

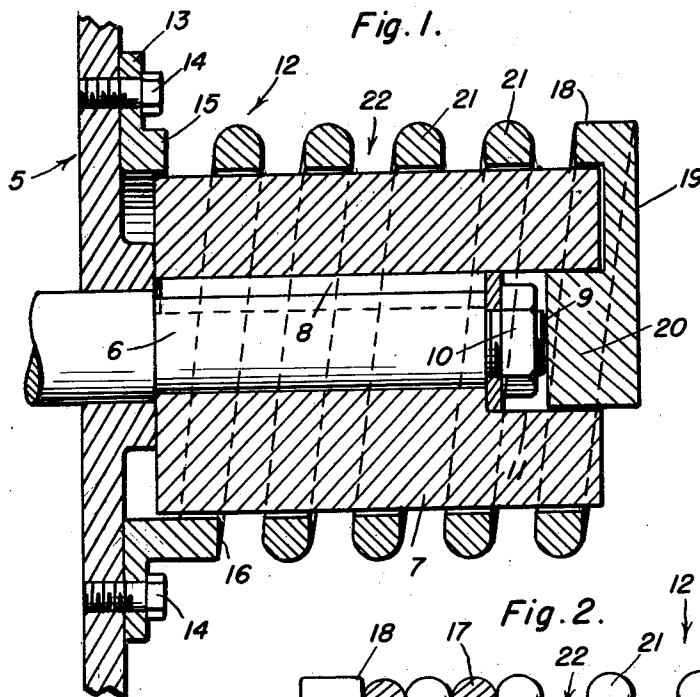
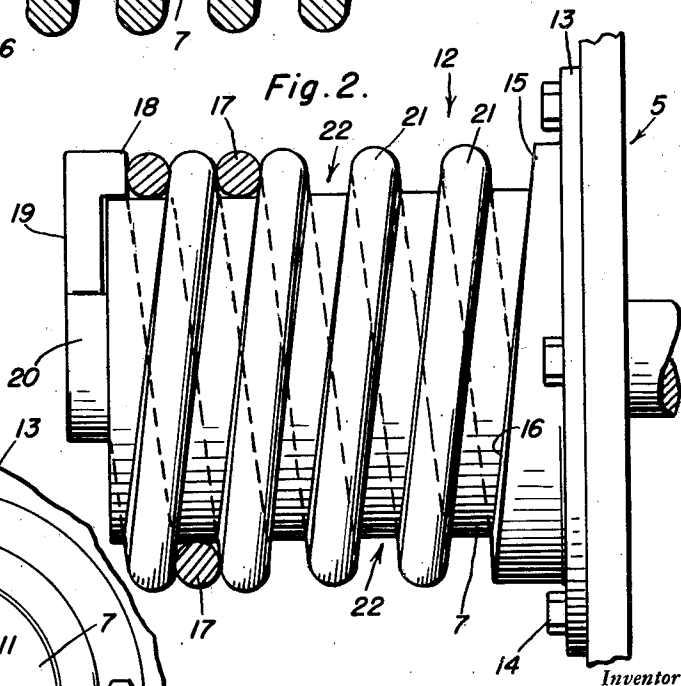
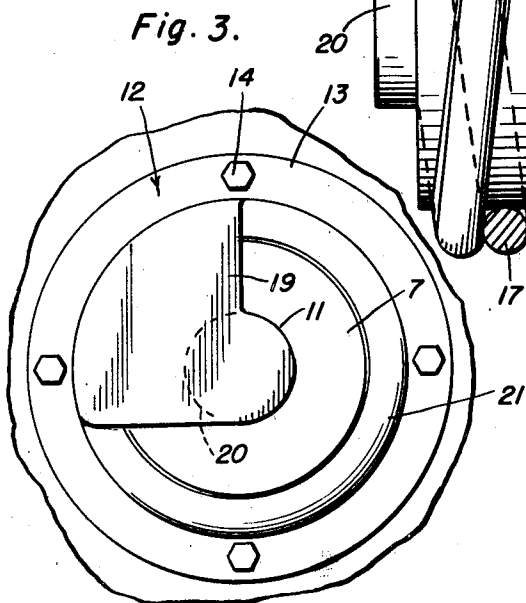
Feb. 14, 1950

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2,497,220

SAFETY TYPE CATHEAD CONSTRUCTION

Filed Sept. 4, 1947



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UNITED STATES PATENT OFFICE

2,497,220

SAFETY-TYPE CATHEAD CONSTRUCTION

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Application September 4, 1947; Serial No. 772,082

4 Claims. (Cl. 254-176)

1

The present invention relates to a novel and improved cathead which is distinguishable structurally and functionally from commonly known types, in that it is constructed to prevent the catline from fouling, becoming unmanageable and producing a condition, which, under present-day circumstances, catches an operator and man-
gles his body before the powering means can be stopped and brought under control.

In carrying out the principles of the instant invention, I have evolved and produced a novel cathead construction, which is such that the windings of the catline are systematically and progressively guided and wound smoothly and uniformly, whereby to prevent overlapping and consequent difficult-to-manage fouling.

More specifically, the unit, which constitutes the primary improvement, has to do with a simple and expedient structure, the inner end of which is fastened to the relatively stationary draw work, the outer end coacting intimately with the corresponding end of the cathead, and the intermediate portions comprising helical coils which wrap around the periphery of the cathead and provide the aforementioned guides and intervening spaces, in which the windings of the catline nest and lodge, thus attaining the uniform wrap-around result desired.

Another object of the invention is to provide a simple and practical safety catline controller and guide means which minimizes fouling and which also spaces the windings of the catline one from the other and consequently prevents chaffing and undue line wear.

Another object of the invention is to provide a safety controller unit, which is in the form of an attachment and which is capable of being associated with conventional-type catheads now in service, by making comparatively simple alterations in the existing structure.

A further object is to provide an entire new-type cathead which is especially made to accommodate the controller unit, and in which the latter embodies yieldable coils unattached from the cathead proper, thus providing the compensating properties in the handling of lines of different diameters and also providing sufficient friction against the windings to insure non-slipping tight results.

Other objects and advantages will become more readily apparent from the following description of the accompanying drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views:

2

Figure 1 is a fragmentary sectional and elevational view, disclosing a cathead constructed in accordance with the principles of the present invention.

Figure 2 is an elevational view of the same, showing the catline windings partly wrapped in place.

Figure 3 is an end elevational view of Figure 2, observing same in a direction from left to right.

Referring now to the drawings by distinguishing reference numerals and accompanying lead lines, it will be seen that the numeral 5 designates a fragmentary portion of a common-type draw-work which is equipped with a source of power (not shown) for rotating the jack shaft 6, on which the cathead 7 is keyed for rotation, as at 8. It will be noted that the jack shaft has a stud 9 on its outer end, which terminates inwardly of the bore and is provided with a clamping nut 10, thus defining an adaptor pocket 11, at the outer end of said bore.

The catline guide or "spooling" and controller unit is denoted, generally, by the numeral 12 and comprises an annulus or annular flange 13, which is bolted securely, as at 14, to the draw-work casing 5. This annular portion is provided with a collar 15 whose spiralling surface 16 serves to pilot and guide the windings 17 of the catline around the cathead 7. The collar is, in effect, a head taking the place of the usual flange provided on ordinary-type catheads. A similar head-forming abutment or shoulder 18 is provided at the outer end of the unit, and is integral with a segmental or sector-shaped plate 19, which contacts the outer end of the cathead and which has an inwardly projecting journal 20 situated in the aforementioned adaptor pocket 11. The intermediate portion of the unit is made up of a plurality of helical coils 21 which surround the outer periphery of the cathead, the same being detached and of requisite resiliency. These coils define a spiralling channelway 22 between themselves and the cathead to which the windings of the catline wrap in uniform progressive and smooth fashion, as is obvious. The unit 12 may be made of steel, cold rolled iron or may be cast in one piece, if desired. The cathead rotates freely, in relation to the parts which go to make up that unit. The spaces between the coils are regulated, according to the size of the rope used.

The provision and self-accommodating nature of the unit in relation to the cathead, provides requisite lifting power while eliminating the haz-

3

ard of the catline becoming twisted, fouled and consequently unmanageable, as previously pointed out.

It is submitted that persons working in oil fields, familiar with difficulties attending present-day constructions, will readily appreciate the import of the invention and the many advantages attending same, when in use.

A careful consideration of the foregoing description in conjunction with the invention as illustrated in the drawings will enable the reader to obtain a clear understanding and impression of the alleged features of merit and novelty sufficient to clarify the construction of the invention as hereinafter claimed.

Minor changes in shape, size, materials and rearrangement of parts may be resorted to in actual practice so long as no departure is made from the invention as claimed.

Having described the invention what is claimed as new is:

1. In a cathead construction of the class described, a relatively stationary draw-work having a bearing, a jack shaft mounted for rotation in said bearing and projecting beyond said draw-work, an annular collar having an attaching flange bolted to said draw-work, said collar concentrically surrounding said bearing and shaft, a helical coil having a plurality of convolutions, said coil being integrally connected with said collar, and a cylindrical cathead keyed on said shaft and rotatable within the inner peripheral confines of said coil, the outermost convolution of said coil terminating in a shoulder forming plate, said plate being parallel to said collar and attaching flange and having an axial projection constituting a journal, said journal projecting into the outer end portion of the bore of said cathead.

2. In a structure of the class described, a relatively stationary draw-work having a bearing, a jack shaft mounted for rotation in said bearing and projecting beyond the draw-work, a shoulderless cathead having an axial bore, said shaft being keyed to said cathead in said bore, and terminating short of one end of the bore thereby providing a journal accommodating pocket, a collar surrounding the inner end portion of said cathead having a flange fixedly attached to said draw-work, a helical coil having a plurality of turns connected with and extending outwardly beyond said collar and surrounding and detached from the peripheral surface of said cathead, and a journal carried by the coil farthest away from said draw-work, said journal projecting into said pocket and aligned with said shaft.

3. In a structure of the class described, a rela-

4

tively stationary draw-work having a bearing, a jack shaft mounted for rotation in said bearing and projecting beyond said draw-work, a shoulderless cathead having an axial bore, said shaft projecting into said bore and terminating short of the outer end of the bore and providing a journal accommodating pocket, said cathead being keyed on said shaft for rotation therewith, a collar concentrically surrounding the inner end portion of said cathead having a flange fixedly attached to said draw-work, a helical coil having a plurality of turns connected with and extending outwardly beyond said collar and surrounding and detached from the peripheral surface of said cathead, the outermost turn terminating in a shoulder radiating from the surface of the cathead and further including a sector-shaped plate, said plate being provided with an inturned journal and said journal projecting axially into said pocket.

4. An attachment for a draw-work, said attachment being adapted to surround and cage-in a power-driven collarless cathead, being adapted for support partly by way of the draw-work and partly by way of the cathead, comprising a collar adapted to surround an inner end portion of the cathead, said collar having an outstanding attaching flange adapted to be rigidly mounted on said draw-work, said collar being provided with an axially aligned helical coil having a plurality of turns, said turns being adapted to surround the peripheral surface of the cathead to provide catline controller and guide means, the endmost turn, farthest from said collar terminating in a lateral plate, said plate being parallel to said collar, and the face of the plate directed toward said collar having an axially positioned stud constituting a journal, the latter being adapted to extend into the bore of a cathead.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,288,784	Williams	Dec. 24, 1918
1,489,902	Segelhorst	Apr. 8, 1924
1,659,521	Dye	Feb. 14, 1928
1,734,832	Shanklin	Nov. 5, 1929
1,856,503	Murray	May 3, 1932

FOREIGN PATENTS

Number	Country	Date
261,237	Italy	Nov. 16, 1928