May 30, 1933. E. J. McILVRIED 1,911,914

FLUID DISTRIBUTING MEANS FOR STRAND WORKING APPARATUS

Original Filed July 26, 1930

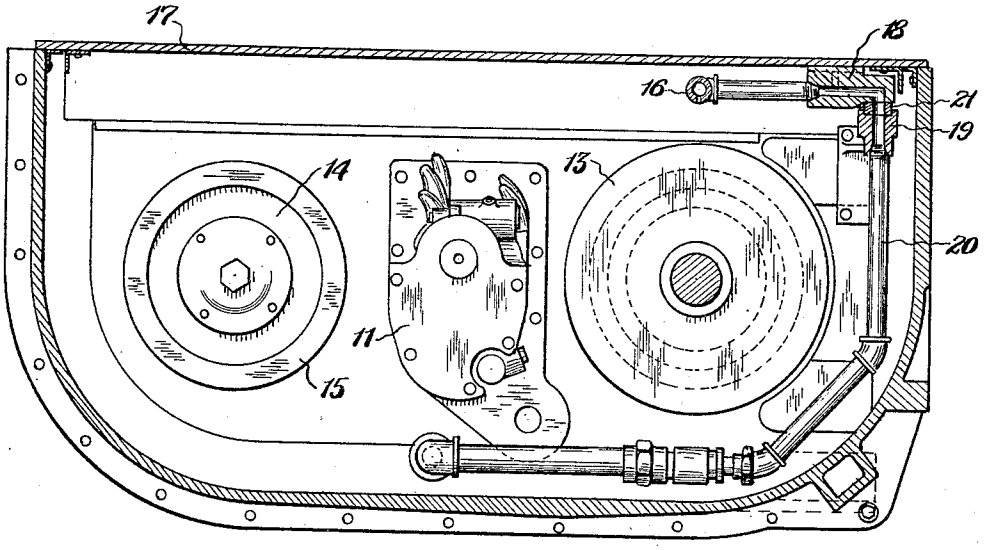


FIG. 2

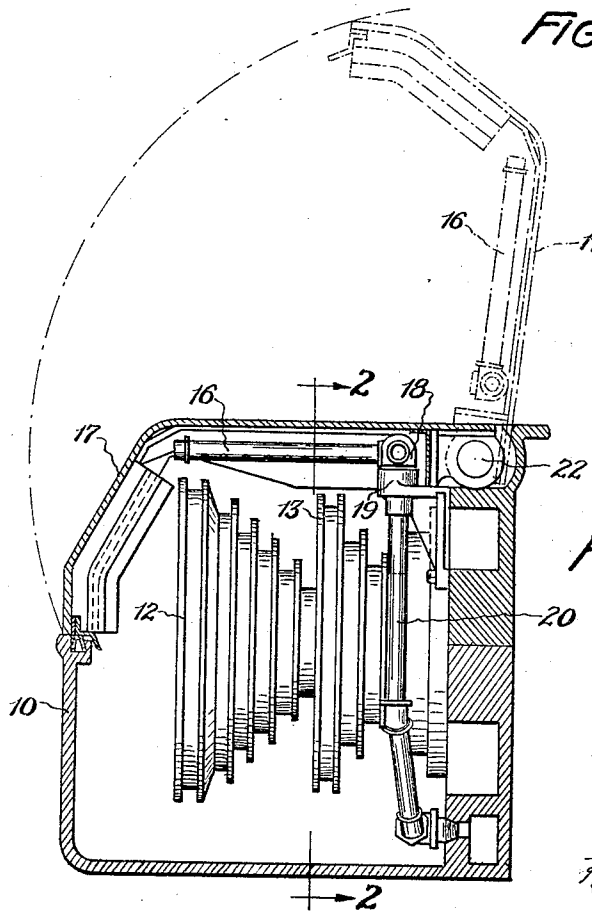


FIG. 1

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Patented May 30, 1933 1,911,914

UNITED STATES PATENT OFFICE

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FLUID DISTRIBUTING MEANS FOR STRAND WORKING APPARATUS

Original application filed July 26, 1930, Serial No. 470,891. Divided and this application filed September 11, 1931. Serial No. 562,327.

This invention relates to apparatus for working material which is supplied thereto in strand or strip form, and more particularly my invention relates to an improved form of high speed wire drawing apparatus.

This application is filed as a division of my original application Serial No. 470,891, filed July 26, 1930 entitled Strand working apparatus.

As its principal object, my invention aims to provide improved apparatus of the type mentioned in which novel means is employed for distributing compound to the strand working means.

Another object of this invention is to provide strand working apparatus wherein the compound distributing means is movable with the cover of the casing which houses the strand working means.

My invention may be further briefly summarized as consisting in certain novel combinations and arrangements of parts hereinafter described and particularly set out in the appended claims.

In the accompanying sheet of drawing,

Fig. 1 is a partial transverse sectional elevation of strand working apparatus embodying my invention; and

Fig. 2 is a longitudinal sectional elevation of the same taken substantially in the direction indicated by line 2—2 of Fig. 1.

In the drawing to which detailed reference will now be made, I have shown the strand working apparatus of my invention embodied in a wire drawing machine suitable for high speed drawing operation, and although I show a wire drawing machine in illustrating my invention, it should be understood, however, that my invention may be applied to various forms of apparatus for the working or attenuation of material in strand or strip form.

The wire drawing apparatus illustrated in this instance is housed within the casing 10 and comprises, in general, a die supporting bracket or shelf 11, drawing capstans 12 and 13 arranged in axial alignment with each other at one side of the die shelf, and an idler capstan 14 at the opposite side of the die shelf. The idler capstan may be of any suitable form of construction but as herein illustrated is made up of a plurality of flanged and independently rotatable sheaves 15. The drawing capstans 12 and 13 are substantially cone shaped, each having annular drum surfaces of different diameters which align with the respective dies of a set of dies carried by the die shelf so that by wrapping the strand around these drum surfaces it can be pulled through the dies by rotating the drawing capstans. These annular drum surfaces are arranged in step formation, or in other words, are arranged so that their diameters increase progressively along the axis of rotation of the capstan. As is well understood in this art, the progressively increasing diameters of the annular drum surfaces take care of the increase in length of the strand incident to its passage through the dies. From the working apparatus just described, the strand may be delivered to an appropriate form of spooling or winding apparatus arranged near the casing 10.

During the operation of wire drawing machinery and the like, it is customary to supply a liquid, usually referred to as a compound, to the strand working apparatus. This compound acts as a lubricant and as a cooling medium to facilitate the working of the strand. To effectively distribute this compound to the drawing capstans 12 and 13 it is desirable to have a distributing pipe extend outwardly over these capstans, however, a distributing pipe arranged in this position would interfere with the operations of stringing or removing the strands of material which pass around the capstans. To permit the use of distributing means in this advantageous position, I have devised an arrangement in which a perforated distributing pipe 16 is mounted upon the underside of the movable cover 17 of the casing 10 in such a position as to extend over and substantially parallel to the axis of the capstans 12 and 13 when the cover is closed. To provide for a supply of compound to the distributing pipe 16 I provide the latter with a fitting 18 which is also secured to the underside of the cover, and which is arranged to cooperate with the

fitting 19. The latter fitting is mounted at the upper end of the supply pipe 20, and is preferably secured to a wall of the casing. The fitting 19 is provided at its upper end with a suitably shaped recess within which an annular resilient gasket or packing member 21, is seated. When the cover 16 is in the full line position indicated in Fig. 1 to close the casing 10, the fitting 18 engages the packing member 21 and establishes a fluid tight connection between the supply pipe and the distributing pipe. When the fittings 18 and 19 are in this cooperating position their fluid passages are continuous so that compound will be supplied to the distributing pipe from the supply pipe 20. When the cover is swung about the axis of its actuating shaft 22 to the open position indicated in dotted lines in Fig. 1, the distributing pipe 16 is carried with the cover and is thereby moved away from the capstans 12 and 13 and to an out of the way position.

It will now be readily seen that I have provided a novel arrangement for distributing compound to the strand working means in such a way that the distributing means assumes an out of the way position when work is to be performed on the apparatus within the casing, and assumes a position immediately adjacent to the drawing capstans when the cover has been moved to the closed position. With this arrangement the compound distributing means is definitely positioned for most efficient cooperation with the drawing capstans and yet does not interfere with work which must be performed within the casing such as the operation of stringing the strand to be drawn, around the capstans.

While I have illustrated and described the device of my invention in a detailed manner it should be understood however, that I do not intend to limit myself to the precise details and arrangements of parts which I have shown and described, but regard my invention as including such changes and modifications as do not involve a departure from the spirit of the invention and the scope of the appended claims.

Having thus described my invention, I claim:

1. In apparatus of the character described the combination of a casing, means in said casing for working a strand of material, a movable cover for said casing, fluid supply means, and means mounted on and movable with said cover for delivering fluid to the strand working means when the cover is in closed position, said fluid delivering means and said fluid supply means being so arranged that continuity of their fluid conducting passages is established only when said cover is in closed position.

2. In apparatus of the character described the combination of a casing, means in said casing for working a strand of material, a movable cover for said casing, means mounted on said cover and movable therewith when the cover is moved to open or closed positions and adapted to deliver fluid to the strand working means when the cover is in closed position, and means for supplying fluid to said movable means.

3. In apparatus of the character described the combination of a casing, means in said casing for working a strand of material, a movable cover for said casing, means on said cover for delivering fluid to the strand working means, and fluid supply means adapted to be engaged by the fluid delivering means for supplying fluid to the latter while said cover is closed.

4. In apparatus of the character described the combination of a casing, means in said casing for working a strand of material, a movable cover for said casing, a member movable with said cover, means connected with said member and movably mounted on said cover for delivering fluid to the strand working means when the cover is closed, a fluid supply member arranged to cooperate with the movable member when the cover is closed, and resilient packing means carried by one of said members for sealing engagement with the other of said members.

5. In apparatus of the character described the combination of a housing, strand working means in said housing including a rotatable capstan for tensioning the strand being worked, a movable cover for closing said housing, fluid delivery means movable with said cover to extend near said capstan when the cover is in closed position, and means for supplying fluid to said delivery means.

6. In apparatus of the character described the combination of a casing, strand working means in said casing, a movable cover for closing said casing, means for supplying a strand working fluid, and means for delivering said fluid to said strand working means including means actuated by movement of said cover for connecting said delivering means with said supply means when the cover is moved to closed position and for disconnecting said delivering means from said supply means upon opening movement of said cover.

In testimony whereof, I hereunto affix my signature.

EDWIN J. McILVRIED.