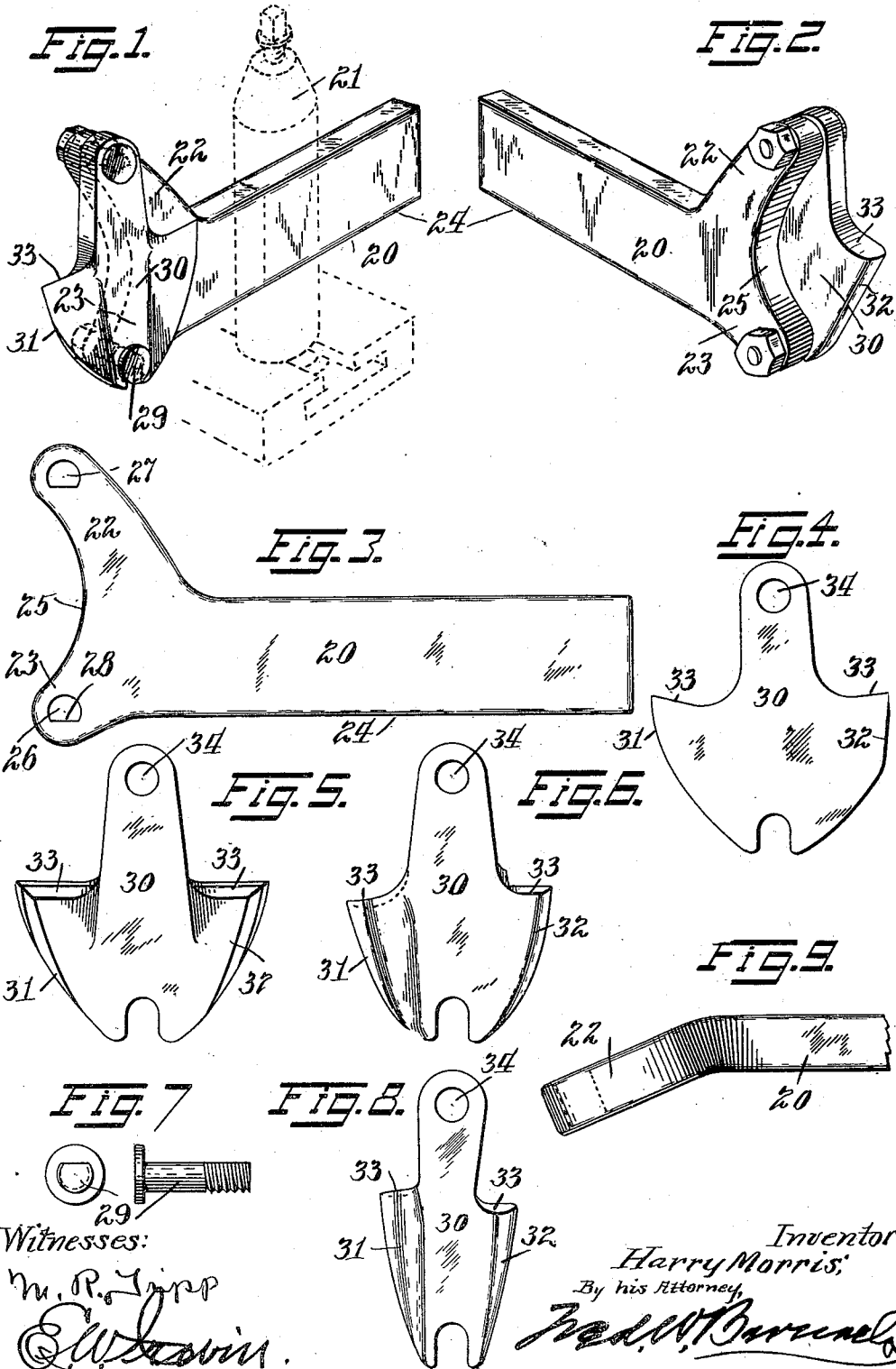


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 TOOL AND TOOL HOLDER.
 APPLICATION FILED AUG. 28, 1906.

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UNITED STATES PATENT OFFICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY MORRIS, a citizen of the United States, residing in borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Tools and Tool-Holders, of which the following is a specification.

The invention has reference to tool-holders and to tools.

It is an object of the invention to provide a tool-holder which is so constructed that it is capable of carrying, at will, a variety of tools, which during use, may be both suspended and supported by the tool-holder in such a manner that there will occur an equalization of strain from and at the points of suspense and of support.

It is another object of the invention to provide in connection with the tool-holder, a variety of tools which are adapted for various purposes in the art, and which may each be independently applied to and used in connection with the holder, and in this connection it is a further object of said invention to so arrange the said tools that each tool-member may be provided with a plurality of working surfaces or points of an independent character so that the number of tool-pieces may be reduced, while at the same time giving a greater number of working elements.

It is still another object of the invention to so arrange the tool-holder and the associating tools, that there may be a substantial universality of use of the tools—that is to say, that the tools may be used as “rights” and “lefts,” as understood in the art to which this invention appertains; and within the comprehension of this object it may also be stated that the tool-holder proper, or the tool-holding portion of the tool-holder may be so arranged or constructed that the tools may be angularly presented relatively to the axis of revolution of the element or stock upon which the tool is designed to operate.

To carry out the objects hereinabove set forth, together with such other objects as may become apparent without particular recitation, the invention, may, of course, be embodied into any suitable form, best calculated to first meet the requirements of the work to be performed, and then to suit the marketable demands; hence special arrangements of the tool-holder and the tools, so long as the principle of the invention is

present, will all be comprehended within the scope of this case and the claims hereto appended and forming a part hereof, and any arrangements which may be attempted in competition to represent or resemble the invention herein expressed will be considered to constitute an infringement of this invention so long as the said principle of invention is present in such representations or resemblances. There is, of course, therefore illustrated, on the sheet of drawings hereto forming a part of this specification, an embodiment of a convenient and practical form of the invention; Figure 1 illustrating a perspective view of a tool-holder and a tool applied thereto for “right-handed” duty; Fig. 2 illustrates a similar view showing an application of a tool for “left-handed” duty; Fig. 3 illustrates an elevational view of a form of tool-holder; Figs. 4, 5, 6 and 8 represent various types of tools which may be used in connection with the tool-holder; Fig. 7 represents two views of a suitable form of fastening device for the tools (although this is not necessarily a portion of the invention as any suitable means for this function may be employed), and Fig. 9 represents a tool-holder having the tool-holding or supporting portion offset with relation to the main body of the tool-holder.

As applicable to the illustration set forth herewith, and which perhaps represents one of the most practical forms of the invention, 20 represents the stock or body-portion of a tool-holder which may be inserted into the usual tool-post 21. This tool-holder is provided, in any suitable manner with portions 22 and 23 which may be suitably disposed with relation to each other and with the base 24 of the body-portion 20 of the tool-holder, by which a tool may be suspended and supported simultaneously in presentation to the work. In the present instance the tool will be suspended from the portion 22 and will then at the same time be supported by the portion 23, in any suitable manner, one manner of which will later on be set forth.

The relation or location of the portions 22 and 23, relatively to each other and to the base 24, will of course be largely a matter of discretion resulting from mechanical experience, and any one of such relations may be adopted, at will, within the purview of, and without departing from the spirit of the invention; the object being to obtain by such

relations the best results. In the present instance, as shown, these portions 22 and 23 are located substantially in radiated relations one to another, leaving between them
 5 sufficient span to permit a wider range of use of the tool. In the present instance, as shown, the portions 22 and 23 are arms which are integral with and which extend beyond the extremity 25 of the tool-holder-body 20, the suspension arm extending up-
 10 wardly and angularly, while the supporting arm depends angularly from said body. These arms, in the present instance, are designed to support or carry a tool, by having the same suspended at or contiguous to the
 15 extremity of one arm, and supported by and at or contiguous to the extremity of the other arm. Naturally, however, equivalent arrangements may be adopted. The method
 20 of applying the tools to these portions 22 and 23, may, of course, as has heretofore been pointed out, be of any suitable character best adapted for various purposes, and one of these methods is illustrated as com-
 25 prising openings 26 and 27 which, in the present case, are located approximately contiguous to the extremities of each portion 22 and 23, and which are substantially in a vertical plane relatively, said plane, in the
 30 present case, being also substantially at right angles to the plane of the base 24 of the body 20. However, as is obvious, that this relation may be modified within the scope of this invention, such relation being only
 35 a mechanical expedient and may be departed from to meet varying contingencies. These openings 26 and 27 are shown as partially circular, having one flat wall 28; the fasten-
 40 ing device 29, such as a bolt, being correspondingly shaped, so that when said fastening device is performing the duty of retaining the tool to the tool-holder, there will be no possibility of the said device shifting
 45 out of place or releasing the tool from the holder.

Thus far is illustrated a tool-holder, of any character or design, which is provided with tool-holding portions, the one from which the tool may be suspended and the other by
 50 which the tool may be supported, and which points of suspense and support are substantially equidistant from the axial line of the tool-holder-body, whereby the strain forces resulting from the suspense and from the
 55 support will be equalized, thus insuring to the practicability and durability of the tool holder. Again, the tool suspending and supporting portions of the holder, being extended beyond the extremity of the forward
 60 portion of the holder, enables the tool to be projected into a piece of stock without interruption with greater latitude, which is one of the essential features in so forming the holder.

65 In connection with the tool-holder, above

set forth, there is provided a variety of tools, some of which are illustrated in figures upon the drawing. The tool may be formed in any suitable manner best calculated to render beneficial results, and also be adapted
 70 to be connected to the holder. In the present instance, the tool comprises a body portion 30, extending from the central axis of which, and in opposed directions are blades 31 and 32, the working portions 33 of each
 75 of which are presented substantially intermediate of the upper and lower portions of the blade 30, and thus, when the tool is applied to the tool-holder, these points 33 are substantially intermediate of the tool sus-
 80 pending portion 22 and the tool supporting portion 23 of the tool holder, thus further equalizing the strain from the points of suspense and support. The manner of forming the blade 30 of the tool for assembling
 85 the same with the tool holder, will, of course, correspond to the manner in which the tool-holder portions 22 and 23 are provided with fastening means, and this again, is a matter of expedience and skill, rather than of in-
 90 vention. The method illustrated constitutes an opening 34 located in the upper portion of the blade 30 which may register with the opening in the suspending arm 22 of the holder, and the lower portion of said blade
 95 30 is bifurcated, in the present instance so that the blade may straddle the bolt 29, and thereby be simultaneously supported by the bolt which passes through the lower arm 23 while the tool is being suspended from the
 100 arm 22 by another similar bolt.

The tools are constructed for interchangeable use, and therefore the working point or portion on one side of the central axis of the tool formed for right hand duty, while
 105 the opposite blade or point is formed for left hand duty, in those cases where the character of the working portions are the same, and in the other blades one kind of tool may extend from one side of a blade while an-
 110 other character of tool may occupy the opposite portion. Consequently, there is provided tools which may be used for right and left hand work and other tools may be adopted to give a variety of performances with
 115 a nominal quantity of tool-pieces.

In Fig. 9 on the drawings there is illustrated an off-set tool-holder, that is to say the tool-holding portions are offset relatively to the body portion of the tool-holder. This
 120 offsetting of the tool-holding portions may be accomplished in any suitable manner, such for instance angularly, right or left, or right angularly right or left, or in any other manner which the work may demand.
 125

It will now be seen that the tool-holder and tool form a combination by which great durability is created for the reason that the working portion of the tool is substantially supported and reinforced tri-angularly by
 130

the support from the point of juncture of the tool holder and post, the suspending arm and the supporting arm; in this way there is created greater strength enabling greater load upon the tool, and permitting the latter to thus perform greater work. The relation of the tool to the tool-holder also permit greater latitude of use in the tool, which is also essential in practice.

10 Having thus described this invention, I claim:

1. The combination with a stock having two tool-holding arms extending angularly away from the body of the stock and forming an arch, of a tool adapted to be suspended from one arm and supported by the other arm and means for uniting the tool-holding arms and a tool.

2. The combination with a stock having two tool-holding arms branching away from the body of the stock and forming a stock-entering recess, of a reversible tool adapted to be suspended from and supported by the arms and bolts passing through the tool and the tool-holding arms for holding the tool in place to the tool-holding arms.

3. A cutter, comprising in combination, a stock, arms formed on one end of said stock and radiating in a V from a center located in the longitudinal axis of said stock and a tool supported by said arms and spanning said V, said tool being formed and mounted

so that the strain on its working edge is communicated to said arms and thence to said longitudinal axis of said stock at said center.

4. A cutter, comprising in combination, a stock having a body portion and a bi-branched portion comprising arms radiating from a center located in the axis of said stock body, and a tool member pivotally supported to span the free ends of said arms and arranged so that the strain on the cutting edge is communicated to the ends of said arms and thence to said longitudinal axis.

5. A cutter, comprising in combination, a stock having an elongated body portion and a bi-branched tool holding portion, said bi-branched tool-holding portion radiating from a common center located in the axis of said body portion and forming two sides of a triangular structure, and a cutting tool forming the third side of said triangular structure and arranged to communicate the strain on the cutting edge to the ends of said arms and thence center said strain in the longitudinal axis.

Signed at New York, in the county and State of New York.

HARRY MORRIS.

Witnesses:

MAYBELLE McADOO,
FRED. W. BARNACLO.