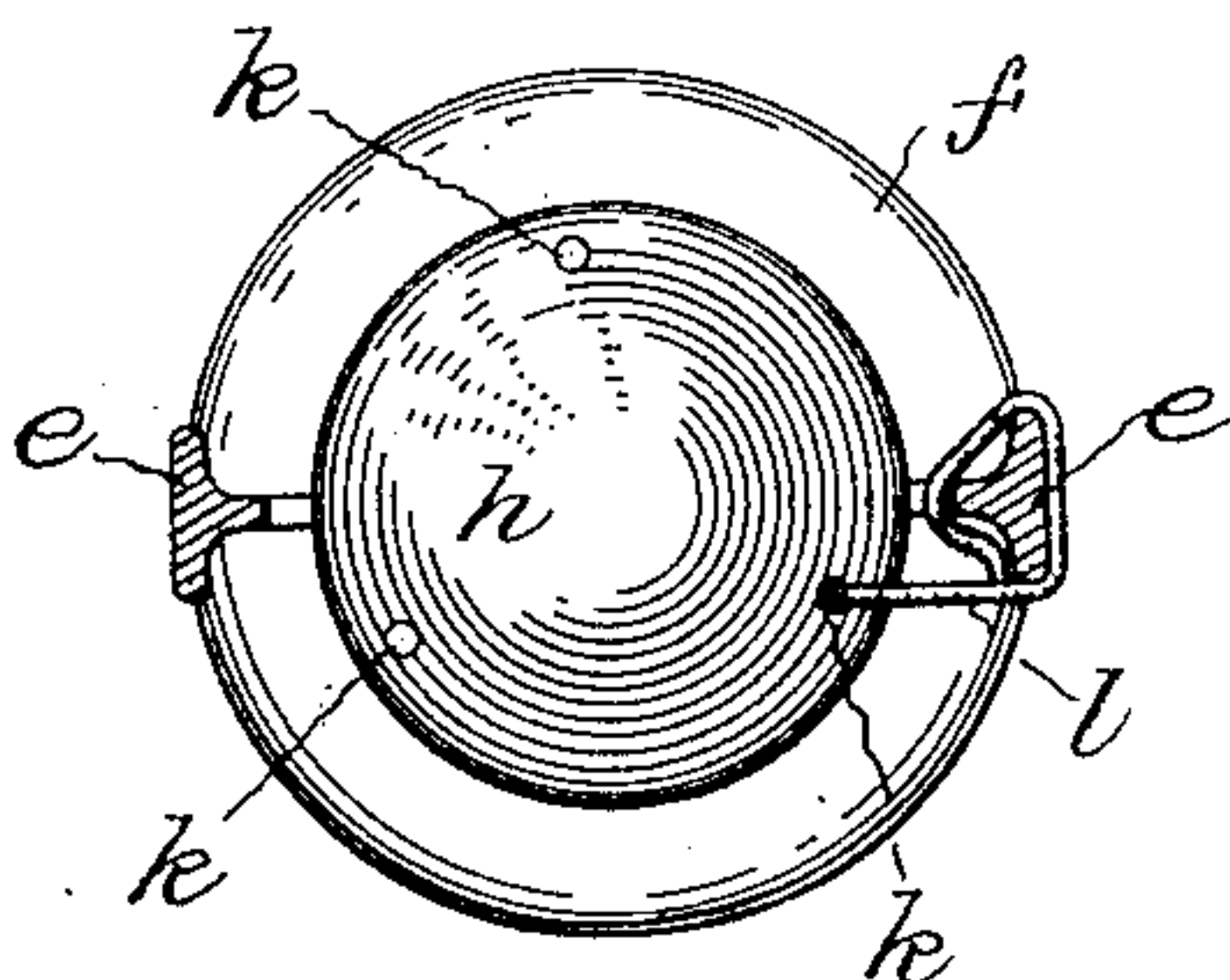


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## TROLLEY-WIRE SUSPENSION.

SPECIFICATION forming part of Letters Patent No. 662,595, dated November 27, 1900.

Application filed March 10, 1900. Serial No. 8,164. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. HAYNES, a citizen of the United States, and a resident of South Manchester, in the county of Hartford and State of Connecticut, have invented a certain new and useful Improvement in Trolley-Wire Suspension, of which the following is a specification.

My invention relates to the class of devices used for supporting a trolley-wire from posts or other fixed parts; and its object is to provide means for supporting the wire which will not be liable to become loose in use or wear. One form of mechanism by means of which this object may be attained is illustrated in the accompanying drawings, in which—

Figure 1 is a detail view of the outer end of a bracket-arm used to support a trolley-wire and of a hanger broken away to show construction. Fig. 2 is a view in horizontal section through the hanger and showing the cap-lock.

In the accompanying drawings, the letter *a* denotes a bracket-arm or like means of support for a trolley-wire *b*, these being of any convenient form or arrangement.

The hanger *c* includes the insulating tubular socket *d*, with clamp-screw *d'* for securing it in place, the yoke *e* supporting the bottom plate *f*, which is concaved on the bottom and shaped to receive the cone *g* and cap *h* of the cap-and-cone insulation.

The above parts are of the well-known form, and the threaded shank *h'*, fast to the cap *h*, extends into a threaded socket in the ear *i* as the means of attaching the ear and the wire *b*, supported by it, to the hanger.

The cap-and-cone insulation is for many reasons the best form of insulation; but a serious defect in its construction has driven it out of use to a considerable extent. This defect consists in the liability of the cap to unscrew from the ear by changes in temperature and the vibrations to which the parts are subjected in the ordinary use of the structure. This unscrewing of the parts results in their separation and the temporary throwing out of service of the line, particularly if this accident occurs on a curve. In any event it is a fault which requires prompt remedy to prevent a breakdown in the service. My im-

provement removes this objection completely by providing simple, cheap, and convenient means for locking the cap in place after it has been screwed firmly up to hold the several parts in proper relative position, as illustrated in Fig. 1 of the drawings.

My improvement is embodied in the structure by providing in the cap *h* sockets *k*, which are preferably perforations extending through the cap depthwise near its periphery, as they can be easily formed in molding the cap without any increase in the cost of production. In addition to these sockets the latch *l* is supported on the hanger preferably by loosely attaching a loop to one of the branches of the yoke *e*, so that the latch may be out of the way in assembling the parts, and the hooked end *l'* of the latch can be inserted into a socket *k* in the cap and thus anchor it firmly in place. When the sockets are formed as shown, they also form anchor-holes for a spanner, which is the most convenient device for securing it in place. It is obvious that other forms of latch or bolt devices may be used in place of this specific form of latch without departing from my invention or requiring the exercise of any but the skill of the art in producing equivalents, and such forms are intended to be used as within my invention.

The material of which the lock or latch is formed is not important, but it may evidently be of iron wire of suitable gage, as to the form shown, as a cheap and readily-obtained material.

A thorough test of this invention on a trolley-line in continuous service has been made and the operativeness shown beyond doubt. The defect in this approved form of insulation is completely remedied.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with a trolley-wire hanger, a cap-and-cone insulation in which the cap is provided with a locking-socket, and a latch loosely attached to the arm of the hanger and having its end adapted to engage the socket in the cap.

2. In combination with a trolley-wire hanger, a cap-and-cone insulation, a threaded shank connecting said cap and cone, locking-



sockets in the cap, and a latch loosely attached to the arm of the hanger and having a hooked end engaging the socket in the cap.

3. In combination with a trolley-wire  
5 hanger, a cap-insulator having a threaded shank, a cone-insulator through which the shank passes, a wire-supporting ear having a threaded socket to receive the shank, a

locking-socket in the cap-insulator, and means for locking said cap to the hanger to  
against rotation.

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