

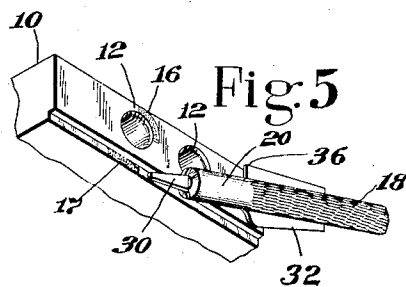
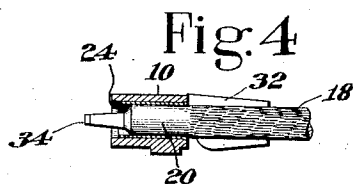
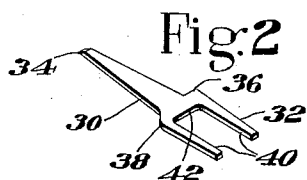
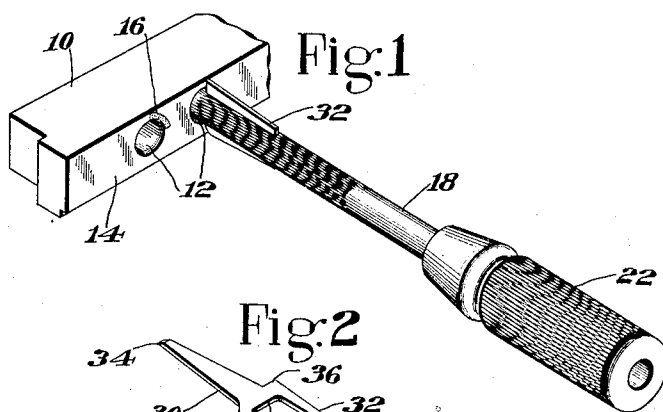
June 30, 1931.

J. H. HILL

1,812,482

SCRAPING TOOL

Filed March 22, 1930



INVENTOR

John H. Hill.
by H. H. Conway, Atty.

UNITED STATES PATENT OFFICE

JOHN H. HILL, OF WOLLASTON, MASSACHUSETTS, ASSIGNOR TO GILLETTE SAFETY RAZOR COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF DELAWARE

SCRAPING TOOL

Application filed March 22, 1930. Serial No. 438,123.

This invention relates to scraping implements, and contemplates a tool particularly adapted for specialized work in removing quadrant markings from multiple plug-jack blocks employed in telephone switch boards.

Every telephone exchange board contains a large number of plug-jacks mounted on insulating blocks or strips, each having a plurality of aligned holes of the proper size to accommodate standard connecting plugs used for interchangeably completing various circuits, there being usually one hole for each subscribing line. Suitable informatory markings of colored enamel paint are often placed adjacent each hole for indicating the status of the subscriber or subscribers connected thereto. In a single party line there may be a circumferential mark entirely about the hole. A four-party line may have differently colored marks about each quadrant of the corresponding hole, such indicia being termed quadrant markings. Other colored enamel stripes are sometimes applied to the blocks in grooves formed therein.

The status of a party to a line is frequently changed, necessitating removal of the corresponding marking. Paint-removing solutions cannot be used on account of the danger of corrosion to electrical contacts associated with the block. A great many changes must be quickly and effectively made from time to time and upon the issuance of each new telephone directory the superseded markings heretofore have been removed by carefully scraping the jack blocks with a knife or a narrow-edged screw driver.

In accordance with the present invention, a specially constructed scraper, having a detachable blade is made available which is peculiarly adapted to remove enamel paint from the surfaces of multiple plug-jack blocks or from any groove or recess formed therein, so that a large number of marking changes can be accomplished in a very short time with a single tool. By providing a rounded mandrel guide rod of the proper size to fit within a plug-jack hole and securing a scraping blade in a diametrical slot therein, the surface markings may be removed by rotating the tool within the hole

and applying a slight pressure to the end. A central extension of the blade may also be projected beyond the end of the guide rod to be utilized in place of the usual screw driver for removing the enamel from grooves in the switch board. If the blade bit is properly fitted to the guide rod no other fastening means are needed and the parts may be quickly detached for replacement or resharpening of the bit. A suitable handle may be attached to facilitate operation of the scraper.

The bit, having the centrally-extending end tapering into a narrow knife edge and bifurcated at the other end with extending parallel edges within the bifurcation spaced to fit the outside of the guide rod, may be slipped within the slot therein. The bifurcated portion which projects beyond the guide rod is formed with lateral shoulders which merge into the tapering end portion of the bit. These shoulders may be provided with perpendicularly disposed knife edges but it is preferable that one shoulder only be so provided, the other being curved into alignment with the edges of the bifurcated portion and tapering end to insure better control of the scraping action.

The slot in the rod holder is of sufficient depth to accommodate the bit and permit the holder to overlap at least a part of the tapering end of the extending portion which is narrower than the holder and not only serves to carry the end scraping edge but also assists in guiding the tool when entering the hole. The end of the rod may be beveled, if desired, to prevent its catching on the edge of the hole. This beveled end is also useful as a fulcrum guide against which the tool may slide in utilizing the end scraping edge, thus preventing it from digging into the surface too deeply. Not only is the enamel paint of the markings removed more quickly with the use of such a tool but the area scraped may be more accurately confined to the particular quadrant marking which it is desired to remove.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof, selected for purposes of

illustration and shown in the accompanying drawings, in which

Fig. 1 is a view in perspective of the scraping tool inserted in a plug-jack hole;

Fig. 2 is a similar view of the blade utilized in the tool;

Fig. 3 is a side view of the end portion of the holder rod of the scraper;

Fig. 4 is a view of the end portion of the complete tool in position in a plug-jack hole; and

Fig. 5 is a view in perspective illustrating the use of the end edge of the tool.

The upright portion of a telephone exchange switch board contains a plurality of multiple plug-jack blocks formed of hard rubber or other insulating composition. These are clamped in position one above the other and carry jacks electrically connected to various circuits. Fig. 1 illustrates a block 10 containing jack holes 12 of the general configuration of each individual multiple jack strip, the extending end being broken away for the sake of simplicity. Such blocks as these are attached to the supporting structure of the exchange board in superposed relation with their front faces 14 arranged in the same plane. It frequently becomes desirable to apply special symbols adjacent the individual holes for the purpose of supplying peculiar information concerning the circuits connected thereto. It has been customary to affix arcuate sectors, such as shown at 16, arranged in different angular relations to the holes 12, according to the party or parties to which the marking applies. In the present case, the marking 16 would apply to one party of a four-party line, according to the particular quadrant covered and the code used. The stripes are affixed with a specially-formed box pen having center shaft for fitting within the jack hole 12. Differently colored enamel bands are used to convey different information. Additional markings may also be applied to the multiple block 10, as indicated at 17, in a groove or recess formed below the surface 14 of the block 10.

According to my invention herein described, the blade-holding mandrel rod 18, of a diameter which readily fits within the holes 12, is provided with a mandrel portion 20 and a knurled operating handle 22 at the opposite end thereof. Each hole 12 is ordinarily provided with a brass or German silver contact sleeve 24, which is of fairly soft texture. It is, therefore, preferable to fashion the mandrel rod 18 of similar or softer material, in order to avoid undue abrasion of this sleeve.

The mandrel portion 20 of the rod has an open-ended diametrical slot 28 in which a scraping blade-bit may be inserted. A blade particularly adapted for this purpose is shown in Fig. 2, being provided with a re-

duced tapering end portion 30 and an enlarged bifurcated portion 32 at the other end thereof. The blade is preferably composed of hardened sheet steel in order that it may effectively retain suitable scraping knife edges 34 and 36. The edge 34 is formed by beveling the tapering end 30, while the edge 36 is arranged on a shoulder-like formation between the narrowed portion 30 and the wider bifurcated portion 32. The opposite shoulder 38 between these two portions is curved and merges into alignment with the edges thereof, being set back so as not to interfere with the scraping action of the edge 36. This arrangement is more effective than one in which both shoulders are formed with scraping edges, because the scraping action may be more easily controlled when a single edge is utilized. The parallel inner sides 40 of the opening in the bifurcated portion are spaced to fit the outside diameter of the holder rod 18 when the blade is secured within the slot 28 with the end boundary 42 of the opening in abutting relation to the bottom of the slot.

If the sides of the slot 28 are slightly deflected toward each other, the blade may be inserted within the slot and be frictionally held therein with sufficient rigidity to prevent displacement during use. It will be noted, particularly in connection with Figs. 4 and 5, that only the scraping edge 36 and the shoulder 38 extend radially beyond the sides of the holder rod, while the mandrel portion of the rod overlaps and contains a part of the tapering end 30 of the blade-bit, and itself provides a mandrel member of the proper size to turn freely in whatever jack hole 12 it may be inserted. The end of the extension 30 should not project to such an extent as to interfere with electrical contacts behind the multiple block 10 and the radially projecting portions of the blade act as stops to limit its extent of penetration. The edge 34 may be effectively employed to remove enamel markings 17 within the groove or recess, the beveled end of the rod 18 being useful in steadying the tool and preventing the edge 34 from digging into the insulating material. This construction assists in removing the paint only without unduly abrading the multiple block itself.

The use of the tool for erasing quadrant markings is illustrated in Figs. 1 and 4, the mandrel portion 20 maintaining the perpendicularly disposed scraping edge 36 in substantially parallel relation to the surface 14 of the block 10, thus insuring accurate manipulation and scraping action, according to the perpendicular pressure exerted on the scraping edge. The tool is also useful for trimming the ends of the arcuate sectors 16 in case they have been applied inaccurately. Suitable knurling may be imprinted on the central portion of the holder rod to assist in

rotating it in contact with the surface to be scraped. The tapering extending end portion 30 is useful for locating the guide mandrel within the plug-jack hole. The angular relation between the scraping edge 36 and the holder 18 is always maintained by the contact of the inner edges 40 of the bifurcated portion with the outside surface of the holder, preventing transverse displacement of the blade-bit. With this construction and arrangement, scraping can be accomplished easily and effectively with a single tool, without producing roughened surfaces about the jack holes or in the recesses below the holes, and a uniform area not extending unduly beyond the painted surface may quickly be scraped. The tool itself is simply constructed and economically manufactured, thus rendering it an article of commercial value.

The removable blade reduces the renewal cost and improves the effectiveness of operation.

Signed at Boston, Massachusetts, this 17th day of March, 1930.

JOHN H. HILL.

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

1. In a scraping tool, a handle rod with mandrel portion containing a transverse slot, a scraping blade inserted within said slot, and having parallel arms contacting with said rod to prevent displacement within the slot of the blade, and a shoulder on the blade having a radially-disposed scraping edge formed at the base of one of said arms and projecting laterally from said mandrel portion of the rod.

2. In a scraping tool, a flat blade having a central projecting end and two substantially parallel arm portions at the opposite end of the blade, a shoulder between said central end and said arm portions having a scraping edge arranged substantially at right angles to said arm portions, and a holder having a slotted rod and a mandrel portion, said central end being partially enclosed within said slot and said arm portions extending in parallel contacting relation with said holder.

3. In a scraping tool, a flattened blade of substantially uniform thickness, a shoulder formed at the juncture of narrower and wider portions thereof and an opening in the wider portion, an operating rod disposed within said opening, enclosing a part of said narrower portion and forming a mandrel, and a scraping edge formed on said shoulder.

4. A scraping tool for the surface of telephone multiple blocks, comprising a mandrel member for fitting within a plug-jack hole and turning smoothly therein and a radially-extending scraping blade for scraping the circumferential area adjacent the plug-jack hole when the tool is rotated, said mandrel guiding the scraping blade and confining its action to a circumferential path.

5. A scraping tool for telephone multiple blocks, comprising a holder having a cylindrical mandrel at its end, and a thin flat blade