

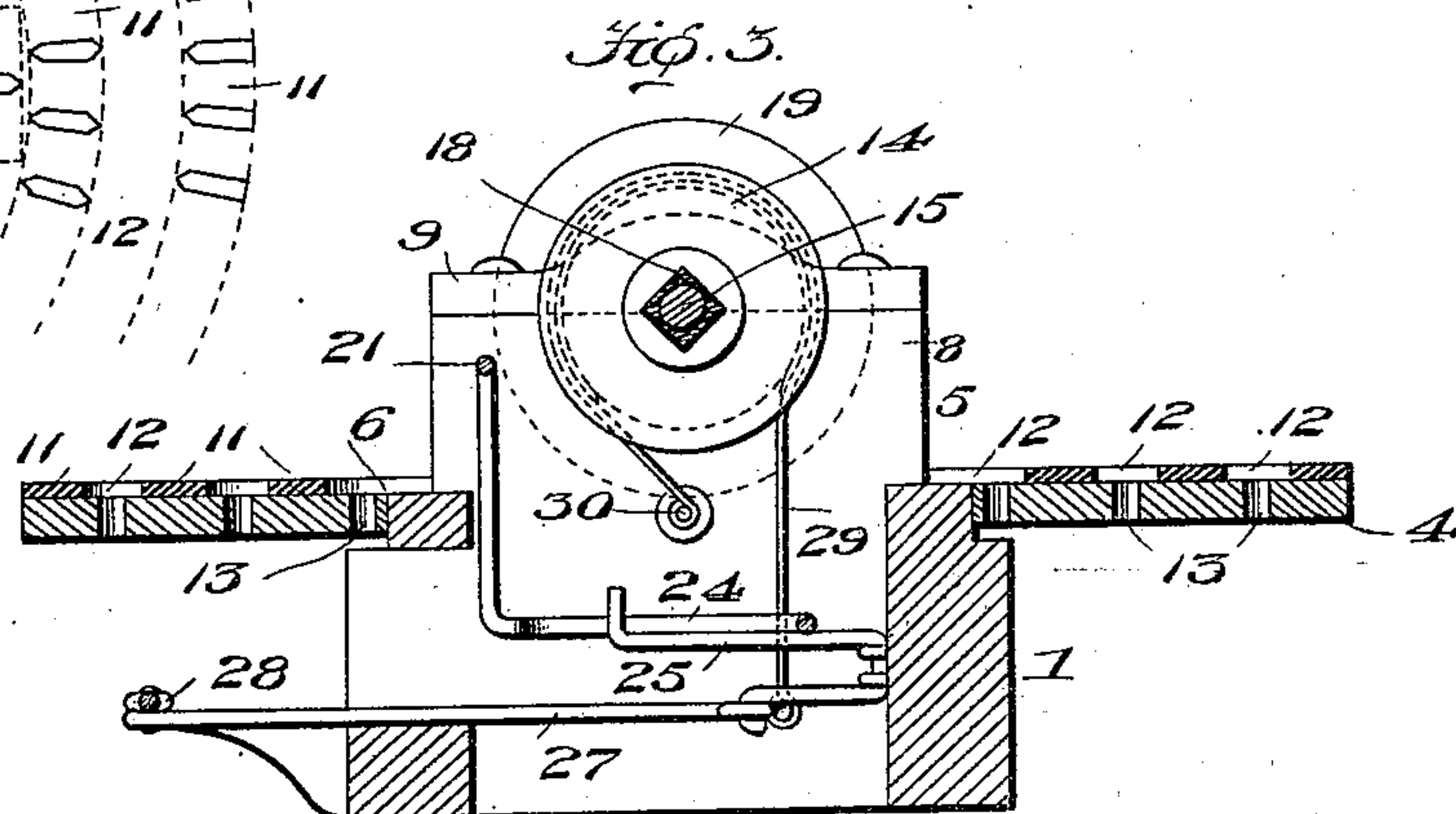
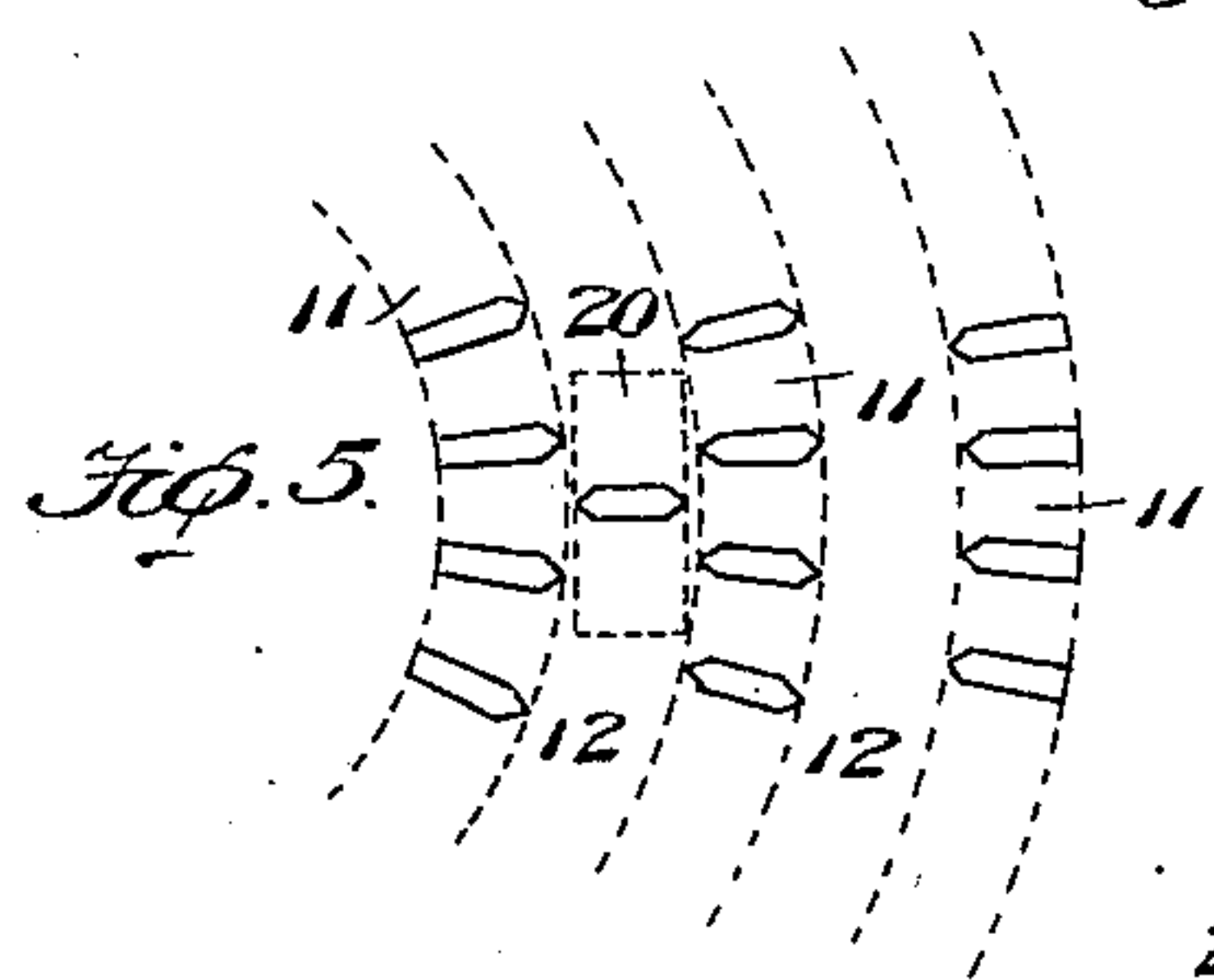
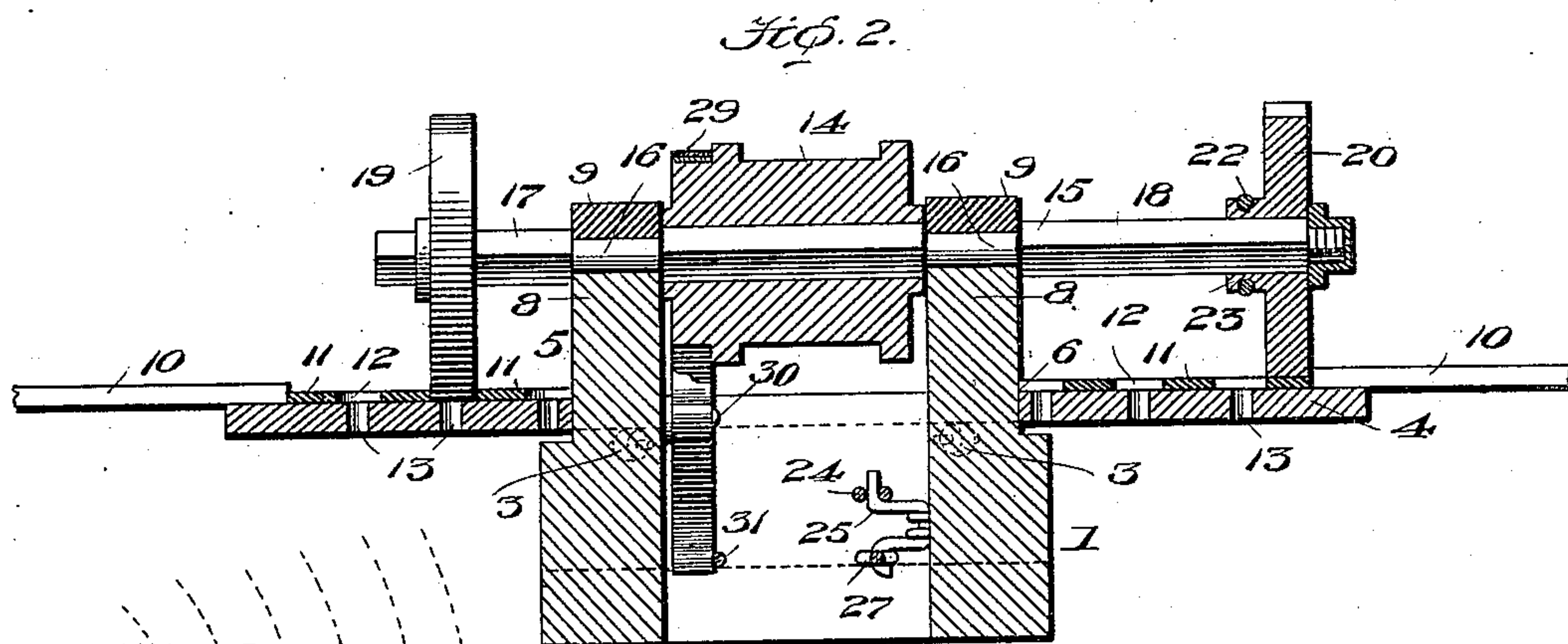
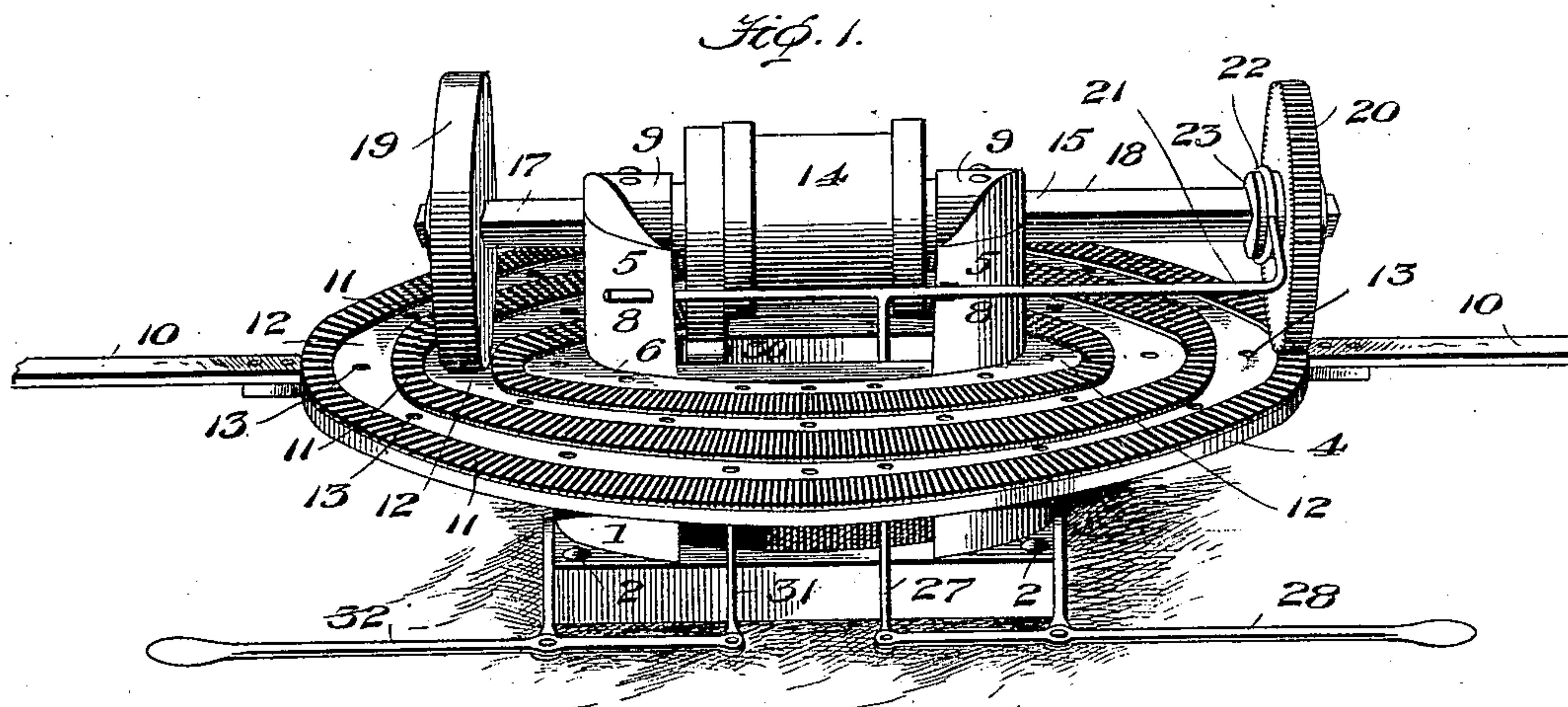
No. 705,880.

Patented July 29, 1902.

E. R. STORRS.
SWEEP OPERATED HOISTING WINDLASS.

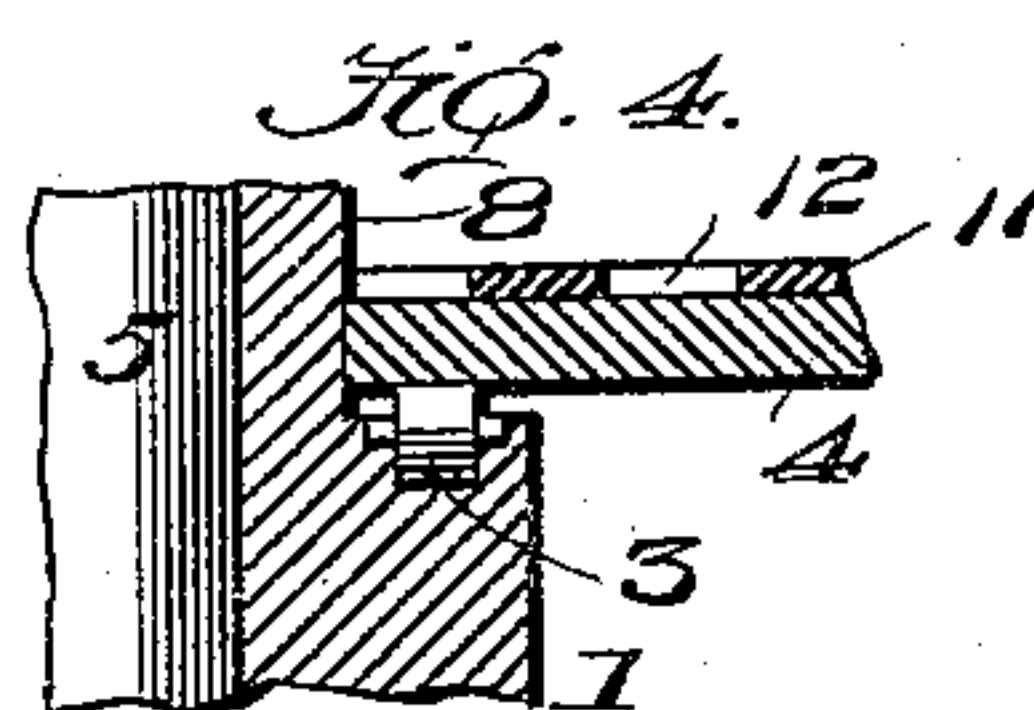
(Application filed Sept. 4, 1901.)

(No Model.)



Witnesses

Charles V. Lockwood



Inventor
Eugene R. Storrs
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his Attorney

UNITED STATES PATENT OFFICE.

EUGENE R. STORRS, OF CRIPPLECREEK, COLORADO.

SWEEP-OPERATED HOISTING-WINDLASS.

SPECIFICATION forming part of Letters Patent No. 705,880, dated July 29, 1902.

Application filed September 4, 1901. Serial No. 74,280. (No model.)

To all whom it may concern:

Be it known that I, EUGENE R. STORRS, a citizen of the United States, residing at Cripplecreek, county of Teller, State of Colorado, have invented certain new and useful Improvements in Sweep - Operated Hoisting-Windlasses, of which the following is a specification.

My invention relates to sweep-operated hoisting-windlasses.

The object of the invention is the provision of a windlass of simple, strong, and durable construction which will be adapted for variations in speed, easy running, and capable of production at small cost.

A further object is to provide a sweep-operated hoisting-windlass which will be of light and portable construction, so as to be easily transferred, thereby particularly adapting it for use in mining operations, whether conducted at the bottoms of cañons or on the tops of mountains, wherever horses can be taken.

The objects of the invention more particularly are the provision in a sweep-operated hoisting-windlass of a novel form of sweep-operated table supported and journaled in an improved manner, a winding-drum, and means for operating it from the table after a novel fashion and for equalizing the strain and providing for different speeds.

Having the foregoing objects in view, the invention consists in certain improved features and novel combinations of parts, set forth in detail hereinafter and recited in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of the complete invention; Fig. 2, a transverse section taken longitudinally of the shaft; Fig. 3, a similar view taken at right angles to Fig. 2; Fig. 4, a detail of one of the antifriction-rollers, and Fig. 5 a diagrammatic view illustrating the pointed ends of the teeth of the gear-tracks and pinion and the manner in which the pinion meshes with the tracks.

The numeral 1 designates a frame which may be suitably bolted to a base by a bolt 2. This frame has antifriction-rollers 3 at its corners for the support of the rotary table 4 and is provided with an upwardly-extending circular portion 5, fitting in the central circular opening 6 in the table and having the

uprights 8, provided with pillow-blocks 9. The rotary table has sweeps 10 connected thereto for the attachment of horses and is provided with three circular concentric raised gear-tracks 11, separated by the blank spaces 12, through which are perforations 13 to allow draining off of any water which may accumulate on the table.

The numeral 14 designates a winding-drum secured on a shaft 15 and located between the pillow-blocks. The shaft 15 has cylindrical bearings 16, journaled in the pillow-blocks, and squared portions 17 and 18. Journaled on one end of the shaft and held against the squared portion 17 is a guide-wheel 19, which is adapted to bear on one of the blank spaces of the table. On the other end 18 of the shaft is a pinion 20, which is slidably journaled thereon and adapted to turn therewith and also for meshing with any of the gear-tracks. As illustrated in Fig. 5, both ends of the teeth of the middle gear-track and the pinion and the inner ends of the teeth of the outer gear-tracks are pointed to facilitate rapid and easy meshing of the pinion with the gear-tracks when shifted from one to the other and to prevent breakage or chipping of the teeth. The shifting of the pinion to cause it to mesh with any of the gear-tracks is accomplished by a shifting-rod 21, slidable in the uprights and having a yoke 22, loose on a hub 23 of the pinion. Depending from the shifting-rod is an arm having a loop 24, located in the open portion of the frame, while 25 designates a pivoted arm having a portion slidable in said loop, said arm being operated by a pull-rod 27 and lever 28.

The numeral 29 designates a friction-brake strap lined with leather or other suitable material having one end secured to the frame at 30, thence passing around a portion of the winding-drum, and its other end secured to a pull-rod 31, operated by a lever 32.

The advantages of equalizing the strain on the shaft and balancing the rotary table will be apparent, for it will be seen that by employing a pinion at one end of the shaft and a guide-wheel at the other end, which latter is adapted to bear lightly on the table and keep it down on the antifriction-rollers, all tilting of the table is prevented, while the strain is not concentrated on the shaft in any

one place. Furthermore, the positioning of the winding-drum between the uprights on the frame further balances the strain, as also the disposition of the friction-brake in this position.

The machine is intended for operation by horses attached to the sweeps, whereupon the table will be turned, and the meshing of any track-pinion will cause a rotation of the shaft and winding-drum. By positioning the winding-drum as shown and described the hoisting-rope can run directly from the drum to the derrick, thus dispensing with the usual ground-sheave. The provision of three different gear-tracks makes it possible to obtain speeds either slow, fast, or swift, according to conditions, while the provision of pointed ends for the teeth of the gear-tracks and pinion is particularly advantageous in insuring longevity of the gear-tracks and pinion and ease in changing from one gear to another.

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

1. In a machine of the class described, the combination with a rotary power-table having a plurality of concentric gear-tracks, of a rotary shaft extending transversely of the table, a guide-wheel journaled on the shaft at one side of the center of the table and bearing against the latter in the space between the gear-tracks, and a pinion slidably mounted on the shaft on the opposite side of the center of the table and adapted to engage with either of the gear-tracks so as to turn with the table and the shaft being adapted to turn with the pinion.

2. In a machine of the class described, the combination with a rotary power-table having concentric gear-tracks, of separated bearings located on opposite sides of the center of rotation of said power-table, a shaft journaled in said bearings, a winding-drum secured on the shaft intermediate the bearings, a guide-wheel loosely journaled on one end of the shaft and adapted to bear against the table between the gear-tracks, and a pinion slidably longi-

tudinally on the shaft and adapted to turn therewith, which is arranged to mesh with any of the gear-tracks.

3. In a machine of the class described, the combination with a frame, of a table adapted to turn thereon, a shaft journaled to turn in the frame, a wheel on the shaft adapted to engage the table and slidable longitudinally on the shaft, a rod slidably mounted in the frame and connected to the wheel, said rod having an open arm, a pivoted member having a projection movable in the opening in the arm and a lever for operating said pivoted member, whereby the wheel may shift on the shaft.

4. In a machine of the class described, the combination with a frame having an upright portion and provided with antifriction-rollers, of a table having concentric gear-tracks and provided with an open central portion turning on the upright portion of the frame and being supported by the antifriction-rollers, a shaft journaled in the upright portion of the frame, a winding-drum on said shaft between the portions of the upright part of the frame, a friction-brake having one end secured to the frame and its remaining portion adapted to act on the drum, lever mechanism for operating said friction-brake, a guide-wheel journaled on the shaft and adapted to bear against the table, a pinion slidably longitudinally of the shaft at the opposite end from the guide-wheel and adapted to turn with the shaft, a rod slidably mounted on the frame and connected to the pinion, said pinion being adapted to engage the tracks, said rod having a member provided with an elongated slot, a member pivoted to the frame and provided with a projection received in the slot, and lever mechanism for operating said member, whereby the shifting of the pinion is accomplished.

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

EUGENE R. STORRS.

Witnesses:

M. E. O'BRYAN,
ZENO FELDER.