April 4, 1944. B. A. HARROUN 2,345,815

OIL SAVER AND ROD STRIPPER

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FIG. 1.

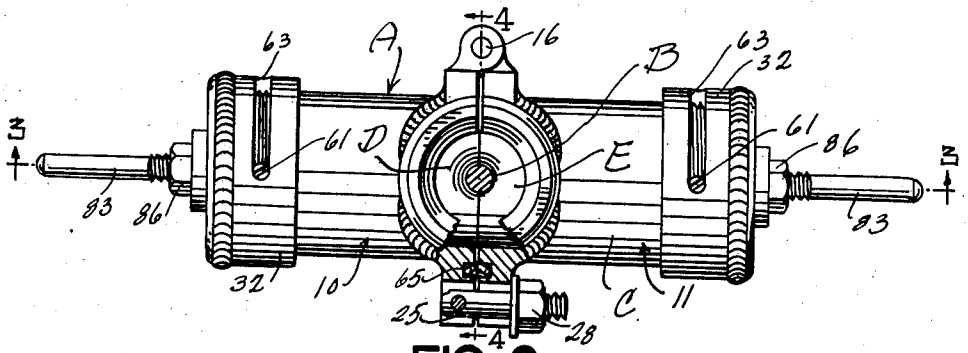


FIG. 2.

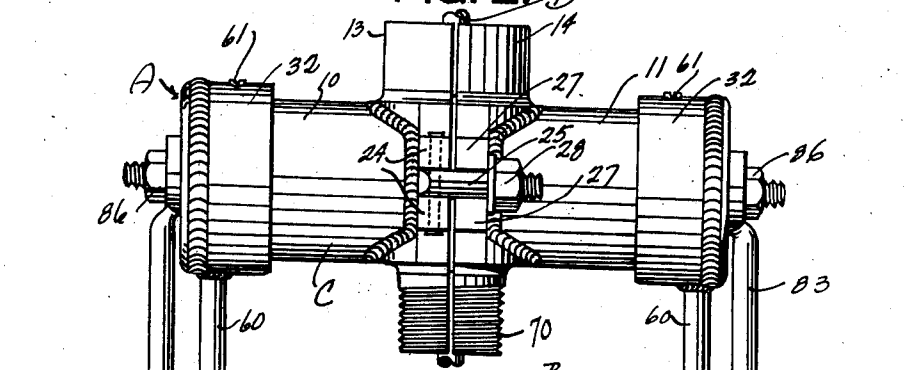
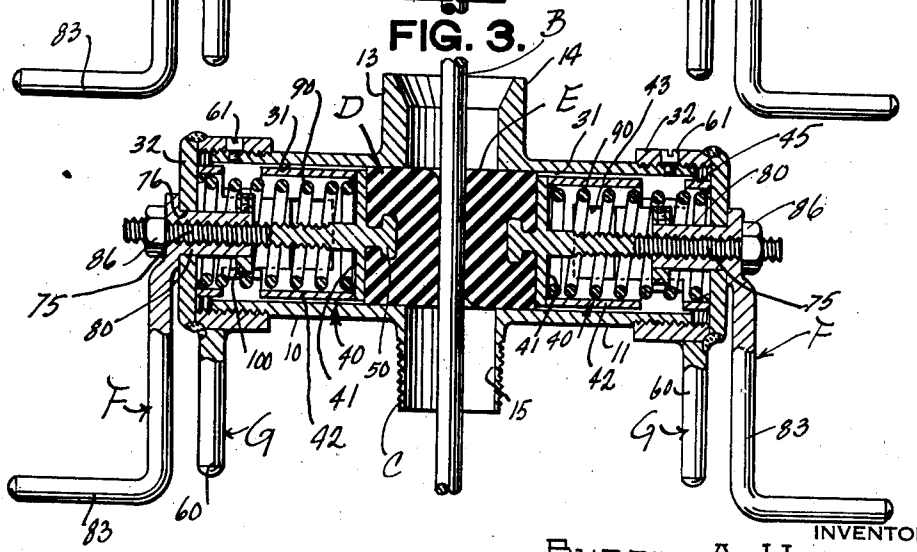


FIG. 3.



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FIG. 4.

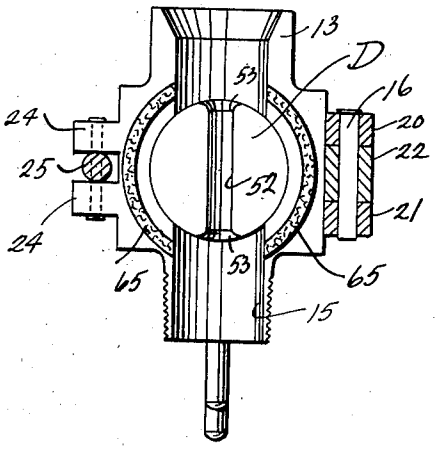


FIG. 5.

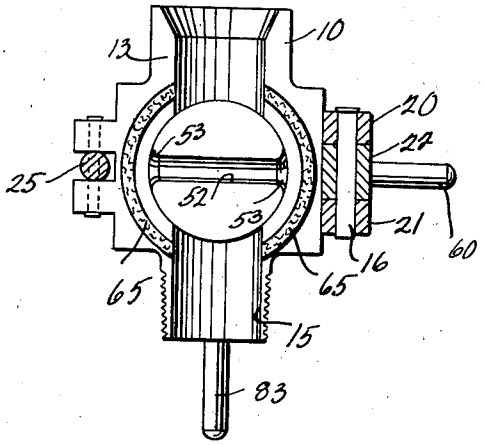


FIG. 6.

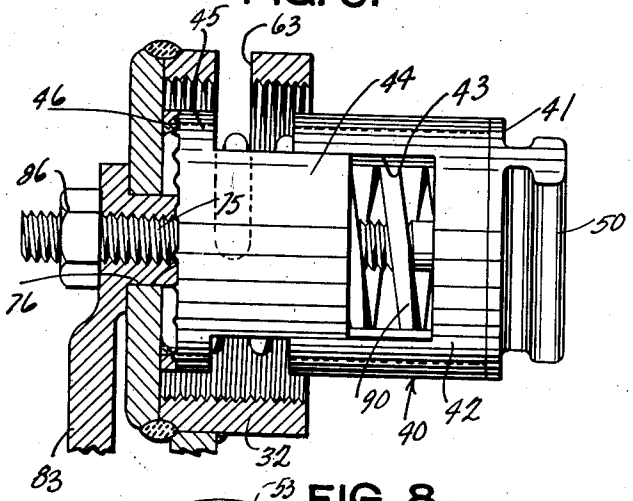


FIG. 7.

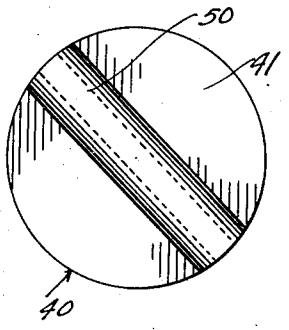
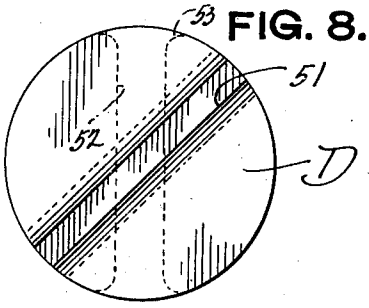


FIG. 8.



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OIL SAVER AND ROD STRIPPER

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Application May 1, 1941, Serial No. 391,432

9 Claims. (Cl. 166—15)

This invention relates to improvements in oil well savers and strippers for oil well pumping equipment.

The primary object of this invention is the provision of a relatively simple type of oil well stripper and saver which may be used with facility to strip and clean oil from sucker rods, or which may be used to close off the well when the pump line is drawn therefrom.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the accompanying drawings, forming a part of this specification, and wherein similar reference characters designate the corresponding parts throughout the several views,

Figure 1 is a plan view of the oil well saver and stripper.

Figure 2 is a side elevation of the oil well saver and stripper.

Figure 3 is a longitudinal sectional view taken through the oil well saver and stripper, substantially on the line 3—3 of Figure 1.

Figure 4 is a sectional view taken through the oil well saver and stripper substantially on the line 4—4 of Figure 1.

Figure 5 is a view similar to Figure 4, but with one of the wipers in oil well closing position.

Figure 6 is an enlarged fragmentary sectional view taken through certain details which control the longitudinal and rotary movement of one of the sucker rod wipers.

Figure 7 is an end view of a member which supports one of the rod wipers.

Figure 8 is a view of the key slot side of one of the wipers, showing the relation of the key way to the sucker rod oil stripping way of the wiper.

In the drawings, wherein for the purpose of illustration, is shown only a preferred embodiment of the invention, the letter A may generally designate the improved oil saver and stripper, which is adapted to strip oil from sucker rods B. It includes a housing C; wipers D and E; means F for each of the wipers to advance and retract the same with respect to the sucker line, and G indicates means provided for each of the wipers D and E for rotating the wipers in order to close off the well after removal of the sucker rod line.

The housing construction C of the improved oil saver and stripper is divided into sections 10 and 11. These housing sections 10 and 11 provide complimentary semi-circular portions 13 and 14, which define a passageway 15 therethrough for receiving the sucker line. These sections 13 and 14 are hinged by a pin 16 on a vertical axis for lateral swinging, so that the passageway 15 may be opened to remove the oil saver and stripper from the pump line. As is shown in Figures 4 and 5 of the drawings, the section 10 of the housing C is provided with lugs 20 and 21 to receive the pintle 16, and the other section 11 is provided with an intermediate lug 22 to receive this pintle. Diametrically opposite, the housing section 10 is provided with a pair of lugs 24 pivotally receiving a lock bolt 25 which is adapted to swing into position between corresponding lugs 27 provided on the other housing section 11, as shown in Figure 2. The lock bolt 25 at its screw threaded end is provided with a lock nut and washer arrangement 28 by means of which the sections 10 and 11 may be clamped together to assemble the oil saver and stripper housing in position for receiving the casing or casing head.

Each housing section 10 and 11 is provided with a lateral tubular extension having a passageway 31 wherein the wiper D or E, as the case may be, is rotated, or moved towards or away from the sucker rod passageway 15. The tubular portions are externally screw threaded at their outer ends to rotatably receive caps or rotary control members 32 with which the means F and G are associated for rotating and longitudinally moving the wipers.

The controlling means F and G for each wiper have cooperatively related parts including a wiper supporting member 40, generally of cup shaped formation including a flat vertically positioned wall 41 upon which the wiper is removably mounted. Furthermore, each cup shaped member 40 includes an annular wall construction 42 arranged on a horizontal axis, provided with diametrically opposed slots 43 cut inwardly from the outer edge thereof for slidably receiving therein tongues 44 of a stub sleeve 45 which is welded or otherwise secured at 46 to the inner surface of the end wall of the housing cap 32, as clearly shown in Figures 3 and 6 of the drawings. These tongues 44 slidably fit in the slot 43 and thus provide a tongue and slot connection for the wipers D and E upon the caps 32.

The wall 41 of each wiper supporting member 40 is provided with a key 50 of T-shaped cross section, on the sucker rod facing side thereof, diametrically extending across the face of the wall 41, as shown in Figure 7 of the drawings. The wipers D and E are each provided with a corresponding key way 51. The wipers D and E are preferably of rubber or composition

material, suitable for stripping oil from sucker rods, and preferably flexible enough so that they may be placed in abutting relation for properly and completely sealing off the well. Generally, the wipers D and E are of cylindrical formation, and each of them is provided with a sucker rod receiving groove 52 of semi-circular cross section, flared at its ends 53, to facilitate wiping of the oil from the rods. These wiping grooves 52 are disposed in acute angled relation with respect to the line of the key ways 51, as shown in Figure 8 of the drawings. The wipers D and E slide back and forth in the passage ways 31 of their respective housing sections 10 and 11 with a non-leak engagement with the housing.

Completing the description of the means G to rotate the wipers D and E for well closing purposes, each cap 32 is provided with a handle 60 by means of which it may be rotated. Since the tongues 44, which are rigid with these caps 32, are received in the slots 43 of the wiper supporting members 40 it is readily apparent that rotation of the caps 32 will also cause rotation of the wipers. The rotation of each cap 32 is limited to a quarter turn, by means of a screw 61 mounted on the housing and received within a 90 degree slot 63 provided in the sleeve portion of the cap 32, as shown in Figures 1 and 3 of the drawings. It is thus apparent that, in the position shown in Figure 3, the sucker rod receiving grooves 52 can be disposed in facing relation to provide a sucker rod receiving passageway. By rotating the caps it is also apparent that the wipers D and E can be placed at an angle of 90 degrees with respect to the sucker rod passageway 151, in the position shown in Figure 5. This will close off the sucker rod passageway completely.

It should be noted that the portions 13 and 14 forming the circular rod receiving sleeve of the housing C may be sealed by suitable packing means. Thus, arcuate packing 65 may be embedded in suitable grooves in the facing sides of the sleeve portions 13 and 14, and clamped in sealing relation by the bolt means 25 above described, and as can be readily understood from Figures 1, 4, and 5. The space dividing the split line of the sections 13 and 14 is rather exaggerated in Figures 1 and 2 of the drawings. Any suitable packing means may be placed upon the screw threaded portion 70 of the housing C where the same receives the casing or casing head, as will be well understood by those skilled in the art to which this invention relates.

Referring to further details of the means F for advancing and retracting the wipers D and E, it should be noted that the wall 41 of each wiper supporting member 40 at its outer surface is provided with an axially extending feed screw 75 which extends through an opening 76 in the outer wall of the cap 32. In this opening 76 there is disposed a nut 80 threaded upon the screw 75, and bearing in the opening 76. Externally of the cap 32 this nut 80 is provided with a rigid crank or handle 83. Rotation of the nut 80 by means of the handle 83 will feed the screw 75 inwardly or outwardly and thus feed the wiper D or E, as the case may be, towards or away from the sucker rod B. A retaining nut 86 may be placed upon the feed screw for holding the nut 80 in a definite adjustment. A compression spring 90 is placed in each housing sleeve, bearing in the cup shaped member 40 against the wall 41 at one end and at its opposite end engaging the outer wall of the cap 32. The function of the springs 90 is of course to force the wipers in the direction of the sucker rod B.

In order to limit the outward movement of the nut 80 a lock washer arrangement 100 may be provided on the inner end of the same, as shown in the drawings.

The operation of the improved oil saver and stripper will be apparent from the foregoing. Due to the cooperative relation of the means which enables the wipers to be fed toward or away from each other or rotated through 90 degrees it is possible to regulate these wipers for efficient wiping from the sucker rod, or by simple turn to completely close off the well passageway. The wipers can be completely retracted in the passageways 31 in order to permit the traveling valve to be pulled out without damaging any part of the equipment.

Various changes in the shape, size and arrangement of parts may be made to the form of the invention herein shown and described, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In an oil saving device the combination of a housing provided with means for attachment to a well casing and having a sucker rod passageway therethrough, oil wiping means including opposed wipers, means to radially move the oil wipers to surround a sucker rod for stripping oil therefrom, and means for both rotatably and radially moving said wipers to close off the entire passageway of said housing after removal of the sucker rod from the passageway.

2. In a device for closing off a passageway, in a housing through which a reciprocating part extends, the combination of a housing having such a passageway therein and a reciprocating part therein, means supported by said housing including complimentary members movable in the housing transverse to the passageway and at opposite sides of the reciprocating part and having complimentary sockets therein for snugly receiving the reciprocatory part so as to seal off the passageway, said members being rotatable in said housing, and means to rotate the members after the reciprocatory part is removed from the passageway so as to relatively disalign the sockets therein from the passageway of the housing and completely close off said passageway from transmission of fluids therethrough.

3. In an oil saver and wiper the combination of a housing having a pump line passageway therethrough, complimentary wipers supported in the housing at opposite sides of the axis of the passageway and having complimentary sockets for receiving a pump line, means for rotating said wipers so as to disalign the complimentary pump line sockets with respect to each other, and means for imparting rectilinear movement to said wipers into or out of operative wiping relation with a pump line between said wipers.

4. In an oil saver and wiper for oil well pumping equipment and the like, the combination of a housing adapted to be attached to a well casing or the like and having a passageway therein for reciprocally receiving a pump line, rotary wipers mounted in said housing on an axis normal to the axis of the pump line and at opposite sides of the latter and having sockets therein for snugly receiving the pump line in wiping relation in said passageway of the housing, means for moving said wipers along their axes towards and away from the pumping line to position them

in wiping relation with the pumping line or out of wiping relation therewith, and means exterior of the housing for rotating said wipers to disalign the pump line sockets therein with the passageway of the housing whereby to completely seal off said passageway.

5. In an oil saver and wiper for oil well pumping equipment and the like, the combination of a housing adapted to be attached to a well casing or the like and having a passageway therein for reciprocally receiving a pump line, rotary wipers mounted in said housing on an axis normal to the axis of the pump line and at opposite sides of the latter and having sockets therein for snugly receiving the pump line in wiping relation in said passageway of the housing, means for moving said wipers along their axes towards and away from the pumping line to position them in wiping relation with the pumping line or out of wiping relation therewith, and means exterior of the housing for rotating said wipers to disalign the pump line sockets therein with the passageway of the housing whereby to completely seal off said passageway, and spring means normally urging said wipers towards each other in the passageway of the housing.

6. In an oil well saver and wiper for pumping lines the combination of a housing having means for attachment to a well casing and providing a pump line passageway therethrough, a wiper member rotatably mounted in the housing on an axis normal to the axis of movement of the pump line, means to slidably move said wiper member into and out of wiping relation with said pump line on a line normal to said pump line, and additional means to rotate said wiper member in the pump line passageway of said housing after removal of the pump line therefrom.

7. In a combination oil well saver and wiper for the pump lines of oil well pumping equipment the combination of a housing for attaching to a well casing or casing head having a pump line passageway therethrough, wiper members slidably mounted in said housing on axes normal to the axis of the pump line and extending into said passageway for wiping abutment with the pump line, said wiper members having pump line receiving sockets therein, means for moving said wiper members across said passageway toward and away from the pump line, and means for rotating said wiper members in said casing to disalign the pump line receiving sockets thereof with the passageway of said housing in order to seal off said passageway.

8. In an oil well saver and wiper the combination of a housing having a pump line passageway therethrough, complimentary wiper members movable on an axis normal to the pump line and at opposite sides of the pump line and across said passageway of the housing and having sockets therein for receiving the pump line in a wiping relation therewith, a rotary member supported by the housing for each of said wiper members upon which said wiper members have tongue and slot connections and thru which said wipers may be rotated to disalign the pump line socket thereof with respect to the pump line passageway of the housing whereby to close off said passageway from flow of materials therethrough when the pump line is removed therefrom, each of said wipers having a feed screw attached thereto, and means rotatably supported by said rotary member first mentioned including an adjusting nut in threaded engagement with said feed screws whereby upon rotation thereof the wipers may be moved across the passageway of the housing towards and away from the pump line.

9. In an oil well saver and wiper the combination of a housing having a pump line passageway therethrough, complimentary wiper members movable on an axis normal to the pump line and at opposite sides of the pump line and across said passageway of the housing and having sockets therein for receiving the pump line in a wiping relation therewith, a rotary member supported by the housing for each of said wiper members upon which said wiper members have tongue and slot connections and through which said wipers may be rotated to disalign the pump line sockets thereof with respect to the pump line passageway of the housing whereby to close off said passageway from flow of materials therethrough when the pump line is removed therefrom, each of said wipers having a feed screw attached thereto, and means rotatably supported by said rotary member first mentioned including an adjusting nut in threaded engagement with said feed screws whereby upon rotation thereof the wipers may be moved across the passageway of the housing towards and away from the pump line, and spring means normally urging said wipers toward the pump line.

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