B. R. SHOVER.

SHEET METAL INSULATOR PIN.

APPLICATION FILED MAR. 1, 1912.

1,026,711. Patented May 21, 1912.

FIG.4

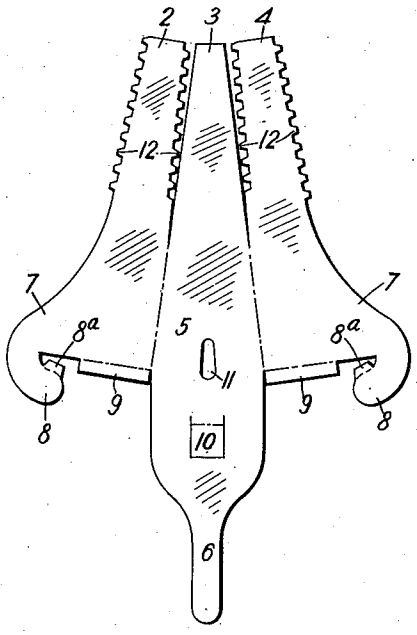


FIG.1

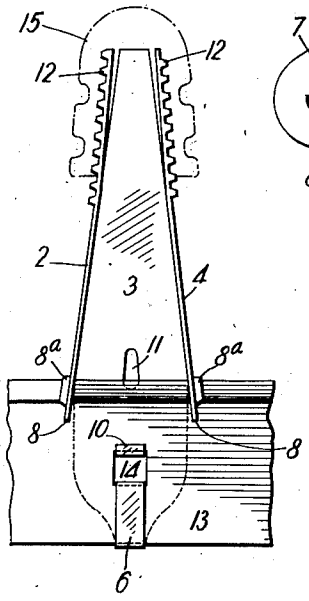
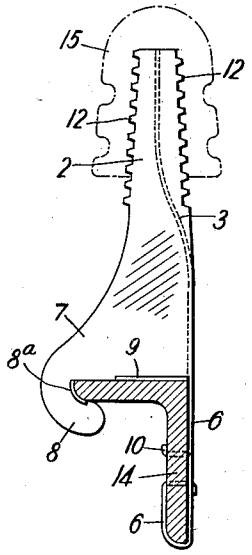


FIG.2



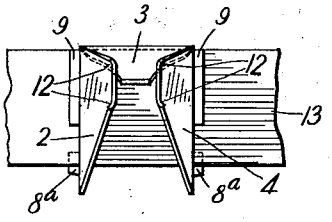


FIG.3

WITNESSES

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SHEET-METAL INSULATOR-PIN.

1,026,711. Specification of Letters Patent. Patented May 21, 1912.

Application filed March 1, 1912. Serial No. 680,973.

To all whom it may concern:

Be it known that I, BARTON R. SHOVER, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented a new and useful Sheet-Metal Insulator-Pin, of which the following is a full, clear, and exact description.

My invention relates to the construction of insulator pins used in securing insulators on the cross arms of poles carrying electrical conductors such as electric power and light lines, and telephone and telegraph wires, and the invention more particularly relates to the construction of insulator pins for securing such insulators to cross arms formed of metal and used with either wooden or metallic poles.

One object of my invention is to provide an insulator pin which is formed of sheet metal and which provides a strong and durable construction, which is readily secured in place on the cross arms, is effective in holding the insulators in place, and is easily and cheaply manufactured.

Referring to the accompanying drawings forming part of this specification, Figure 1 is a front elevation of my improved insulator pin, as constructed for use in securing an insulator on the cross arm of a pole. Fig. 2 is a side elevation of the same. Fig. 3 is a top plan of the construction shown in Figs. 1 and 2. Fig. 4 is a plan showing a development of the flat sheet of metal as punched or sheared preparatory to the later bending operations in making the improved insulator pins forming this invention.

In the drawings, a flat sheet of steel or other suitable metal is stamped or sheared so as to provide the separate angularly extending tongues 2, 3 and 4 which merge into the body portion 5 of the metal sheet. The sheet of metal is provided with another downwardly extending tongue 6 on the lower end of the body portion 5 opposite the middle tongue 3. The body portion 5 has wing portions 7, on the sides thereof and the outer lower ends of the wings 7 are provided with lips 8. The body portion of the sheet is also provided with lips 9 on the end thereof opposite the tongues 2 and 4.

The body portion 5 of the insulator is also slitted so as to form a tongue 10 and above the tongue 10 an opening or hole 11 is provided for a purpose described later.

The opposite side edges of the tongues 2 and 4 are provided with serrations or teeth 12. The teeth on the opposite side edges of the tongues are relatively spaced so that when the tongues are later bent into position, along the broken lines of Fig. 4, a screw thread will be formed thereby on the angularly extending side edges of the tongues 2 and 4.

After the sheet has been stamped or sheared and is slitted, as is shown in Fig. 4, the tongues 2 and 4 are bent so as to extend substantially at right angles to the middle tongue 3 and the teeth 12 on the side edges of the tongues 2 and 4 are bent outwardly at an angle of approximately 45 degrees to the side surfaces of the tongues 2 and 4, as is clearly shown in Fig. 3.

The lips 9 provided on the opposite end of the body portion are bent at right angles to the side surfaces of the body portion, and the tongue 3 is bent to form a reverse curve at an intermediate point in its length so as to provide a separator or spreader, which is located between and which limits the inward movement of the tongues 2 and 4 of the completed insulator pin, this construction being clearly indicated in Figs. 2 and 3.

In applying the insulator pins for use, the cross-arms 13 on the poles which are formed of rolled metal angles as shown are provided with rectangular openings 14 in the vertically extending leg of the angles forming the cross arms, the holes 14 being located at the desired spaced apart intervals in the length of the cross arm. The insulator pins which have been pressed or bent into the shape shown in Figs. 1, 2 and 3 are then applied to the cross arm, and the tongue 6 on the lower end of the insulators is bent upwardly and then inwardly around the vertical leg of the cross arm, its outer end then passing through the hole 14 in the vertical leg of the cross arm and the opening made in the insulator in forming the lip 10 and being bent downwardly so as to tightly secure the insulator pin in position on the cross arm. The lip 10 formed by slitting the body portion of the tongue 6 is located in such manner that it is adapted to be bent so as to extend through the opening 14 in the cross arm 13 and its outer edge is then bent upwardly around the edge of the hole 14 so as to clamp and assist in tightly securing the insulator pin on the cross arm. When the insulator pin is applied to the arm 13 the curved ears or hooks

on the lower portions of the tongues 2 and 4 embrace the outer edge of the horizontal leg of the cross arm 14 and the lips 8ª on the ears 8 which are bent at right angles to the surface of the ears form a bearing surface which engages with the edge of the cross arm. The lips 9 on the lower end of the body portion 5 which are also bent at right angles to the side surfaces of the body portion, also provide a flat bearing surface on the insulator pins engaging with the top surface of the cross arm.

The opening or hole 11 in the body of the insulator pin is located so as to provide means for draining the inclosure formed by the top surface of the cross arm with the lower ends of the tongues 2, 3 and 4.

By reference to the drawings, it will be seen that the upper outer end of the so-formed insulator pins can be sprung inwardly to a slight extent, the degree of inward movement of the tongues 2 and 4 being limited by engagement with the side edges of the separator formed by the tongue 3. The insulators 15 which are shown in outline by broken lines in Figs. 1 and 2 have internal screw threads so that they are screwed onto the upper end of the insulator pins in the same manner as with the ordinary wooden insulator pins. With the insulator pin construction forming my invention, the tongues 2 and 3 are arranged so as to adjust themselves to any slight inaccuracies in the screw threads of the insulator and the resiliency of the metal forming the insulator pins will cause the tongues having the screw threads thereon to spring outwardly so as to tightly grasp and hold the insulators 15 in position on the pins.

The advantages of my invention will be apparent to those skilled in the art. A strong and durable insulator pin is stamped from a metal sheet at slight cost and an insulator pin which will effectively secure the insulator to the cross arms is obtained. The insulator pins are quickly applied for use on the cross arms of the poles without the use of bolts and rivets.

Modifications in the construction and arrangement of the parts may be made without departing from my invention.

The number of tongues used in forming the insulator pins may be changed, the manner of securing the insulator pins to the cross arms may be varied, and other changes in the construction and arrangement of the parts may be made without departing from my invention as defined in the appended claims.

I claim:—

1. An insulator pin formed of a sheet of metal slitted lengthwise to form a plurality of tongue portions connected by an integral body portion and bent in the direction of the length of the slits to form oppositely facing tongues on which the insulators are secured, and means on the body portion of the so-formed pins whereby the pins are fastened in place.

2. An insulator pin formed of a sheet of metal slitted lengthwise to form a plurality of tongue portions connected by an integral body portion and bent in the direction of the length of said slits to form oppositely facing tongues, means on the tongues by which the insulators are secured in place thereon and means on the body portion of the pins whereby the pins are fastened in place.

3. An insulator pin formed of a sheet of metal slitted lengthwise to form a plurality of tongue portions connected by an integral body portion and bent in the direction of the length of said slits to form oppositely facing tongues, means on the side edges of the tongues by which the insulators are secured in place on the pins, and means on the body portion of the pins whereby the insulator pins are held in place.

4. An insulator pin formed of a sheet of metal slitted lengthwise to form a plurality of tongue portions connected by an integral body portion and bent in the direction of the length of said slits to form oppositely facing tongues, the side edges of said oppositely facing tongues having serrations therein forming a thread whereby the insulators are held in place on the pins, and means on the body portion thereof whereby the pins are secured in place.

5. An insulator pin formed of a sheet of metal slitted lengthwise to form a plurality of tongue portions connected by an integral body portion, said tongues being bent in the direction of the length of said slits to form oppositely facing tongues, the side edges of at least part of said tongues having angularly extending teeth engaging with the insulators in holding the insulators in place and means on the body portion of the pins whereby the pins are held in place.

6. An insulator pin formed of a sheet of metal slitted lengthwise to form a plurality of tongue portions connected by an integral body portion and bent in the direction of the length of the slits to form an intermediate tongue between the oppositely facing tongues on which the insulators are secured, and means on the body portion thereof whereby the pins are fastened in place.

7. An insulator pin formed of a sheet of metal slitted lengthwise to form a plurality of tongue portions connected by an integral body portion and bent in the direction of the length of the slits to form an intermediate tongue between the oppositely facing tongues, and oppositely facing tongues on which the insulators are secured, and a tongue on the body portion whereby to fasten the insulator pins in place.

8. An insulator pin formed of a sheet of metal slitted lengthwise to form a plurality of tongue portions connected by an integral body portion and bent in the direction of the length of the slits to form oppositely facing tongues on which the insulators are secured and an intermediate tongue extending between the oppositely facing tongues, and tongues on the body portion of the pins whereby the pins are secured in place.

In testimony whereof I have hereunto set my hand.

BARTON R. SHOVER.

Witnesses:
CHESTER LA VOGUE,
E. H. SCHRADER.