April 6, 1937. F. S. HORECHNEY 2,076,462

COMBINATION TOOL

Filed Nov. 27, 1935 3 Sheets-Sheet 1

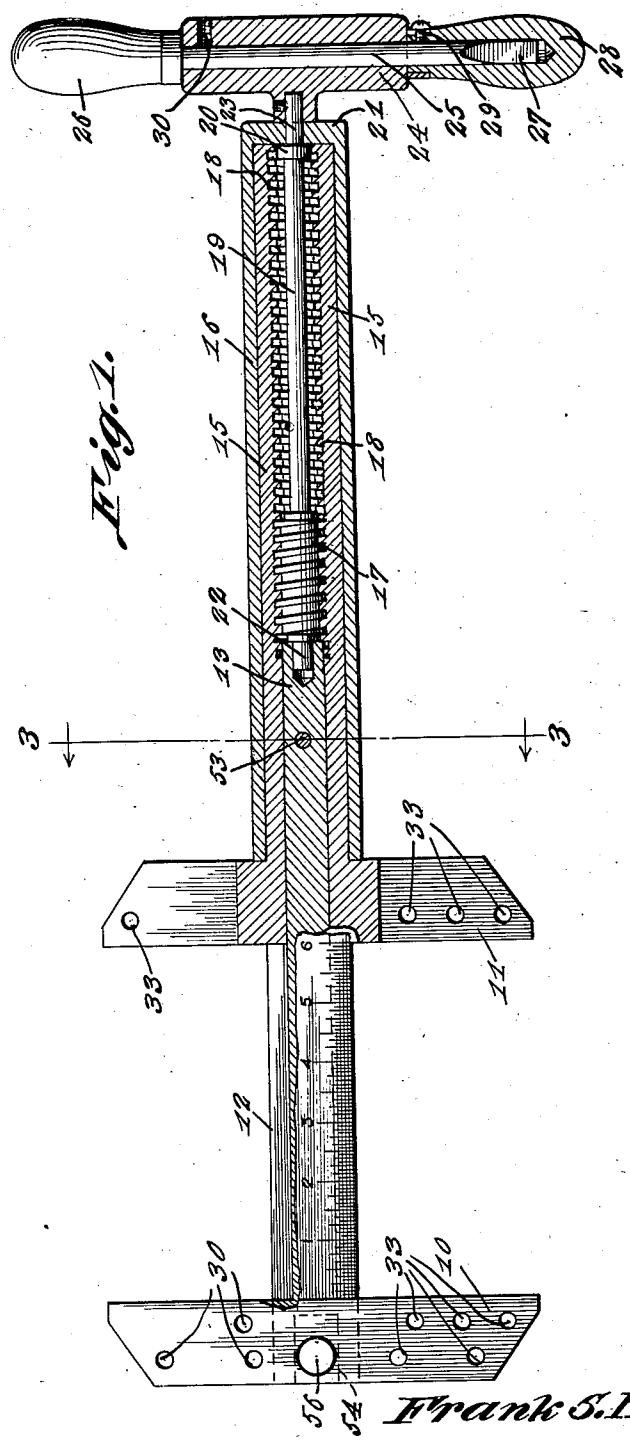


Fig. 1.

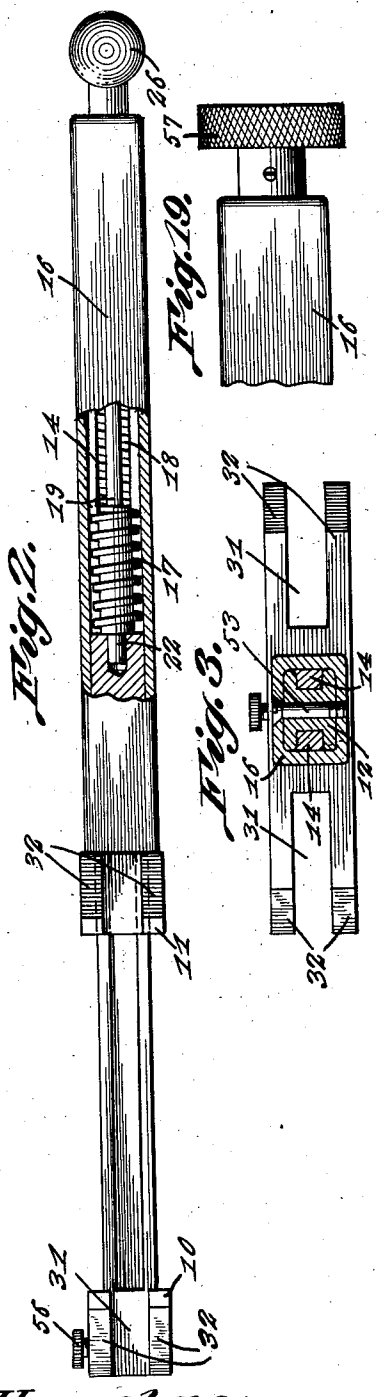


Fig. 2.

Fig. 3.

Fig. 4.

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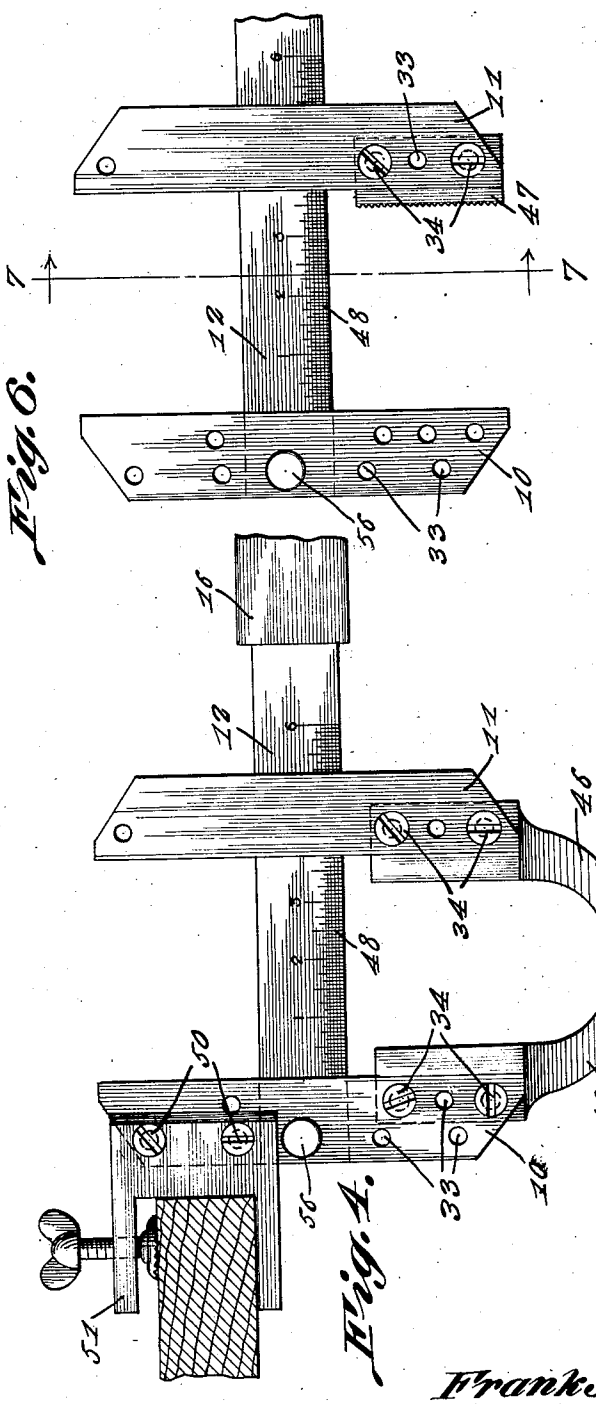
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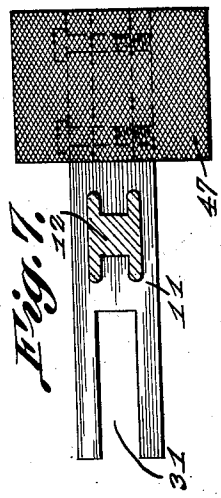
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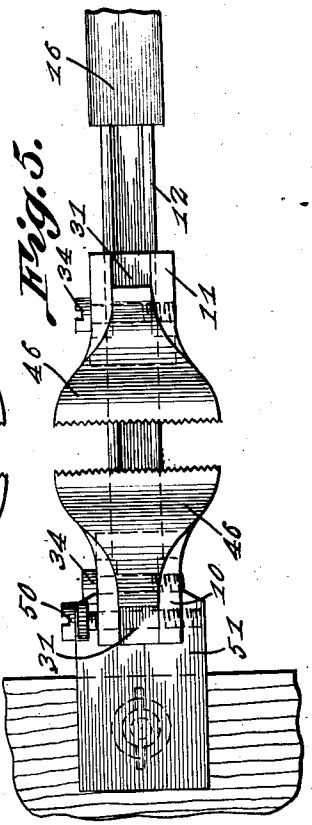
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COMBINATION TOOL

Filed Nov. 27, 1935 3 Sheets-Sheet 2







Frank S. Horechney INVENTOR

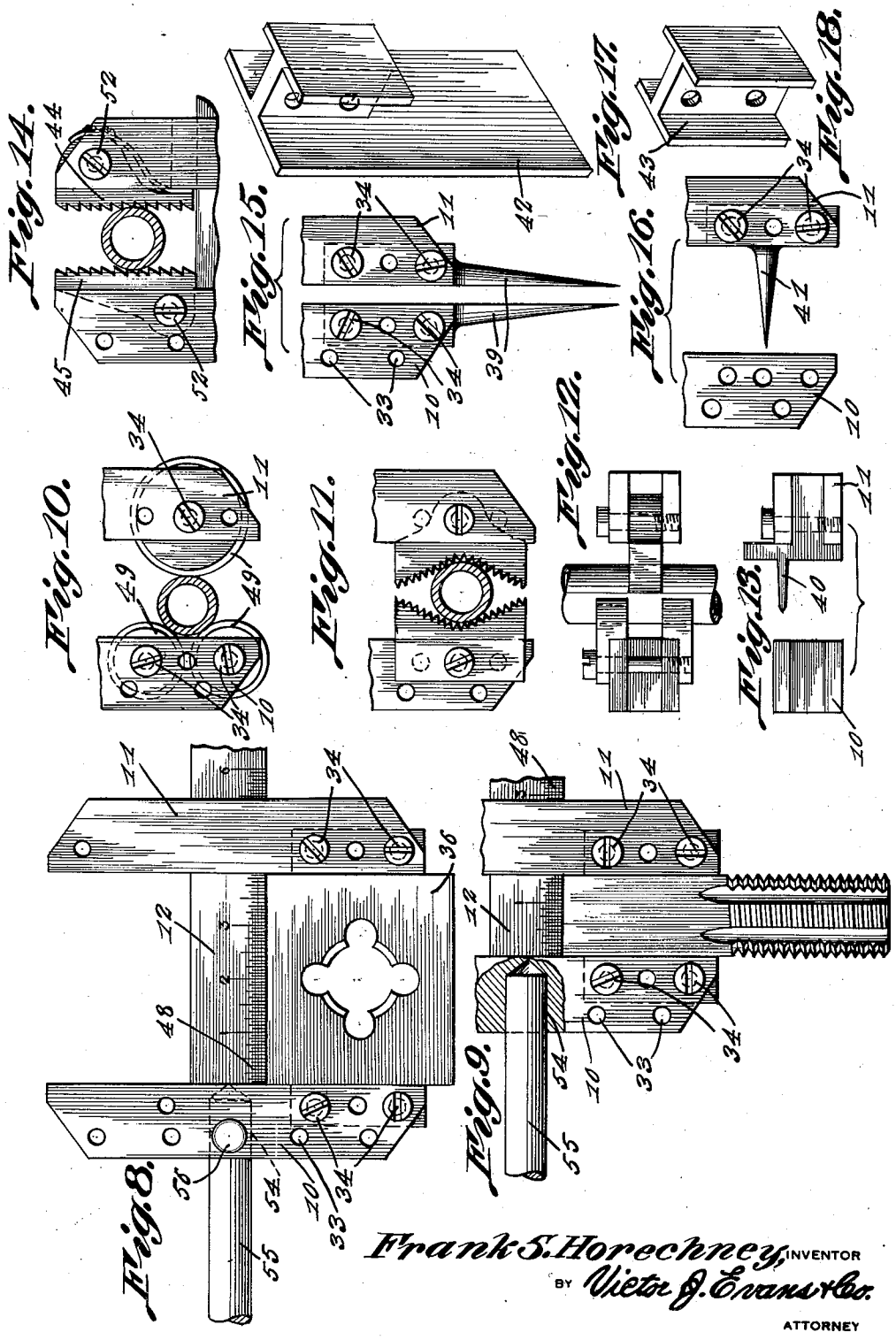
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COMBINATION TOOL

Filed Nov. 27, 1935 3 Sheets-Sheet 3



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2,076,462

UNITED STATES PATENT OFFICE

2,076,462

COMBINATION TOOL

Frank S. Horechney, Milwaukee, Wis.

Application November 27, 1935, Serial No. 51,911

2 Claims. (Cl. 81—168)

The invention relates to combination tools and more especially to a convertible wrench and vice.

The primary object of the invention is the provision of a tool of this character, wherein through the use of several jaw members these can be converted so that the tool will function as a wrench, a bench vice, a stock and die, thread cutter, a pipe clamp, pipe wrench, pipe cutter and other implements necessary in a work shop so that said tool is for universal purposes.

Another object of the invention is the provision of a tool of this character, wherein the construction of the same is novel in form and is readily and easily converted to serve in varying capacities.

A further object of the invention is the provision of a tool of this character, which is comparatively simple in construction, thoroughly reliable and efficient in different capacities, readily and easily converted, strong, durable, and inexpensive to manufacture.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a plan view partly in section of a tool constructed in accordance with the invention, the same functioning as a double jaw wrench.

Figure 2 is an edge elevation thereof.

Figure 3 is a sectional view on the line 3—3 of Figure 1 looking in the direction of the arrows.

Figure 4 is a fragmentary side elevation showing the tool converted for use as a bench vice.

Figure 5 is a bottom plan view thereof.

Figure 6 is a fragmentary side elevation of the tool converted for service as a file.

Figure 7 is a sectional view on the line 7—7 of Figure 6 looking in the direction of the arrows.

Figure 8 is a side elevation of the tool showing the same serving as an external thread cutter.

Figure 9 is a view similar to Figure 8 showing the tool functioning as an internal thread cutter.

Figure 10 is a fragmentary elevation showing the tool converted as a pipe cutter.

Figure 11 is a view similar to Figure 10 showing the tool serving as a pipe clamp.

Figure 12 is an edge elevation thereof.

Figure 13 is a view similar to Figure 12 showing the tool used as a measuring gage.

Figure 14 is a fragmentary side elevation of the tool serving as a "Stillson" wrench.

Figure 15 is a view similar to Figure 14 showing the tool used as a wedge.

Figure 16 is a view similar to Figure 15 showing the tool used as a punch.

Figure 17 is a perspective view of a block for attachment to the tool.

Figure 18 is a view similar to Figure 17 showing another form of block for use with the tool.

Figure 19 is a fragmentary elevation of a modification.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, the tool comprises opposed double jaws 10 and 11, respectively, these being movable with relation to each other and the said jaw 10 has intermediate thereof a substantially H-shaped shank 12, it having a bifurcated end portion 13 to provide spaced parallel side extensions 14 between which are fitted the shank extensions 14 of the jaw 11 which has a central opening for accommodating the shank 12, the latter with the extensions 15 of the jaw 11 being interfitted within a housing or barrel 16 which confines therein a feed worm thread 17 which engages companion threads 18 formed in the extensions 15 and the said thread 17 is upon a turning stem 19, it having a shoulder 20 bearing against the end 21 of the barrel or housing 16 and a swiveled connection 22 at the crest of the bifurcation in the shank 12. Detachably fastened to the end 23 of the stem 19 extended without the housing or barrel 16 is a T handle piece 24 in which is longitudinally fitted a screw driver shank 25 carrying a permanent handle 26 at one end and at the bit end 27 a removable capping handle 28, the latter being removably secured by a set screw 29 fitted therein and biting into the shank 25 while the T piece 24 carries a crank handle socket 30 which also bites into the shank 25 so that in this manner the removable screw driver is made fast in the said piece 24 as is clearly shown in Figure 1 of the drawings.

The double jaws 10 and 11 are bifurcated into fork formations 31 while the cheek portions 32 of such jaws 10 and 11 are provided with perforations 33, these accommodating fasteners 34 for attaching wings 35 as are provided on a die 36 for external thread cutting of bolts, pipes or the like, a tap 37 for internal thread cutting of a pipe, pipe clamps 38, wedges 39, punches 40 and 41, respectively, blocks 42 and 43, respec-

tively, and "Stillson" wrench acting parts 44 and 45, respectively, vice grips 46 and a file piece 47, respectively.

The shank 12 between the jaws 10 and 11 for a distance thereof carries a graduated scale 48 functioning as a micrometer in the adjustment of the said jaws 10 and 11. Also the fasteners 34 make possible the attachment of rotatable pipe cutting rollers 49 in the bifurcations 31 of the said jaw.

The jaw 10 through the instrumentality of fasteners 50, which are similar to the fasteners 34, can be attached to a bench clamp 51 so that the jaws 10 and 11 can function as a vice, for example, a bench vice.

The jaws 10 and 11 are adjustable by the turning of the stem 19, its thread 17 coacting with the threads 18, the latter being on the extensions 15 of the jaw 11 and thus by the turning of the piece 24 these jaws 10 and 11 can be moved toward or away from each other to have the same function for clamping purposes.

The "Stillson" wrench acting parts 44 and 45 are mounted in the jaws 10 and 11 by fasteners 52 as is clearly shown in Figure 14 of the drawings.

The housing or barrel 16 is detachably secured in place for confining the shank 12 and the extensions 15 of the respective jaws 10 and 11 therein through the medium of a fastener 53 which is passed transversely through suitable openings therefor as provided in these parts.

The tool is readily convertible for service in different capacities, the examples of which have been hereinbefore set forth, and such tool can function as an ordinary wrench or a bench vice as before referred to.

The jaw 10 medially thereof and opening through the outer side of the same is provided with a socket 54 into which is adapted to be fitted a supplemental handle 55 which is made fast by a set screw 56 in this socket 54 and this handle 55 is serviceable when the jaws 10 and 11 are carrying the die 36 or tap 37 for thread cutting purposes so that the tool can be properly manipulated in this capacity.

In Figure 19 of the drawings there is shown a modification wherein in substitute for the handle piece 24 there is a circular knob 57, the latter being peripherally knurled.

What is claimed is:

1. A tool of the character described comprising an elongated tubular housing closed at one end and open at its other, a jaw having a longitudinally split shank forming spaced stems fitted within said housing through its open end and slidable therein, a second jaw having a substantially H-shaped shank passed through the first-named jaw and made secure within the housing and forming guideways for said stems, a feed screw threaded with the stems and swiveled in the H-shaped shank and extended through the closed end of the housing, and means connected with the said screw at the closed end of the housing for operating the same.

2. A tool of the character described comprising an elongated tubular housing closed at one end and open at its other, a jaw having a longitudinally split shank forming spaced stems fitted within said housing through its open end and slidable therein, a second jaw having a substantially H-shaped shank passed through the first-named jaw and made secure within the housing and forming guideways for said stems, a feed screw threaded with the stems and swiveled in the H-shaped shank and extended through the closed end of the housing, and means connected with the said screw at the closed end of the housing for operating the same, the said housing being of substantially the length of the shank of the first-named jaw and the shank of the second-named jaw being fixed within said housing to project its jaw a considerable distance from the housing.

FRANK S. HORECHNEY.