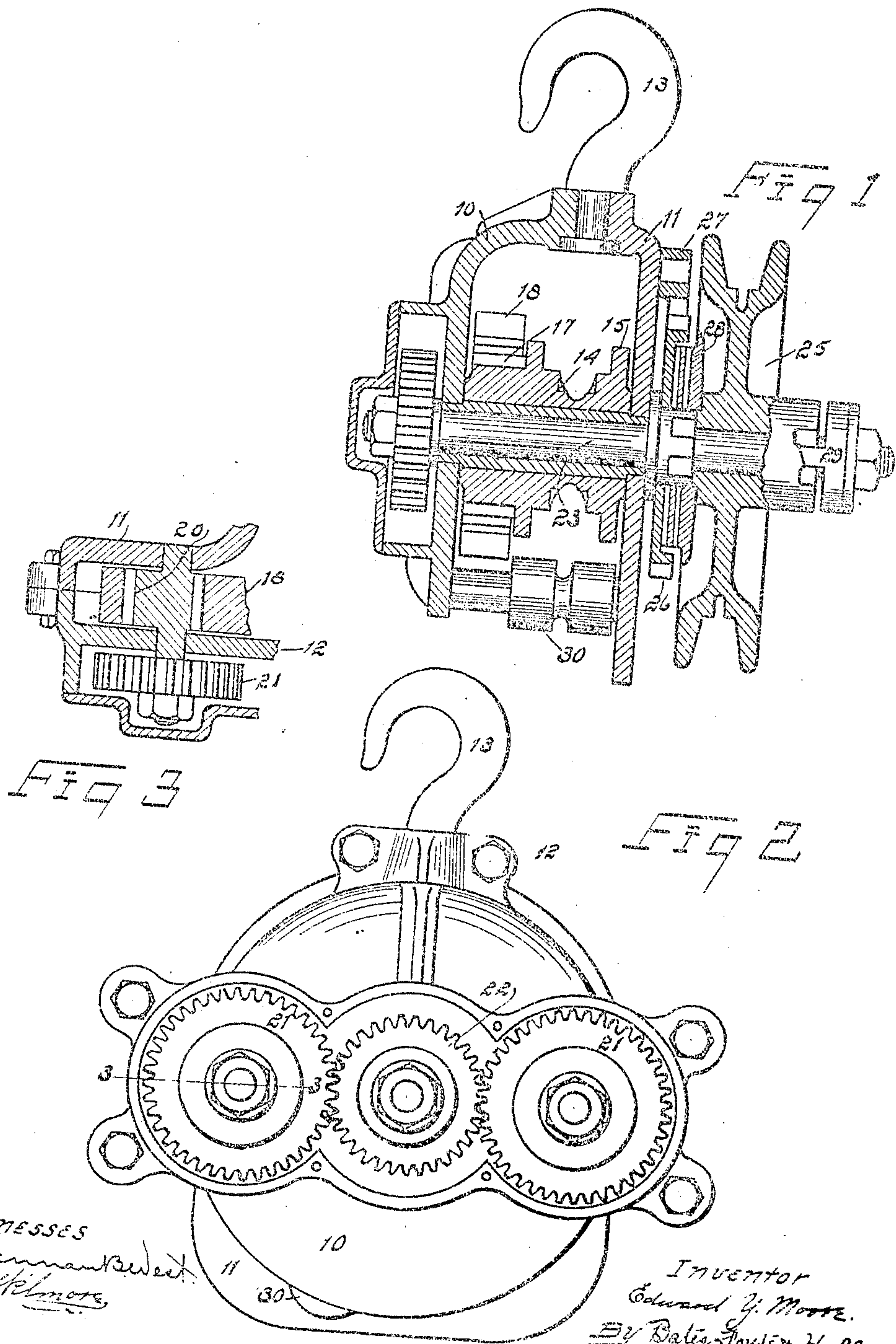


No. 882,262.

E. Y. MOORE.
HOIST.
APPLICATION FILED FEB. 1, 1907.

PATENTED MAR. 17, 1908.

2 SHEETS—SHEET 1.



WITNESSES
Barnard West
F. G. K. Moore

Inventor
Edward Y. Moore.
By Bates, Fowles & Hull,
Attorneys

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2 SHEETS—SHEET 2

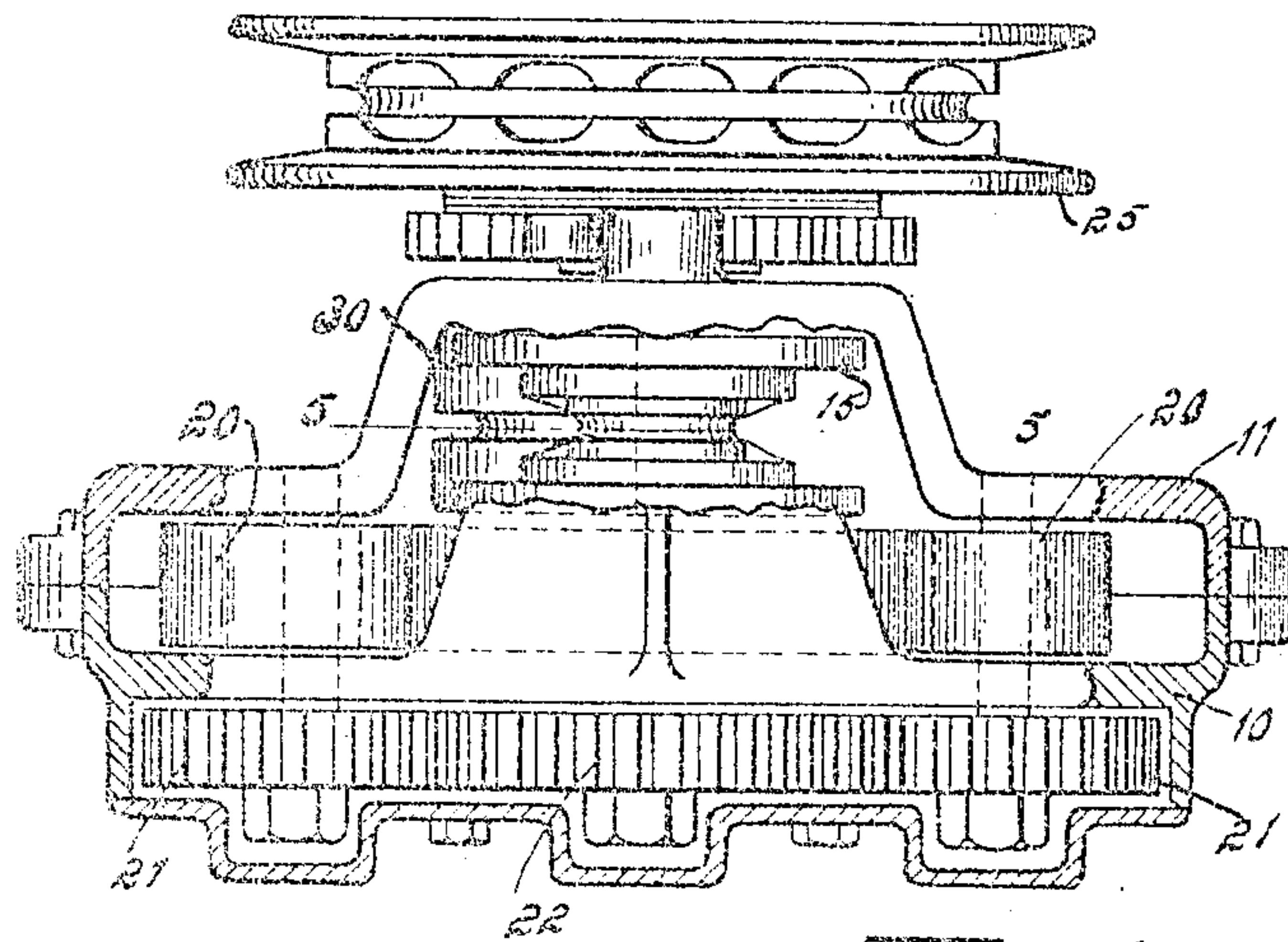


Fig 4

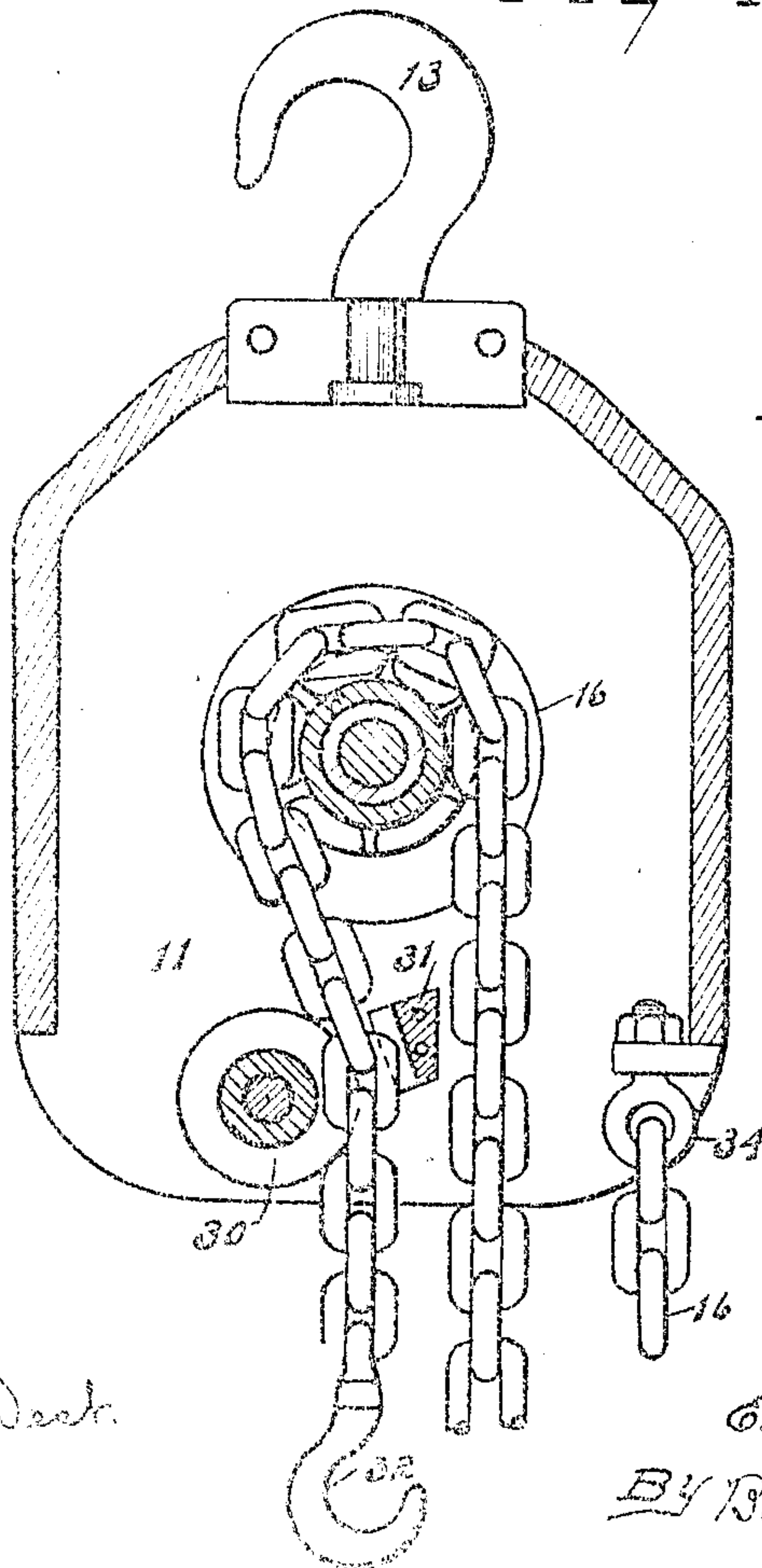


Fig 5

Witnesses
Dennan B. West.
J. E. Holmes

Inventor
Edward Y. Moore
BY Balin, Ford & Hull,
ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWARD Y. MOORE, OF CLEVELAND, OHIO.

HOIST.

No. 882,262.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed February 1, 1907. Serial No. 355,254.

To all whom it may concern:

Be it known that I, EDWARD Y. MOORE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Hoists, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

10 The object of this invention is to provide an efficient portable hoist for high speed and comparatively small loads.

My Patent No. 757,333 issued April 12, 1904, shows a hoist suspensible from a hook and having its lift chain extending around a pocket wheel whose axis is directly beneath the axis of the hook, the lift chain hanging in a bight which passes through a movable load-supporting pulley, as is usual.

20 The present invention provides mechanism whereby such type of hoist may operate with a chain extending in a single reach from the load to the support. This not only enables the load to be raised with twice the speed, but it also enables a hook to be provided at the end of the lift chain, whereby that chain may be used as a sling around the article to be lifted.

30 The invention comprises the combination of a lift wheel, a supporting hook above the axis of the lift wheel, and a means carried by the hoist frame and operating to deflect the lift chain to bring it beneath the axis of the supporting wheel and the shank of the hook, so that the hoist will not be thrown out of balance.

40 The invention is illustrated in the drawings embodied in a hoist of the type shown in my patent referred to, and is hereinafter more fully described.

Figure 1 is a vertical section through the hoist along the axis of the shank of the supporting hook; Fig. 2 is a side elevation; Fig. 3 is a fragmentary horizontal section through one of the lifting eccentrics, as indicated by the line 3—3 Fig. 2; Fig. 4 is a plan of the hoist partly broken away; Fig. 5 is a vertical section of the hoist in a plane parallel with Fig. 2 and taken substantially on the line 5—5 of Fig. 4.

55 Referring to the drawings by reference numerals, 10 and 11 represent two main parts of the hoist frame. These parts are brought together near their upper ends where they are held by bolts 12, the supporting hook 13 having its shank swiveled in recesses

at the junction of the frame members. The frame members are braced by the stationary sleeve 14 extending across them. Mounted on this sleeve is a lift wheel 15, which, as shown, has pockets for the reception of the links of the lift chain 16.

60 The mechanism shown for rotating the lift wheel 15 is shown, described and claimed in my patent referred to. It will now be briefly described. The lift wheel is provided with gear teeth 17. Surrounding this gear 17 is a yoke 18 having internal teeth of greater number than the teeth 17. The yoke is mounted on a pair of eccentrics 20 which are journaled in the frame members and which have rigid with their shanks gears 21. These gears 21 mesh with the gear 22 on a shaft 23 which is journaled on the sleeve 14. On this shaft is a suitable hand-chain-wheel 25 adapted to drive it.

As shown, suitable brake mechanism is provided, and forms the connecting mechanism between the hand chain wheel and the shaft 23. This brake mechanism includes a loose disk 26 having ratchet teeth, a pawl 27 adapted to lock it, friction disks 28 and a collar having an inclined lug 29. This construction operates to force the hand wheel inward to clamp the disk 26 when the wheel is turned in a raising direction. This clamping during raising is idle as the disk 26 rotates freely under the pawl 27; it operates as a self-locking feature for holding the load at any desired point, while to lower the load it is only necessary to turn the hand wheel backward keeping it ahead of the lowering load. This feature of the brake is more fully explained and is claimed in my Patent No. 794,997 issued July 18, 1905.

95 It will be seen from the drawings and description that the axis of the lift wheel 14 is directly beneath the shank of the hook 13, and the point from which the hook is suspensible. This construction enables the hoist to be well balanced. For light loads it is desirable to use a single lift chain instead of one depending in a bight. To enable such lift chain to be used while preserving the balancing of the hoist, I provide mechanism to bring the load supporting hook directly beneath the axis of the lift wheel. This is shown in Fig. 5 and is accomplished by providing a grooved roller 30 journaled between the frame plates 10 and 11, lower than the lift wheel and out of the vertical plane through its axis. The groove of this roller is adapted to

receive those links which are parallel with the frame plates, the links transverse to the frame plates lying on the surface of the roller.

Coöperating with the roller 30 is a stationary guide block 31 carried between the frame plates and having a groove corresponding to the groove in the roller. This guide block and roller are so placed that the chain hangs down from the hoist directly beneath the axis of the lift wheel and beneath the shank of the supporting hook. The lift chain being provided with a hook 32 at its lower end, the lower portion of the chain may be used as a sling, the hook hooking around the chain itself, as is well understood. The idle portion of the chain may depend freely from the opposite side of the lift wheel, the end of this idle portion either hanging down or being suitably supported, as shown in Fig. 5 by the eye 34 to which the end of the chain 16 is secured.

It will be seen that by very simple mechanism I have provided a balanced suspensible hoist operating with a single lift chain, so that high speed may be attained.

I claim:

1. The combination of a hoist frame, a supporting hook having its shank swiveled thereto, a lift wheel directly below the said shank, a guide roller below the lift wheel but offset from the plane through said shank and axis of the lift wheel, said roller having a peripheral groove to receive the links facing

at right angles to the axis of the roller and a cylindrical portion on each side of the groove to receive the links facing parallel with said axis, a chain extending over the lift wheel and along the inner side of the guide roller, and a chain guard carried by the hoist frame coöperating with said roller and providing a chain-raceway between them limited to a single chain, said guide being out of the way of the portion of the chain depending from the other side of the lift wheel.

2. In a hoist, the combination of a frame including a pair of side plates, a hook having its shank swiveled to said frame, a lift wheel carried by the frame, a guide roller carried by the frame on an axis parallel with the lift wheel and lower than the axis of the lift wheel and out of the plane through the shank of the supporting hook and the axis of the lift wheel, a chain carried by the lift wheel and deflected by the roller substantially into said plane, and a chain guard consisting of a block stationarily carried between the side plates of the frame and coöperating with said roller, said roller and guard having grooves facing each other.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

EDWARD Y. MOORE.

Witnesses:

ALBERT H. BATES,
WINIFRED L. MCGARRELL.