

No. 811,440.

PATENTED JAN. 30, 1906.

W. F. ROBERTS.
BLOCK.

APPLICATION FILED MAY 5, 1905.

Fig. 1.

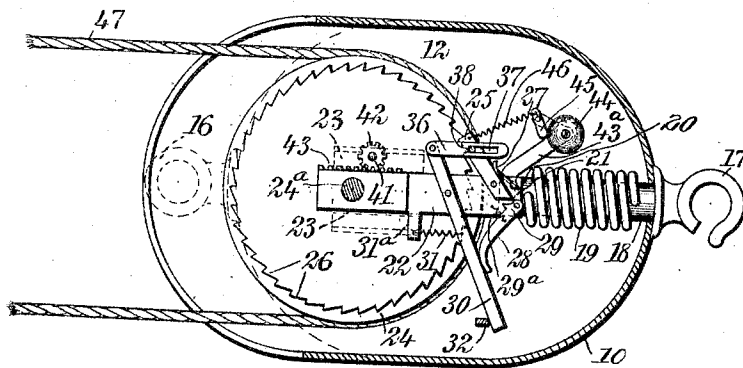


Fig. 2.

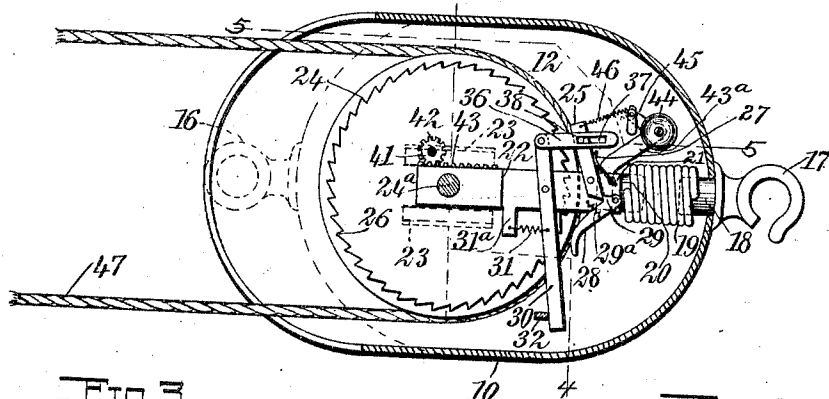


Fig. 3.

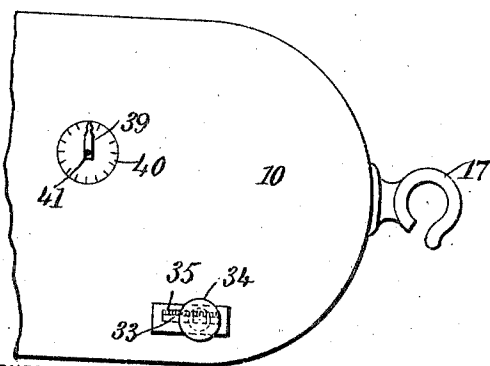


Fig. 4.

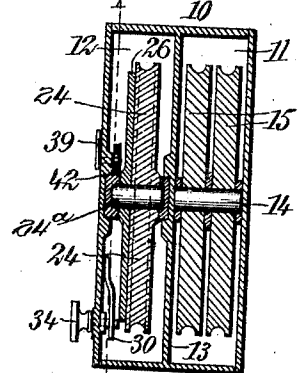
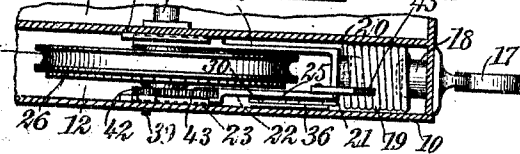


Fig. 5.



WITNESSES:

L. Almqvist
S. H. A. A.

INVENTOR

William F. Roberts

BY

Mumme
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM FRANCIS ROBERTS, OF NASHVILLE, TENNESSEE.

BLOCK.

No. 811,440.

Specification of Letters Patent.

Patented Jan. 30, 1906.

Application filed May 6, 1905. Serial No. 269,056.

To all whom it may concern:

Be it known that I, WILLIAM FRANCIS ROBERTS, a citizen of the United States, and a resident of Nashville, in the county of Davidson and State of Tennessee, have invented a new and Improved Block, of which the following is a full, clear, and exact description.

My invention relates to blocks used in connection with tackle, and more particularly to those adapted for the tightening of conductors and carrier or guy wires in line construction.

It has for its principal objects the provision of a block which is automatically locked upon the establishment of a definite tension in the wire to which it is applied, this being capable of variation, and which will give an indication of the existence of the lock.

Reference is to be had to the accompanying drawings, which form a part of this specification, in which like reference characters indicate like parts in the several views.

Figure 1 is a longitudinal section through one embodiment of my invention, it being taken on the line 1 1 of Fig. 4, the elements being shown in their relation when the lock is established. Fig. 2 is a similar view with the parts in their normal position. Fig. 3 is a broken side elevation of the block. Fig. 4 is a transverse section on the line 4 4 of Fig. 2, and Fig. 5 is a longitudinal section on the line 5 5 of Fig. 2.

10 designates the casing or supporting portion of the block, this being here shown as comprising two sections or chambers 11 and 12, separated by a partition 13. In the chamber 11 is mounted a spindle 14, about which may rotate sheaves or pulleys 15 15, as is usual in devices of this character. The casing surrounding the chamber 11 is of less length than that about the companion chamber and preferably carries an eye 16, which may be used in the ordinary manner to connect the blocks when arranged in multiple.

From the casing at the end of the chamber 12 opposite the eye 16 projects a hook 17 for connection to the work. From the hook into the chamber 12 projects a portion 18, which is joined by a spring 19 to an extension 20 from a frame 21. This frame has opposite side bars 22 22 and is mounted to move bodily within the casing in ways 23. Between the

side bars is a sheave 24, rotatable upon a spindle 24^a.

Associated with the movable frame is locking mechanism, which, as illustrated, comprises a latch 25, pivoted upon the outside of one of the side bars and which is movable into engagement with ratchet-teeth or locking projections 26, surrounding one side of the sheave 24 near its periphery. A spring 27, which, as shown, is of the leaf type, is fixed upon the side bar adjacent to the latch and exerts its force to press said latch toward the teeth. Pivoted upon the frame is a dog 28, having a projection 29, which may be drawn into contact with the latch by a spring 29^a to hold it out of engagement with the teeth. Fulcrumed upon the frame at the inner side of the latch and dog is a lever 30, lying in the same plane as the end of the dog opposite the projection and normally held out of contact therewith by a spring 31, extending between the lever and a projection 31^a from the side bar. Mounted upon the casing at the side adjacent to this locking mechanism is a contact member 32, preferably in the form of a pin extending through a slot 33 and having its end outside the casing threaded to receive a clamping-nut 34. This nut is shown as movable along a scale 35, which may be graduated in pounds or other units showing the tension exerted. The extremity of the lever 30 opposite this contact member has articulated to it a setting-link 36, in which is a longitudinal slot 37 to receive a pin 38, projecting from the latch. When the elements are in the position illustrated in Fig. 2 of the drawings, an inward movement of the link is permitted without operative contact with the pin; but when the parts have the relation shown in Fig. 1 an outward movement of the link serves to restore the latch to its coöperation with the dog.

Means are preferably provided for giving a visible and audible indication of the tension applied to the apparatus and the existence of the lock. The former may consist of a pointer or hand 39, movable over a dial 40 and supported upon a spindle 41, journaled in the side wall of the casing. At its inner end this spindle has fixed upon it a pinion 42, meshing with a rack 43, carried by one of the side bars of the frame. As in the scale, this

dial may be graduated in pounds, the hand occupying a zero position when the elements are in the position shown in Fig. 2. Fixed to an arm 43^a, projecting from the frame 21, is a bell 44, which may be struck by a hammer 45, pivoted adjacent to it, and connected by a spring 46 with the latch. When the latch is released from the dog and moves into engagement with the sheave-teeth, the bell is struck by the hammer.

In use the hook of the block is attached to the wire to be drawn tight by means of a suitable clamp and a rope 47, surrounding the sheaves, connected at one end to a fixed object in the usual manner, while force is applied to the other end. As the slack is taken up under the application of this force the spring 19 will expand, allowing the frame and the locking mechanism carried thereby to move toward the contact member, which is adjusted at such a point upon the scale as to secure action at the desired tension. When such a condition of tension is approached in the spring, the lever 30 will have reached the contact member and is moved thereby into cooperation with the dog. This is swung to one side, releasing the latch, which is forced by its spring into contact with the sheave-teeth, locking it against further rotation. At this time and at any other time during the movement the amount of tension exerted will be indicated upon the dial, and the locking tension will be registered until the parts are restored to their normal position. When the rotation of the sheave is stopped by the locking mechanism, the users will naturally cease pulling upon the operating-rope; but an oversight in this direction is guarded against and they are warned more positively of the existence of the lock by the stroke of the bell, this having been given when the latch was released. After the wire operated upon is secured and the rope slackened off the spring 19 restores the frame to its initial position. This carries the lever out of engagement with the contact member and returns it to the position shown in Fig. 2. This movement presses the inner end of the slot in the setting-link against the latch-pin, forcing it back against its spring until it is caught by the dog. If in using my improved block it is desired to exert a greater or less degree of tension before the lock is applied, the contact member is adjusted along its slot to the proper position, as is indicated by the scale. This moves it with relation to the lever, it therefore requiring a greater or less extension of the spring 19 to bring these elements into cooperation.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A block comprising a casing, a rotatable sheave bodily movable in the casing, and means for locking the sheave against rotation after a definite bodily movement.

2. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for resisting this movement of the sheave, and means for locking the sheave against rotation after a certain amount of resistance has been overcome.

3. A block comprising a casing, a rotatable sheave bodily movable in the casing, and means operable by the bodily movement for locking the sheave against rotation.

4. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for locking the sheave against rotation after a definite bodily movement, and means for varying the range of effective movement.

5. A block comprising a casing, a frame movable therein, a sheave journaled in the frame and having locking projections, and locking mechanism mounted upon the frame and cooperating with the projections and with an element carried by the casing.

6. A block comprising a casing, a frame movable therein, a sheave journaled in the frame and having locking projections, locking mechanism mounted upon the frame and cooperating with the projections, and a contact member movable upon the casing and which may be engaged by the locking mechanism.

7. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for locking the sheave against rotation after a definite bodily movement, and an audible signal operable by the locking mechanism.

8. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for resisting this movement of the sheave, means for locking the sheave against rotation after a certain amount of resistance has been overcome, and an audible signal sounded when the sheave is locked.

9. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for locking the sheave against rotation after a definite bodily movement, and an indicator operable by the bodily movement of the sheave.

10. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for resisting this movement of the sheave, means for locking the sheave against rotation after a certain amount of resistance has been overcome, and means for indicating the resistance overcome.

11. A block comprising a casing, a frame movable therein, a sheave rotatable in the frame and having teeth, a latch which may engage the teeth, a dog for the latch, a lever fulcrumed upon the frame and cooperating with the dog, and a contact member carried by the casing and situated in the path of the lever.

12. A block comprising a casing, a frame movable therein, a sheave rotatable in the frame and having teeth, a latch which may

engage the teeth, a dog for the latch, a lever
fulcrumed upon the frame and coöperating
with the dog, a setting-link connecting the le-
ver and latch, and a contact member carried
5 by the casing and situated in the path of the
lever.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

WILLIAM FRANCIS ROBERTS.

Witnesses:

EDWIN M. BOND,
JAMES H. PARKES.