No. 768,822. PATENTED AUG. 30, 1904.

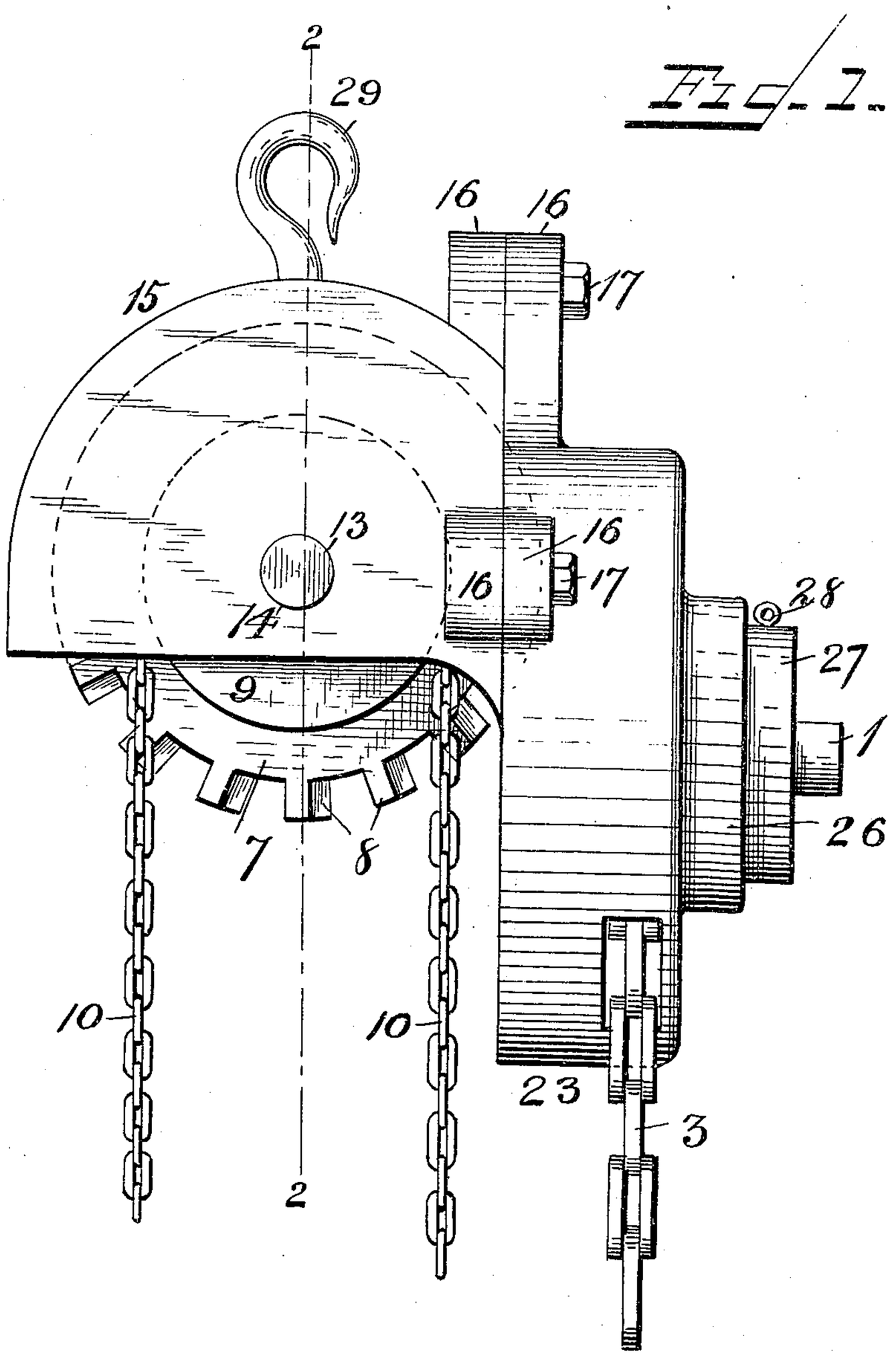
H. J. SCHMICK.

HOISTING DEVICE.

APPLICATION FILED APR. 5, 1904.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



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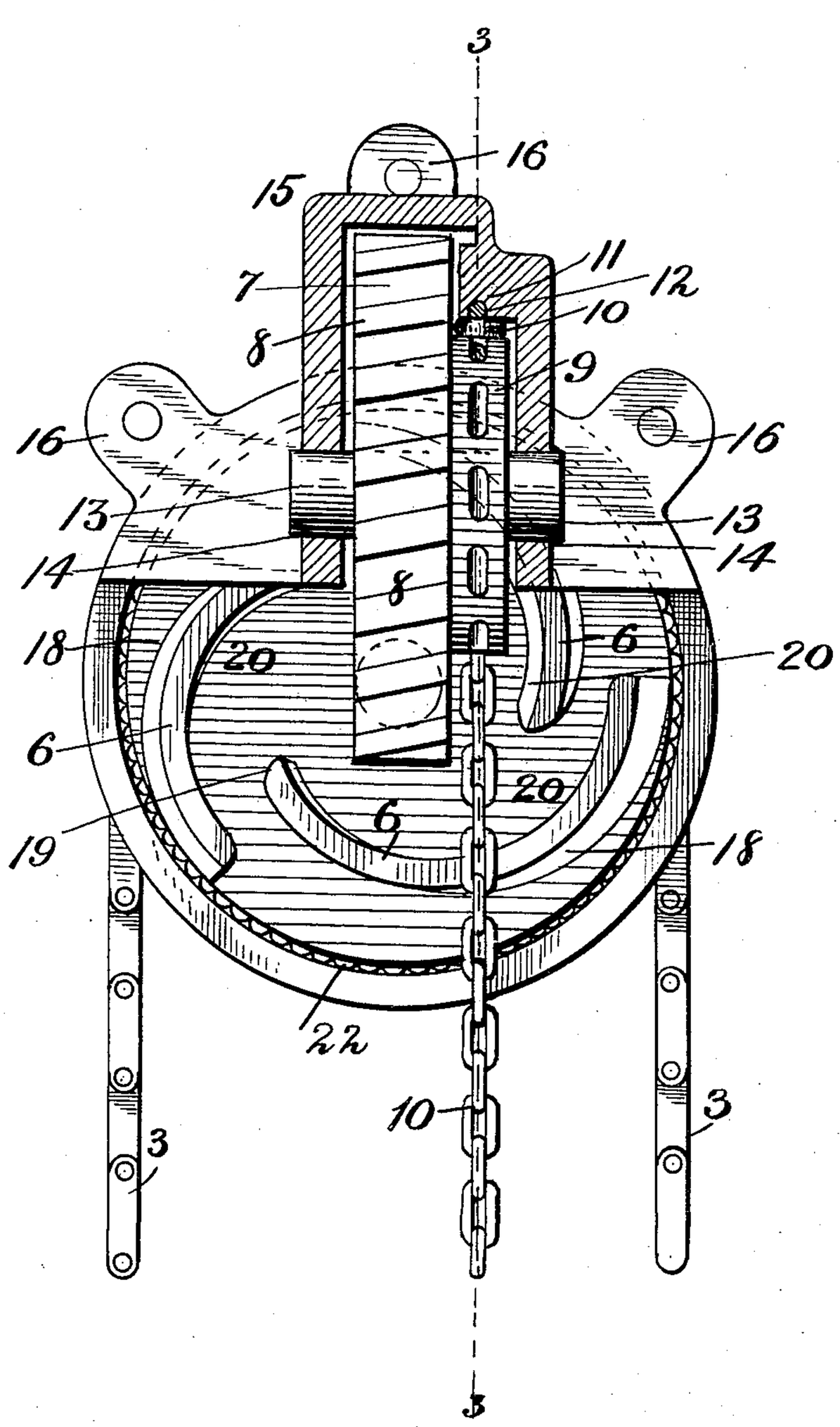
NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.



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NO MODEL. 3 SHEETS—SHEET 3.

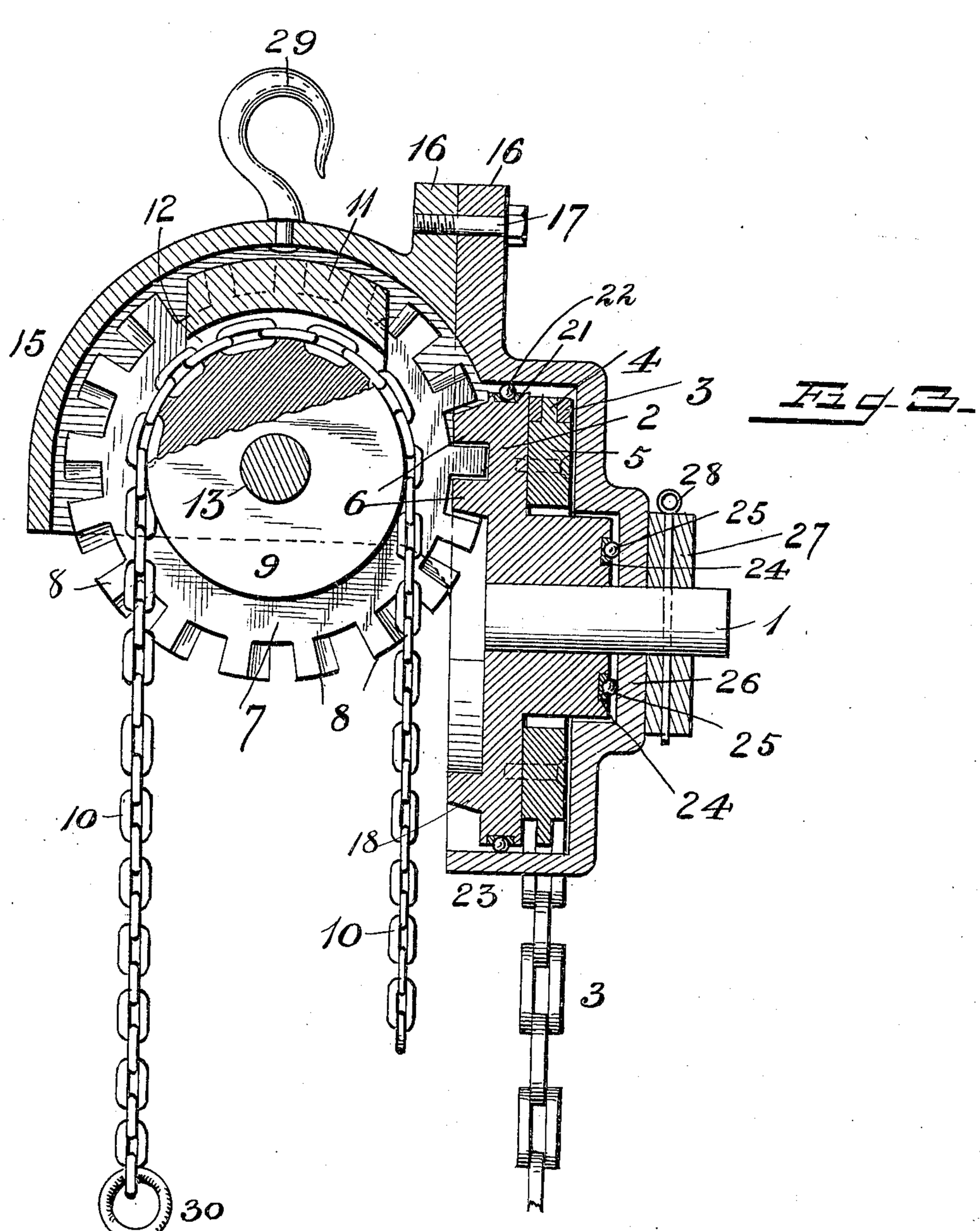

Fig. 3.

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No. 768,822. Patented August 30, 1904.

UNITED STATES PATENT OFFICE.

HENRY J. SCHMICK, OF HAMBURG, PENNSYLVANIA.

HOISTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 768,822, dated August 30, 1904.

Application filed April 5, 1904. Serial No. 201,697. (No model.)

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 hoisting devices, and has for its object economy in time and construction by dispensing with the multiple pulleys, tackle-blocks, or sheaves usually employed and the application of power directly to a member engaged by the chain which serves to hoist the article to be moved; and the invention consists in certain improvements, 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 side elevation of a hoisting device embodying my invention; Fig. 2, a vertical transverse section on line 2 2, Fig. 1; and Fig. 3, a vertical broken section on line 3 3, Fig. 2.

Reference being had to the drawings and the designating characters thereon, 1 indicates a shaft on which is secured a disk or head 2 to revolve therewith as the disk and shaft are rotated—in the present instance by a sprocket-chain 3 engaging the teeth 4 of a sprocket-wheel 5, secured to the rear side of the disk—and on the opposite side or face of the disk are one or more radio-helical members 6.

7 indicates a gear-wheel or hoisting member having peripheral teeth 8 inclined transversely of the wheel, a cylindrical projection 9 on one side, on which a chain or hoisting member 10 is supported, and the chain is held in engagement with the periphery thereof by a lateral projection 11 on the inside of the housing, in the face of which projection, adjacent to the projection 9, is a groove 12, in which the links of the chain travel. The wheel 7 is supported on a shaft 13, which in turn is supported in bearings 14 14 in the housing 15, which is preferably made of cast-steel and in two parts connected by lugs 16 and bolts 17.

To effect constant engagement of the outer or working surface 18 of the member 6 with the teeth 8 of the wheel 7, said surface is made angular in transverse section of the member and of a constantly-increasing angle from the root or point of engagement 19 on the member with the teeth outward in the revolution of the wheel, and the inner side or surface 20 of said member is inclined in the same ratio but in the reverse direction to prevent binding of the next tooth thereon as the head revolves.

The periphery of the disk 2 is provided with a groove 21 to receive balls 22, which bear against the inner surface of the extension 23 of the housing, and in the end of the collar 24 like balls 25 are inserted to take the thrust on the disk 2 in its engagement with the wheel 7. The shaft 1 extends through the end 26 of the housing and is secured by a loose collar 27 and a cotter-pin 28, extending through the collar and the shaft. The hoisting device in the form shown is suspended by a hook 29, and the chain 10 is provided with a hook 30.

In the construction shown the weight of the article is sustained by the hoisting member 7, and power to hoist is applied directly thereto by the revoluble disk or head 2, revolved by manual power through the medium of the chain 3, thus dispensing with the numerous and superfluous pulleys and tackle usually employed, and the time required to hoist an article is greatly reduced thereby. The weight of the article being hoisted is sustained at any point by contact of the teeth 8 with the angular working surface 18 of the members 6, which in their engagement are in planes at a right angle to each other.

Having thus fully described my invention, what I claim is—

1. In a hoisting device, a revoluble disk or head provided with a working member on the face thereof having a working surface of constantly-increasing angularity from the root of the member outward, and means for revolving said disk; in combination with a revoluble member operated by said working member, and a hoisting member engaging said revoluble member.

2. In a hoisting device, a revoluble disk or head provided with a working member having its sides inclined in reverse direction, forming

a working surface of constantly-increasing angularity from the root of the member outward, and means for revolving said disk; in combination with a revoluble member having peripheral teeth engaged by said working member, and a hoisting member engaged by said revoluble member.

3. In a hoisting device, a revoluble disk or head provided with a working member on the face thereof having a working surface of constantly-increasing angularity from the root of the member outward, and means for revolving said disk; in combination with a revoluble member having peripheral teeth inclined transversely and engaged by said working member, and a hoisting member engaging said revoluble member.

4. In a hoisting device, a revoluble disk or head provided with a working member on the face thereof, a housing surrounding said disk, a ball-bearing between the periphery of the disk and said housing, a thrust-bearing between the collar on the disk and the housing, and means for revolving said disk; in combination with a revoluble member having peripheral teeth engaged by said working member, and a hoisting member engaging said revoluble member.

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

HENRY J. SCHMICK.

Witnesses:
J. ED. MILLER,
M. H. WENRICH.