May 25, 1971 F. G. SCHRIEVER ET AL 3,580,779

HAND OPERATED TOOL FOR MARKING WIRE

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FIG. 1

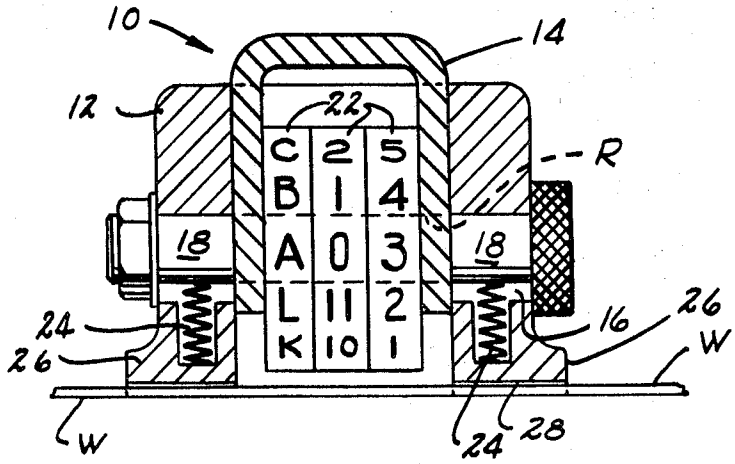


FIG. 6

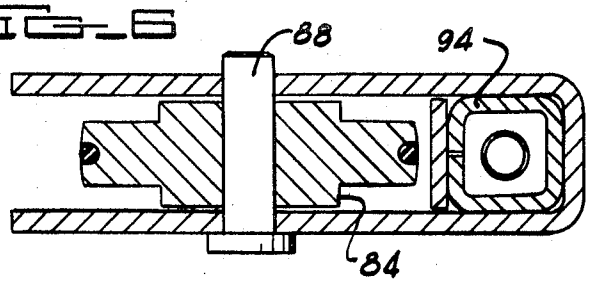


FIG. 7

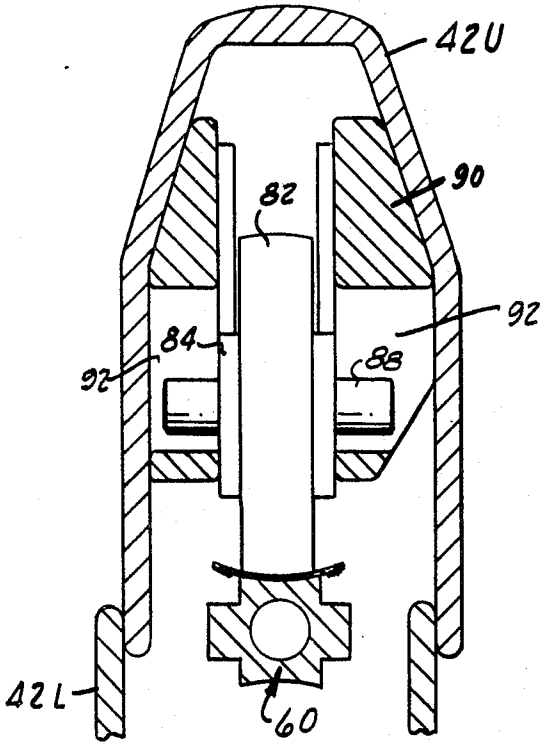


FIG. 11

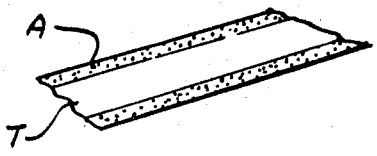
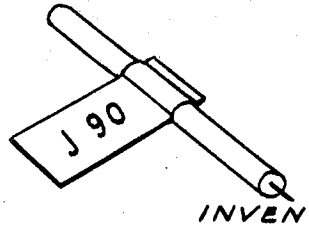


FIG. 12



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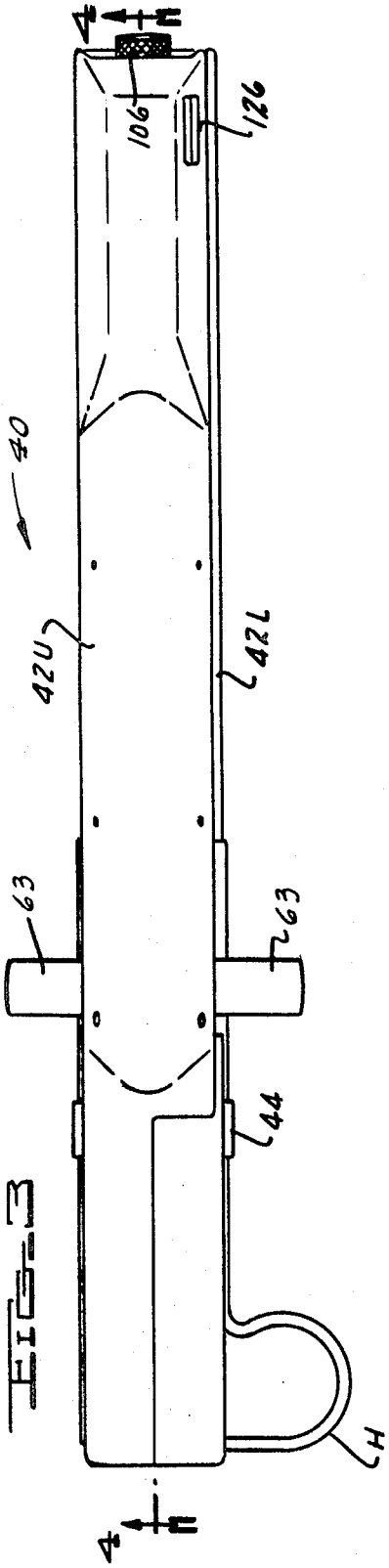


FIG. 3

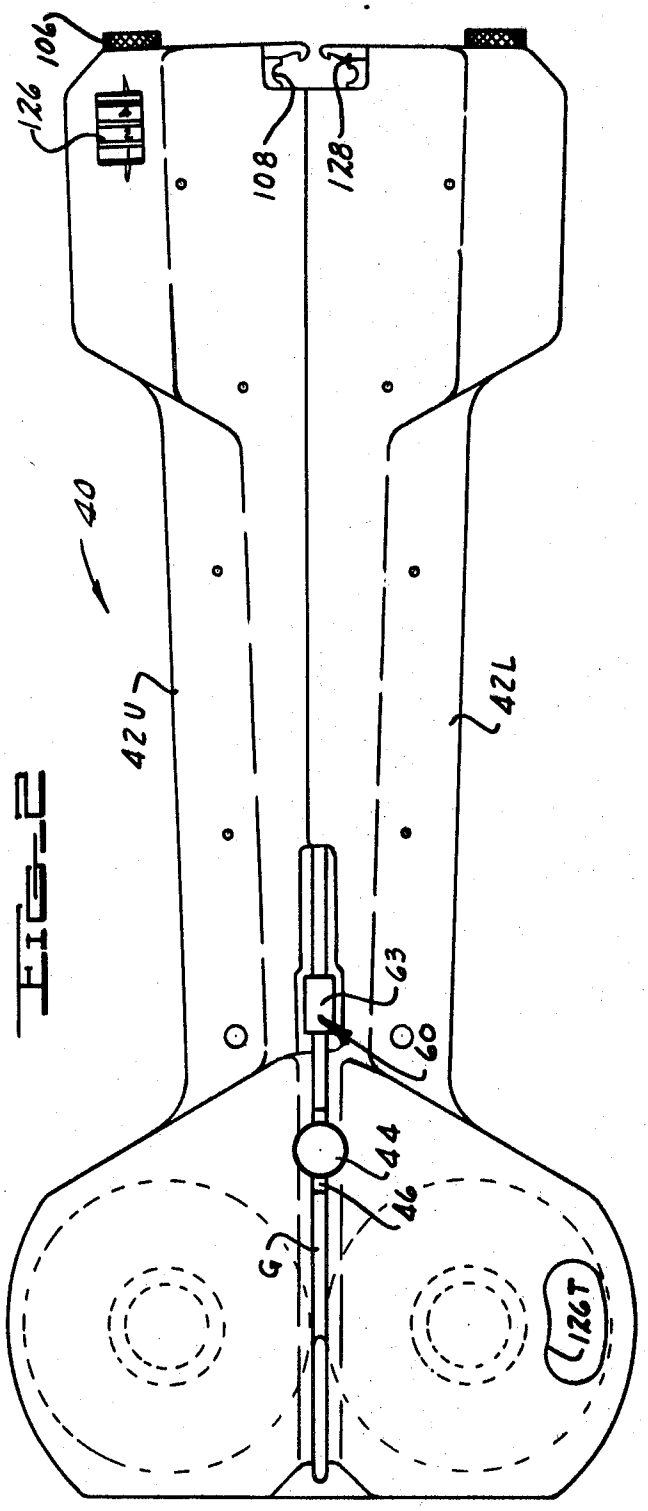


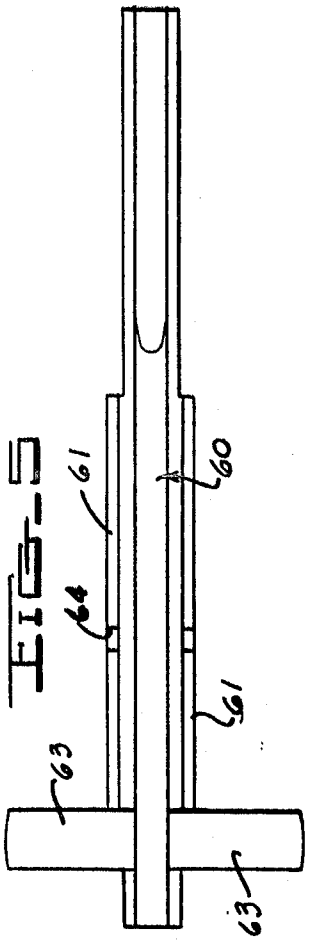
FIG. 2

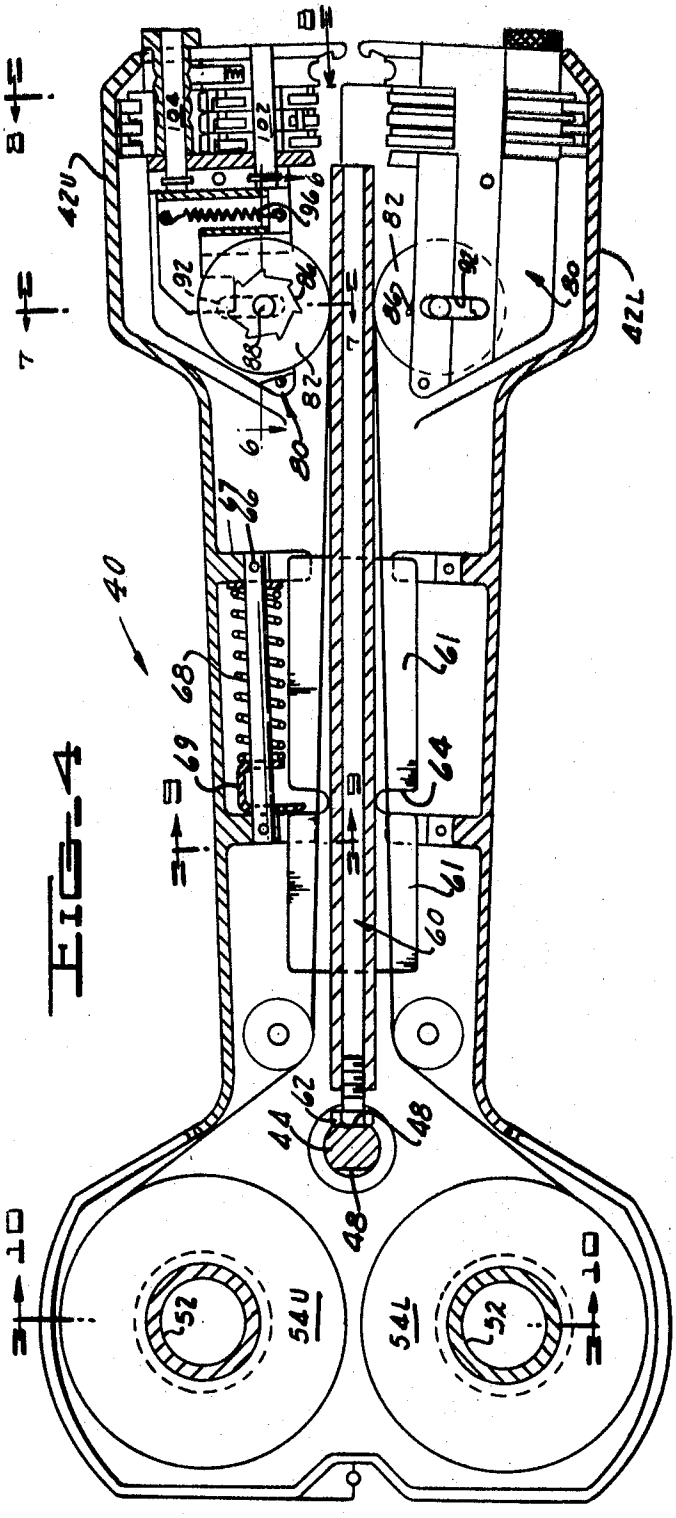
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HAND OPERATED TOOL FOR MARKING WIRE

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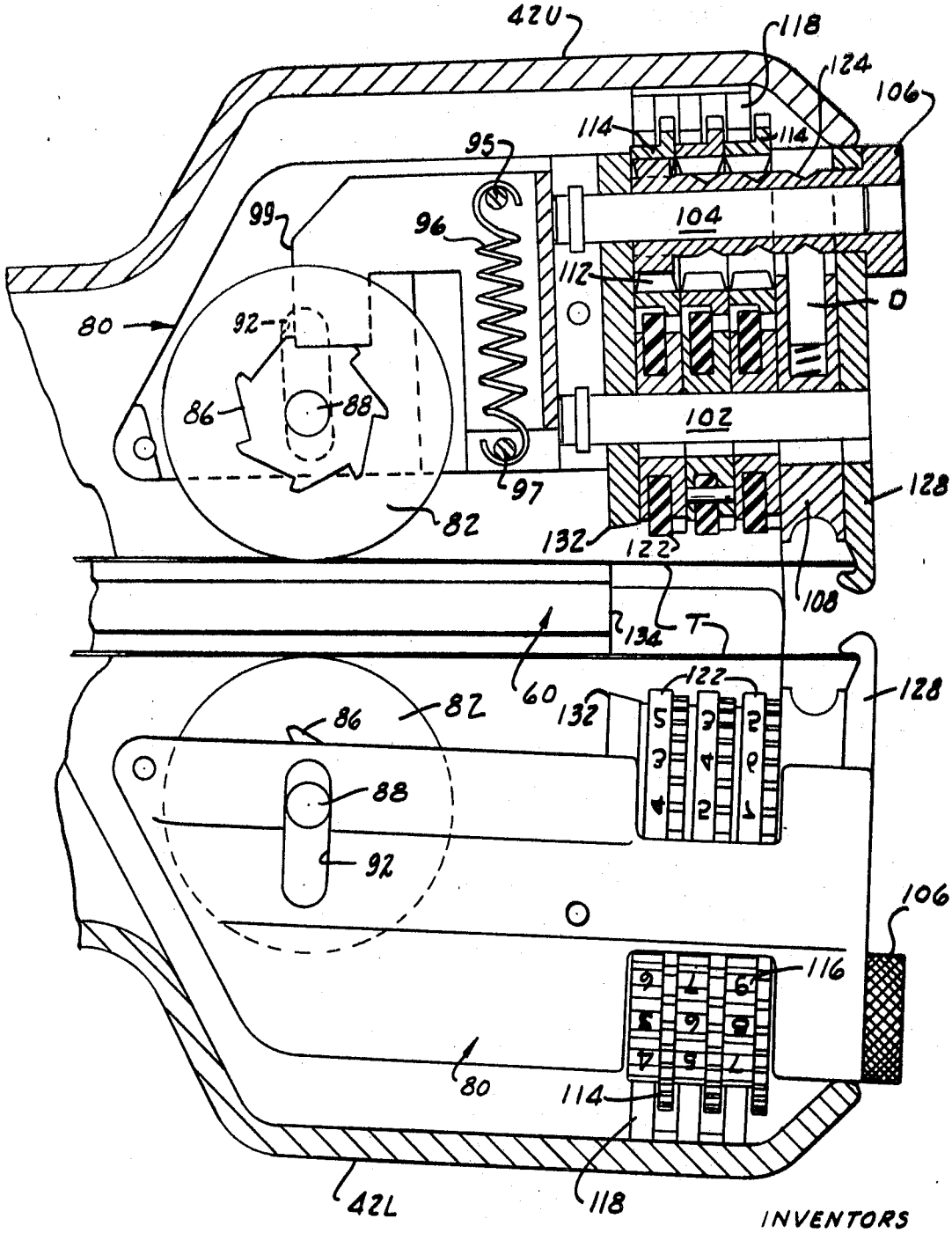
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HAND OPERATED TOOL FOR MARKING WIRE

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FIG. 4A



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HAND OPERATED TOOL FOR MARKING WIRE

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FIG. 8

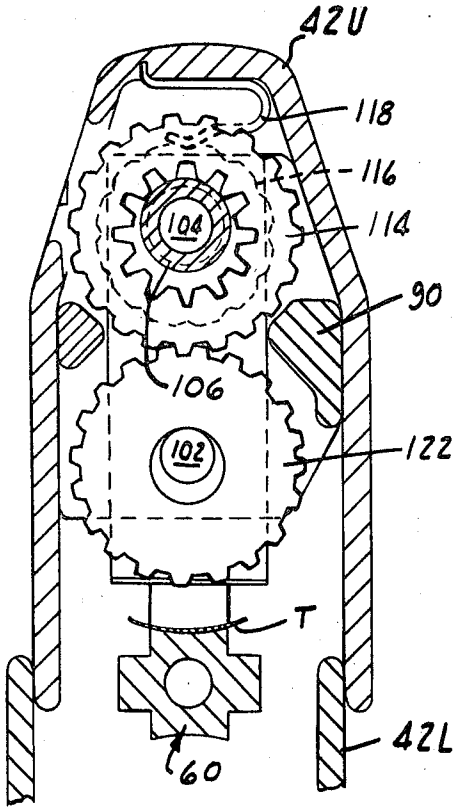


FIG. 9

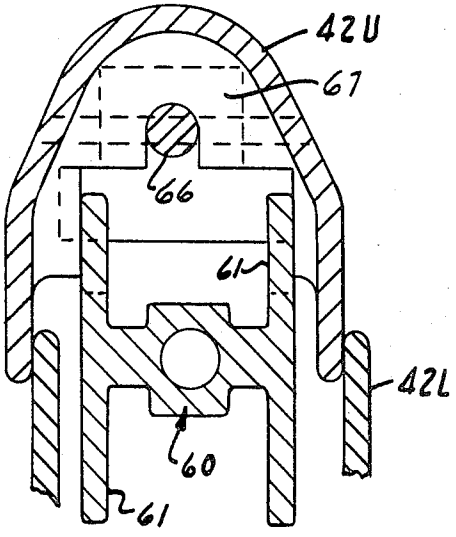
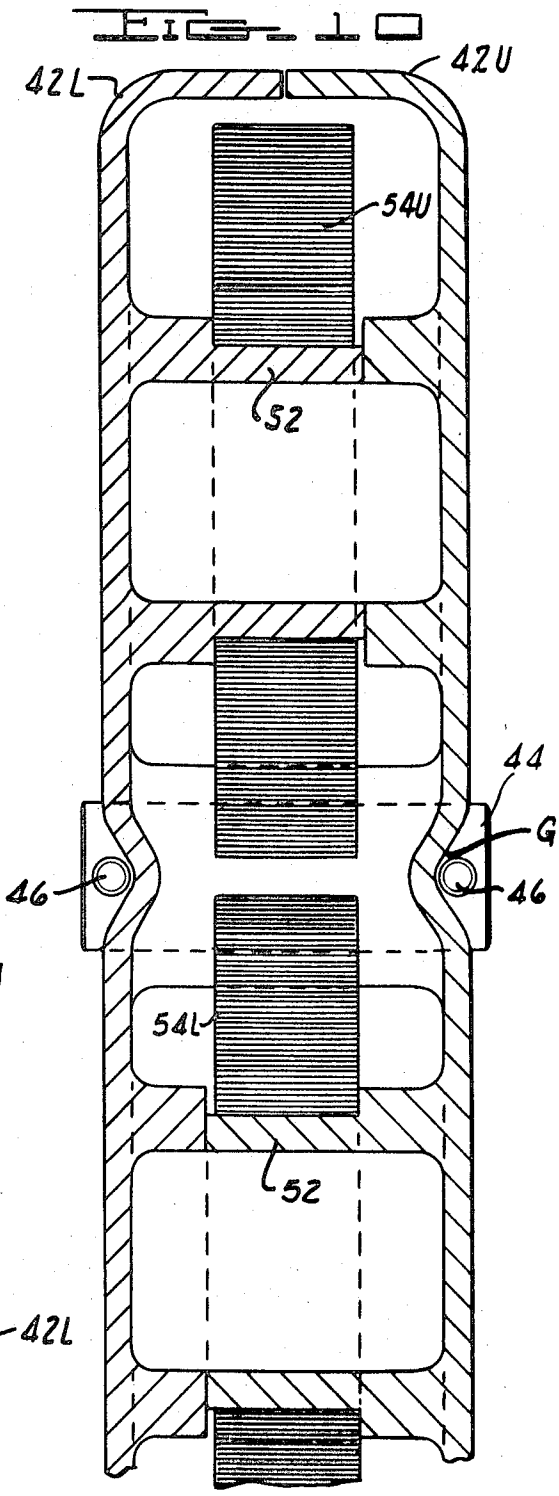


FIG. 10



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HAND OPERATED TOOL FOR MARKING WIRE

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Int. Cl. B32b; B41m
U.S. Cl. 156—384 4 Claims

ABSTRACT OF THE DISCLOSURE

This invention is directed to a portable hand tool used for on the job identification of wire, wherein adhesive tape is printed with selected indicia by the operator and dispensed at the will of the operator for manual or automatic application to the wire at the desired locations, or the indcia can be applied directly to the wire or other cylindrical object.

At the outset it will be understood that wire identification in and of itself is not new, since wire has been color coded, printed, tagged with printed cards and secured by hand, as well as having pre-printed adhesive labels applied thereto which are similar to those used in the modern store for affixing the price of the merchandise, for many years. However, in today's modern age of mass production, the above mentioned methods are obsolete, because of the high cost of labor and the inability to maintain production at a high rate when these methods are used.

In view of problems which are encountered when using the above described methods of wire identification, the present invention was born. With the use of the present invention, wire identification means are applied quickly and neatly, at but a fraction of the cost of the other known methods.

It is therefore a primary object of the present invention to provide a new method and apparatus for the application of wire identification means wherein a unitary portable tool is used by non-skilled labor.

Another object of the invention is the provision of unitary hand tool which is semi-automatic in operation and adjustable to apply the desired indicia.

Still another object of the invention is the provision of appropriate indicia in said unitary hand tool, so that the wires in any circuit can be appropriately numbered in accordance with the numbers on the circuit diagram, thus eliminating the confusion which exists when a circuit must be re-numbered in accordance with available tags or labels.

Another object is the provision of a partable hand tool wherein the indicia can be incorporated on one or both sides of adhesive tag applied to a given wire.

Still another object of the present invention is the provision of a hand tool wherein the indicia can be changed in a minimum of time.

Yet still another object of the invention is the provision of a unitary hand tool for making pre-selected indicia tags wherein each and every tag is of the same uniform size.

The above and other objects of the present invention can be accomplished by the provision of a unitary portable hand tool assembly having a two part housing of generally symmetrical configuration and held together by a pivot pin positioned therebetween; fixed means integral with said housing for the support of a roll of tape, said tape having an adhesive applied to the edges of one surface of said tape; a tape feeder bar guided and supported by said housing members and located between each roll of tape; a indicia marking cartrage positioned in each of said housings adjacent said tape feeder bar; a cutter member carried by said indicia marking cartrage and cooperable with the end of said tape feeder bar, the end portion of said tape feeder bar being supported between two rollers,

one carried by each of said indicia cartrage marking members; adjustment means provided for said tape feeder member intermediate said pivot pin and said rollers for adjusting the length of said tape feeder bar so as to assure proper cut-off of said tape; the outer surface of each of said rollers is convex, while the surfaces of said feeder bar are concave, thus imparting a curve to each piece of tape thereby rendering same stiff during its displacement between the indicia marking cartrages, to avoid attachment of the tape to the tape feeder bar, the tape feeder bar is of less dimension than the space between the adhesive located thereon; pivotal displacement of the housing members toward each other acting to operate the cut-off means, apply the indicia and thereafter join the adhesive portions thereof together and around the wire located between two anvils located within said cartrages.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings wherein like reference characters designate corresponding parts in the several views.

In the drawings:

FIG. 1 represents one form of the present invention taken along the horizontal center line, with parts shown in elevation for clarity.

FIG. 2 is an elevational view of another form of the present invention.

FIG. 3 is a plan view of the hand tool shown in FIG. 2.

FIG. 4 is a cross section taken substantially along lines **4—4** of FIG. 3 illustrating the internal structure of the proposed invention.

FIG. 4A is an enlarged view of the pivotal housing members and the indicia marking members which are shown in section as well as elevation.

FIG. 5 is a plan view of feeder bar.

FIG. 6 is a view taken substantially along lines **6—6** of FIG. 4.

FIG. 7 is a cross section taken substantially along lines **7—7** of FIG. 4.

FIG. 8 is a cross section taken along lines **8—8** of FIG. 4.

FIG. 9 is another cross section taken along lines **9—9** of FIG. 4.

FIG. 10 is a cross section taken along lines **10—10** of FIG. 4.

FIG. 11 illustrates the adhesive tape used.

FIG. 12 shows a finished tag applied to a wire.

Looking now at the drawings, FIG. 1 illustrates a simple version of the present invention. The complete assembly is identified by the numeral **10**, with the outer housing **12** being disposed around the U-shaped inner housing. The U-shaped inner housing is shown at **14** and is adapted to an axle shaft **18** on which are rotatably mounted three indicia marking members **22**. The axle shaft **18** extends through two slots **16** in the outer housing **12**, while being disposed through two round openings R in the inner housing. Each of the slots **16** has located therein a compression spring **24** which is located in a spring pocket. The feet **26** of the outer housing **12** each have a groove **28** located therein for receiving a wire W. This then guides the wire W to the proper position beneath the idicia marking members. Each of the indicia marking members **22** are made from an absorbent material, which will retain ink or other marking medium in the manner of a sponge. Although each of the marking members **22** is shown with indicia thereon in the form of letters and numerals, the characters are optional and in actual practice would be reversed so that the character will print properly.

In actual practice, the wire W is positioned on a surface beneath the body of the assembly **10**, within the grooves

28. The top section of the inner housing **14** is compressed against the springs **24**, bringing the indicia marking members in contact with the wire, so as to imprint same. Since the marking members are resilient, they will conform to the wire configuration during the printing operation. The printing being completed, the springs **24** return the inner housing **14** to the open position so that the wire may be advanced and the cycle completed again.

While the above description has been directed to resilient marking members **22**, the invention is not limited to such a construction, since the indicia marking members may be made from rigid, non-absorbing material. When this type structure is used, the indicia marking members are electrically or otherwise heated and the wire is "branded" with the desired character or characters. This structure is not illustrated.

FIG. 2 of the drawings illustrates an elevational view of the complete, unitary hand tool which is used to apply printed tags on a wire. This assembly is identified by the numeral **40** and is made up of a two part housing **42**, with each of the housing parts being of generally symmetrical configuration. It will be noted that the upper housing is identified by the numeral **42U**, while the lower housing section is identified by numeral **42L**. The two housing sections **42U** and **42L** are joined by a pivot pin **44**, which permits the housing members to be displaced with respect to each other. For purposes of description, only the upper half of the housing **42U** and its respective components will be described, since it is readily apparent that each section is of similar construction. However, it will be understood that housing section **42L** could of course be made without benefit of the indicia marking assembly, with the resultant tag being printed or otherwise marked on one side only, without departing from the spirit of the invention.

It will be noted that FIG. 3 is a top view of structure shown in FIG. 2 and denotes the section line on which FIG. 4 is taken. It will be seen in FIGS. 3 and 4 that the portable hand tool of the present invention is split substantially along the vertical center line on the left end and along the horizontal axis throughout the central portion and right end.

The left end portion is enlarged and has integral therewith, an adhesive tape spool support member **52**. The spool support **52** for the upper tape spool **54U** extends from the housing section **42L**, while the spool support for the lower tape spool **54L** extends from the housing section **42U**. Immediately to the right of the tape spools **54U** and **54L** is the pivot pin **44**, which is positioned with two pins **46** located in a groove G in the sides of the housing sections **42U** and **42L**. The central section of pivot pin **44** has two flats **48** thereon, one of which engages the head of a threaded member **62** positioned in the end of the tape feeder bar **60**. As are the other parts, the tape feeder bar is generally symmetrical and is illustrated in FIG. 5 of the drawings. Rotation of the head of the thread, member **62** positions the right end of the tape feeder bar **60** in proper relationship to the cutter member carried in the indicia marking assembly **80**, which will be described hereinafter. The head of the threaded member **62** is maintained in contact with the flat **48** on the pivot **44** by means of a compression spring **68** positioned on a shaft **66** located within the housing. One end of the spring **66** is in contact with a housing flange **67** while the other end is in contact with a flag member **69**, the tab portion of which depends downwardly into a space **64** on the feeder guide portion **61**. Two ears **63** extend from the feeder bar **60** for actuation of same to advance the adhesive tape into position, prior to the cut off and indicia marking. The ears **63** extend through a horizontal slot in the housing members. With this construction, the feeder bar **60** is always maintained in its rearwardmost position. It will be noted in FIG. 9 that the feeder guide portions **61** are guided between portions which extend from the housing.

The adhesive tape is maintained in contact with the feeder bar **60** by means of spring loaded wheels **82** carried by the indicia marking assembly **80**. Each wheel **82** has a hub **84**, with teeth **86** thereon. The axle shaft **88** on which the wheel and hub are mounted extends into slots **92** in the indicia marking housing **80**. An L-shaped hollow member **94** is slidably positioned in the fixed part of the indicia marking assembly **80**, with the foot of said L-shaped member maintained in contact with the hub by means of tension spring **96**, one end of which is secured to the fixed portion of the housing **81**, while the other end thereof is secured to the slidable member.

The indicia marking rollers are located on shaft **102** and are driven by gears on shaft **104**. While each of shaft members **102** and **104** are flanged and retained within the housing assembly **81** is joined by screws, rivets or the like which extend not only through the housing assembly **81**, but also through the upper and lower housings **42U** and **42L** thus assuring proper positioning of same in the said housings. Additionally, shaft **104** has positioned thereabout, a geared adjustment key **106**, which is adjustable and positioned with a detent device (spring loaded) carried on the wire anvil **108**. The adjustment key has a spur gear on the left end thereof, which is adapted to cooperate with an internal gear **112** on each of the gear wheels **114**. The outside of each of the gear wheels **114** has a plurality of notches **116** which cooperate with the fingers of a leaf spring **118**, so that when the adjustment key **106** is rotated, the indicia marking roll **122** will remain in the adjusted position through the cooperation of the external teeth on gear wheel **114**, whereafter the adjustment key **106** is moved to the right so as to engage the internal gear teeth on the next wheel. The grooves **124** in adjustment key cooperate with the detent D to position the internal gear of the center wheel and when this is complete, the adjustment key **106** is then again moved to the right for the adjustment of the third wheel **114**. As will be noted in FIG. 2 a window **126** is provided in housing **42** to permit the operator of the hand tool of the present invention to observe the position of the indicia marking wheels without dis-assembly of the tool. This is accomplished by placing corresponding characters on the notched surface of gear wheel **114**, which when observed will indicate the relative position of each of the indicia marking wheels **122** through the window.

The indicia marking wheels are made from an absorbent material such as "porlon," which can be saturated with ink, thus simplifying the complete structure by the elimination of a stamp pad within the assembly.

From the foregoing description, it is apparent that the present invention is simple, durable and solves a problem of long standing. In operation, the indicia marking wheels **122** are adjusted in the manner described using the adjustment key **106** and viewing the adjustment through the window in the housing. Assuming the device is loaded with tape, the tape T is advanced to the stop **128** in the indicia marking assembly **80**, thus rotating wheel **82** to make the tape T rigid, by means of the feeder bar **60**. The hub **86** moves the L-shaped finger member against the tension spring **96** which is secured to pins **95** and **97**. Pin **97** being in the fixed portion of the indicia marking assembly **80**, while pin **95** is in the displacable member and guided by the said indicia marking assembly **80**. When the tape T reaches the limit of travel, the stop on the hub **86** will be in engagement with the L-shaped member **99** and the ear **63** on the feeder bar **60** will be in contact with the end of the slot in the housing.

The last operation is the pivoting of the housing assemblies **42U** and **42L** to actuate the cutoff **132** against the end **134** of the feeder bar **60**, thereafter applying the predetermined indica on each face of the tape T and securing same to a wire positioned between the tape T and the anvils **108**.

FIG. 11 shows the adhesive A as applied to the edges

of the tape T, while FIG. 12 illustrates a wire having a tag applied by means of the tool of the present invention.

Having thus described our invention, we claim:

1. In a unitary hand operated construction used for the identification of wire, the combination of,

a housing of generally symmetrical configuration;

means within said housing for the support of at least one spool of adhesive tape;

a tape feeder bar supported within said housing;

a plurality of stacked circular indicia marking members supported within said housing and adapted for marking engagement with the surface of said tape;

means for limiting the reel-off of said adhesive tape;

and cut off means for said tape in said housing to permit the release of the wire and indicia marked tape applied therearound.

2. A structure as in claim 1, wherein the surface of contact between the adhesive tape and the feeder bar is curved so that the tape is more rigid during its displacement, the adhesive being on one side only, with the exposed adhesive being in the form of a norrow band along the outer edges of the tape, while the width of the feeder

bar in contact with said tape is of less dimension than the space between the narrow bands of adhesive so as to prevent adherence thereto for ease of handling.

3. A device as in claim 1, wherein the stacked circular indicia marking members are independently adjustable and rotationally contained within a unitary assembly in said housing.

4. A device as in claim 1, wherein said stacked circular members are independently gear driven with portions of said gears cooperable with other gears which make visible through a window in the housing the pre-selected adjustment of the said indicia.

References Cited

UNITED STATES PATENTS

2,514,453	7/1950	Miller	156—522
2,925,773	2/1960	Kingsley	101—27

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U.S. Cl. X.R.

156—475, 517