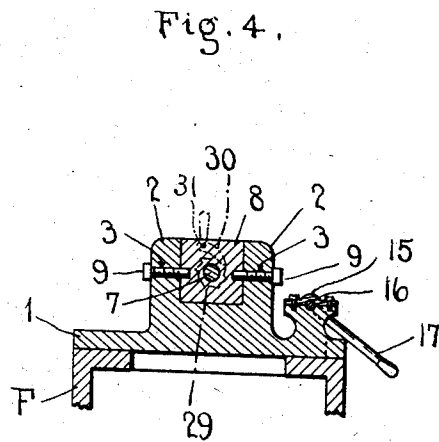
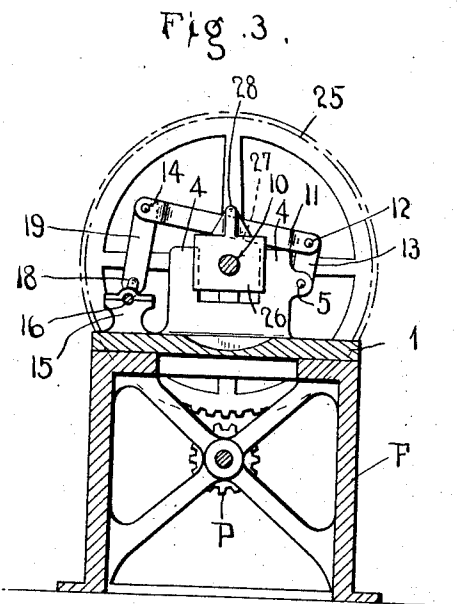
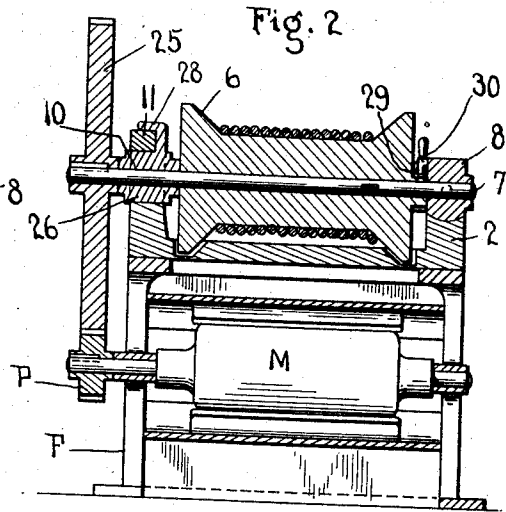
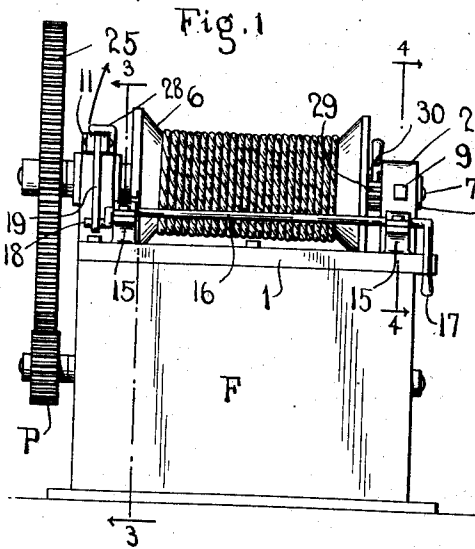


L. BAYER.
CAPSTAN OR WINDLASS.
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1,040,120.

Patented Oct. 1, 1912.



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UNITED STATES PATENT OFFICE.

LEE BAYER, OF WILLISVILLE, ILLINOIS.

CAPSTAN OR WINDLASS.

1,040,120.

Specification of Letters Patent.

Patented Oct. 1, 1912.

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To all whom it may concern:

Be it known that I, LEE BAYER, a citizen of the United States, residing at Willisville, in the county of Perry and State of Illinois, have invented certain new and useful Improvements in Capstans or Windlasses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the class of hoisting, and more especially to capstans and windlasses; and the object of the same is to produce a very compact device of this character intended primarily for moving mining machinery and other heavy objects about the shop or in the mine, carrying its own motor if the same be electric, and provided with means for instantly throwing the drum out of gear with the motor so that the action of the windlass may be checked without cutting off the power. This and other objects are accomplished by the construction hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a side elevation, and Fig. 2 a central vertical sectional view of this device with the gear wheels engaged with each other. Fig. 3 is a cross section on the line 3—3 of Fig. 1, with the gear wheels out of engagement with each other. Fig. 4 is a cross section on the line 4—4 of Fig. 1.

In the drawings the letter M designates broadly a motor (here shown as of the electric type) whose power shaft carries a pinion P, the whole being disposed within a frame F forming no part of the present invention excepting that it serves as a support for the mechanism to be described below. Secured upon said frame is the base 1 of this improved windlass or capstan, the same having twin lugs 8 rising from its rear end and perforated as at 3, and twin lugs 4 rising from its front end and one of them having an eye 5 for a purpose to appear.

The numeral 6 designates a drum which is mounted fast on a shaft 7 whose rear end is journaled in a block 8 which is pivoted in the apertures 3 of the twin lugs 2. In Fig. 4 I have shown set screws 9 passing inward through said apertures 3 and on whose tips the block 8 is held so that it may rock slightly between the lugs 2, and the purpose of these set screws is to permit the block to

be removed when desired. Forward of the drum 6 the shaft 7 is journaled in a bearing 10 in a block carried by an arm 11 having an eye 12 at one end disposed directly above said eye 5 and pivotally connected therewith by means of a link 13, and also having an eye 14 at the other end. Mounted in bearings 15 on the base 1 alongside the main shaft 7 is a rock shaft 16 having a handle 17 at one extremity and a crank 18 near its other extremity, and said crank is connected by a link 19 with the eye 14 as shown. When the handle 17 is moved to rock the shaft 16 in its bearings, the crank and the pitman link 19 cause the entire arm 11 to rise and fall around its pivotal eye 12 for a purpose which will appear below. On the front end of the shaft 7, forward of the bearing 10, is fixed a gear 25 which is adapted to lie in engagement with the pinion P when the arm 11 is depressed, but which may be thrown out of engagement therewith by manipulating the handle 17 so as to rock the crank shaft 16 as above described.

A special feature of this invention lies in forming the bearing 10 within a block 26 which is of a size to fit closely between the adjacent faces of the spaced lugs so as to resist lateral movement of the block when the machine is doing work. The upper face of the block is preferably beveled off as shown in dotted lines at 27 in Fig. 3, so that the arm 11 may pass across the same as therein indicated; and rising from the block is a hook 28 which engages over the upper side of the arm as best seen in Fig. 2. The block is depressed by pressure of the arm 11 upon it, and it is raised by engagement of the arm 11 beneath the hook 28 in a manner which will be clear.

If desired, I may form ratchet teeth 29 on the rear end of the drum 6 and pivot a pawl 30 at 31 in the block 8 so that after the drum has been employed to put tension on a rope the pawl may be turned to engage the teeth and hold the parts stationary. If this detail be employed I prefer to pivot the pawl to the block 8 which has only a rocking motion on its trunnions or set screws 9. The length of the crank 18 is by preference exactly such that when turned downward the teeth of the gear 25 and pinion P are fully in mesh, and when turned upward these teeth are thrown out of mesh but the block 26 is not raised out of its position between the two lugs 4.

The parts of this machine are of the desired sizes, shapes, proportions and materials and changes in details may be made without departing from the principle of my invention.

It will not be necessary to illustrate and describe the uses to which a machine of this character may be put. When employed as a windlass, the rope from the drum is usually led upward over a sheave or pulley and then downward to some weight which is to be raised, but when employed as a capstan the rope from the windlass is led to a distance and either attached direct to some article to be drawn toward the machine or passed around an idle pulley or block and led thence to the article which is to be moved. Particularly I employ this machine for moving heavy pieces of machinery from one point to another in the shop, or perhaps for drawing them into a mine if they are mining machines, and drawing them out of the same when their usefulness has reached its limit.

What is claimed as new is:

1. In a windlass, the combination with a motor having a pinion on its shaft, and the motor frame; of a base mounted on the latter and having spaced lugs rising from its front and rear ends, a block pivoted between the rearmost lugs and having a bearing, a block slidably mounted between the forward lugs and also having a bearing, means for raising and lowering this block at will, a drum, a shaft fast through the drum and journaled in both bearings, and a driven gear on its front end adapted to be engaged with said driving pinion.

2. In a windlass, the combination with a motor having a pinion on its shaft, and the motor frame; of a base mounted on the latter and having spaced lugs rising from its

front and rear ends, a block pivoted between the rearmost lugs and having a bearing, a block slidably mounted between the forward lugs and also having a bearing, a hook rising from this block, an arm passing over the block and under its hook, a link pivotally connecting one end of the arm with one of said forward lugs, a crank shaft journaled on the base and having a handle at its rear end, a link connecting its crank with the other end of said arm, a drum, a shaft fast through the drum and journaled in both bearings, and a driven gear on its front end adapted to be engaged with said driving pinion.

3. In a windlass, the combination with a base having spaced lugs rising from its front and rear ends, and a power-driven shaft having a pinion forward of and below the forward pair of lugs; of a block slidably mounted between said forward lugs and having a bearing, means for adjusting this block vertically, a second block loosely mounted between the rearmost pair of lugs and having a bearing, set screws passing through these lugs and with their tips loosely engaging the sides of this block, a pawl pivoted to the latter, a shaft journaled in the bearings in both blocks, a gear on its front end adapted to be thrown into mesh with said pinion, a drum fast on the shaft between the blocks, and ratchet teeth on the rear end of the drum adapted to be engaged by said pawl.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LEE BAYER.

Witnesses:

GROVER C. GREGORY,
FRED METZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."