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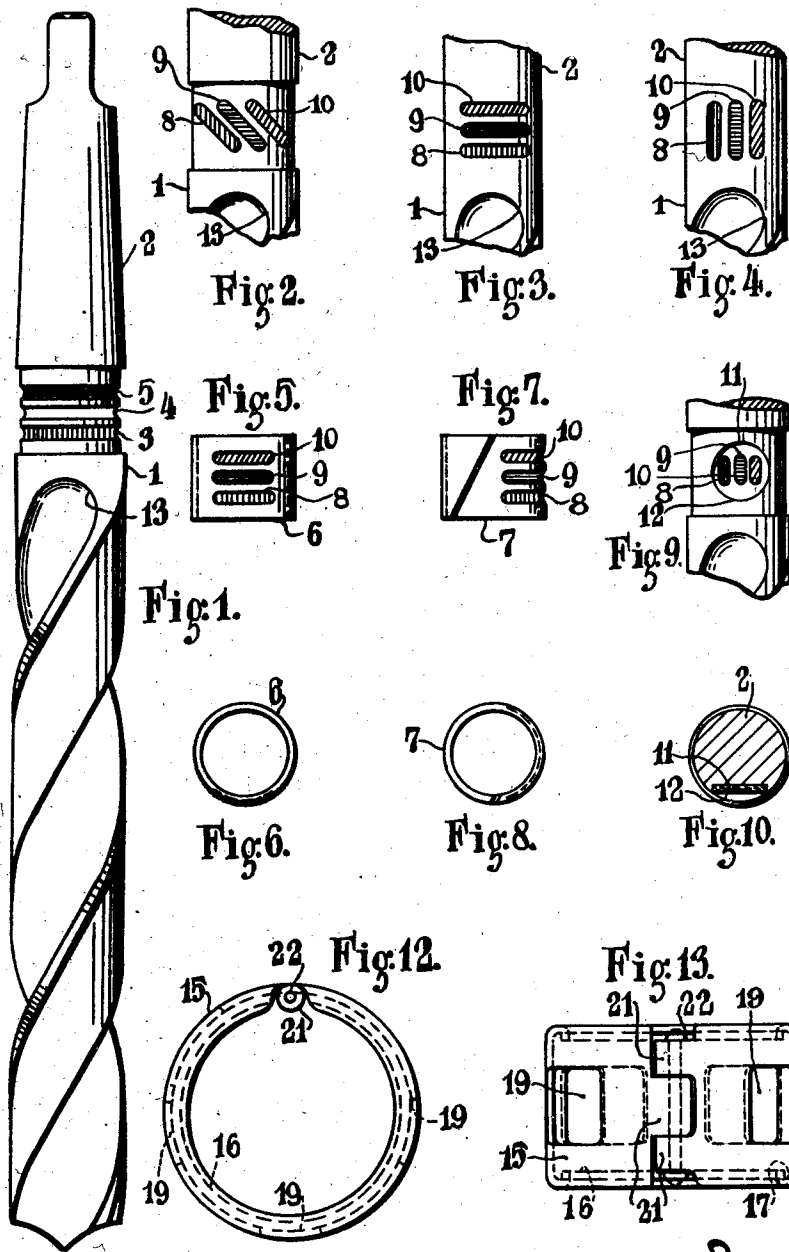
G. L. MURRAY

1,984,839

IDENTIFICATION MEANS FOR TOOLS

Filed Nov. 7, 1933

2 Sheets-Sheet 1



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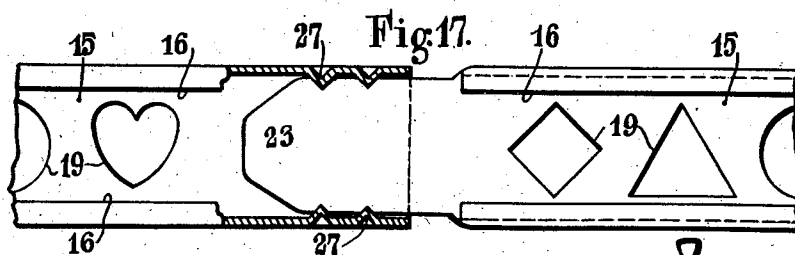
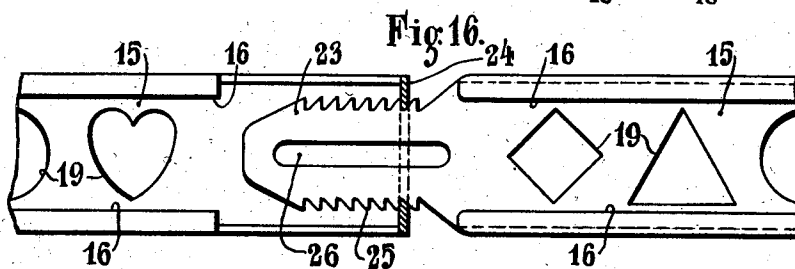
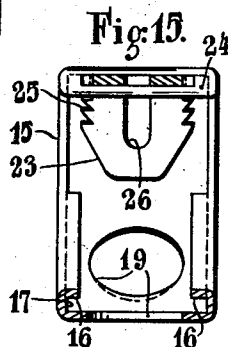
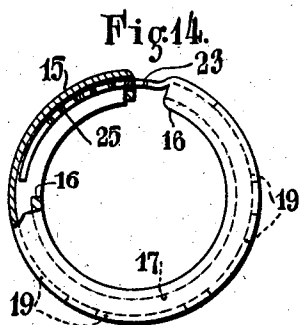
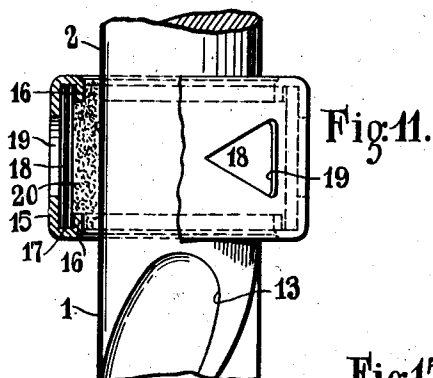
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UNITED STATES PATENT OFFICE

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IDENTIFICATION MEANS FOR TOOLS

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8 Claims. (Cl. 40—2.2)

This invention relates to tools such as drills, reamers, taps and the like; it is also applicable to milling cutters, slot drills, drill sockets, adaptors, screw dies, thread chasers and similar articles, the whole of the above being hereinafter termed and included in the term "tool".

The object of this invention is to provide the tool with means for indicating its size, dimension or other characteristic at a glance, the said marking or indication of the size being adapted to cover the varying sizes or dimensions of any range of tool.

The invention consists in hand, machine or like tools wherein said tools are provided on one or more of their surfaces with one or more recesses and/or protuberances arranged singly or in combination and adapted for the reception of a colouring medium or coloured substance, so as to provide a single colour or a combination of colours for indicating the size of, or the tool itself.

The invention also includes means for applying to, and securing on, the tool an identity marking capable of serving both as an identification of the size of the tool and/or the complete tool itself.

The invention may further embrace an element adapted to be either removably or permanently secured to any desired part or parts of the tool, said element including means for displaying a colour identification either by itself or in combination with a colour and shape identification.

The invention may further consist in an element capable of application to the tool in such a manner as to receive or retain a colouring medium or coloured substance, so as to provide a single colour or a combination of colours for the purpose of identification.

The said element may include any, or a combination, of the following devices for displaying a colour and/or shape identification; for example the said element may be furnished with protuberances or recesses to hold a coloured pigment, coloured insert or equivalent arrangement. Alternatively the element may be apertured to constitute windows or openings (hereinafter referred to as "windows") through which a coloured background or insert can be seen. The said windows may be shaped to afford additional identification and also serve as an aid to a colour-blind person.

The attachable element may be in the form of a clip adapted to grip some suitable part of the tool, or it may be adapted to engage in a recess formed in the tool, being secured in position by

an adhesive medium, by crimping, by expansion, by spring or other retaining member, by the use of a suitable gripping material, or by a combination of two or more of any of these expedients.

The identification means are adapted to be incorporated with tools for hand or machine operation, and such means can be additional to any figures, letters or like markings already on such tools, or added to existing tools.

Also more than one attachable element may be employed and these may be concentrated in one position or grouped in various positions on the tool.

Referring to the accompanying drawings, which show, merely by way of example, various embodiments of the invention:—

Fig. 1 is a view illustrating a drill with rings or grooves formed on its shank,

Figs. 2, 3 and 4 show various ways of arranging the grooves on the drill shank.

Figs. 5 and 6 are respectively an elevation and plan of a sleeve or collar capable of being applied to the tool,

Figs. 7 and 8 illustrate a split sleeve or collar for the same purpose,

Figs. 9 and 10 show respectively a front elevation and a transverse sectional view of a drill with an identification disc inserted in a recess,

Fig. 11 is an enlarged part sectional elevation of a sleeve or collar applied to a drill and adapted to hold a coloured insert,

Figs. 12 and 13 are respectively a similarly enlarged plan and elevation, showing a way of joining a split sleeve or collar,

Figs. 14, 15 and 16 are respectively a part sectional plan, a sectional elevation and a developed plan all enlarged, of a modified form of collar,

Fig. 17 is a developed plan, on a similar scale, of yet a further embodiment.

In the drawings, like parts are designated by like reference numerals throughout the various figures. Also the colour method or system (employed with the different tools) is illustrated by dots or section lines arranged in accordance with the Heraldic Convention, namely:—

Red—By vertical lines.

Yellow—By dots.

Black—By horizontal and vertical lines crossing each other.

Blue—By horizontal lines.

Purple—By diagonal lines drawn from right to left in a downward direction.

The tool 1 (such as, say, a drill, having cutting edges formed in the usual and ordinary manner) may have formed on its shank 2 a number of

peripheral grooves, indents, protuberances, or longitudinal or transverse recesses which extend wholly or partially say, along or around the perimeter of the tool. When two or more peripheral grooves (three are shown in Fig. 1 and marked respectively 3, 4 and 5) are employed they may be of the same or unequal width and depth, and the sides or walls of each groove may be made either square or V-shaped, or with a flat or a semicircular bottom. The grooves 3, 4 and 5, are arranged at equal or unequal widths and/or distances apart, and each groove may be covered or filled with an enamel or other paint or a substance such that when it—the paint or enamel—is set it will become solid, and may be level with the perimeter of the shank 2 of the tool 1.

In some cases it may be found advisable to form the said grooves or recesses 3, 4 and 5, in the periphery of a separate collar or sleeve, or a hollow boss 6, as shown in Figs. 5 to 8, which may or may not be split in, say, a longitudinal, angular, or any other convenient manner. The collar, sleeve or hollow boss (hereinafter termed "collar") is made of a ferrous or nonferrous material or of, say, celluloid, or, the material sold under the registered trade-mark "Bakelite", or other suitable material or materials. When a split collar 7 is employed, then it is arranged to slip upon the shank 2 of the tool. In other cases, the shank 2 is reduced in diameter to provide a depressed area (as shown in Figs. 1, 2 and 9) to receive the coloured markings or to fit tightly the internal diameter of the collar 6 or 7. The longitudinal, transverse or angular recesses 8, 9, 10 may be formed in the periphery of the reduced or other portion of the shank or of the collar as shown in Figs. 1 and 2, in place of the said grooves, as previously named. The sleeve may be contracted or crimped onto a suitable part of the tool.

As an example for carrying the invention into practice, for a tool, with English dimensions, say, of seven-eighths of an inch diameter, then three grooves 3, 4 and 5, of the same or different shapes and widths may be applied and formed in the tool 1 during its process of manufacture, and each of the colours in the said grooves will indicate a portion of the dimension of the diameter of the tool, so that, when, say, three colours—a red, a yellow, and a black—are employed which may be of different dimensions, the black may represent half an inch; the red a quarter of an inch, and the yellow an eighth of an inch, thus making up the diameter of seven-eighths of an inch. In some cases the longitudinal, angular, or partly circumferential recesses or protuberances 8, 9 and 10, or both, may be used, which recesses or protuberances may be of distinctive shape, length and size, suitably spaced on the shank 2 of the tool 1. Each recess or protuberance 8, 9 or 10 may be of the same or different size and of a different colour, so that when more than one colour is employed the sum total number of the colours will indicate the exact size of the tool. For example, say, one of the recesses or protuberances may be red, another blue, and a third purple, and when the measurements of each respective colour are added together, then the size of the tool 1 is at once indicated.

A suitable shape for the recesses or protuberances may either be of the elongated type shown in the drawings, or circular, square, or polygonal, but it should be distinctly understood that this method of indicating the size of the tool by a system of colours is not limited to the said shapes.

If desired, one or more recesses 11 (Fig. 9) is, or are, formed in a convenient portion of the tool 1 for the reception of one or more inserts 12 of ferrous or non-ferrous material or other suitable substance, such, for example, as celluloid or paper encased in celluloid, or "bakelite", or the like. The inserts 12 are in the form of discs, letters, symbols, or other figures, or such shapes are formed in, or on, the inserts 12; in Fig. 9 three recesses 8, 9, 10 are shown in or on a circular insert 12.

The sizes and shapes of the identification markings are varied to suit the size and shape of the tools 1 to which the colour or colours is or are applied. Also one or more recesses and/or protuberances may be formed in any convenient part of the tool; for example, in the case of drills and taps, they may be located in one or more of the flutes 13, or in the end or ends thereof.

By the use of the method of colouring the tools the problem of the rapid identification and classification of the tools in the tool-room and in other departments of a works is greatly simplified and errors of the existing systems avoided.

By each dimension being indicated by a particular colour, or a combination of colours which is or are common to different kinds of tools, it ensures that only the proper appliances are used for each portion of the work in hand, for example the correct size of drill for a particular size of tap.

The herein described method of indication by colour may be applied to tools required for English, metric, decimal or any other nomenclature and varying from the smallest dimension to those of a larger size, so that a workman will be sure of having the tool or tools of the exact size required for the work in hand by virtue of the colour or colours.

In Fig. 11 is shown a construction of clip 15, which allows for slight variation in the diameter of the portion of the tool to be embraced. The clip 15 is preferably of spring steel and is formed with an intumed flange 16 top and bottom, the flange 16 being so fashioned as to constitute an annular channel 17 for the purpose of receiving and holding a coloured insert 18. The latter is placed in position before the clip is applied to the tool.

Around the periphery of the clip are formed windows 19 (of any number, size or shape) by means of which the colours and/or shape identifications are displayed to indicate the type, nomenclature or size of the tool.

The colour insert 18 may be of ferrous, non-ferrous or any other appropriate substance such as celluloid, paper, paper encased in celluloid, or material such as "bakelite".

It is desirable to interpose between the clip 15 and the tool a layer of resilient gripping material 20, such as rubber, paper, fibre or like substance capable of being compressed firmly into engagement with the tool. To increase this gripping action the material may be lined or impregnated with emery, carborundum, or other suitable abrasive.

As illustrated in Figs. 12 and 13, the clip 15 may be jointed by the provision of lugs 21 on the contiguous ends, which engage and are held by a pin 22 in the manner of a hinge.

Alternatively as shown in Figs. 14, 15 and 16, one end 23 of the clip 15 may be adapted to slide into the apertured turned-over portion 24 on the other end of the clip. In order to provide a self-

locking or non-return action, the end 23 of the clip is formed with notches or indents 25 and a central slot 26 enables the end 23 to contract inwardly in such a way as to permit the passage of the latter into the apertured portion 24. Owing to the shape of the notches 25, the end 23 cannot come out of the apertured portion 24.

Fig 17 illustrates a slightly modified construction wherein the end 23 of the clip, instead of being notched, is left plain and extends the full width of the interior of the clip. In order to lock it in position, a V-shaped tool is applied to the sides of the clip so as to crimp the metal inwardly into engagement with the end 23, as shown at 27.

In fitting the clips illustrated in Figs. 12—17, the gripping material is first applied in the correct position on the tool, whose size or other characteristic it is desired to indicate. The spring clip, with the coloured insert already in position, is then placed around the gripping material and firmly closed by means of a suitable pair of pliers or other clamping device.

As an alternative way of joining a clip, such as 15, the ends may be spot welded together, while the clip is firmly held in position as described in the preceding paragraph.

By each dimension being indicated by a particular colour, or a combination of colours, which is or are common to different kinds of tools, it ensures that only the proper appliances are used for each portion of the work in hand, for example the correct size of drill for a particular size of tap.

It will be apparent from an inspection of Figs. 1, 2, 9 and 10, and 11 to 17, inclusive, that the coloured material which forms the identifying colour symbols is so arranged with respect to the means on the tool by which it is carried that it is protected against abrasion and possible obliteration. In Figs. 1 and 2, this protection is afforded by the arrangement of the grooves 3, 4 and 5 or recesses 8, 9 and 10 in a portion of the shank of the tool of reduced diameter, and in Figs. 9 and 10 by the additional provision of the recess or recesses 11, whereas in Figs. 11 to 17 it is afforded by the thickness of the material of which the clips 15 are made.

What I claim and desire to secure by Letters Patent is:—

1. A tool having a shank provided with a por-

tion of reduced diameter and a plurality of recesses formed therein, and a distinctive colouring substance applied to each recess, the shank of the tool protecting the colouring substance against abrasion by virtue of the location of such substance in the portion of reduced diameter.

2. A tool having a shank provided with a portion of reduced diameter, and a plurality of transverse circumferential grooves in said portion, each of said grooves containing a coloured material, said coloured material providing a means for identifying said tool as to dimension and class, and being protected against abrasion by said shank.

3. A tool having a shank provided with a portion of reduced diameter, and a plurality of transverse circumferential grooves in said portion, each of said grooves containing a differently coloured material, said coloured material providing a means for identifying said tool as to dimension and class, and being protected against abrasion by said shank.

4. A tool having a shank provided with a portion of reduced diameter, a recess formed in said portion, and a coloured insert filled into said recess and protected thereby and by said shank against abrasion.

5. A tool having a shank provided with a depressed area and a recess formed in said area, and an indicator in color in said recess for identifying said tool and protected by said shank against abrasion.

6. A tool having a shank provided with a depressed area and a plurality of recesses in said area, each of said recesses containing a colored material, said colored material providing means for identifying said tool, and being protected by said shank against abrasion.

7. A tool having a shank provided with a portion of reduced diameter and a circular recess in said portion, and an indicator in color in said recess for identifying said tool and protected by said shank against abrasion.

8. A tool having a shank provided with a portion of reduced diameter and a circular recess in said portion, and an insert mounted in said circular recess providing an indicator in color for identifying said tool and protected by said shank against abrasion.

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