No. 864,998. PATENTED SEPT. 3, 1907.

H. J. SCHMICK.

HOISTING DEVICE.

APPLICATION FILED MAY 20, 1907.

2 SHEETS—SHEET 1.

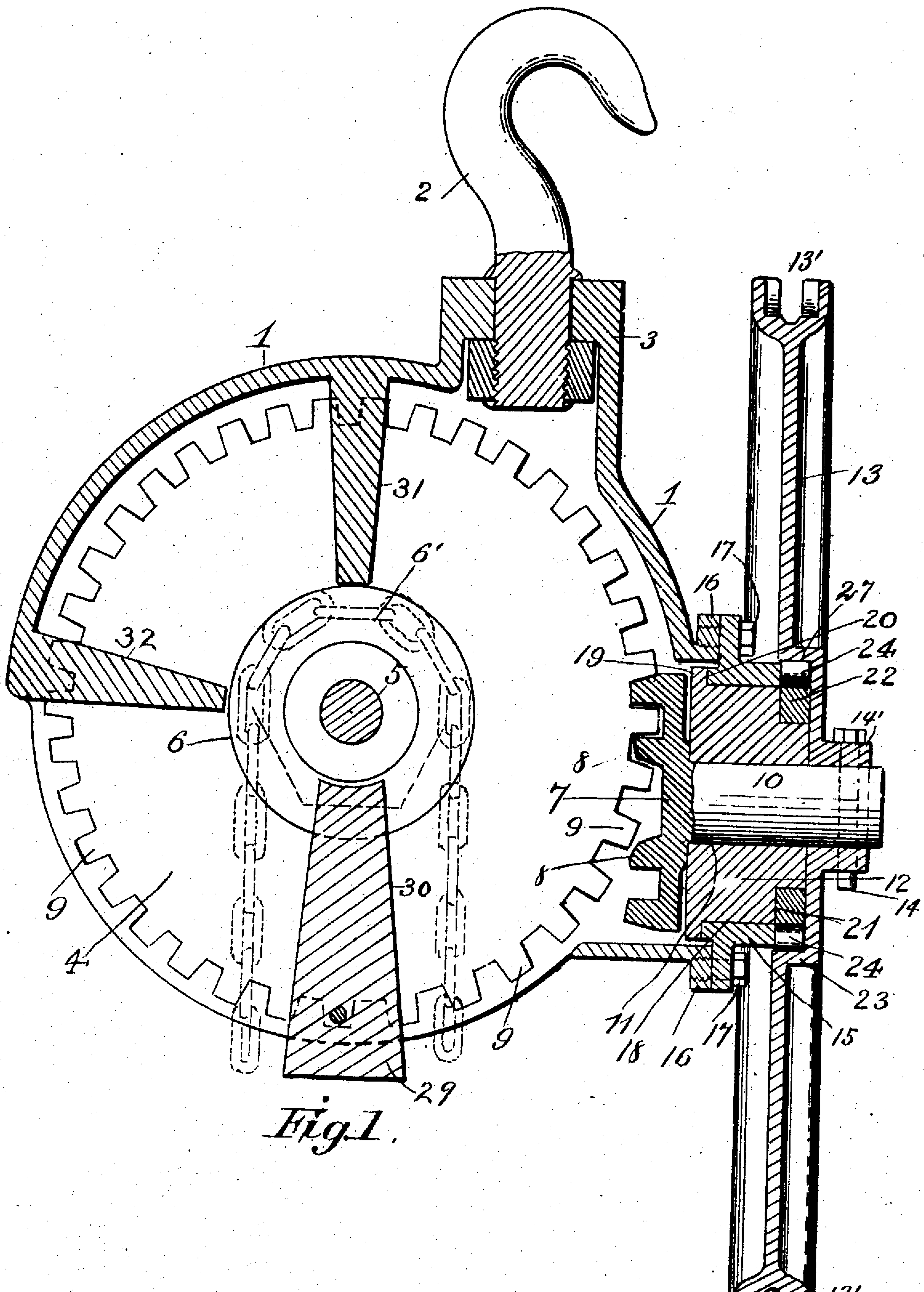

Fig 1.

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2 SHEETS—SHEET 2.

Fig. 4

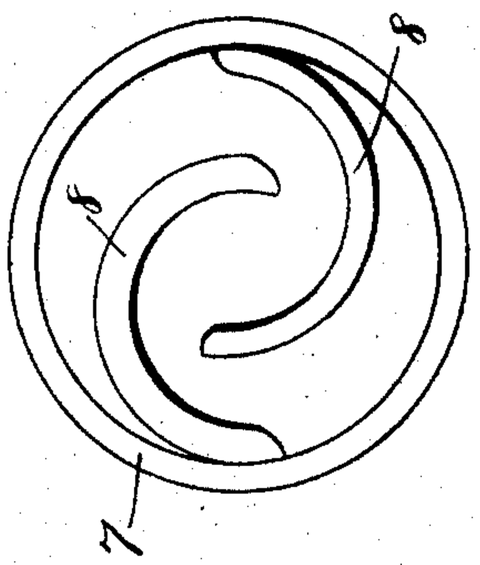


Fig. 3

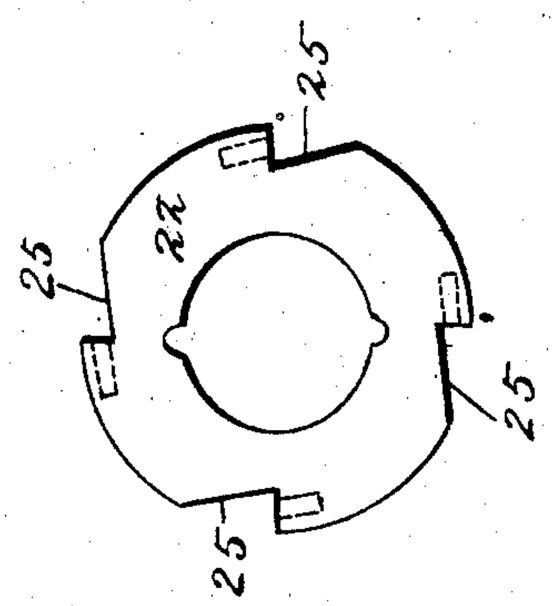
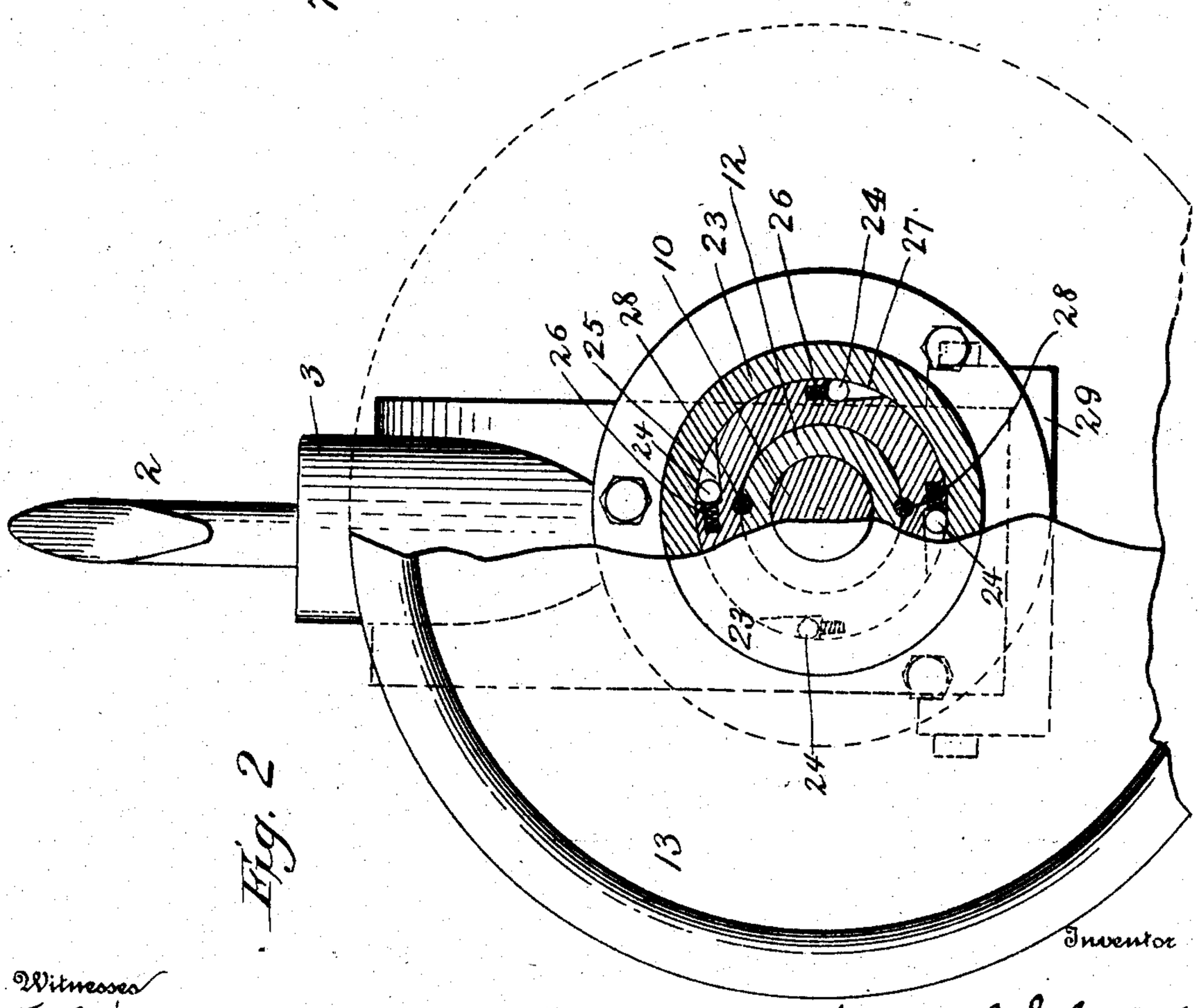


Fig. 2



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HOISTING DEVICE.

No. 864,998. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed May 20, 1907. Serial No. 374,638.

To all whom it may concern:

Be it known that I, HENRY J. SCHMICK, a citizen of the United States, residing at Hamburg, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Hoisting Devices; and I do hereby 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.

My invention relates to chain hoists, or hoisting devices and has for its object the construction of such a hoisting device that will maintain the load upon it at any stage in its elevation, and the invention consists in certain improvements in construction which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification: Figure 1 represents a vertical section partly in elevation of my improved hoisting device. Fig. 2 an end view, partly in section. Fig. 3 a plan view of the clutch-ring detached, and Fig. 4 is an end view of the head with its working members.

Reference being had to the drawings and the designating characters thereon, the numeral 1 indicates the housing or casing provided with a hook 2 swiveled in a boss 3, on which the device is suspended. 4 a gear-wheel or hoisting member supported on a shaft 5, which shaft is supported in the sides or wall of the casing in the usual manner, and on one side of the wheel 4 is a cylindrical projection or boss 6 on which a hoisting chain 6′ is supported.

7 indicates the head, on the face of which are radio helical cams or working members 8 which engage the teeth 9 on the gear-wheel or hoisting member 4. The head is provided with a shaft 10 which has its bearing and revolves in the seat 11, in the sleeve 12 and is secured to the driving wheel 13 by a pin 14 extending through the hub 14′ of said wheel and the shaft.

15 is a cap secured to the flange 16 of the housing 1, by bolts 17 and its inner surface 18 forms a bearing for the sleeve 12, at whose inner end is a flange or collar 19 which engages a seat 20 on the cap 15 to take part of the thrust of the head 7, and at the outer end of the sleeve is a rabbet 21 in which is seated the clutch-ring 22 which is inclosed in the extension 23 of the hub 14 of the driving-wheel 13, and is provided with friction-rollers 24, in seats 25 on the clutch-ring which are thrown out by springs 26 and engage the wall 27 of the extension 23 of the hub and cause the sleeve 12 to revolve with the driving-wheel in the descent of the article which has been hoisted. The clutch-ring 22 is secured to the sleeve 12 by screw-threaded stubs 28. The driving-wheel 13 is provided with a groove 13′ in the periphery to receive a chain, not shown, for revolving the wheel and the hoisting member.

In hoisting, the head 7 revolves on its shaft 10, but when the operation of hoisting ceases, the weight of the article being hoisted causes the gear-wheel 4 to revolve in the opposite direction and carries with it the head 7, its shaft 10, and the driving wheel 13; the friction rolls 24 in the clutch-ring 22 thrown out by the springs 26 that engage the wall 27 of the hub extension 23 and lock the wheel 13 to the clutch-ring and the sleeve 12, and cause the head 7 and its shaft 10 to revolve on the sleeve 12 and its bearing 18 in the cap 15, and thereby sustain the weight of the article on the hoisting chain 6′. The friction produced by the rollers 24 engaging the wall 27 and the increased area of the bearing between the sleeve 12 and its seat 18, as compared with the shaft 10 and its bearing 11 in the sleeve 12 supports the load on the hoisting chain at any desired point.

The construction described provides two concentric bearings on which the head 7 and its shaft revolves, one in the act of hoisting, and the other, of greatly increased area, in lowering. 29 is a stirrup secured to the housing and is provided with a tongue or bar 30 which extends up to the boss 6, and prevents the chain 6′ from being carried around the boss when lifting a load, and 31, 32 indicate guides projecting inward from the wall of the housing to prevent the chain jumping off the boss.

It is obvious that changes in minor details of construction may be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim is

1. In a hoisting device, a revoluble hoisting-member, a revoluble member engaging said hoisting-member and provided with a shaft, a sleeve provided with a bearing for the shaft, a bearing in the casing for said sleeve, a driving member secured to the shaft and provided with a hub, and a friction clutch connecting said sleeve and the hub of the driving member.

2. In a hoisting device, a revoluble hoisting-member, a revoluble disk or head having working members on the face thereof engaging the hoisting-member and provided with a shaft, separate concentric bearings for the head and its shaft, and means for revolving the disk or head.

3. In a hoisting device, a revoluble hoisting-member, a revoluble disk or head having working members thereon engaging the hoisting-member, and provided with a shaft, a sleeve provided with a bearing for the shaft, separate bearings for the sleeve and the shaft, a driving member, and means for locking said member to said sleeve.

4. In a hoisting device, a revoluble hoisting-member, a revoluble member engaging said hoisting-member and provided with a shaft, a sleeve provided with a bearing for the shaft, a bearing for the sleeve, a clutch-ring secured to said sleeve, and a driving wheel secured to the shaft and engaged by the clutch.

5. In a hoisting device, a revoluble hoisting-member, a revoluble member engaging the hoisting-member and provided with a shaft, a sleeve provided with a bearing for the shaft, a bearing for the sleeve, a clutch-ring secured to said sleeve, rollers in said ring, and a driving-wheel provided with a hub engaged by said rollers.

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

HENRY J. SCHMICK.

Witnesses:
HARVEY C. JOHNSON,
M. C. KREIDER.