

Oct. 21, 1941.

A. J. MATTER

2,260,086

DRILL HOLDER

Filed Sept. 12, 1940

2 Sheets-Sheet 1

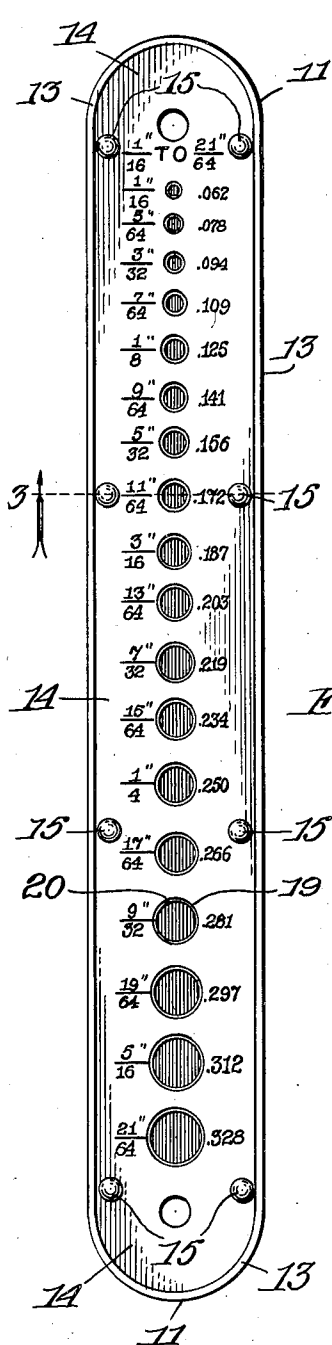


Fig. 1.

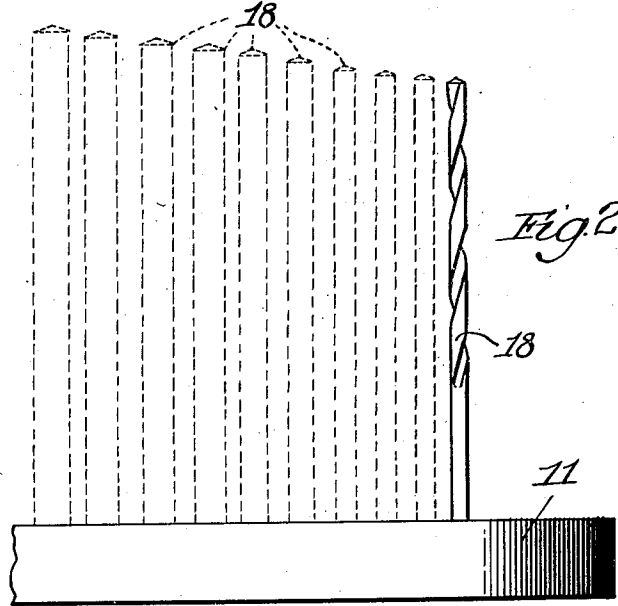


Fig. 2.

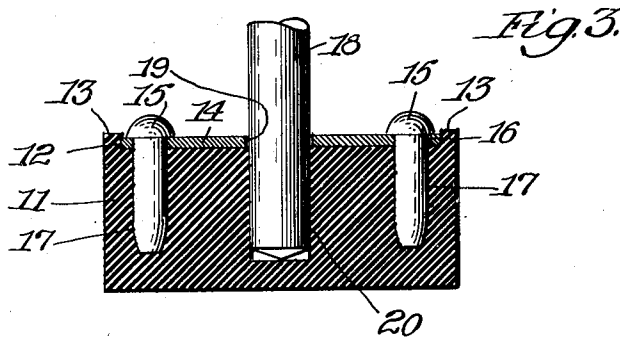


Fig. 3.

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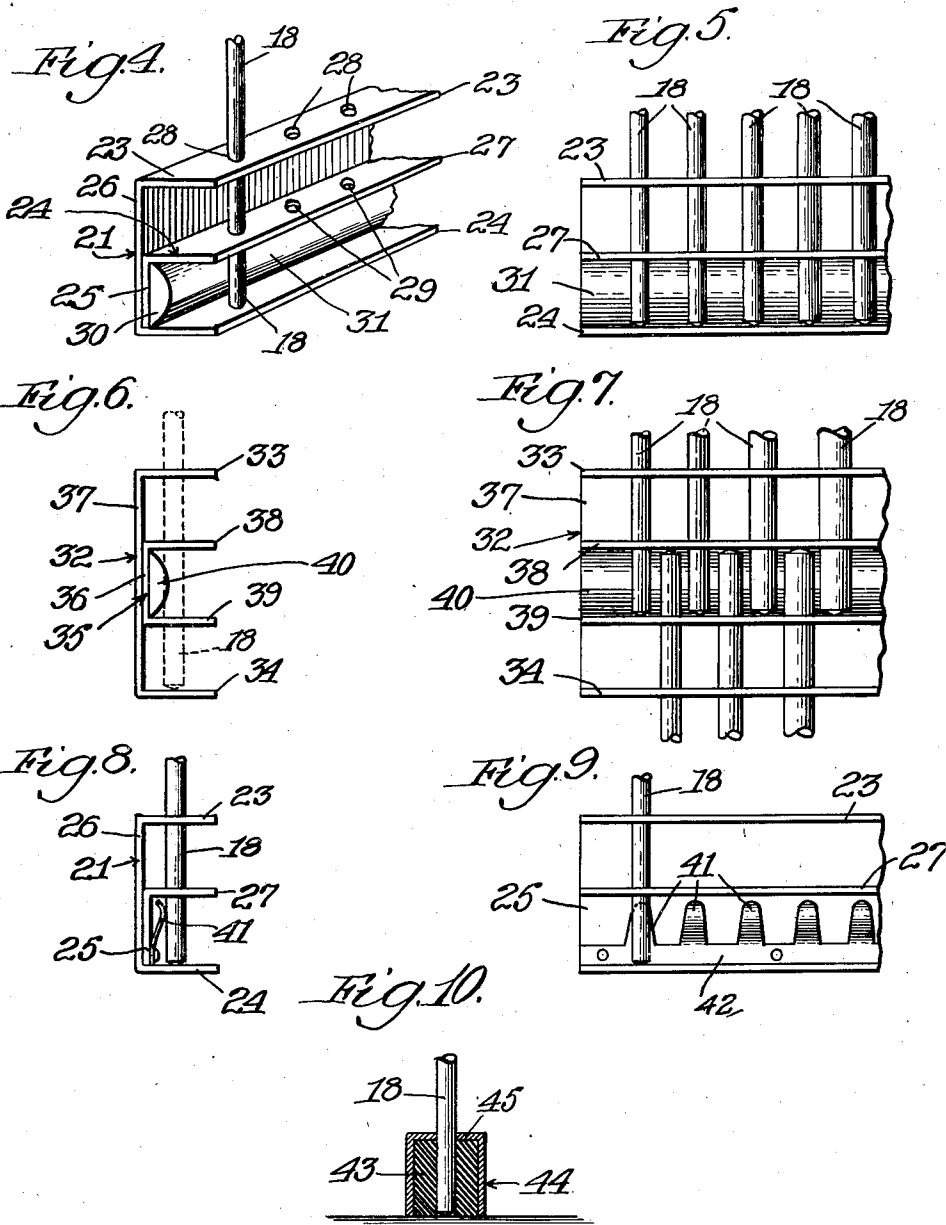
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,260,086

DRILL HOLDER

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Application September 12, 1940, Serial No. 356,567

2 Claims. (Cl. 211-69)

My invention relates to holders for drill bits and more especially sets of drill bits in which holders the bits are placed and retained in a predetermined arrangement according to size.

One of my objects is to provide an economical and compact construction of drill holder.

Another object is to provide a construction of holder whereby the drill bits will be held in predetermined positions in the holder, against accidental displacement therefrom, regardless of the turning of the holder upside down or sideways, yet be easily individually removable from, and replaceable in, the holder; particularly to the end of permitting a workman to store the holder, with the bits therein, in his tool box, without risk of the bits becoming displaced from the holder and intermingled with each other and with such other tools as may be contained in the box, and which would require sorting and gaging of a number of the bits each time to find the right one to use; and other objects as will be manifest from the following description.

Referring to the accompanying drawings:

Figure 1 is a face view of a holder constituting one embodiment of my invention.

Figure 2 is a broken view in side elevation of the holder showing drill bits in place therein.

Figure 3 is an enlarged sectional view of the holder, the section being taken at the line 3 on Fig. 1 and viewed in the direction of the arrow.

Figure 4 is a broken perspective view of another embodiment of the invention.

Figure 5 is a view in side elevation of the structure of Fig. 4.

Figure 6 is an end view of another embodiment of the invention.

Figure 7 is a broken view, in side elevation, of the structure of Fig. 6.

Figure 8 is an end view of another embodiment of the invention.

Figure 9 is a broken view in side elevation of the structure of Fig. 8; and

Figure 10 is an end view of another embodiment of the invention.

Referring to the construction shown in Figs. 1-3, the holder comprises a base portion 11 of any suitable resilient material, such as for example, soft rubber, molded into the desired shape, as for example as shown, and having a recess 12 in its upper surface affording a marginal up-standing rim 13.

The holder also comprises a plate 14, as for example of metal, set into the recess 12 and secured therein in any suitable manner, as for example by the headed push-pins shown at 15

which extend through openings 16 in the plate 14 and into openings 17 in the base portion wherein they are firmly secured by the gripping action of the rubber.

The holder in this particular instance is provided for holding a set of drill bits 18 the shanks of which, in accordance with common practice, are of progressively greater diameter, and thus there is provided in the plate 14, which constitutes a gage plate, a series of holes 19 extending therethrough and graduated in size in accordance with the diameters of the shanks of the drill bits. Each hole 19 with which is associated the gage member and diameter of the particular size of drill bit as shown to be received therein, is of a diameter slightly larger than the diameter of the shank of such particular drill bit but smaller than the diameter of the next larger size of drill bit so as to permit it to be readily inserted into the proper one of the holes 19.

The resilient base portion 11 of the holder has a series of holes 20 which register, respectively, with the holes 19 in the plate 14, the holes 20 being of less diameter than the holes 19 with which they, respectively, register and of such diameter smaller than the shanks of the drill bits inserted through the holes 19 in the plate 14 and into the holes 21 in the base 11 that the shanks will be firmly gripped by the resilient material and sufficiently frictionally held in place in the holder as to prevent the falling of the drill bits from the holder when the latter is inverted or turned sideways, yet permit of their removal from the holder by the workman as desired.

One of the advantages of the provision of the base member of resilient material as described is that being of such material, damage to other tools coming in contact with the holder is minimized.

In the construction shown in Figs. 4 and 5 the body of the holder is formed of a rigid channel bar 21, as for example of metal, presenting upper and lower flanges 22 and 23, respectively, and a rigid bar 24 of angle shape in cross section located in the channel of the bar 21 and secured at its flange 25 to the web 26 of the bar 21, its flange 27 being disposed substantially parallel with the flange 23 and spaced therefrom.

The flanges 23 and 27 contain alining holes 28 and 29, respectively, of progressively greater diameters from one end to the other of the holder, as in the case of the holder of Figs. 1-3, for receiving the shanks of the set of drill-bits 18 to be assembled with the holder.

In this construction the drill-bits are frictionally, releasably held in place in the holder

by means which are located at one side of the drill bits and yieldingly laterally press against the shanks of the drill bits; the means shown for this purpose comprising a strip 30 of resilient material, as for example soft rubber, secured flatwise to the flange 25 of the bar 24 and of such thickness as to become engaged, and compressed, by the shanks of the drill bits in the assembling of the drill bits with the holder to the position as shown in the drawings. The face of the strip 30 at which it is engaged by the drill bits is preferably of arcuate form in cross section as shown at 31, to facilitate the assembling of the drill bits in the holder.

The construction shown in Figs. 6 and 7 exemplifies the invention as incorporated in a holder in which the drill bits, instead of projecting from one side only of the holder, projects from opposite sides thereof in staggered relation to each other, a feature which permits the holder to be made of less length than in the case where all of the drill bits extend at one side only of the holder, while permitting adjacent drill bits to be spaced apart the desired distance for easy introduction of the drill bits into the holder and selective removal of the drill bits therefrom.

In this construction the body of the holder is formed of a rigid channel bar 32 having upper and lower flanges 33 and 34, respectively, and a rigid channel-bar 35 located in the channel of the bar 32 and secured at its web 36 to the web 37 of the bar 32 with its flanges 38 and 39 substantially parallel with the flanges 33 and 34 and spaced therefrom.

The flanges 33 and 34 contain holes at intervals along their length to receive the shanks of the drill-bits 18 as in the case of the flange 23 of Figs. 4 and 5, the holes in the flanges 33 being staggered with respect to the holes in the flange 34, and the flanges 38 and 39 contain holes for the shanks of the drill bits which aline, respectively, with the holes in the flanges 33 and 34, whereby the drill bits are positioned in the holder to alternately extend from opposite sides thereof as exemplified by the showing in Fig. 7.

The drill-bit receiving holes in the flanges 33, 34, 38 and 39 may be progressively graduated in diameter for the set of drill-bits continuously from one end to the other of the holder or any other arrangement of graduations provided as desired.

This construction is provided with means for frictionally holding the drill bits in place in the

holder as in the case of the construction shown in Figs. 4 and 5, the resilient strip provided for this purpose and shown at 40, being located in the channel of the bar 35 and secured in place to the web of this bar.

The construction shown in Figs. 8 and 9 is the same as that shown in Figs. 4 and 5 except that the means for frictionally holding the drill-bits in place in the holder instead of being provided as a strip of resilient material such as rubber, is in the form of a series of finger springs 41, as for example of spring metal, shown as formed integrally with a connecting strip 42 secured to the base of the holder, the several fingers 41, respectively, registering with, and yieldingly bearing against, the drill bits 18 introduced into the holder. Those of the parts shown in Figs. 8 and 9 which correspond with similar parts of the construction shown in Figs. 4 and 5 are given the same designating numerals.

The construction shown in Fig. 10 is the same as that shown in Figs. 1, 2 and 3 except that the body of resilient material in which the drill bits are frictionally gripped at their shanks and represented at 43 is partially encased in a rigid channel bar 44 the web portion 45 of which corresponds with the plate 14 of Figs. 1-3 and is apertured as in the case of this plate, to receive the shanks of the drill-bits.

While I have illustrated and described certain specific embodiments of my invention I do not wish to be understood as intending to limit it thereto as the same may be variously modified and altered and the invention embodied in other forms of structure without departing from the spirit of the invention.

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

1. A holder comprising a base portion of resilient material having holes to receive the articles to be held in the holder and a plate secured to said base portion and containing holes registering with, and slightly larger than, the holes in said base portion.

2. A holder comprising a base portion of resilient material having holes to receive the articles to be held in the holder and having a recess in its upper surface, and a plate located, and secured, in said recess and containing holes registering with, and slightly larger than, the holes in said base portion.

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