To all whom it may concern:

Be it known that we, Edward Timbs and Lewis E. Zerbe, of the United States, residing at Los Angeles and Moneta, respectively, in the county of Los Angeles and State of California, have invented a new and useful Wire-Line Guard for Traveling Blocks, of which the following is a specification.

This invention relates to traveling blocks such as are employed in the construction of oil wells for raising and lowering casing hooks and similar devices, and refers particularly to a traveling block having means to prevent various articles being entangled in the lines leading to the block and carried into the same.

Hitherto guards have been employed upon traveling blocks used in oil wells to prevent accidents occurring through the entanglement of various articles with the lines operating the traveling block so that such articles will not be drawn into the traveling block. Such guards have, however, increased materially the size and cost of construction of the traveling block, and have been difficult to install or remove from the block.

An object of this invention is to provide a guard for a traveling block which will closely follow the outlines of the sheaves of the block so that the use of the guard will not materially increase the size, bulk or weight of the traveling block and thus provide a guard for a traveling block without rendering the block clumsy or difficult to handle.

Another object of this invention is to provide a guard which may be quickly and readily attached to the traveling block and quickly and readily removed therefrom without dismantling the block.

Another object of this invention is to provide a traveling block having smooth surfaces throughout so that the traveling block cannot catch against any projections during its operation and will readily deflect from engagement with any devices contacting therewith.

Various other objects and advantages of the present invention will be apparent from the description of the accompanying drawings wherein there is illustrated one form in which the invention may be conveniently embodied.

In the drawings:

Figure 1 is a side elevation of the traveling block.

Figure 2 is a front elevation of Figure 1.

Figure 3 is an enlarged section on the line 3-3 of Figure 2; and

Figure 4 is an enlarged detail of the arrangement between the slots in the guard and grooves of the sheaves of the block.

Figure 5 is an enlarged fragmental view of the portion of the device showing the dowels.

Figure 6 is a similar view at right angles to Figure 5.

Figure 7 is a fragmental view in horizontal plan section of the means employed for maintaining the upper ball upright.

In the drawings the traveling block is illustrated as comprising a plurality of sheaves 1 mounted to rotate independently upon a common horizontal pin 2. Preferably each sheave 1 is provided with roller bearings 3 which are supplied with lubricant through ducts 4 extending through the pin 2.

The upper ends of the side-plates 5 support the ends of an upper pin 9 having a head 10 fitting a recess 11 in one of said plates 5 and provided with a nut 12 threaded to the other end of the pin 9, said nut 12 being fitted into a recess 13 of the other side-plate 5. The recesses 11 and 13 bring the ends of the nuts 12 or head 10 flush with the sides of the plates 5. The lower ends of the plates 5 carry a lower pin 14 having a head 15 at one end and a nut 16 at the other, the head 15 and nut 16 being set in recesses 17 in the plates 5 so as to be flush with the sides of the plates 5. 18 indicates diaphragms employed to retain the sheaves spaced apart, a diaphragm being disposed at the outer side of the end sheaves 1 and a diaphragm being positioned between each adjacent pair of sheaves 1. Said diaphragms 18 are carried by the upper, lower and medial pins 9, 14 and 2, respectively, and held spaced apart by means of spacers carried by the upper and lower pins 9 and 14. In this embodiment of the invention the medial spacers 17 are in the form of spools and the end spacers 18 are formed on the extremities of shackles or balls 19 provided at the upper and lower ends of the traveling block. The upper ends 20 of the side plates 5 are bent inwardly and bifurcated to fit around the opposite sides of the upper shackle 19 so it is held in
2. an upright position. The bent ends 20 further serve as deflectors for the top of the traveling block.

21 indicates guards which are shaped to conform with the shape of the sheaves 1, thus having a cylindrical wall 22 and having vertically extending side walls 23 joining the sides of the wall 21. Said walls 23 are spaced so that their side faces are flush with the faces of the side-plates 5 of the block.

Each guard 21 is provided with slotted arms 24 engaging pins 25 extending from within concavities 26 at the inner side of the side-plates 5. The slots in the arm 24 extend upwardly and outwardly from the travelling block so that when the guards 21 are assembled on the travelling block they are hinged on the pins 24 but can readily be removed therefrom by swinging the lower ends of the guards outwardly and upwardly.

Below the outer two sheaves 1 of the block the guard is provided with vertically depending sections 27 which receive bolts 28 for locking the guards to the block.

At the upper end of the walls 22 of the guards are provided line slots 29, the center line slots being located in alignment with the grooves of the sheaves 1, the outer line slots 29 being positioned slightly off center of the grooves of the outside sheaves so that an outwardly inclined line entering said sheaves will not attach or rub against the sides of the slots 29.

As a further protection to the travelling block there is provided means for relieving the pins 25 from excessive shocks such as might result from a blow on the guards 21. Said means comprise recesses 30 in the inner edges of each side plate 5 of the frame, which recesses provide a seat for dowels 31 provided on the lower part of the guards 21. In this manner the guards 21 become a solid rigid unit with the blocks, as even if the bolts 25 were removed, the guards will not become disengaged without the manual operation of swinging them upward.

An important advantage of the travelling block is that it will readily deflect from any obstruction encountered during its travel since the outer surfaces are smooth and provided with no projections which may catch against the contacting object. The guard employed around the sheaves does not substantially increase either the size, bulk or shape of the block and the guard may be quickly detached by disconnecting the two lower bolts from the guards and unhooking the upper ends.

While the travelling block herein described is well suited for the purposes of this invention, it is not intended to limit the invention to the specific details of construction herein described to illustrate the invention in its preferred form, but various modifications may be made without departing from the spirit of the invention. This invention is of the scope set forth in the appended claims.

What we claim is:

1. A traveling block comprising a frame, a plurality of sheaves rotatably carried by the frame, and guards for the sheaves hooked at one end to the frame and clamped together at the other end.

2. A traveling block comprising a frame including vertically extending side plates, horizontal pins at the upper and lower ends of the plates, and a central pin carried by the plates, a plurality of sheaves rotatable on the central pin, diaphragms between the sheaves, and guards at each side of the frame and having hooks at one end engaging the frame and clamped together at the lower end.

3. A traveling block comprising a frame, a plurality of axially aligned sheaves carried by the frame, guards having one end hooked to the frame and clamped at the other end, said guards substantially enclosing the portions of the sheaves protruding from the frame, and slots in the guards for lines entering the sheaves, certain of said slots aligning with the sheaves and certain of the slots being somewhat out of line with the sheaves.

4. In a traveling block, a frame, a plurality of sheaves carried by the frame, guards covering opposed sides of the sheaves, hooks for holding the guards to the frame, dowels on the guards and engaging the frame to support the guards, and means for clamping the guards together.

5. A traveling block, comprising a frame consisting of two vertical side plates, horizontal pins at the upper and lower ends of the plates, a central pin, a plurality of sheaves rotatable on the central pin and a bail connected to the upper pin, the side plates having bifurcated ends engaging the bail to maintain the same upright.

6. A traveling block, comprising a frame including vertically extending side plates, horizontal pins at the upper and lower ends of the plate, and a central pin carried by the plates, a plurality of sheaves rotatable on the central pin, diaphragms between the sheaves, and guards at each side of the frame having hooks at one end engaging the frame and clamped together at the lower end, said guards also carrying means on their lower ends for supporting the guards upon the side plates.

Signed at Torrance City this 2nd day of January, 1924.

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