March 31, 1953 W. O. SCHULTZ ET AL 2,633,161

INDENTING TOOL

Filed Nov. 12, 1948 2 SHEETS—SHEET 1

Fig. 1

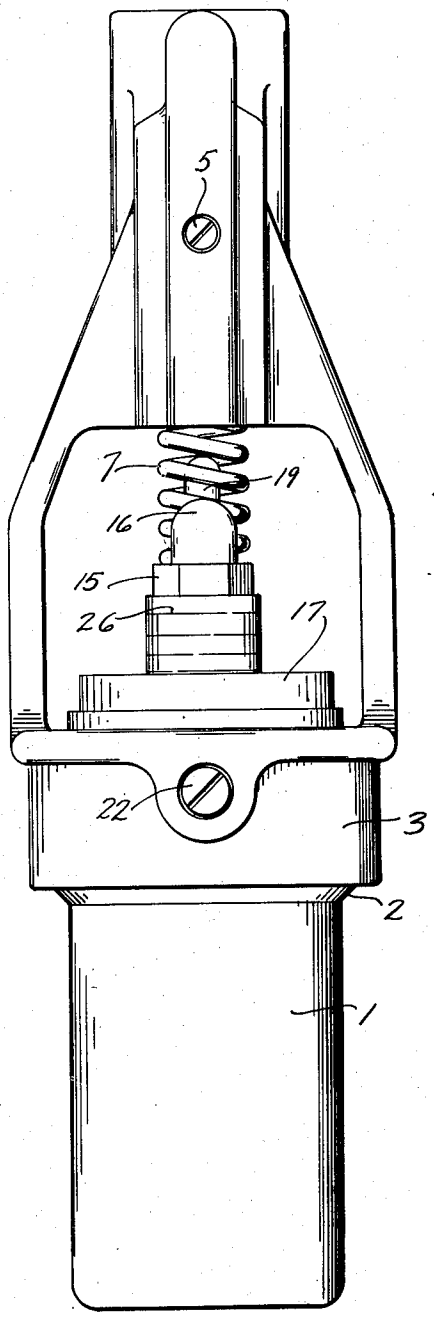


Fig. 2

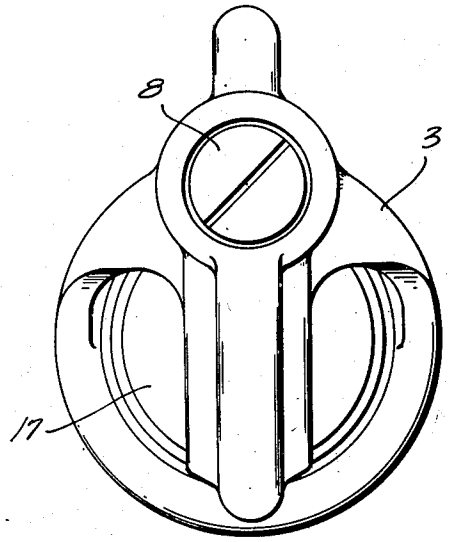
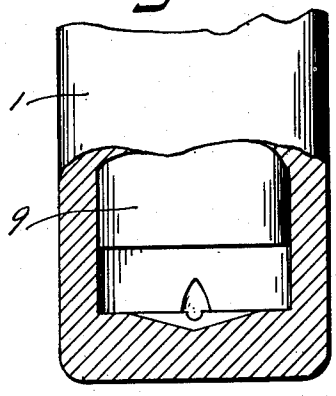


Fig. 3



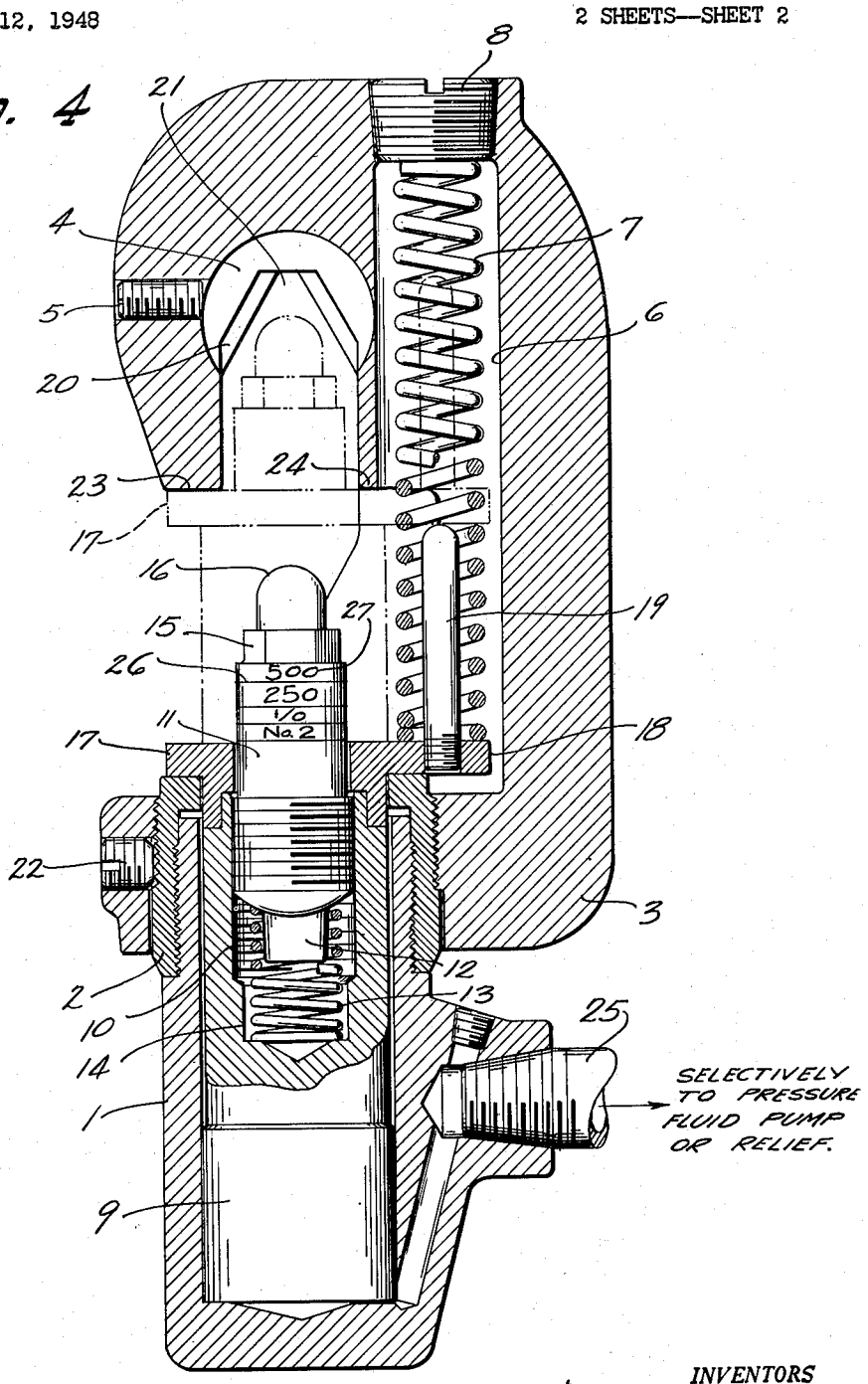
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Fig. 4



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2,633,161

INDENTING TOOL

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1 Claim. (Cl. 140—113)

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This invention relates to an indenting tool for splicing electric cables.

It is the usual practice to provide conducting sleeves for splicing electric cables and to lock the cables in place by indenting the sleeves. It has been necessary in the prior type of indenting tools to provide a separate die for each size of wire.

This invention is designed to provide an indenting tool which is so made that the same die may be used for many different sizes of wires and in which an adjustment is provided for the male member of the indenting die to adjust for the different sizes of wire for which the device is designed.

Further objects are to provide an indenting tool which may be used with many different sizes of wires as hereinabove set forth, and which is of very simple construction and may be quickly and easily adjusted to the particular size of wire which is to be spliced, and in which provision is made for holding the adjustable portion in its adjusted position against inadvertent displacement.

An embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a front elevation of the device.

Figure 2 is a top plan view of the device.

Figure 3 is a fragmentary, sectional view through the lower portion of the device.

Figure 4 is a vertical, sectional view through the device.

Referring to the drawings, it will be seen that the device comprises a body portion or cylinder 1 which carries a threaded adapter 2 on which is screwed jaw casting 3, which is provided with a removable female die element 4 removably held in place by means of a set screw 5. The jaw casting or overhanging, inverted, U-shaped member 3 is provided with an aperture 6 within which is positioned a spring 7. The upper end of the aperture is closed by means of a screw plug 8.

The cylinder 1 is provided with a piston 9 which has an enlarged, lower portion and a slightly reduced, upper portion. The upper portion is provided with a threaded aperture 10 within which is adjustably screwed the male element 11 of the die. This male element is provided with a reduced, lower extension 12 which serves to center a spring 13. The lower end of the spring 13 is seated within an aperture 14 of smaller diameter than the aperture 10. The spring 13 provides sufficient friction to hold the male member 11 in its adjusted position. This male member is adapted to be screwed down into the piston 9 when the device is employed to splice larger size wires by indenting the connecting sleeves. A hexagonal portion 15 is provided on the male member 11 so that it may be readily adjusted by means of a wrench. The upper end of the male member is rounded as indicated at 16.

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A saddle plate or member 17 is carried by the upper end of the piston 9 and may be either rigidly or removably seated on a reduced upper portion of the piston 9. It is provided with a lip 18 against which the spring 7 bears. Preferably, a pin 19 is threaded into the lip 18 of the saddle member 17 and serves as a centering means for the spring 7.

The female member 4 may be removed laterally of the jaw casting or overhanging member 3 when the set screw 5 is loosened. This female member is provided with inwardly projecting jaws 20 which converge towards the upper portion of the U-shaped opening 21 in the female member.

It is preferable to provide a set screw 22 in the jaw casting 3 so that it may be locked to the adapter 2 when it is properly adjusted and may be left in this locked position.

It is to be noted that the saddle member 17 or stop member engages the surfaces or shoulders 23 and 24 of the jaw casting 3. These shoulders 23 and 24 serve as stops and the saddle member 17 serves as a stop for the piston, so that when these stops or stop members are in engagement, the maximum upward travel of the piston 9 is obtained. It is apparent, therefore, that when the device is connected, for example by means of a pipe 25 to a source of fluid pressure such as a fluid pump so that fluid under pressure may be pumped below the piston 9, the portion 16 of the male element 11 of the die will arrive at a predetermined position in the uppermost position of the cylinder 9 with reference to the female element 4 of the die. It is thus clear that for any given setting of the male member 11, a predetermined degree of indenting is obtained for any selected wire size for which the adjustment has been made. It is to be noted that the male element 11 of the die is provided with a series of graduations 26 and with corresponding insigne 27 indicating the wire size, for example in the position shown for the adjustment illustrated in Figure 4, the device is set for a No. 2 wire size. The operator is assured that all splicing for No. 2 wire, for instance, will be identically alike for the setting shown in Figure 4. All he has to do is to operate the fluid pressure pump until the saddle member 17 en-

gages the shoulders 23 and 24, at which time the proper indentation for a No. 2 wire is obtained for the adjustment illustrated. Obviously for any other size, the male element 11 is adjusted to the appropriate or selected size. The fluid foot pump or other source of fluid pressure is provided with a relief means so that the pressure beneath the piston 9 may be removed in accordance with the usual practice. At the time that the relief is open, the spring 7 forces the piston and its associated parts back to the position shown in full lines in Figure 4. The uppermost position for the adjustment shown in Figure 4 is indicated in dot and dash lines in Figure 4.

It will be seen that a very simple form of indenting tool has been shown which may be used with the utmost facility for splicing many different sizes of wires without requiring any change of dies.

It will be seen further that the device is simple and may be readily produced and easily adjusted and used.

Although this invention has been described in considerable detail, it is to be understood that such description is intended as illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

We claim:

A hydraulic indenting tool comprising a main

portion consisting of a cylinder and an overhanging member carried by said cylinder, a female element of an indenting die carried by said overhanging member, a piston within said cylinder, a male element of an indenting die adjustably screw threaded into said piston, a saddle member carried by said piston independently of said male member and adjacent said male member, spring means urging said piston away from said overhanging member, said overhanging member having shouldered means arranged to be engaged by said saddle member to limit the outward motion of said piston, and means for conducting fluid under pressure to said cylinder.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,784,377	Moore	Dec. 8, 1930
2,158,855	Eby	May 16, 1939
2,423,957	Amtsberg	July 15, 1947
2,424,849	Rogoff	July 29, 1947
2,483,799	Veit et al.	Oct. 4, 1949