Aug. 29, 1944. F. S. ZAICA 2,357,065

TAKE-UP BLOCK

Filed March 27, 1944

FIG. 1.

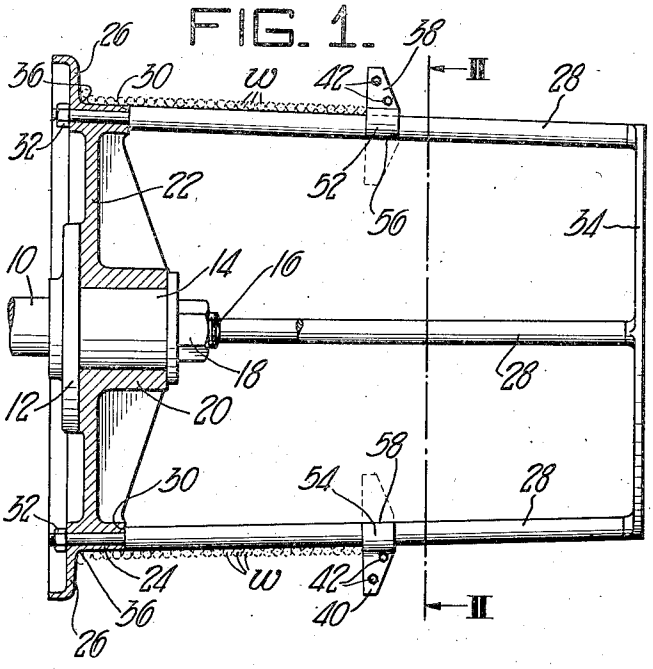


FIG. 3.

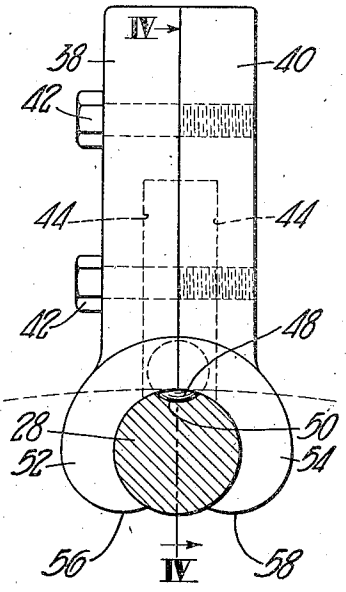


FIG. 2.

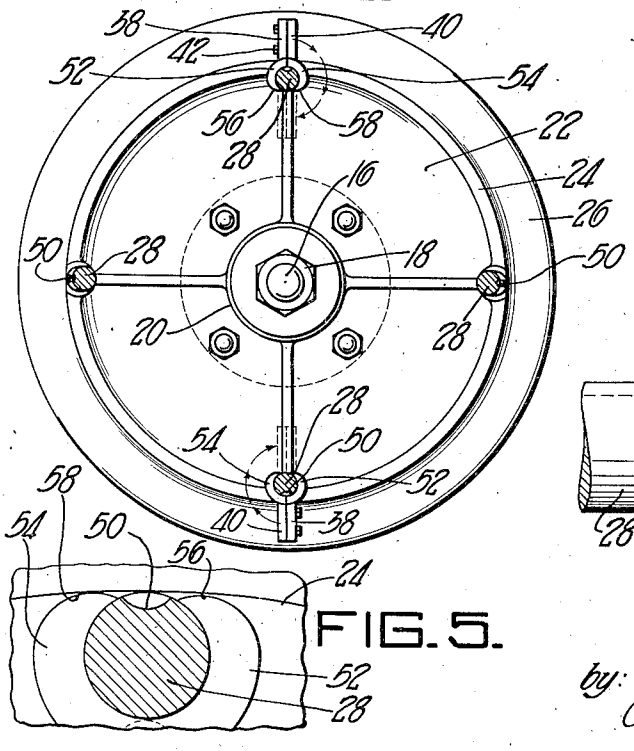


FIG. 4.

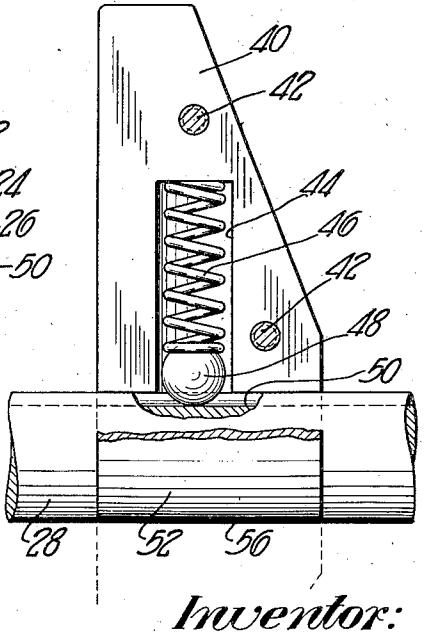


FIG. 5.

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TAKE-UP BLOCK

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4 Claims. (Cl. 242—78)

The present invention relates to improvements in take-up blocks such as those used in the wire drawing or wire processing industry. It is customary in this industry, in various operations, to use a drum-like receiver known as a block for accumulating a multiplicity of adjacent convolutions of wire in substantially circular coiled form as the wire or rod stock comes either from a drawing die or from processing devices such as galvanizing frames or the like. Such blocks are frequently in the form of a short drum-like annular member carrying a plurality of longitudinally-extending rods on which the accumulated convolutions of wire or rod stock are progressively accumulated as the block rotates.

The present invention is directed particularly to an improved take-up block of the type carrying a plurality of longitudinally-extending rods which in some cases converge, at least one of the rods being provided with a slidably supported keeper having a recessed portion housing a resilient member and a rod-engaging friction member adapted to impositively hold or lock the keeper in various positions of adjustment lengthwise of the rod, this keeper being adapted, when in normal position, to prevent the convolutions from slipping endwise off the take-up block. The keeper is also adapted to be swung inwardly to such position that the accumulated batch of coiled wire on the block can be readily removed therefrom, without interference by the keeper.

The above and other aspects of the invention will be fully apparent from a consideration of the following detailed disclosure, the accompanying drawing, and the appended claims.

In the drawing:

Figure 1 is a longitudinal section through a take-up block embodying the invention, the keeper illustrated being shown in full lines in normal positions to prevent convolutions from slipping off the block and in dotted lines illustrating the position to which the keepers are swung to facilitate stripping a coiled batch of convolutions from the block.

Figure 2 is a section on line II—II of Figure 1.

Figure 3 is an enlarged detail showing the improved keeper mounted on one of the rods of the block.

Figure 4 is a section on line IV—IV of Figure 3.

Figure 5 is a fragmentary view similar to Figure 3, showing the keeper swung to position to facilitate stripping the accumulated convolutions from the block.

In the embodiment of the invention illustrated, 10 represents a suitable clutch-controlled power shaft which near one extremity carries a collar 12 and an enlarged shank 14 having an integral threaded extension 16 carrying a clamp nut 18 adapted to securely anchor a hub 20 to the shaft. This hub is connected by a web portion 22 with an annular rim 24 having a radially extending flange 26.

A plurality of rods 28 shouldered at 30 are secured to the member 24 by a suitable fastening means such as nuts 32. Usually the rods 28 will converge longitudinally so as to facilitate the progressive movement of the coiled convolutions of the wire or rod *w* thereon. At their outer ends the rods are connected to one another by a spider or ring 34.

It is well known to those skilled in the art that in the normal operation of a take-up block of the general type shown in Figure 1, the wire or rod stock coiled thereon is directed onto the block at the curved fillet 36 located at the intersection of the flange 26 and the outer periphery of the rim 24. The leading end of a wire or rod is usually wrapped two or three times around one of the rods 28 when an initial bundle is started. After several convolutions of wire are wound on the block, the snubbing action thereof exerts sufficient pull to draw the wire or rod through the wire drawing die or through take-up frames of associated galvanizing or other processing apparatus. As the block rotates in normal operation, the new convolution immediately adjacent the flange 26 crowds into the region between the fillet 36 and the previously wound convolution. This results in pushing previously accumulated convolutions outwardly along the rods 28, it being understood that the converging disposition of these rods facilitates such endwise movement. It is necessary, however, in order to prevent tangling of convolutions, that means be provided for preventing the free end of the coiled batch from riding too freely off the end of the block.

A particular feature of the present invention is directed to the provision of an improved yieldingly mounted keeper for properly restraining the convolutions against too free an endwise movement. As illustrated in the drawing, I provide on each of two diametrically disposed rods 28, a keeper constructed and arranged as illustrated in detail in Figures 3 and 4. Each keeper comprises a pair of complementary sections 38 and 40, secured together by bolts 42. Each section has a recess 44 formed therein for the accommodation of a compression spring 46 and a substantially spherical friction member 48 which is adapted to slidably engage a guide groove 50 ex-

tending longitudinally through the length of the rod 28. The members 38 and 40 have respective rod-engaging jaws 52 and 54 whose outer extremities 56 and 58 terminate within the circular path traversed by the outer part of rods 28 when the block is rotating, so that when it is desired to strip an accumulated batch of coiled wire or rod stock from the block, the keepers, when swung inwardly to the dotted line position of Figure 1, will be entirely clear of the inside diameter of the convolutions; thus the accumulated batch can be slipped off endwise while the block is rotating.

It will be understood that in normal operation the keepers will occupy the full-line position of Figures 1 and 2, and it will also be appreciated that the keeper can be shifted manually to any desired position lengthwise along the rods 28. It is possible to so construct and arrange the parts that the yielding force exerted by the spring 46 on the substantially spherical friction member 43 can be so predetermined that the crowding action of the accumulated convolutions on the block will be effective to gradually shift the keeper automatically longitudinally of the rod 28 as the batch of convolutions accumulates.

The keeper as described, being impositively locked by the friction exerted by the substantially spherical member 48 and spring 46, will in normal operating position be maintained in a proper outward position to prevent slippage of convolutions from the end of the block, yet when a given batch has accumulated, the operator can cut the wire, then quickly and easily turn the keepers inwardly while the block is rotating, and insert one hand endwise through the center of the ring 34 so as to remove any desired number of the accumulated convolutions. After such removal the keepers can again be quickly swung outward to the normal restraining position and shifted to new positions along the rods.

While I have described in considerable detail a specific embodiment of the invention which an actual reduction to practice has demonstrated is highly desirable, it will be understood that various modifications may be made by those skilled in the art without departure from the invention as defined in the appended claims.

I claim:

1. A wire take-up block comprising a rotary member carrying a plurality of longitudinally extending rods at least one of which slidably supports a keeper, said keeper having a recessed portion housing a resilient member and a rod-engaging friction member coacting therewith adapted to impositively hold the keeper in various positions on said rod.

2. A wire take-up block comprising a rotary member carrying a plurality of longitudinally extending rods at least one of which slidably supports a keeper, said keeper having a recessed portion carrying a spring and a friction member adapted to impositively hold the keeper in various positions on the rod, the rod having a guide groove formed therein for coaction with said member.

3. A wire take-up block comprising a rotary member carrying a plurality of longitudinally-extending rods at least one of which carries a keeper, said keeper having a recessed portion carrying a spring and a friction member of substantially spherical form coacting therewith adapted to impositively hold the keeper in various positions on the rod, the rod being longitudinally grooved for coaction with said friction member.

4. A wire take-up block comprising a rotary member carrying a plurality of longitudinally converging rods at least one of which carries a keeper comprising a pair of complementary sections secured together and having rod-engaging jaws whose free extremities terminate within the circular path traversed by the outermost part of said rods while the block is rotating, said keeper sections being recessed, a compression spring and a substantially spherical friction member confined within the recessed portion of the keeper, said rod having a longitudinally extending arcuate groove therein for guiding engagement with said friction member.

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