

Dec. 29, 1936.

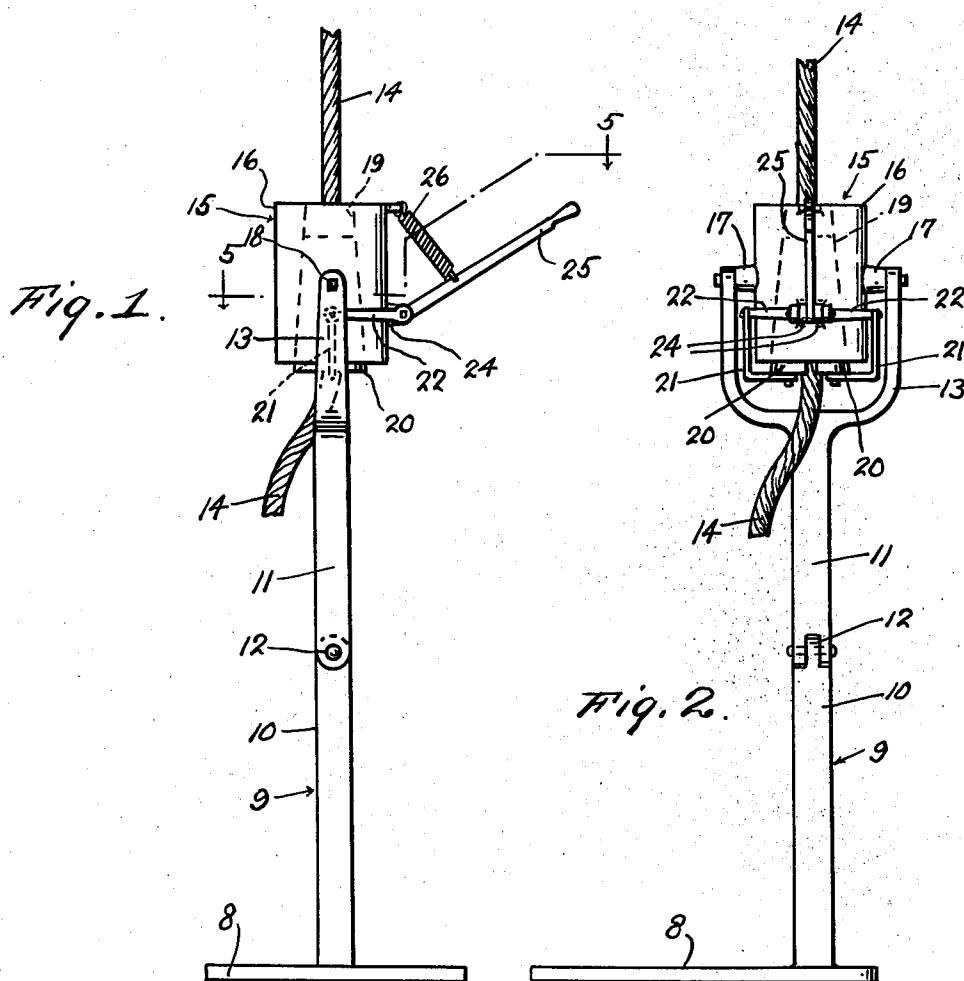
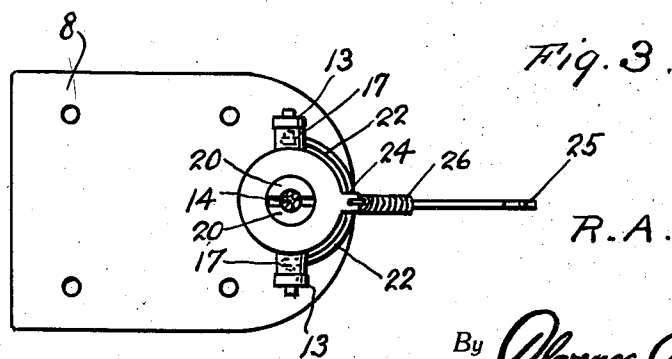
R. A. CRAWFORD

2,066,094

CATLINE CLAMP

Filed Aug. 17, 1935

2 Sheets-Sheet 1



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Fig. 4.

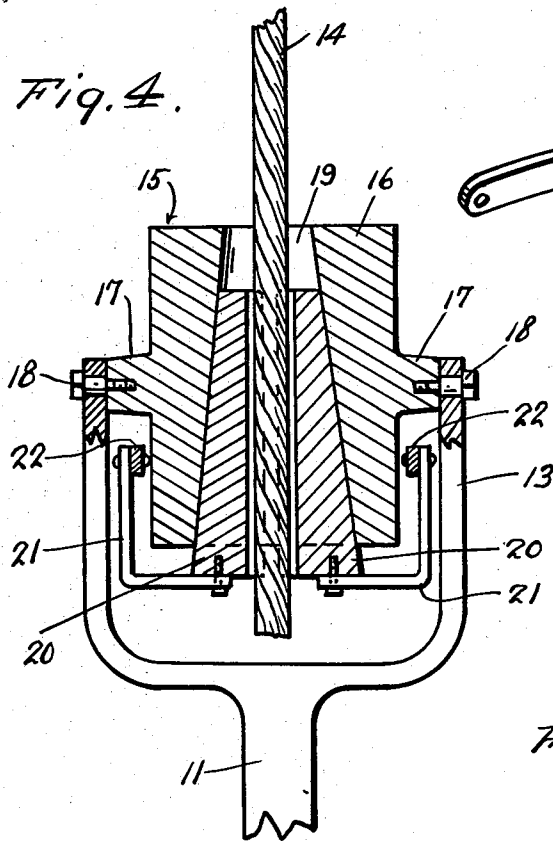


Fig. 6.

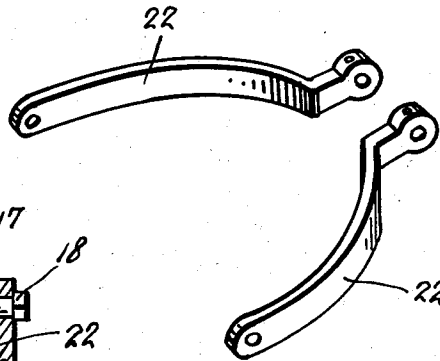


Fig. 7.

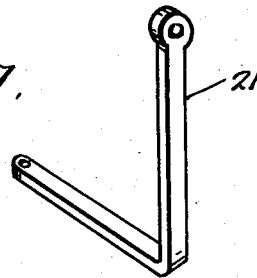
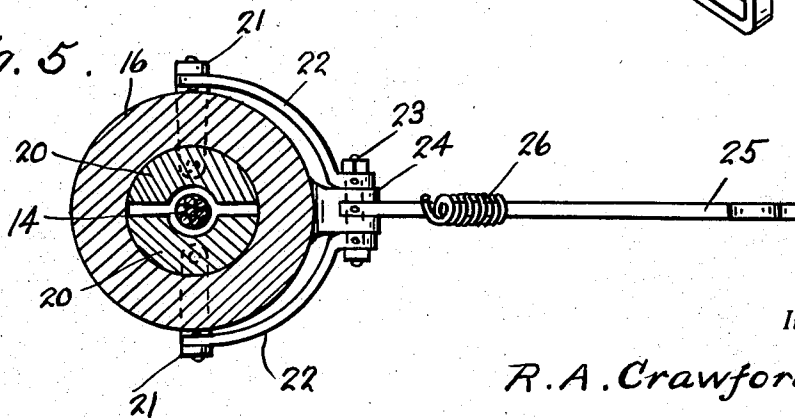


Fig. 5.



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UNITED STATES PATENT OFFICE

2,066,094

CATLINE CLAMP

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fifteen per cent to James P. Lloyd, Center,
Tex.

Application August 17, 1935, Serial No. 36,743

6 Claims. (Cl. 188—65.1)

My invention relates to an improved retention clamp usable in connection with a heavy load lifting cable, rope, and similar lines, and it has more specific reference to a structure which has been especially designed for clamping and holding in a set position a so-called catline such as is used in connection with a portable rig of a type now commonly used in oil fields.

By way of introduction it is to be pointed out that it is now common practice in the oil fields to use all steel portable drilling rigs. It is also common practice to use makeshift holding devices and means or to attempt to snub the catline with the so-called cathead. The present-day method of accomplishing this hazardous task is accompanied with danger, especially to the attendants and workmen on the drilling floor. Not only is the line frictionally burnt and chafed, but it wears out quickly and sometimes breaks, causing injury to those within the vicinity of the falling load.

It goes without saying that I am aware that there are many different types of line and cable clamp holding devices patented and on the market, but I have found none which seems to work efficiently and satisfactorily on portable drilling rigs of the type under consideration. Under the circumstances, after much study and forethought, I feel that I have evolved and produced a novel structural line holding device which is aptly fitted for the purposes intended.

By way of comparison with known structures, I regard it as a distinct improvement especially suitable to fulfill the requirements of a device of this kind. In fact, in reducing the invention to practice, I have found it expedient and practicable to adopt and use an arrangement having a suitable adjustable attaching base and standard, the clamping means being swingably or rockably mounted on the standard and so constructed as is admitted to be conveniently and positively controlled by the attendant appointed to handle this task.

Then, too, it is in keeping with my inventive idea to provide a structure which is strong and durable, sensitive and reliable in action, characterized by appreciable refinements and improvement and altogether feasible to perform its appointed task and functions.

Other features and advantages will become more readily apparent from the following description and drawings.

In the drawings:

Figure 1 is an elevational view looking at the device as a whole and observing it from one side.

Figure 2 is a view similar to Fig. 1 which may be conveniently designated as a face or front elevational view observing Figure 1 in a direction from right to left.

Figure 3 is a top plan view of the same.

Figure 4 is an enlarged view of the invention partly in elevation disclosing the essential details or parts which go to make up the line clamping and releasing means.

Figure 5 is a section taken approximately on the irregular line 5—5 of Figure 1.

Figures 6 and 7 are detailed perspective views.

Referring now to the general arrangement depicted in Figures 1 and 2, I call attention first to the attaching plate 3 which may be conveniently designated as a base. This is designed for attachment to the headboard (not shown) of the conventional portable all steel rig. Secured to and rising vertically from the base, is a standard or upright 9, this being of sectional construction with the lower section relatively stationary and the upper section pivotally connected thereto as indicated at 12 and formed at its upper end with a special adapter yoke 13. This arrangement is used to permit the upper part of the upright to be adjusted in a direct line between the headboard of the derrick and the cathead. Incidentally, the catline is denoted by the numeral 14. In practice this has a heavy load on one end and is actuated by suitable winding and reeling means, but must necessarily be stopped at intervals to hold the load in predetermined position. It is for this reason that I provide the special clamping means now about to be described. This clamping means is indicated as a unit by the numeral 15. In referring to Figure 4, it will be observed that this is a composite structural organization. The main part may be designated as an expanding and contracting cone. It is more in the nature of a cylinder 16 having diametrically opposed outstanding studs 17 pivotally attached to the arms of the yoke as indicated at 18. The cylinder has a tapered bore 19 which functions as the cone. The entire part 15 is pivotable or swingable in the yoke so that it may be kept in alignment with the line 14 irrespective of the inclination or drawn position of the line. In other words this cone is a self-adapting feature in relation to the position of the line. The expansible and contractible clamping means comprises a pair of substantially semi-conical slips 20, these being fitted into the conical bore 19.

The actuating means for the slips comprises a coordination of companion parts. I first pro-

vide a pair of substantially right-angularly shaped brackets 21, these being fastened to the respective slips and connected to the pair of complementary and segmental actuating links 22. The links are made to partially embrace the cylindrical body and are fastened to a short rocker-shaft 23 mounted for oscillation in a bearing lug 24 on one side of the body 16 as shown in Fig. 5. Shaft 23 is oscillated or rocked through the instrumentality of the hand-controlled lever 25 which is appropriately keyed or fastened thereto. The secured end of the lever works between the furcations on the lug 24, the lug being bifurcated for this purpose. I also call attention to the numeral 26 which designates a coil spring fastened to the intermediate portion of the hand-actuated lever and anchored at its upper end to the body 16 as shown better in Figure 1. The spring normally pulls the lever up to actuate the links 22 and brackets 21 to pull the slips 20 down in the conical bore 19 to normally hold the slips in a released position and in readiness to grasp the cable or line 14 whenever necessary or desired.

With this arrangement it is obvious that whenever the line is to be clamped in any predetermined position or state, all that is necessary is to grasp the lever 25 and to pull it down against the tension of the spring 26. This actuates the rocker arms or links 22 and they pull up on the actuating bracket 21 to shove the slips 20 up into the conical bore 19. Manifestly, this produces the desired clamping or binding action on the catline 14.

I desire to emphasize the incorporation in an arrangement of this type of the supporting means which is readily attachable to the standard parts of the drill rig. In other words, base 8, with its sectional standard 9, constitutes an ideal structure for mounting the clamping means on present-day drill rigs. Then, too, the fact that the section 11 is pivotally mounted, adapts it for the particular work, and moreover the fact that it is provided with the yoke 13, permits the yoke to have the ideal function of supporting the entire clamping unit 15. This unit comprises not only the slips 20 and conical bore 19 but the associated lever and actuating features for the slips. In other words, all of these parts are assembled together in one unit and the entire unit is bodily rockable on the pivoting fasteners 18. This is a distinct improvement because it renders the clamping unit self adjusting and allows it to occupy the proper aligned position with respect to the line 14. Under the circumstances, there is little chafing or undue wear on the line 14. At the same time the actuating lever is always in a relatively convenient position for expeditious action and operation.

Having thus described the invention, what is claimed as new is:

1. In a structure of the class described, a support, a body freely and pivotally mounted on said support, said body having a conical bore for pas-

sage of a conventional catline, a pair of expandible and contractible line clamping grips mounted for sliding movement in said bore, and appendant actuated and handling means on said body for slidably actuating said grips.

2. In a line clamping structure of the class described, a relatively fixed support, a body pivotally mounted on said support having a conical passage through which a line is adapted to slide, a pair of companion semi-conical slips mounted in said bore, a rocker shaft mounted on said body, a lever connected with said rocker shaft, rocker arms connected with said rocker shaft, and operating connections between said rocker arms and said slips.

3. In a line guiding and clamping device of the class described, a substantially cylindrical body having a central conical bore opening through its opposite ends, a pair of substantially semi-conical line slips mounted in said bore and having a passage for a relatively movable line, substantially L-shaped actuating brackets connected with said slips, said body being provided at a predetermined point with a lug, a rocker shaft mounted to oscillate in a bearing in said lug, and a lever connected with said rocker shaft, and rocker arms connected with said rocker shaft, partially embracing said body and pivotally connected with said brackets.

4. In a line guiding, snubbing and clamping assembly, relatively stationary supporting means including a yoke, a self-adapting catline guide pivotally mounted for pendulous movement in said yoke, catline clamping means incorporated in said guide, and manually actuated means solely mounted on said guide to facilitate the bodily swinging thereof and for operating the clamping means, whereby to effectively accommodate and regulate said catline.

5. As a component part of a structural assemblage of the class described, a line guide including a body having a passage therethrough for the line, longitudinally adjustable line guiding and clamping slips mounted in said passage, a hand lever pivotally mounted on said guide, spring means connected with the guide and lever to hold the lever in a predetermined normal position, and an operating connection between the lever and the said slips.

6. As a component part of a structural assemblage of the class described, a line guide including a body having a passage therethrough for the line, longitudinally adjustable line guiding and clamping slips mounted in said passage, a hand lever pivotally mounted on said guide, spring means connected with the guide and lever to hold the lever in a predetermined normal position, an operating connection between the lever and said slips, said operating connection including links connected with the lever and additional connections between the links and said line clamping slips.

ROLAND A. CRAWFORD.