No. 768,186. PATENTED AUG. 23, 1904.

R. A. LACHMANN.

DRILL SLEEVE.

APPLICATION FILED MAR. 25, 1903.

NO MODEL.

FIG. 1.

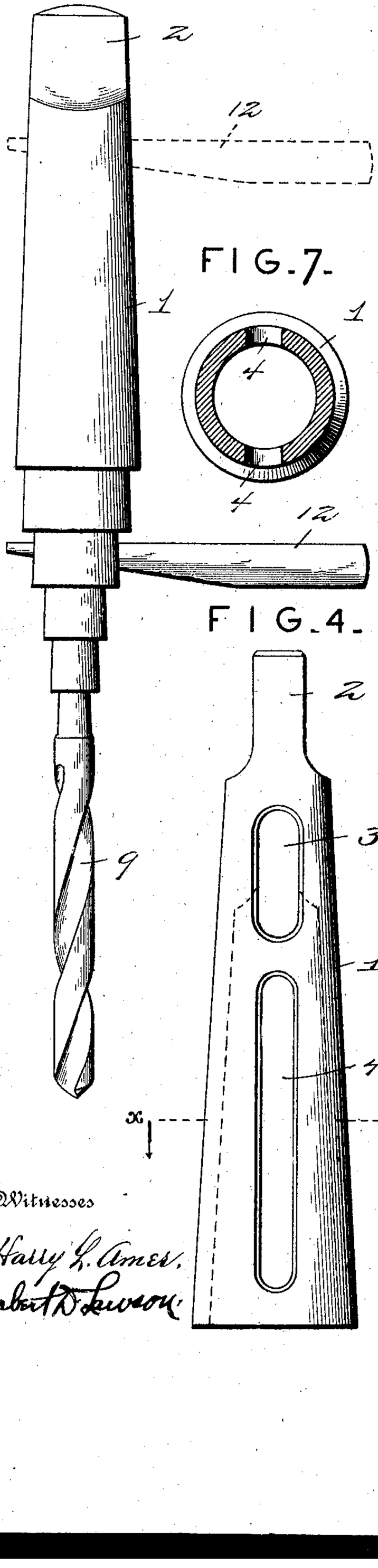


FIG. 7.

FIG. 4.

FIG. 2.

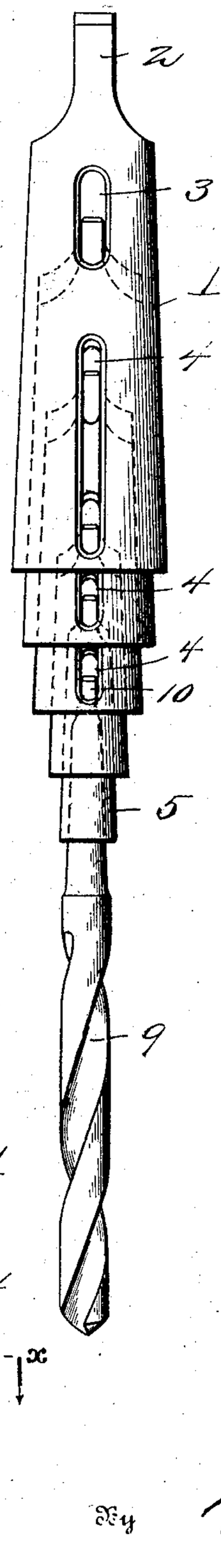


FIG. 5.

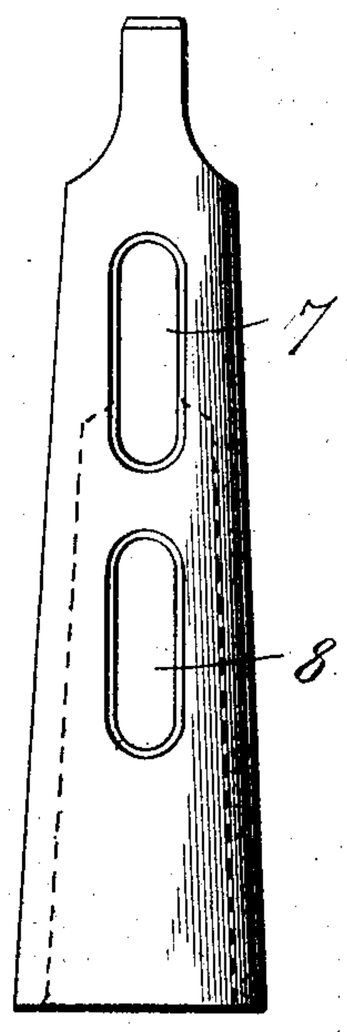


FIG. 6.

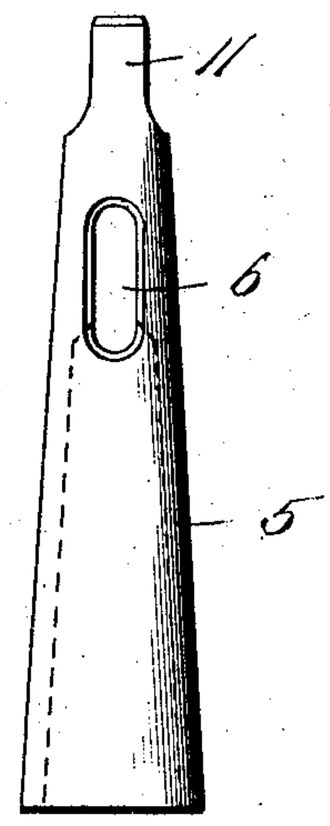
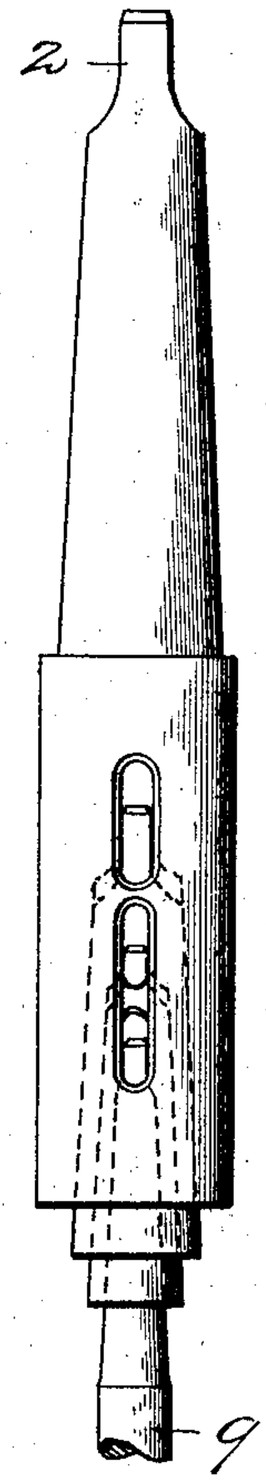


FIG. 3.



Witnesses

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No. 768,186. Patented August 23, 1904.

UNITED STATES PATENT OFFICE.

ROBERT A. LACHMANN, OF CHICAGO, ILLINOIS.

DRILL-SLEEVE.

SPECIFICATION forming part of Letters Patent No. 768,186, dated August 23, 1904.

Application filed March 25, 1903. Serial No. 149,565. (No model.)

To all whom it may concern:

Be it known that I, ROBERT A. LACHMANN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Drill-Sleeves, of which the following is a specification.

My invention has relation to new and useful Improvements in tool-holders, and more especially to those of that character or type which are socketed to receive the shank of a tool and adapted to be nested together in order that tools of different sizes may be used with the same machine press or spindle.

One of the objects of the invention is to provide a tool-holder of the character mentioned which is so constructed that when in operative position in a machine-spindle the tool may be removed therefrom without the necessity of dislodging the holder and subsequently by a separate operation detaching the tool from the holder, which latter stated operation is necessitated by the forms of holders now generally employed.

Another object is to so construct the holders that when nested together and carrying the tool should it be desired to employ a larger tool requiring a holder in the nested series having a larger socket the smaller holders may be removed from the one it is desired to use without removing all the holders from the machine and then separating them one at a time.

The invention consists in providing a plurality of socketed tool-holders of different sizes, each having an opening in its walls, said holders being constructed to be nested together and the openings in their walls being so shaped and arranged as to overlap, so that a drift-pin or other driving-tool may be inserted through the wall of the larger holder and have access to the socket of the smaller nested holder.

I have fully and clearly illustrated my invention in the accompanying drawings, forming a part of this specification, and wherein—

Figure 1 is a view in side elevation of the tool-holders of different sizes nested together in operative relation to carry a drill or other tool. Fig. 2 is a view in front elevation of the tool-holders nested together and showing the arrangment of the openings in the several holders with relation to each other. Fig. 3 is a similar view showing in nested relation a series of holders embodying my improvements. Fig. 4 is an enlarged detail view of one of the sleeves. Fig. 5 is a similar view of a smaller-sized sleeve. Fig. 6 is a detail view of the smallest sleeve of the series; and Fig. 7 is a section on the line *x x*, Fig. 4.

Referring to the drawings, wherein a plurality of drill-sleeves are shown as being constructed to embody my invention, 1 designates a tapered drill-sleeve having a tang 2 at its upper or reduced end and provided with a short longitudinally-extending slot 3 adjacent said tang, said sleeve being also provided with a longitudinally-extending tapered socket adapted to receive the shank end of a drill or other tool.

The above features of construction are similar to devices of this character which have ordinarily been used and form no part of my invention. I, however, have improved upon the construction just mentioned by providing each sleeve or holder with a longitudinally-extending slot 4 in each side wall thereof and in alinement with the slots 3 and which extend for a major portion of the length of the socket in the sleeve and opening therein, said slots being so located as to permit lateral access of a drift-pin or similar driving-tool to substantially any point in the length of the socket. The edges of these slots are rounded, as shown clearly in Fig. 7, and in the larger size of sleeves the slots 4 are preferably approximately twice the length of the smaller ordinary slots 3; but it will be understood that the length of the slot 4 in each sleeve depends upon the length of its socket and upon the lengths of the slots in the sleeves to be nested in said socket. The sleeves in the series, as previously indicated, are of different sizes, the smallest one, 5, being provided with but a single slot 6 in each side. The next largest sleeve of the series used has two slots 7 and 8 in each side, said slots being of the same length. The larger sleeves, however, as before stated, have the two sets of slots formed of different lengths.

If it is desired to place into a large drill-

press a drill the tang or shank of which is too small to be seated in the socket of the drill-press, a number of the sleeves or holders are nested in the press until the last one is of the proper size to receive the drill. Said drill 9 is inserted into the sleeve, and when in position therein the tang 10 of the drill will appear in position between the slots 6 of sleeve 5, the slot 8 of the next largest sleeve, which is illustrated in Fig 5, and the slot in the second sleeve in the nested series above the sleeve 5.) The tang 11 of sleeve 5 will be accessible through the slots in the third and fourth sleeves in the series or the second and third above the sleeve 5, and the tangs of the other sleeves will also be accessible through the slots of the larger sleeves, arranged thereon in a similar manner. When the parts are assembled in this manner and as illustrated in Figs. 1, 2, and 3, the drill can be quickly removed for sharpening or other purposes by inserting a drift 12 into the registering slots of the first three sleeves in the series, so as to bear downward upon the tang of the drill, and when said drift is forced inward the drill be ejected without first going to the trouble of removing the sleeves one from the other. Should it be desired to place a larger-size drill within the press, the drift can be placed above the tang of the sleeve which it is desired to remove, and said sleeve can thus be readily forced outward without detaching the remaining sleeves from each other, thereby saving time and reducing wear upon the parts.

It will be seen from the foregoing description, taken in connection with the drawings, that beginning with the smallest sleeve any required number of the sleeves may be removed from their operative position without affecting those immediately above in the series by simply driving the drift into the slot above the tang of the last sleeve to be removed and that the entire series may be removed by inserting the drift in the uppermost slot, which, as shown in the drawings, is slot 3.

By rounding the edges of the slots the same will be prevented from becoming nicked or otherwise injured by metal tools coming in contact therewith.

It will be seen that in using the drift the same always has a bearing in the upper end of the slot of the sleeve in which the tang to be operated upon is located, and it does not bear on any of the other sleeves during such operation, the openings in the latter merely serving to give access to the slot of the sleeve which carries the sleeve or tool to be removed.

It will be understood that various combinations of the sleeves can be used in order to obtain desired results, and in all cases the slots are so arranged that the tangs of the several sleeves will be in a position easily accessible for removal by means of the drift.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus fully described the invention, what is claimed as new is—

1. A plurality of taper-socketed tool-holders of different sizes nested together, and having transverse openings through their walls so shaped and disposed as to overlap, whereby to give access with a drift-pin to the socket of a smaller nested holder through the wall of the larger holder.

2. A tool-holding device having a tapered tool-socket and having its wall open laterally throughout the major portion of the length of the socket so as to permit lateral access of a drift-pin or other driving-tool to substantially any point in its length.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT A. LACHMANN.

Witnesses:

HUGO PULVER,

H. R. ASH.