

Nov. 13, 1934.

C. K. HUTHSING

1,980,862

WRENCH

Filed Jan. 31, 1934

2 Sheets-Sheet 1

FIG. 1.

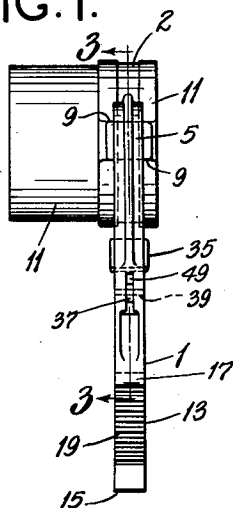


FIG. 2.

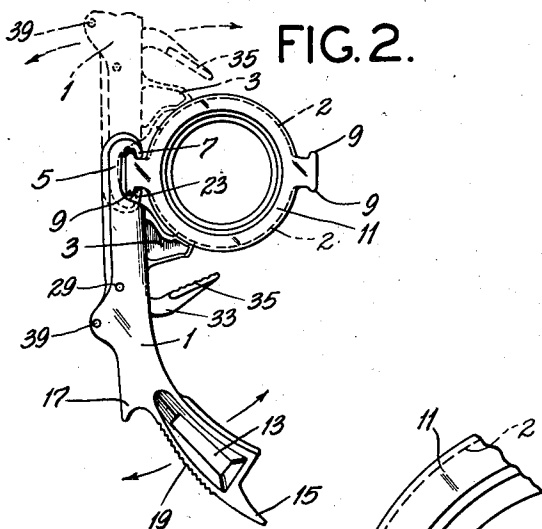


FIG. 3.

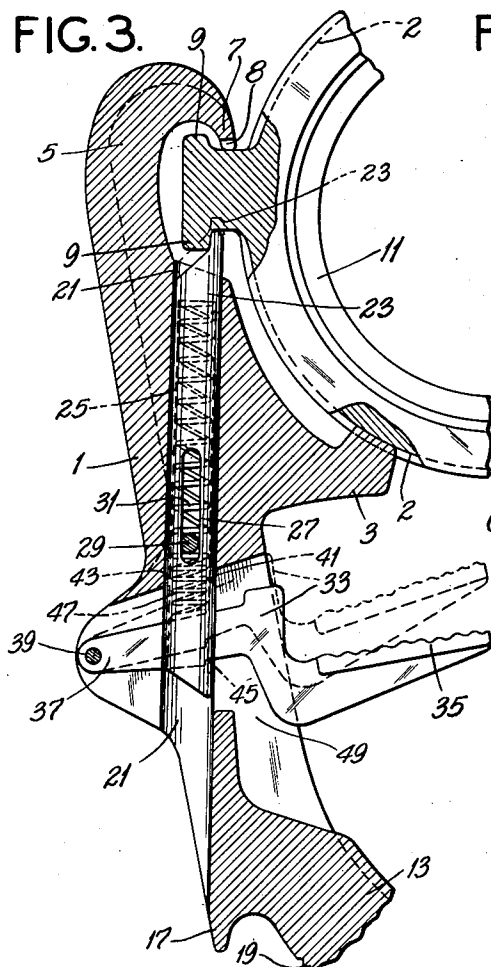
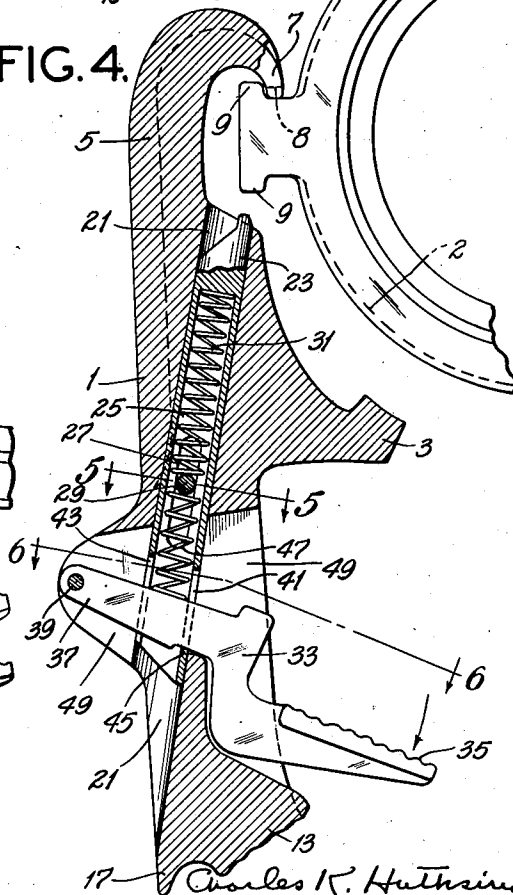


FIG. 4.



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FIG. 6.

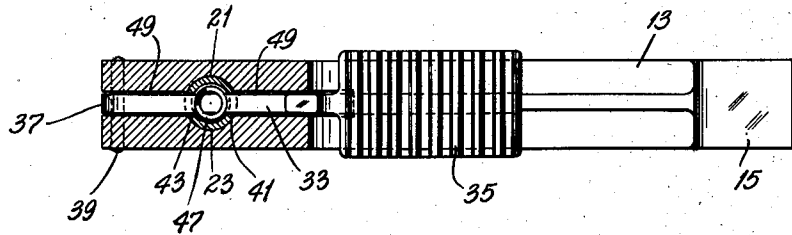


FIG. 7.

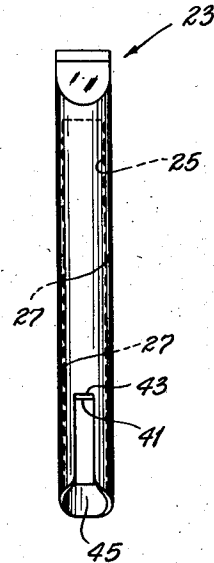


FIG. 8.

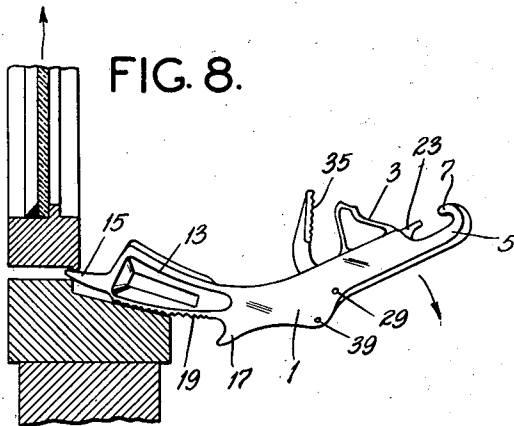
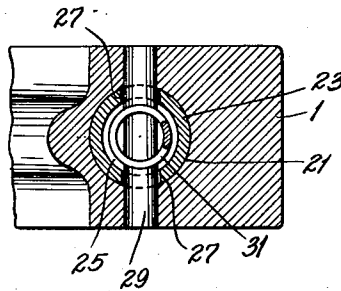


FIG. 5.



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UNITED STATES PATENT OFFICE

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WRENCH

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Application January 31, 1934, Serial No. 709,066

4 Claims. (Cl. 81—90)

This invention relates to wrenches, and with regard to certain more specific features, to wrenches for use in connection with fire extinguishing apparatus and the like.

This invention is an improvement upon the wrench shown in United States Patent 1,936,359, dated November 21, 1933.

Among the several objects of the invention may be noted the provision of an improved wrench of convenient form which may be universally used with certain old and new types of fire hose couplings, the same being usable in several ways and on several sizes of such couplings; the provision of a wrench of this class which is also adapted to perform other duties; the provision of a wrench of the class described which may be readily carried about by firemen or the like; and the provision of such apparatus which is exceedingly simple and fool-proof in operation and which may be economically manufactured. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combination of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, in which is illustrated one of the various possible embodiments of the invention,

Fig. 1 is a plan view of the wrench in use on a coupling;

Fig. 2 is a side elevation of Fig. 1, showing in dotted lines an alternative position for applying the wrench to the coupling;

Fig. 3 is an enlarged detail, longitudinal section taken on line 3—3 of Fig. 1;

Fig. 4 is a view similar to Fig. 3 showing an alternative position of parts;

Fig. 5 is an enlarged cross section taken on line 5—5 of Fig. 4;

Fig. 6 is a cross section taken on line 6—6 of Fig. 4;

Fig. 7 is a detail view of a detent per se; and,

Fig. 8 is a view showing another use of the wrench.

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

Referring now more particularly to Figs. 1 and 2, there is shown at numeral 1 a wrench handle having a fulcrum 3. The wrench has a head 5 including a downwardly extending claw 7 adapted to hook in under lips 9 of lugs on modern types of

fire hose couplings 11 while the fulcrum 3 engages the couplings in one of a pair of peripheral depressions 2.

The rear end of the body 1 is formed as a pistol grip 13 having a claw 15 which may be used for prying purposes, as illustrated in Fig. 8. A guard 17 is employed above the grip 13. serrations 19 serve to increase the friction of the operator's hold on the pistol grip.

Through the handle 1 (and corresponding in position to a pistol barrel) is formed a barrel 21 for slidably accommodating a detent 23, said detent having a cylindrical form which is also hollow, as shown at numeral 25. The hollow portion 25 of the detent is slotted on opposite sides as shown at numeral 27 for the purpose of accommodating a cross pin 29 which is driven with a force fit into the body 1 and thus functions as a guide and a means for holding the detent piston in the bore 21. The pin 29 is also used as a reaction point for a forward spring 31 which tends normally to press the detent 23 toward the engaging position shown in Fig. 3.

In order to withdraw the detent 23 from the engaging position shown in Fig. 3 and place it in the disengaged position shown in Fig. 4, a trigger 33 is used, the same comprising a serrated finger piece 35 and an extension 37 for pivotally engaging a fulcrum 39 above the line of motion of the detent 23. The extension 37 passes through a lower slit 41 in the body 25 of the detent 23 and also through an upper slit 43. The trigger is adapted to withdraw the detent by engaging a portion 45 thereon located behind said slit 41. A second spring 47 reacts between the trigger extension 37 and said cross pin 29 so as to ensure engagement between the trigger and said portion 45 without lost motion. The forward spring 31 is stronger than the rearward spring 47 and hence the detent 23 is normally driven to the position shown in Fig. 3.

It will be noted that the trigger extension 37 oscillates in an opening 49 from which the trigger may be removed by removing the fulcrum pin 39. This also releases the detent 23 for removal, provided the pin 29 is removed.

Among the advantages of the invention are:

(1) The simplicity of the construction and low number of parts. There are only three major parts, besides the two springs and two pins which constitute minor parts.

(2) In view of item 1, the device is very reliable.

(3) A low number of parts results in the abil-

ity to make each part strong and heavy without ultimately making the wrench too heavy.

(4) The wrench may be applied in either clockwise or counterclockwise direction, as indicated in Fig. 2 by dotted lines, and rotation is effected in either direction. A man may turn the couplings in either direction, with force.

(5) The pistol-like construction leads to facile handling of the wrench.

(6) The heavy construction of the device permits its use as a tool for other purposes such as illustrated in Fig. 8 and for purposes such as knocking ice from couplings and the like, all without damage to the working parts which are on the interior of the wrench.

(7) The moving elements of the wrench being on the interior are protected from damage which exteriorly mounted parts would be subjected to.

(8) The provision of the fulcrum 39 above the detent 23 results in the use of the trigger 33 as a second class lever which provides a leverage which is more than if it were used as a first class lever.

As shown in Figs. 3 and 4, the lower claw 7 is provided with a notch 8 which serves to center the wrench on the cylindric lugs of the old type of coupling having cylindrical instead of the present type of lug.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in carrying out the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. In a wrench, a body having a claw at one end, a pistol grip at the other end, a fulcrum located between said claw and said grip, said body having a barrel oppositely located with respect to said claw, a trigger operable from said hand on said grip, means for pivoting said trigger above said barrel, a hollow detent in said barrel, said detent having at least one slot therein, a pin passing through said body and said slot and adapted to hold said detent prisoner, a spring reacting between said last-named pin and the forward end of said detent to normally press the detent

toward said claw, said detent having an opening for accommodating said trigger, the rear portion of which opening is adapted to be engaged by said trigger whereby the detent is operable by the trigger.

2. In a wrench, a body having a claw at one end, a pistol grip at the other end, a fulcrum located between said claw and said grip, said claw having a barrel oppositely located with respect to said claw, a trigger operable from said hand on said grip, means for pivoting said trigger above said barrel, a hollow detent in said barrel, prisoner means holding said detent prisoner but permitting limited movement thereof, a spring reacting between said last-named means and the forward end of said detent to normally press the detent toward said claw, said detent having an opening for accommodating said trigger, and a spring reacting between said trigger and said prisoner means to force the trigger to engage the rear of the detent.

3. In a wrench, a body having a claw at one end, a pistol grip at the other end, a fulcrum between the claw and the grip, said body having a barrel substantially directed toward said claw, a circular and hollow detent in said barrel having slots, means passing through said slots and attached to said body for loosely holding said detent prisoner, resilient means reacting between said pin and the end of said detent to normally press the same towards said claw, a trigger, said detent having means accommodating said trigger, means for pivoting the trigger to the body above the detent, and a spring reacting between the trigger and said pin, said springs both being within the hollow detent.

4. In a wrench, a body having a claw at one end, a grip at the other end including a fulcrum between the claw and the grip, said body having a circular barrel, a hollow detent in said barrel having a slot, means passing through said slot and attached to said body for holding said detent prisoner, resilient means reacting between said pin and the end of said detent to normally press the same towards said claw, a trigger, said detent having means accommodating said trigger, means for pivoting the trigger to the body above the detent, and a spring reacting between the trigger and said pin, said springs both being within the hollow detent.

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