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1,702,158

W. J. GAGNON

CONTACT OF THE PIN TYPE

Filed Sept. 14, 1925

Fig. 1.

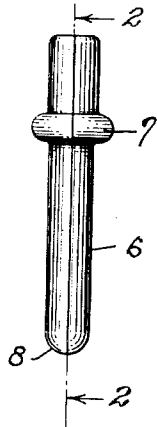


Fig. 2.

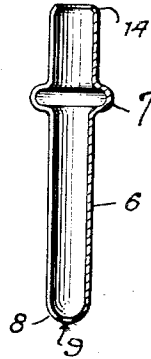


Fig. 3.

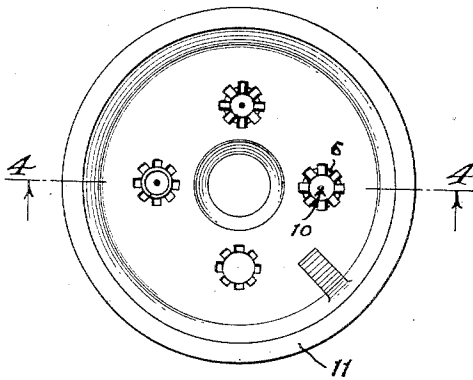


Fig. 4.

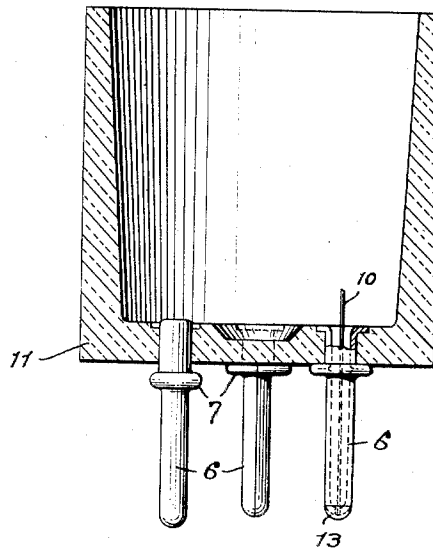
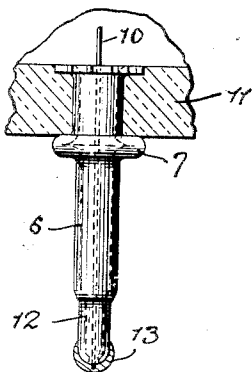


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CONTACT OF THE PIN TYPE.

Application filed September 14, 1925. Serial No. 56,291.

My invention relates to pin type contacts and particularly to contacts for circuit extension appliances such as lamps, audions, attachment plugs, etc. The object of my invention is to provide a sheet metal, tubular contact which possesses a rigidity comparable to that of the usual contact pin formed from rod or bar stock, and has certain specific technical advantages thereover, in addition to its relative economy.

In the accompanying drawings—

Fig. 1 is a side elevation, drawn to an enlarged scale, of a sheet metal contact pin embodying my invention in one form;

Fig. 2 is a section on the line 2—2, Fig. 1;

Fig. 3 is a plan view of an audion base to which my improved contacts are attached;

Fig. 4 is a section on the line 4—4, Fig. 3; and

Fig. 5 is an enlarged section through portion of the base showing a contact of slightly modified construction.

Contacts of the pin type are now universally, so far as I am aware, formed from solid rod or bar stock, which is shaped for service either by press or machine operations. Not only is the stock itself expensive, but the necessary operations thereon add materially to the cost of manufacture. Furthermore, in fittings to which such contacts are secured by upsetting or riveting, the hardness of the bar or rod metal, coupled with its non-yielding rigidity, not only necessitate heavy pressure to effect the upsetting operation, but also result in a heavy percentage of breakage of the relatively fragile bodies to which the contacts are thus secured.

My invention provides a tubular contact pin 6 formed from sheet metal stock which is preferably of substantially softer material than that found in bar or rod stock, and is consequently riveted or spread by less pressure when securing the contact to its base. Secondly, I provide the shank of the pin with an abutment shoulder 7 in the form of an annular open bead, which collapses under pressure and thus forms a cushion which relieves the base of fracturing stresses when the pin is being riveted thereto. Thirdly, I dome the contact end of the pin to facilitate its engagement with an associated terminal, and also to guide an associated lead wire, when used, to the end open-

ing in the pin. Fourth, the rounded contact end of the pin is formed with an axial opening to permit the passage therethrough of a lead wire 10 when such a connection is desired—as for example in a lamp or audion base 11. Fifth, the contact end of the pin is preferably formed of reduced diameter 12 (Fig. 5) to accommodate excess lead-wire solder 13 without increasing the overall diameter of the pin to such an extent as to prevent its entry into an associated socket; and sixth, the head end of the pin is preferably bevelled inward slightly, as at 14, to facilitate its entry into the passage in the base to which it is secured.

In Fig. 4, which illustrates an audion base 11 of standard type, made of a phenol condensation product, or other frangible insulating material, the head of the pin 6 at the left of the figure is shown partially inserted through the bottom diaphragm of the base preparatory to the riveting operation. The adjacent pin is shown riveted in position—note the compressed cushioning flange 7. The pin on the right is not only riveted in position, but has the lead wire inserted and attached by solder 13. Unless the end of the pin 6 is reduced as indicated in Fig. 5, the drop of solder 13 is very apt to so exceed the diameter of the pin that its removal by another manufacturing operation, is necessary in order to permit the pin to enter its cooperating socket.

While I have shown and explained my invention particularly with reference to a contact pin for an audion base, it will be recognized that certain of its characteristics are of value in pins for attachment plugs, connectors, and that my invention includes these and related utilities.

I claim—

1. A tubular contact pin made from sheet metal stock and having spaced from its head end a collapsible abutment flange.

2. A rigid tubular contact pin made from sheet metal stock and outwardly bowed intermediate its ends to form an annular cushioning flange which assists in securing the pin to a supporting base.

3. A rigid tubular contact pin made from sheet metal stock having its contact end domed and apertured, and its shank provided with an outwardly formed annular cushioning flange, and the other end deform-

able to cooperate with said cushioning flange to secure the pin to a supporting insulating base.

5 4. A tubular contact pin made from sheet metal stock and having at its opposite ends openings of less diameter than the internal diameter of the pin.

10 5. A tubular contact pin made from sheet metal stock and having its opposite ends rounded and apertured, said end apertures being of less diameter than the internal diameter of the pin.

15 6. A tubular contact pin made from sheet metal stock and having its opposite ends rounded and apertured, said end apertures being of less diameter than the internal diameter of the pin, and having a continuous annular projection intermediate said rounded ends.

20 7. A rigid, tubular contact pin formed from sheet metal stock and having its wall outwardly folded intermediate the ends of the pin to form a cushioning flange to assist

in securing the pin to an associated base.

8. An electric fitting having an insulating 25 base and an associated rigid, tubular contact pin, said pin being formed from sheet metal stock and having its wall adjacent one end out-folded to form an annular cushioning flange, said end being spread to 30 coact with said shoulder in securing the pin firmly to the base.

9. An electric fitting having an insulating base and an associated rigid, tubular contact pin, said pin being formed from sheet 35 metal stock and having its wall adjacent one end out-folded to form an annular cushioning flange, said end being spread to coact with said shoulder in securing the pin firmly to the base, and said spread end of 40 the pin affording an opening through which a lead wire may be inserted into the pin.

In testimony whereof I have signed my name to this specification.

WILLIAM J. GAGNON.