June 26, 1945. W. M. KOPPEL 2,379,088

CLOSING DIE

Filed Jan. 18, 1944

Fig. 1.

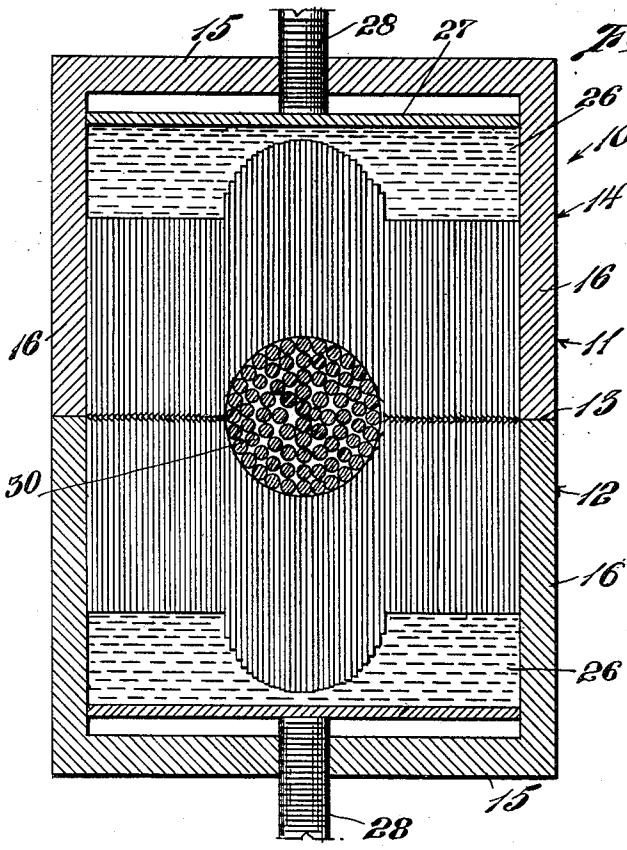


Fig. 3.

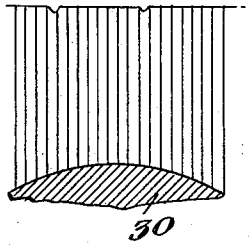


Fig. 4.

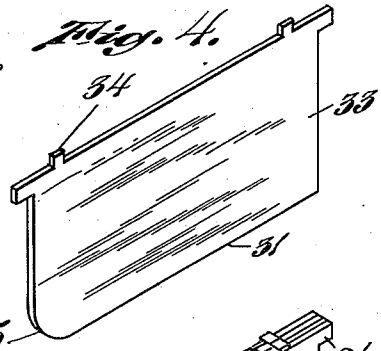


Fig. 2.

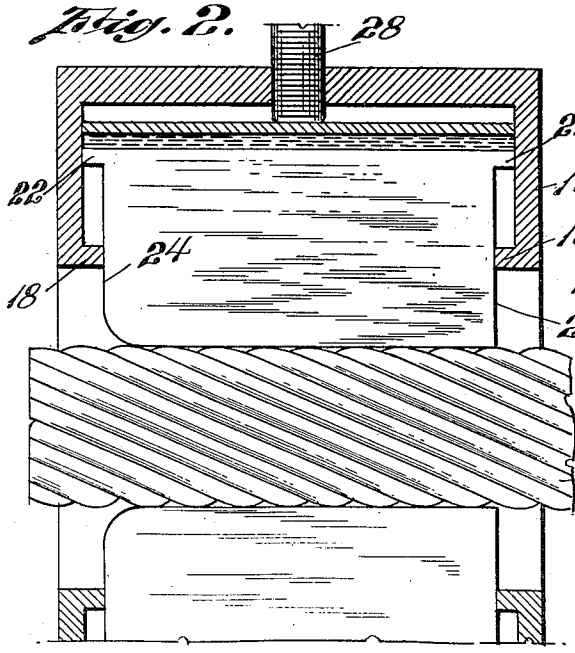
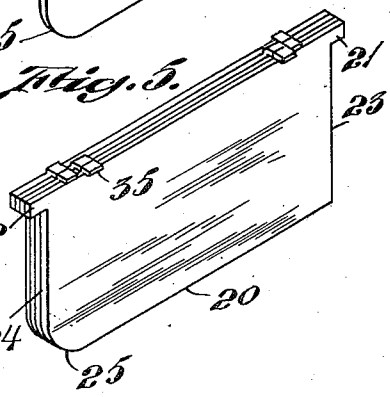


Fig. 5.



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CLOSING DIE

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Application January 18, 1944, Serial No. 518,733

6 Claims. (Cl. 57—138)

This invention relates to a closing die of the type used for wire cable.

In the laying of wire cable it is usual to provide a closing die which consists of two blocks which are clamped together and which together provide a hole through them with an enlarged entrance end. If the size of the cable which is being laid is changed then the die must be changed to provide either a larger hole through the mating blocks or a smaller hole through the mating sections of the die as the occasion requires. Further, after a die has been used a certain period of time the hole becomes enlarged and it is necessary to change the die in order that a smaller hole may be provided. A worn die then can only be used on larger sizes if occasion should require. A die consisting of these two blocks or sections must be provided for each of the different sizes of cable which is to be laid, thus requiring a large number of dies where changes of sizes or a variety of sizes are to be produced.

One of the objects of this invention is to provide a closing die which may be adjusted as to size so as to accommodate cables of varying size or so as to be adjusted to take up wear.

Another object of this invention is to provide an arrangement whereby the same amount of pressure is applied along all parts of the adjusted surfaces on the cable.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a sectional view through the die omitting the holder therefor;

Fig. 2 is a sectional view looking at right angles to Fig. 1 and illustrating the same parts;

Fig. 3 is an enlarged sectional view looking in the direction of Fig. 1;

Fig. 4 is a perspective view of one of the plates;

Fig. 5 is a perspective view of a plurality of the plates in assembled relation.

In illustrating this invention I have omitted the holder for the two sections or blocks which is usually used and is of a standard uniform size. I have, however, illustrated each of the sections of the die which are received in this holder and about which the invention centers. In each of the die sections I have provided a plurality of plates held in face to face relation so that they may move upwardly in a desired number and to a desired height to accommodate a cable of a given size. A fluid means is provided to engage the plates on their upper edges so that an equal distribution of pressure through the fluid on the plates may be provided while I have also provided adjustable means for applying pressure on this fluid.

With reference to the drawing, 10 designates a die consisting of two sections 11 and 12 which, on their outside dimensions, are of a size to fit into the usual holding mechanism. The sections 11 and 12 abut along the line 13 and are held firmly together in the holding means. Instead of making each of the sections 11 and 12 solid with a half-round recess in each so as to provide a hole through the two when assembled I have made each of the sections 11 and 12 hollow with an outer containing casing 14 having top or bottom walls 15 and side walls 16, and end walls 17 which are provided with inwardly extending lips 18 as shown in Fig. 2.

A plurality of plates 20 shaped as shown in Fig. 5 with flanges 21 and 22 at either end to engage the lips 18 are provided in face to face relation as shown in Fig. 5 and mounted in each of the casings 14 so that their faces will engage the side walls 16 while their fingers 21 and 22 will extend outwardly beyond the lip 18 of each of the end walls. The ends 23 and 24 of each of the plates will snugly engage the ends of the lips 18. One end of each of the plates as at 25 will be rounded so as to provide a beveled entrance end of the opening which is provided through the die.

Between the plates and the closed ends of the casings 14 a liquid 26 is provided. The joint between the plates and the casing where they come in contact will be sufficiently accurate so as to provide a seal to prevent the escape of the fluid which may be of a heavy liquid nature. The pressure member 27 is actuated by the screw 28 so as to provide the desired pressure upon the plates after they have been placed in adjusted relation. In some cases instead of using fluid small BB shot may be substituted through which the pressure is applied.

In use the die 10 consisting of the two sections or parts 11 and 12 are assembled about a cable designated 30 which is to be laid with the pressure means 28 withdrawn so that the plates may accommodate themselves to the cable. The edges 31 of each of the plates are beveled so that they will fit the round of the cable or approximately so. Pressure is then applied upon the pressure plate 27 by the pressure means 28 and the plates will accommodate themselves around the cable as shown in Fig. 1. Any desired pres-

sure may be applied so that the desired squeezing in or laying of the cable or compressing will be had, after which the die, which is held by suitable usual means, will be set in position and the cable as twisted will be drawn therethrough. Any size opening may be provided within the range of the die.

In order to prevent one plate such as **33** from sliding down through other plates fingers **34** are provided on the upper edge of each plate, which fingers may be bent as at **35** in Fig. 5 so that this finger will engage the next plate so that the plates may be kept in suitable arrangement. The lateral extent of each finger **35** will be only the thickness of each plate.

I claim:

1. A closing die for cable comprising cooperating parts providing when assembled a hole through them, each part comprising a plurality of movable members extending axially of the hole, each adjustable to vary the size of the opening through the two parts when assembled and means equalizing the pressure on said members to prevent opening movement of said members in each of said parts.

2. A closing die for cable comprising cooperating parts providing when assembled a hole through them, each part comprising a plurality of movable members extending axially of the hole, each adjustable to vary the size of the opening through the two parts when assembled, and fluid means equalizing the pressure on said members to prevent opening movement of said members in each of said parts.

3. A closing die for cable comprising cooperating sections providing when assembled a hole through them, each section comprising a plurality of plates in face to face relation and parallel to the longitudinal axis of the cable worked on said plates being relatively adjustable to vary the size of the said hole.

4. A closing die for cable comprising cooperating sections providing when assembled a hole through them, each section comprising a plurality of plates in face to face relation and parallel to the longitudinal axis of the cable worked on, said plates being relatively adjustable to vary the size of the said hole, and means in each of said sections to prevent opening movement of said plates.

5. A closing die for cable comprising cooperating sections providing when assembled a hole through them, each section comprising a plurality of plates in face to face relation and parallel to the longitudinal axis of the cable worked on, said plates being relatively adjustable to vary the size of the said hole, and means in each of said sections equalizing the pressure on each of said plates to prevent opening movement of said plates.

6. A closing die for cable comprising cooperating sections providing when assembled a hole through them, each section comprising a plurality of plates in face to face relation and parallel to the longitudinal axis of the cable worked on said plates being relatively adjustable to vary the size of the said hole, and fluid means in each of said sections equalizing the pressure on each of said plates to prevent opening movement of said plates.

WILLIAM MARTIN KOPPEL.