Jan. 18, 1927. 1,614,581

C. S. WRIGHT

WIRE LINE DRILLING CLAMP

Filed Oct. 21, 1926

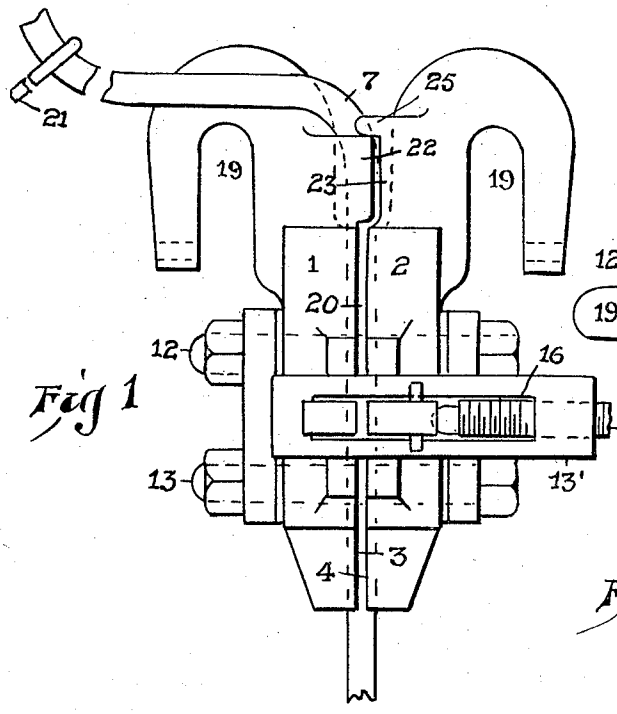


Fig 1

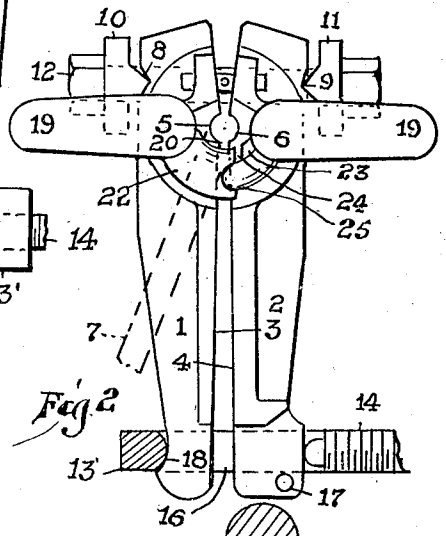


Fig 2

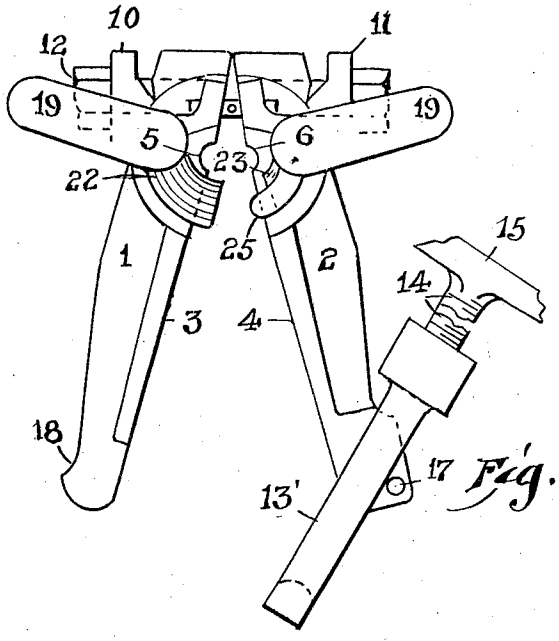


Fig. 3

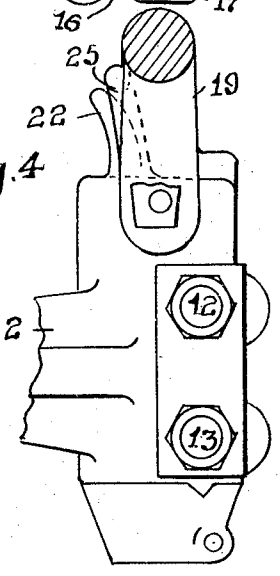


Fig. 4

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UNITED STATES PATENT OFFICE.

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WIRE-LINE-DRILLING CLAMP.

Application filed October 21, 1926. Serial No. 143,146.

My invention relates to wire line drilling clamps.

It is the object of this invention to provide a clamp of the general type shown in my Patent No. 1,601,197 granted September 28, 1926, with a wire line guide or guard which will prevent the wire line from being drawn more or less between the clamping jaws at the side of the wire line passages in the closed clamps. This object will be made more clear in the following description of the invention.

Referring to the accompanying drawing, Fig. 1 is a side elevation of one of my clamps closed; Fig. 2, a plan view of Fig. 1 with the means for holding the clamping jaws closed omitted; Fig. 3, a plan view of my clamp with the jaws open; and Fig. 4, an enlarged elevation of a side of one of the jaws with parts broken away and in section.

I show my invention applied to the clamp shown in my said patent, but it is applicable to other clamps.

On the drawing, 1 and 2 designate two clamping levers or members which are substantially alike except that one, as 1, is right handed and the other, as 2, is left handed. The vertical opposed faces 3 and 4 of the levers are provided near one end with opposed vertical grooves 5 and 6 arcuate in horizontal or cross section, the opposing faces of the grooves forming, when the levers are approximately in closed or clamping positions, as shown in Fig. 2, a cylindrical seat for engaging and gripping the wire line 7.

The outer faces of the levers beyond the grooves 5 and 6 are fulcrumed on the knife-edges 8 and 9 integral with the fulcrum-plates 10 and 11 which are held in place by bolts 12 and 13 extending through the levers 1 and 2 and the plates 10 and 11, as shown in my said patent. The particular manner of pivotaly connecting the levers has no bearing on the present invention and therefore the particular means shown in the present drawing need not be further described.

The levers 1 and 2 are moved to their final wire-line clamping positions, shown in Figs. 1 and 2, by the loop member 13′ and the screw 14 having the handle 15. The member 13′ has a rectangular opening 16 which contains at all times the outer end of the lever 2 on which it is held by the cross-pin 17 passed through the lever 2 beyond the member 13′. The opening 16 is long enough so that the outer end of the lever 1 may also be seated therein when the levers are brought to within a short distance of their final closing positions. At this time one end wall of the opening 16 seats in the notch 18 in the outer edge of the lever 1. The screw 14 works in the member 13′ and extends through the remaining end wall of the opening 16 and against the outer edge of the lever 2. The levers have thereon the hooks 19 by which the clamp may be connected to a walking beam or other operator.

The clamp being suspended, by the hooks 19 has the wire line or rope 7 placed between the levers 1 and 2 and opposite the grooves 5 and 6, the levers being opened sufficiently for that purpose. The levers are made to approach each other until they bite upon the line 7. Then the loop member is applied over the end of the lever 1 and the screw 14 is turned so as to make the jaws which comprise the grooves 5 and 6 and parts of the levers adjacent thereto, grip the line 7 firmly. The clamp so far described is that shown in my said patent.

It is better that at the conclusion of a clamping operation the faces 3 and 4 do not touch each other whereby a a space 20 is left between the levers as shown in Figs. 1 and 2. This space is required so that the clamp may receive different sizes of lines or ropes, and more particularly so that, after a line or rope has been gripped, the jaws may be still further brought toward each other in order to tighten or adjust the grip of the jaws on the line or rope.

In drilling a well the hooks 19 are connected to a walking beam which causes the clamp and the drill line 7 to reciprocate up and down. The line 7 above the clamp is led laterally as shown in Fig. 1, and is retained there by the loop 21 of rope or other material secured to the derrick or other support. Sometimes the line 7 slips in the clamp owing to the weight or jerk of the line and the drilling tool suspended at its lower end. This slipping of the line 7 creates a tension of the line between the loop 21 and the clamp and causes the line to be drawn into the space 20 whereby the line is mutilated or rendered unfit for use. Even if the line is not drawn into the space 20, it will be badly kinked and damaged.

To prevent the described injuries to the line 7, I provide the levers 1 and 2 with the upstanding line-guide members 22 and 23 which extend upwardly from the tops of the levers just back of the grooves 5 and 6. The guide member 22 extends across the space 20 and overlaps the lever 2 a short distance. The guide member 23 projects toward the member 22 from which it is separated by the space 24 when the clamp is closed on the line 7, this space being for the same purpose as the space 20. The faces of the members on the side nearest the grooves 5 and 6 are curved upwardly and outwardly and also substantially parallel with the adjacent portions of the grooves 5 and 6, so that these faces when the levers are closed look like a portion of the inside surface of a bell.

The member 23 has a horn or projection 25 which extends from the upper portion of the member 23 toward the member 22 and overlaps the same, leaving sufficient space between the adjacent hook 19 and the end of the horn to form a seat or guide for the line 7 and keep the line away from the spaces 20 and 24, the line being held and guided entirely to one side of both of said spaces, as shown in Fig. 2, where the line 7 is shown in dotted lines.

I do not desire to be limited to the precise construction shown but desire to include such modifications as come fairly within the scope of the appended claims.

I claim—

1. In a rope clamp, a pair of opposed levers having opposed grooves to receive and grip the opposite sides of a rope, there being between the opposed faces of the levers when clamping a rope, a space closed by the rope, in combination with an upwardly flaring extension on one lever arising adjacent to the said grooves and arranged to span the said space when the levers are clamping a rope.

2. In a rope clamp, a pair of opposed levers having opposed grooves to receive and grip the opposite sides of a rope, there being between the opposed faces of the levers when clamping a rope, a space closed by the rope, in combination with an upwardly flaring extension on one lever arising adjacent to the said grooves and arranged to span the said space when the levers are clamping a rope, and means for causing the rope to be guided to one side of the said space in case it should slip longitudinally in the clamp.

3. In a rope clamp, a pair of opposed levers having opposed grooves to receive and grip the opposite sides of a rope, there being between the opposed faces of the levers when clamping a rope, a space closed by the rope, in combination with an upwardly flaring extension on each lever arising adjacent to the said grooves, one of the extensions arranged to span the said space when the levers are clamping a rope.

4. In a rope clamp, a pair of opposed levers having opposed grooves to receive and grip the opposite sides of a rope, there being between the opposed faces of the levers when clamping a rope, a space closed by the rope, in combination with an upwardly flaring extension on each lever arising adjacent to the said grooves, one of the extensions arranged to span the said space when the levers are clamping the rope, the lateral edges of the extensions being opposed and spaced from each other when the levers are clamping a rope.

5. In a rope clamp, a pair of opposed levers having opposed grooves to receive and grip the opposite sides of a rope, there being between the opposed faces of the levers when clamping a rope, a space closed by the rope, in combination with an upwardly flaring extension on each lever arising adjacent to the said grooves, one of the extensions arranged to span the said space when the levers are clamping a rope, the lateral edges of the extensions being opposed and spaced from each other when the levers are clamping a rope, and means for causing the rope to be guided to one side of the space between the levers and between the extensions.

6. In a rope clamp, a pair of opposed levers having opposed grooves to receive and grip the opposite sides of a rope, there being between the opposed faces of the levers when clamping a rope, a space closed by the rope, in combination with an upwardly flaring extension on one lever arising adjacent to the said grooves and arranged to span the said space when the levers are clamping a rope, and a projection carried by the other lever and overlapping the inner face of the said extension sufficiently to form beyond the end of the projection a rope guide at one side of the said space.

In testimony whereof, I hereunto affix my signature.

CLYDE S. WRIGHT.