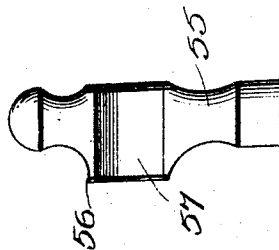
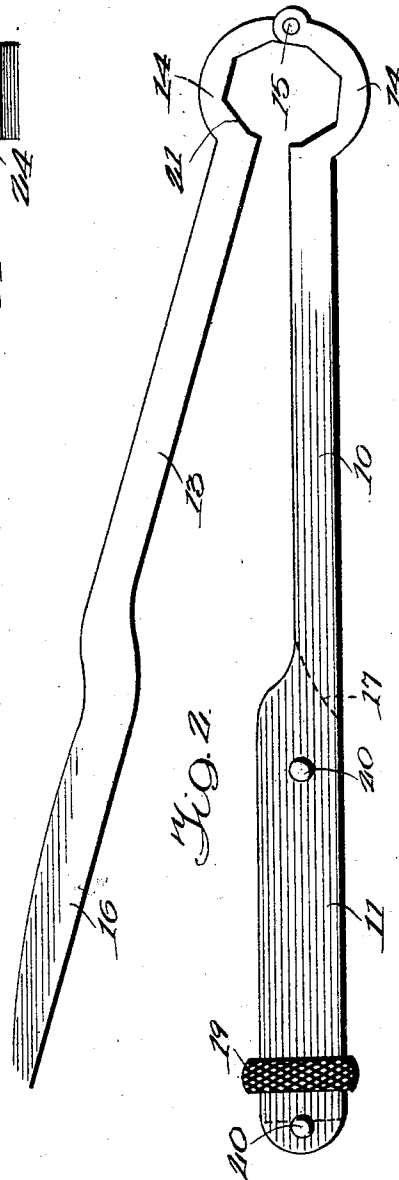
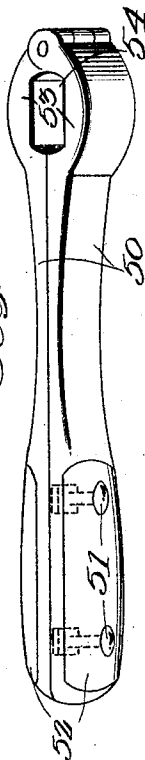
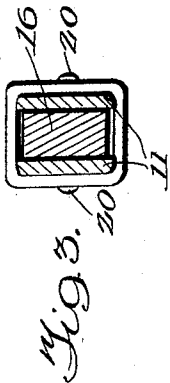


1,411,970.

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BLACKSMITH'S TOOL SET.
APPLICATION FILED OCT. 2, 1920.

1,411,970.

Patented Apr. 4, 1922.

3 SHEETS—SHEET 2.

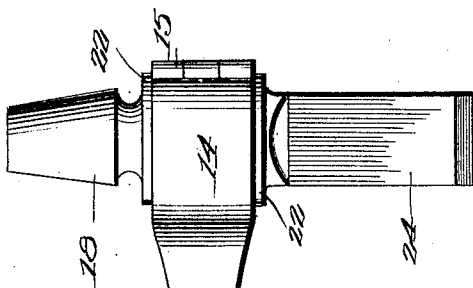


Fig. 4.

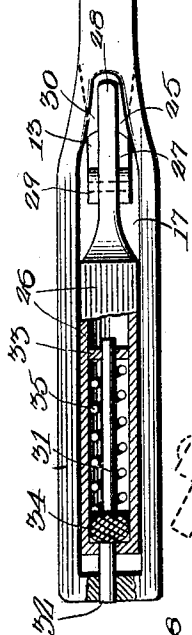
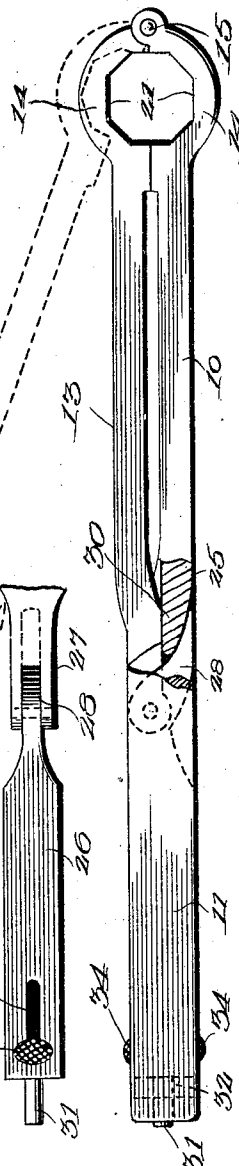
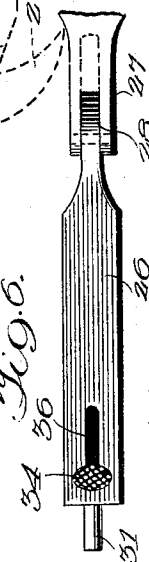
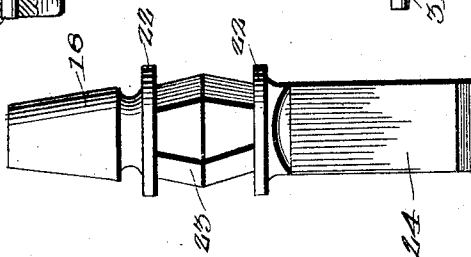


Fig. 5.

Fig. 6.



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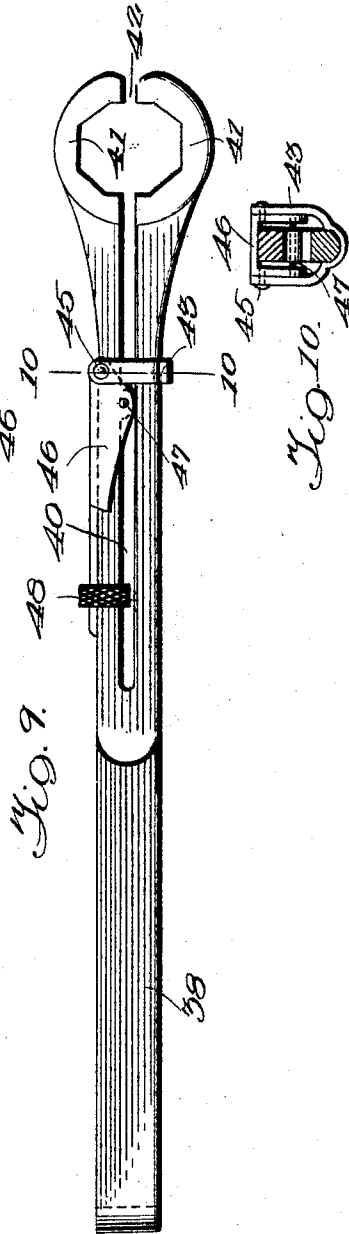
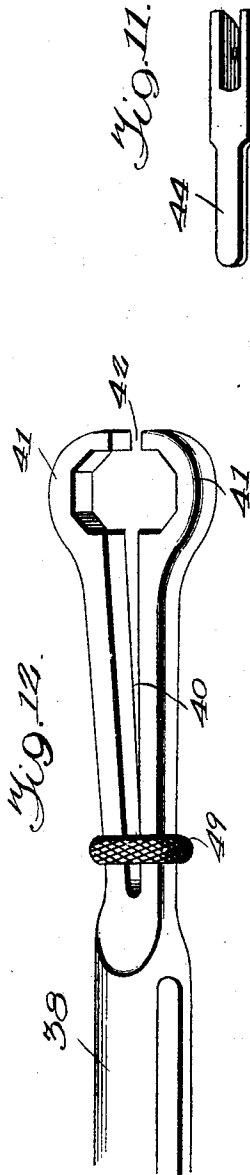
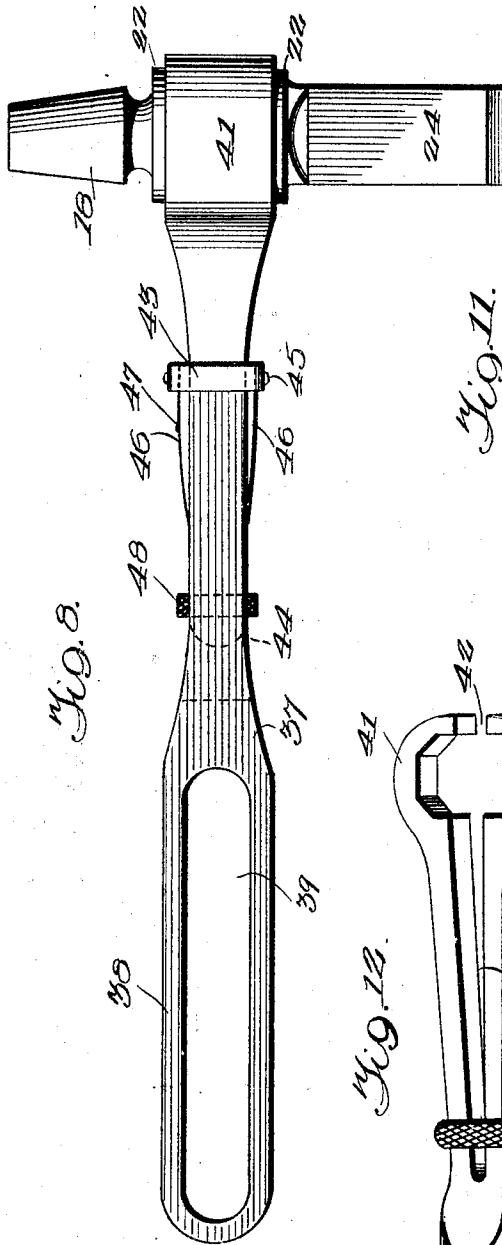


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UNITED STATES PATENT OFFICE.

ARTHUR LEE LIGON, OF PECOS, TEXAS.

BLACKSMITH'S TOOL SET.

1,411,970.

Specification of Letters Patent.

Patented Apr. 4, 1922.

Application filed October 2, 1920. Serial No. 414,203.

To all whom it may concern:

Be it known that I, ARTHUR LEE LIGON, a citizen of the United States, and a resident of Pecos, in the county of Reeves and State of Texas, have invented certain new and useful Improvements in Blacksmiths' Tool Sets, of which the following is a specification.

This invention relates to an improved blacksmith's tool set, although it may be adapted for use by other mechanics in holding various forms of tools and it is directed more particularly to improvements upon the devices illustrated in my Patents Nos. 1,142,447 dated June 8, 1915 and covering a combination blacksmith's tool set and Patent 1,152,327 dated August 31, 1915 and covering detachable handles for tools.

It is the object of the invention to greatly simplify and improve the construction of the handle and gripping arrangement by which the tools are secured thereto against displacement, rendering the devices less complicated, stronger, and more economical to produce, as well as more convenient to use, by reason of the facility with which the tools may be applied or removed from the handles.

Therefore, it is an object of the invention to provide a blacksmith's tool set or detachable handle for tools by which various types of tools, such as a hammer, or tool for carpenters, and including swedges, hatchets, claw hammers, and the like, may be readily applied and held, thus necessitating but a single handle for numerous tools, while also adapting the device to be made in various sizes in accordance with the work to be executed.

Other objects of my invention will become readily apparent to persons skilled in the art, from a consideration of the following description when taken in conjunction with the accompanying drawing, in which:

Figure 1 is a side elevation showing one form of handle constructed in accordance with the invention and having the tool of a set applied thereto,

Figure 2 is a plan view of the handle with the tool removed and the handle in an open position,

Figure 3 is a sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a side elevation partly broken away and in section, of a modified form of handle,

Figure 5 is a plan view of the device with the tool removed, the handle being shown closed in full lines and open in dotted lines,

Figure 6 is a fragmentary side elevation showing the free end of one of the hinged handle portions and holding means applied thereto,

Figure 7 is an elevation of a tool equipped to be held by the handles,

Figure 8 is a side elevation of a further modified form of handle,

Figure 9 is a plan view of the device shown in Figure 8,

Figure 10 is a sectional view taken on the line 10—10 of Figure 9,

Figure 11 is a disassembled perspective view of the parts of the locking device employed with the device shown in Figures 8 and 9,

Figure 12 is a perspective view of a fragmentary portion of a modified handle and gripping means in addition to those specified above,

Figure 13 is a perspective view of a still further modified form of the device, and

Figure 14 is a side elevation of a tool to be held thereby.

Referring to the drawings in detail, in which like reference characters indicate corresponding parts throughout the several views, and particularly to Figures 1, 2 and 3, the handle includes a spring metal or flexible shank portion 10 of forged or pressed steel having a gripping portion 11, the shank portion being narrower than the gripping portion and offset laterally as indicated at 12. At the opposite end of the shank portion 10 and at the corresponding end of a cooperating shank portion 13 are arranged semi-circular jaws 14 having apertured extremities hinged or pivoted together as indicated at 15 so that the shank portion 13 may swing relative to the shank portion 10. The free or rear end of the arm forming the shank portion 13 is offset inwardly as indicated at 16 and is designed to

enter the hollow portion or opening 17 which extends transversely through the handle 11 and is adapted to be retained in closed position to grip the tool 18 and hold the same 5 firmly in position, through the medium of a sliding ring 19 which is mounted on the handle and limited in its movement as well as held from displacement in either direction through the medium of opposed raised 10 portions or projections 20 extending from the top and bottom faces of the handle 11.

By reference to my prior patents, it will be seen that the hinged portion of the handle is held in position by a ring or holding means 15 of complicated construction which considerably weakens the shank of the handle, the handle being made up in such a way as to detract from the strength and durability thereof, particularly in hard service, attention 20 being particularly directed to the neck or small part of the handle which is made up of cut steel. In order to render the same more durable under heavy sledging and usage so as to avoid bending and breaking 25 thereof, the spring steel handle above described, is provided, and is more flexible. It will also yield under hard sledging and service, without breaking or bending excessively. By reference to the drawings, it will 30 be seen that the portion 10 and the gripping portion or handle 11 are relatively rigid, the portion 13 being hinged for movement with respect thereto in order to separate or close the jaws 14. In order to hold the tool 18 35 which is specifically shown in Figure 7, the jaws are provided with a plurality of angular faces at the inside, being hexagonal or of other polygonal or many sided shape, as indicated at 21. The tool 18 is provided with 40 the spaced circumscribing or angular flanges 22 forming shoulders or stops between which is arranged a barrel or bowl-like intermediate portion 23 also having a plurality of sides corresponding to the formation of the 45 jaws 14, in order to accurately fit and conform thereto between the flanges or shoulders 22, in order that the tool will be positively held in position and may be turned or revolved to any position of angularity. Of 50 course, the tool part 24 may be of any desired form, it being understood that various forms of tools may be held in the handle in the manner described, thus adapting the device to various kinds of work. By reason 55 of this form of gripping means, the device can be more easily and economically produced in addition to causing a very firm gripping of the tool. It is of course to be understood that the tool and the jaw space 60 may be of any desired polygonal cross section, being either square, hexagonal, octagonal or the like, so that the operator may be enabled to turn the tool at different angles to suit the work best. Furthermore, by making 65 the tool barrel-shaped intermediately

where the handle grips the same, the tool is prevented from bending or buckling under heavy sledging, being also reinforced by the jaws disposed between the flanges or holders thereof. It should also be noted that the 70 shank portion 13 terminates at a spaced distance from the slot or opening 17 disposed transversely through the enlarged and thickened portion of the handle, in order that the ring 19 may be moved beyond the free end 75 thereof at the rear end of the handle, so that the hinged shank may be swung to a closed position and held by sliding the ring forwardly in the position shown in Figure 1, as distinguished from the position shown in 80 Figure 2, or moved to the open position shown in Figure 2 in order to apply or remove the tool.

In the form of the invention shown in Figures 4, 5 and 6, the tool is similarly held 85 in position but the shank portion 10 has the opening therein formed with an extension 25, and in order to adapt the device to heavy work, where the handle is made heavier and stiff, and where it would be difficult to close 90 the shank 13 against the shank 10 in the construction above described, the shank 13 is provided with a compound leverage having the outer section 26 hinged to the bifurcated 95 free end 27 thereof and formed with an inwardly or laterally offset tapered end portion 28, the pivotal connection being designated at 29. This offset portion is designed to enter the extension recess 25 in order that the pivoted shank 13 may be swung towards 100 the shank portion 10 when the section 26 is moved on its pivot after the projecting end or hook 28 is engaged over the shoulder or extension 30 produced by the extension recess 25. The section 26 is then moved into 105 the slot of the handle or gripping portion proper where it is held by the engagement of a spring pressed bolt 31 with an opening 32 in the closed free end wall of the gripping portion. This bolt is mounted in the 110 section 26, which is made hollow except for a web 33 between which and the shank portion of a button 34, there is disposed an expandible helical spring 35 which is mounted on the shank of the bolt at the reduced end 115 thereof so as to force the operative end of the bolt into the opening 32. The button is disposed at opposite sides of the section 26 and the shank operates through slots 36 in order to permit the bolt to be retracted and 120 disengaged from the aperture or opening 32 in order that the device may be opened to release or engage the tool and closed in order to clamp and hold the same in position. Of course, the buttons will permit the bolts to 125 be retracted by hand while the sections of the handle formed by the shanks are in alinement with the portion 26 arranged within the opening 17, the slots 36 limiting the movements of the bolt by engagement 130

of the intermediate portion or shank of the operating member or button with the end walls thereof. Thus, it will be seen that when the bolt is held engaged with the opening, the device will be firmly held in clamping position and it will be apparent that by reason of the sectional formation of one of the shanks, that the section 26 may be more easily closed within the opening or slot 17 of the gripping portion 11 of the handle, thus more firmly gripping the tool and adapting the device to heavier work. By mounting the bolt in the end of the compound lever portion of the handle, a most desirable type of handle for heavy work is provided. Furthermore, it will be noted that the handle 10 is provided with a recess or depression to receive the projection 28 at the offset end of the section 26 of the compound lever or shank, thus securely holding the parts when in clamping position in addition to facilitating the closing of the shanks and thus the jaws, upon the tool. By this construction, the closing of the handle is greatly facilitated over the means by which this is accomplished in my prior devices or patents as above stated, and particularly No. 1,152,327 in which the holding means is provided in the shank instead of at the gripping end of the handle as in the present device. By this means, a much more substantial and stronger handle is produced and a more firm grip can be obtained upon the tool with less tension or pressure applied to the compound lever or shank. Therefore, a device possessing simplicity in construction, durability in use and strength, as well as ease of operation, is insured.

In the form of the invention shown in Figures 8, 9, 10 and 11, the handle 37 is provided with a gripping portion 38 formed with an opening 39 to cheapen and lighten the structure. It will also be apparent that the gripping and fastening means provided, results in the production of a tool of a fewer number of parts, thus also facilitating manufacture. While tools constructed in accordance with this form are usually larger and heavier, being of that class of tools, they can be easily operated. The device has the shank thereof split longitudinally as shown at 40 toward the jaws 41 which are open as shown at 42, these jaws, or at least one of them, being sufficiently springy or resilient, in order to cause separation of the jaws, in order that the tool may be placed in position or released. However, in order to move the jaws together in clamping relation, a U-shaped stirrup or yoke 43 is mounted on the shank portion and has pivoted thereto, a clamping lever 44 as shown at 45, said lever having side flanges 46 extending upon opposite sides of the shank and connected by a pin 47 which serves as a fulcrum in clamping or releasing the jaws, in order to release

the tension on the spring portion or portions of the shank of the handle so that the same will automatically separate, or may be clamped together when the device is in the position shown in Figures 8 and 9. In this position, the handle 44 is engaged by the keeper or ring 48 mounted upon one of the split portions or sides of the handle and adapted to slide thereon so as to hold the lever in engaged position, or to release the same, when the pivots 45 will move opposite the space between the shank portions when the leverage is released, so that the jaws may separate to receive or release the tool. It is of course to be understood that the jaws and split portions of the shank will spring open of their own accord, both, or at least one, being sufficiently resilient for this purpose, so that when the tension is released, they will immediately separate, thus greatly facilitating the removal or replacing of the tool. It is of course to be understood that the stirrup and clamping lever may be slid to any desired position along the shank for use in clamping the jaws together or releasing the same and by means of the construction provided, all weak and complicated parts are positively done away with, in addition to the cumbersome sliding ring and complicated structure thereof. The folding clamping lever as shown, adds strength to the ring or resilient portion of the handle formed by the shank, and besides being out of the way, is easy to operate and accessible. Furthermore, any form or type of detachable tool may be held in these demountable handles as desired, thus permitting the use thereof by different mechanics for different work.

In the form shown in Figure 12, the handle and shank are of similar construction but in lieu of the clamping lever and stirrup, a simple sliding ring 49 is employed, the shank portions being enlarged in thickness toward the jaw ends so that as the ring is moved forwardly, the jaws will be clamped against the tool and will readily spring apart when the ring is moved rearwardly to the position shown in Figure 12, for engaging or releasing the tool. The jaws in each construction are made the same, being provided with squared faces or forming a socket of polygonal or many sided formation to engage and conform to the corresponding cross sectional shape of the intermediate portion of the tool. This form of the device is extremely simple, being composed of only two detachable or separate parts, aside from the tool. The jaws will automatically swing open due to the resiliency of the split shank portion to receive or discharge a tool, while the forcing of the clamping ring toward the clamping jaws will create an inward pressure on the jaws, so that the tool will be firmly clamped or held in place.

In the construction shown in Figures 13 and 14, the handle sections 50 are held together by bolts or the like 51, gripping portions or fillers 52 of wood being secured in position thereby against the opposed web portions of the shanks at the gripping ends thereof, or at the gripping end of the handle formed thereby. The jaws are made of hexagonal or other polygonal shape at the inside, so as to grip a hammer of the blacksmith's type, or carpenter's claw type, hatchet or other form of tool. The jaws are designated at 53 and the socket thereof at 54, while the tool 55 is shown provided with spaced circumscribing flanges or ribs 56 forming stops, and an intermediate recess 57 held by the jaw. This form of device or demountable handle, is especially adapted for wood and metal worker's trades in combination.

20 In view of the foregoing, it is thought that the operation of the device will be readily

understood and in view of the simplicity and practical value that it will commend itself to those skilled in the art.

Having thus described my invention, I 25 claim:—

A tool of the class described comprising a handle having a shank portion provided with separable jaws, said jaws having co-acting concaved recesses with polygonal or many sided faces, and a tool having an intermediate reduced portion having spaced circumscribing flanges forming shoulders and an intermediate poly-sided portion between said shoulders for engagement with said jaws, said intermediate portion being barrel shaped or enlarged intermediately and tapering toward the ends thereof at said shoulders substantially as and for the purposes specified.

ARTHUR LEE LIGON.