Jan. 10, 1950 J. P. GUIGNABERT 2,494,089

COMBINED TOOL

Filed Dec. 14, 1945

FIG. 1

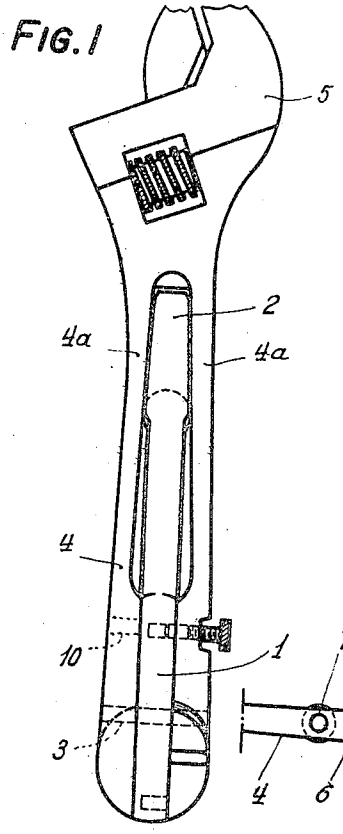


FIG. 2

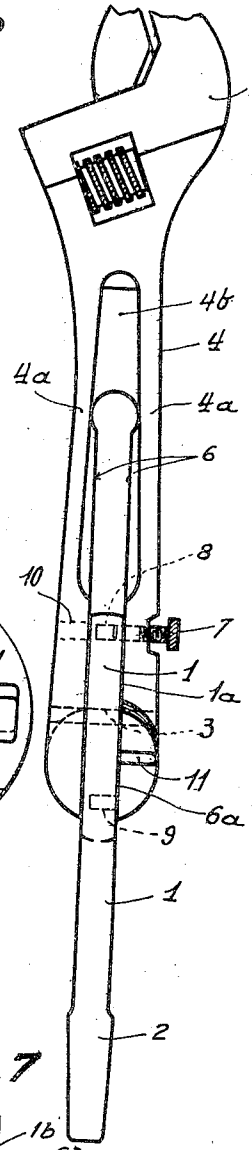


FIG. 3

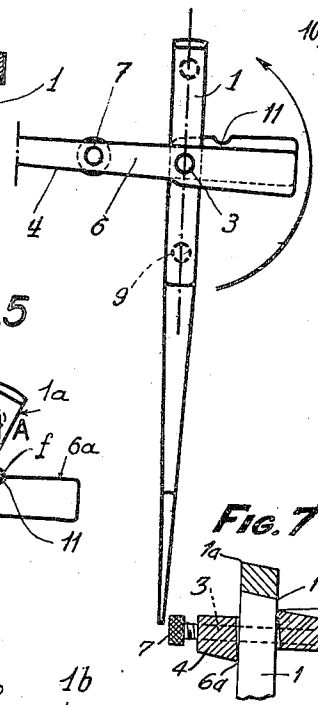


FIG. 4

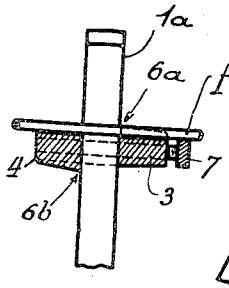


FIG. 5

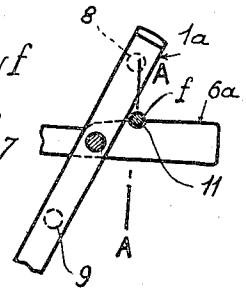
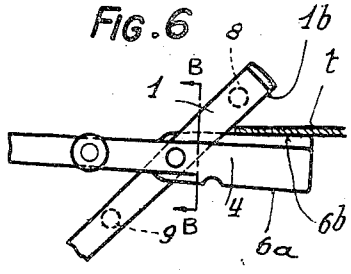


FIG. 7

FIG. 6



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UNITED STATES PATENT OFFICE

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COMBINED TOOL

Joseph Paul Guignabert, Thiers, France

Application December 14, 1945, Serial No. 634,955
In France December 29, 1944

2 Claims. (Cl. 30—258)

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My invention covers a novel industrial product constituted by a nut wrench incorporating a screw driver and adapted to form if required also shears for cutting thin metal sheets or wires of small diameter.

My improved tool is firstly characterised by the fact that the stem or handle of the screwdriver is pivotally secured to an axis parallel to the flat surfaces of the handle of the wrench, said axis being arranged cross-wise with reference to a longitudinal slot provided in said wrench handle and adapted to house said screw-driver handle when inoperative. The position of this axis is moreover such that when said screw-driver is folded back over the wrench, the outer end of its stem or handle is flush with the outer end of the wrench handle while the operative end of the screw-driver engages then the interval between the ribs enclosing the longitudinal groove in the wrench handle inside the hollow provided between the web of said wrench handle and the plane outwardly tangent to said ribs.

A further feature of my invention resides in that the screw-driver handle shows at least in the part extending beyond the pivoting axis thereof and away from its screw driving end a square or rectangular cross section, two edges of which located at the ends of a given diagonal form the movable blades of the shears, the corresponding stationary blades of which are constituted by the two edges, also arranged diagonally, of the co-operating ribs enclosing the longitudinal slot of the handle.

Further detail characteristic features of my invention will appear in the reading of the present specification.

Appended drawing shows by way of example a preferred form of execution of the tool forming the object of my invention.

Fig. 1 is an elevational view of the tool with the screw driver in its withdrawn or folded position.

Fig. 2 is a similar elevational view with the screw driver projected into its normal operative position.

Fig. 3 is a diagrammatical view showing the outline of the tool with the screw driver in one of the particular positions it may assume.

Fig. 4 is a detail cross section through line A—A of Fig. 5.

Fig. 5 is a detail outlined view showing the screw driver positioned for the cutting of metal wire.

Fig. 6 is a detail outlined view showing the screw driver positioned for shearing purposes, in

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cooperation with a blade the position of which is opposed to that used in the case of Fig. 4.

Fig. 7 is a detail cross section through line B—B of Fig. 6, showing the relation of the shearing edges.

As apparent in the drawing, the stem or handle 1 of the screw driver 2 is pivotally secured to an axis or spindle 3 parallel with the flat surfaces of the handle 4 of the wrench 5, the latter being for instance of the type controlled by a knurled worm, or else if desired of any other type. The axis or pivot 3 is arranged across a longitudinal slot or groove 6 provided in the handle 4 of the wrench, said groove 6 being adapted to house the screw driver handle; the position of this axis on the wrench is such with reference to the screw driver handle that when the screw driver is folded back over the wrench into its inoperative position shown in Fig. 1, the end of its handle is flush with the end of the wrench handle while the operative end 2 of the screw driver engages the interval between the ribs 4a, forming the edges of the wrench handle to either side of the slot or groove 6, said operative end of the screw driver lying inside the hollow part provided between the web 4b, of the handle between said ribs and the plane tangent to the upper free surfaces of said ribs.

The screw driver may thus rock through an angle nearly equal to 360° about its axis or pivot 3 and it may be used conveniently in any of the positions comprised inside an angle of 180° starting from the position illustrated in Fig. 3. In the most usual operative position shown in Fig. 2 the screw is in alignment with the wrench handle and it may be locked in said position for instance through a transversal screw engaging a notch or opening 8 of its stem. Another notch or opening 9 is provided in said screw driver handle or stem for locking the screw driver in its folded position of Fig. 1 for which it is completely concealed inside the handle and disturbs thus in no manner whatever the operation of the wrench. The screw 7 is mounted preferably so as to be incapable of leaving the recess provided for it in the wrench handle. It is sufficient therefore to provide a smooth portion beyond the threaded portion of the screw and to engage the stem portion of the screw without its head through a recess 10 provided in the further arm or rib of the wrench handle after which the head of the screw is mounted on its stem and fitted thereon

According to a very important feature of my invention, the tool as it has been described is moreover designed so as to play also the part of shears when required.

To this end the handle 1 of the screw driver shows at least in the part extending beyond the axis 3 and away from its screw driving end 2 a square or rectangular cross-section and two of its edges 1*a* and 1*b*, arranged at the end of a common diagonal are designed so as to form the movable cutting blades of the shears. The corresponding stationary blades are formed by the edges 6*a* and 6*b* of the slot or groove 6 provided in the wrench handle in front of the path of the movable cutting blades. A complementary thickness is moreover provided in this part of the tool over each arm or rib of the tool handle. Inside one of these extra thicknesses may be provided advantageously one or more transversal notches such as 11 for housing wires such as *f* (Figs. 4 and 5) which it is desired to cut. Figs. 4 and 5 show the shears 1*a*, 6*a*, as adapted for use in the cutting of the wire *f*. Obviously it is also possible to cut in this manner metal sheets of reduced thickness.

For using the opposite shears 1*b*, 6*b*, it is sufficient to make the screw driver pivot through a suitable angle with reference to that shown in Fig. 5 and to turn the handle of the wrench upside down. Fig. 6 shows the tool in this position, for instance in the case of the shearing of a metal sheet *t*.

Obviously my invention is by no means limited to the form of execution described and illustrated and it should be construed as covering all the modifications thereof including the replacement of certain parts through their mechanical equivalent and it is also obvious in particular without widening the scope of the invention that it is possible to do away with one of the shears on the tool or even with both.

What I claim is:

1. A flat tool handle formed with a longitudinal slot perpendicular to the flat surfaces of said handle and extending from its rear end over a part of its length, a pivot pin mounted in said handle across said slot at a distance from the open rear end of said slot and parallel to said flat surfaces, an implement stem pivoted about said pivot pin and adapted for movement from an inoperative position wherein said stem is housed in said slot through an angle substantially 360°, said stem comprising a portion extending rearwardly beyond said pivot pin and provided with at least one shearing edge, and at least one stationary shearing edge formed on said handle at the edge of said slot between said pivot pin and the rear end of the handle, and adapted to cooperate with said first mentioned shearing edge.

2. A flat tool handle formed with a longitudinal slot perpendicular to the flat surfaces of said handle and extending from its rear end over a part of its length, a pivot pin mounted in said handle across said slot at a distince from the open rear end of said slot and parallel to said flat surfaces, an implement stem pivoted about said pivot pin and adapted for movement from an inoperative position wherein said stem is housed in said slot through an angle substantially 360°, said stem comprising a portion extending rearwardly beyond said pivot pin and provided with two diagonally opposed shearing edges, and two stationary shearing edges formed on said handle at diagonally opposed edges of said slot between said pivot pin and the rear end of the handle, and adapted to cooperate with said first mentioned shearing edges.

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