

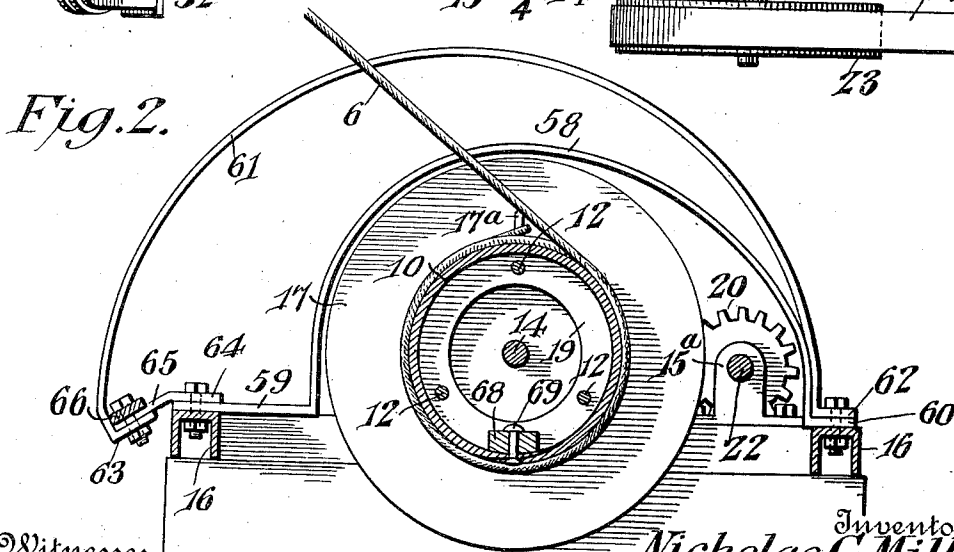
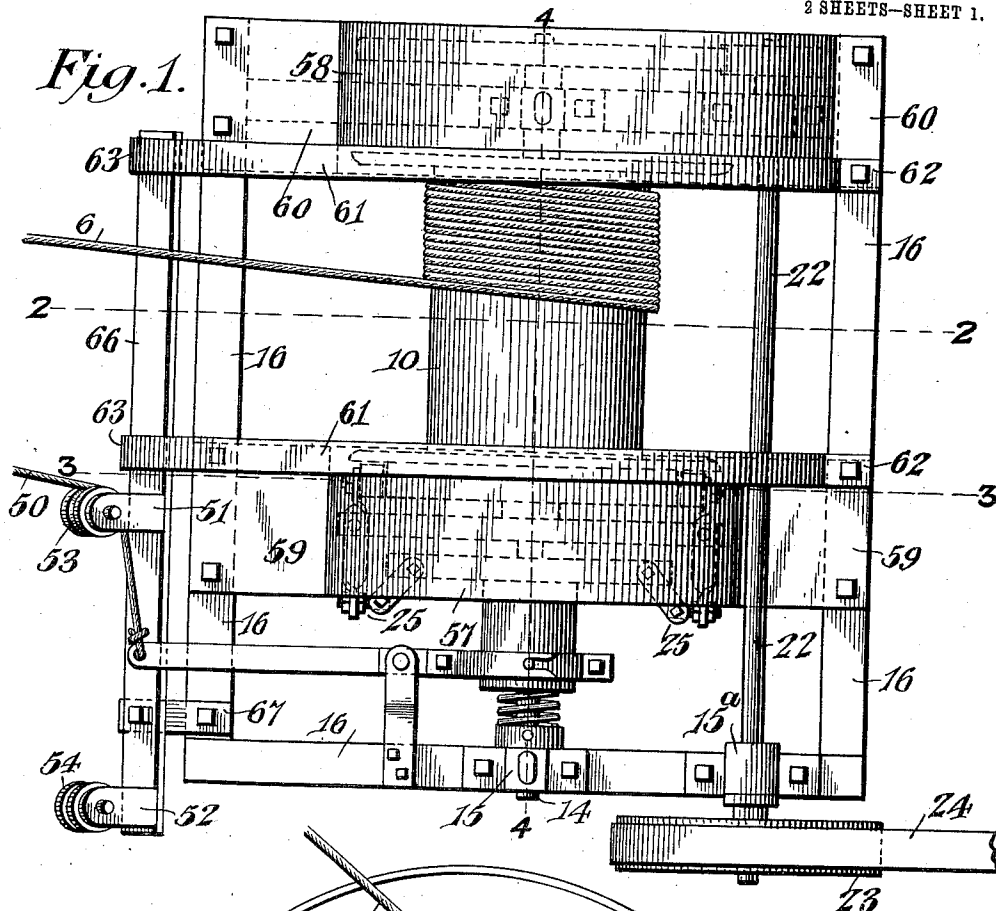
N. C. MILLER.
HOISTING DRUM.

1,019,269.

APPLICATION FILED MAY 25, 1911.

Patented Mar. 5, 1912.

2 SHEETS—SHEET 1.



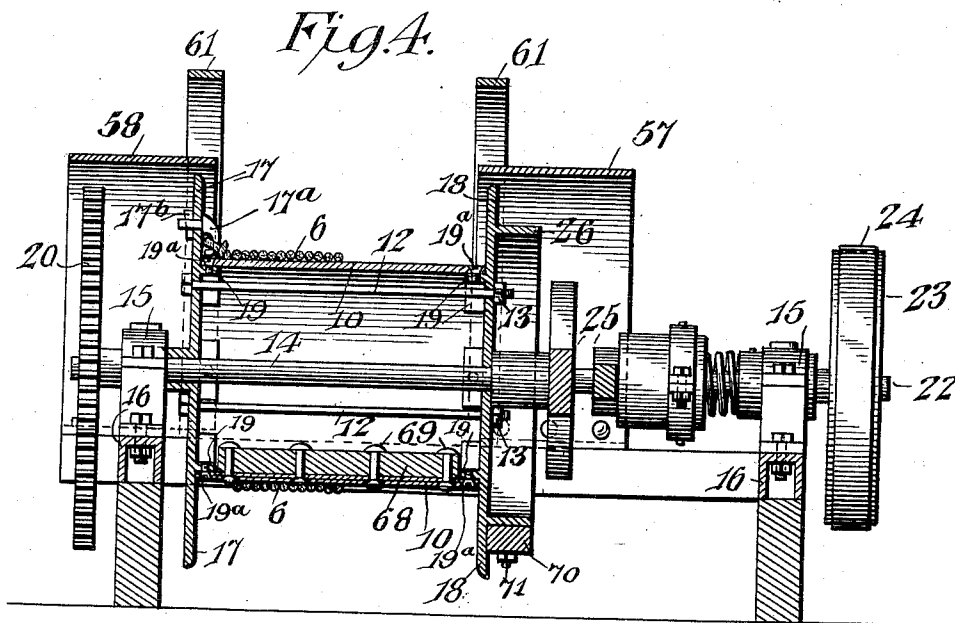
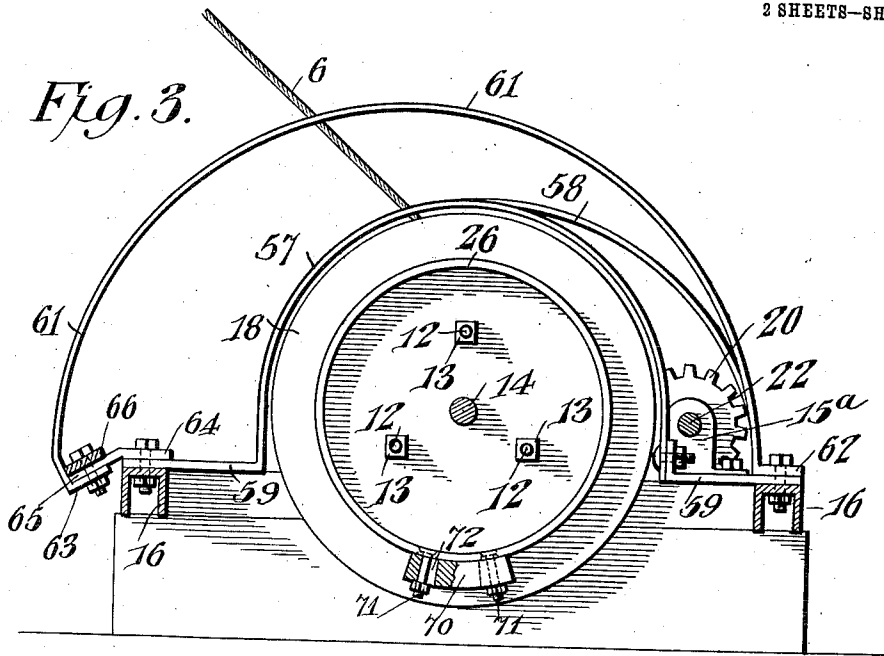
Witnesses
Jas. K. McLaughlin
H. F. Piley.

Inventor
Nicholas C. Miller,
By
E. J. Siggers
Attorney

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2 SHEETS—SHEET 2.



Nicholas C. Miller, Inventor

Witnesses
Jas. E. McLaughlin
H. F. Riley.

By *E. G. Siggers*
Attorney

UNITED STATES PATENT OFFICE.

NICHOLAS C. MILLER, OF DODGEVILLE, WISCONSIN.

HOISTING-DRUM.

1,019,269.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed May 25, 1911. Serial No. 629,454.

To all whom it may concern:

Be it known that I, NICHOLAS C. MILLER, a citizen of the United States, residing at Dodgeville, in the county of Iowa and State of Wisconsin, have invented a new and useful Hoisting-Drum, of which the following is a specification.

The invention relates to improvements in hoisting drums, and is a division in part of an application, filed by me on or about Jan. 31, 1911, Serial No. 605,824.

The object of the present invention is to improve the construction of hoisting drums, and to provide a hoisting drum equipped with guards or fingers for keeping the hoisting rope from the heads of the drum, and provided with means adapted to prevent the drum when released from the actuating means by a clutch from rotating rapidly and unwinding excessive slack.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a plan view of a hoisting drum, constructed in accordance with this invention. Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1. Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1. Fig. 4 is a vertical sectional view on the line 4—4 of Fig. 1.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

In the accompanying drawings in which is illustrated the preferred embodiment of the invention, 6 designates a hoisting rope, extending from a hoisting drum 10, which is designed to be actuated by a gasolene engine, or other suitable motor (not shown). The hoisting drum 10 is mounted on a transverse shaft 14, journaled in suitable bearings 15 of a supporting frame 16. The supporting frame 16, which is rectangular, may be constructed of any suitable material, and the hoisting drum consists of a cylinder and terminal heads 17 and 18. The cylinder,

which is preferably constructed of steel, is connected at its ends to flanges 19, preferably cast integral with the heads 17 and 18 and extending into and fitting against the inner face of the cylinder and secured thereto by screws 19^a, or other suitable fastening devices. The heads 17 and 18 are also connected by longitudinal rods 12 extending from one end of the drum to the other and located within the cylinder and piercing the heads 17 and 18. The rods 12 are provided at one end with suitable heads and are threaded at the other end for the reception of nuts 13. The drum may be of any other preferred construction, and the heads are provided with alined bearing openings to receive the transverse shaft 14. The head 17 of the drum is equipped with a hook 17^a for attaching one end of the hoisting rope to the drum. The hook 17^a, which is detachable, has its shank extended through the head 17 of the drum, and it is secured in an opening in the outer portion of the head 17 by a key 17^b, or other suitable fastening means. One end of the transverse shaft 14 is connected by spur gearing 20 with a counter-shaft 22, journaled in suitable bearings 15^a of the frame 16 and equipped at the opposite side thereof with a pulley 23. The pulley 23 is connected by a belt 24 with the driving pulley of the said engine or motor. When the engine or motor is in operation, the transverse shaft 14 is continuously rotated, and motion is communicated to the drum by a clutch 25, forming the subject-matter of the aforesaid application, and having means for engaging an annular rim or flange 26, which projects from the head 18 of the drum 10.

The clutch mechanism and the gearing are protected by curved guards 57 and 58 of approximately semicylindrical form, constructed of sheet metal, or other suitable material and extending across the frame 16 and having angularly bent terminals 59 and 60, which are bolted or otherwise secured to the opposite sides of the frame 16. The guards protect the parts from dust and the weather and prevent the clutch mechanism from getting wet, and they also eliminate all danger and prevent the accidents, which frequently result from unprotected gearing and other movable parts.

The hoisting rope 6 is arranged between curved fenders or guards 61, arching the

drum adjacent to the heads 17 and 18 and secured at their terminals 62 and 63, respectively, to the guards or shields 57 and 58 at one side of the frame and to the projecting bars 64 at the opposite side of the frame. The ends 62 of the fenders are fitted against the upper faces of the adjacent terminals of the guards or shields, and the other ends 63 are bent inwardly and are secured to the lower faces of the outer inclined portions 65 of the bars 64. The inclined portions 65 of the bars 64 are connected by a bar or brace 66, which is extended to form a support for brackets or castings 51 and 52 of the inner and outer guide pulleys 53 and 54. The outer inclined portions 65 of the bars 64 extend downwardly and outwardly from the frame, and they set the guide pulleys at an inclination to center the clutch operating rope 50. The extended portion of the bar 66 is preferably supported by a bar 67, secured to the frame and having an inclined portion similar to the bars 64 and arranged in parallelism with the same.

The drum 10 is equipped with an interior eccentrically arranged weight 68, preferably consisting of a bar of metal, extending longitudinally of the cylindrical portion of the drum and secured to the inner face of the said cylindrical portion by rivets 69, or other suitable fastening means, and terminating short of the heads of the drum. When the drum is relatively small, it is also equipped with an exterior eccentrically arranged weight 70 of arcuate form and curved to conform to the configuration of the annular flange or rim 26 to which it is secured by bolts 71. The curved weight 70 has concave and convex faces to fit the exterior and interior of the annular rim, and it is reversible and is adapted to be transferred from the inner to the outer face of the annular flange 26, according as the clutch mechanism is arranged to engage the outer or inner face of the said annular rim or flange. The eccentrically arranged weights are adapted when the drum is released by the clutch to prevent the said drum from rapidly rotating and unwinding an excessive amount of slack. The weights 68 and 70 will permit the drum to rotate freely when there is a pulling strain on the hoisting rope. In large drums where the weight 68 is located a considerable distance from the shaft 14, the said weight 68 will be sufficient to prevent free rotary movement of the drum, but in the smaller class of drums, the interiorly arranged weight is located too close to the shaft 14 to act quickly, and it would be impossible to obtain the desired eccentric action or over-balance without making the weight within the cylinder bulky and heavy. Therefore, in the smaller class of cylinders, the curved weight is applied to the annular rim or flange 26 without in-

creasing the size or weight within the cylinder. The addition of the weight 70 to the rim gives the desired over-balance, and adds but little weight to the machine. The weight 70 is preferably provided with slots 72 to accommodate the bolts 71, when the weight 70 is arranged either at the inner or outer face of the annular flange or rim 26.

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

1. The combination with a motor driven shaft, of a loose drum, clutch mechanism for connecting the drum with the motor driven shaft, and an eccentrically arranged weight carried by the drum for preventing free rotary movement thereof when the drum is released by the clutch mechanism.
2. The combination with a motor driven shaft, of a hollow drum, clutch mechanism for connecting the drum with the motor driven shaft, and a weight secured eccentrically within the drum and adapted to prevent free rotary movement thereof when the drum is released by the clutch.
3. The combination of a drum, a hoisting rope extending from the drum and adapted to be wound around the same, and arched fenders extending over the end portions of the drum and arranged to keep the hoisting rope from the ends of the drum.
4. The combination of a frame, a shaft mounted on the frame, a drum loose on the shaft, gearing at one end of the drum for rotating the shaft, clutch mechanism located at the other end of the drum, spaced shields mounted on the frame and extending over the gearing and the clutch mechanism, bars projecting from one side of the frame and having inclined portions, and fenders arched over the end portions of the drum and supported at one end by the shields and at the other end by the inclined portions of the projecting bars.
5. The combination of a frame, a hoisting drum provided at its ends with heads and mounted within the frame, a hoisting rope connected with and adapted to be wound around the drum, and arched fenders extending across and secured at their terminals to the frame and located above the heads of the drum and adapted to keep the hoisting rope away from the same.
6. The combination with a hollow hoisting drum comprising a cylinder, and heads connected with the ends of the cylinder, of an eccentrically arranged weight extending along the inner face of the cylinder and secured to the same to prevent free rotary movement of the drum when the latter is loose.
7. The combination with a motor driven shaft, of a loose drum having an annular rim, clutch mechanism for engaging the rim to connect the drum with the motor driven

shaft, and an eccentrically arranged weight secured to the rim for preventing free rotary movement of the drum.

5 8. The combination with a motor driven shaft, of a loose drum having an annular rim, clutch mechanism for engaging the rim to connect the drum with the motor driven shaft, and an eccentrically arranged weight detachably secured to the rim and having
10 curved faces to fit the inner and outer faces of the rim.

9. The combination of a hollow hoisting drum comprising a cylinder and heads and

provided with an annular rim, an interior eccentrically arranged weight secured to and
15 extending along the inner face of the cylinder, and a reversible exterior weight secured to the rim and having curved faces to fit the inner and outer faces of the said rim.

In testimony that I claim the foregoing
20 as my own, I have hereto affixed my signature in the presence of two witnesses.

NICHOLAS C. MILLER.

Witnesses:

D. H. WILLIAMS,

A. L. COBBINS.

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