

No. 812,873.

PATENTED FEB. 20, 1906.

W. H. PERRY.
ICE CUTTER FOR SURFACE RAILWAYS.

APPLICATION FILED OCT. 5, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

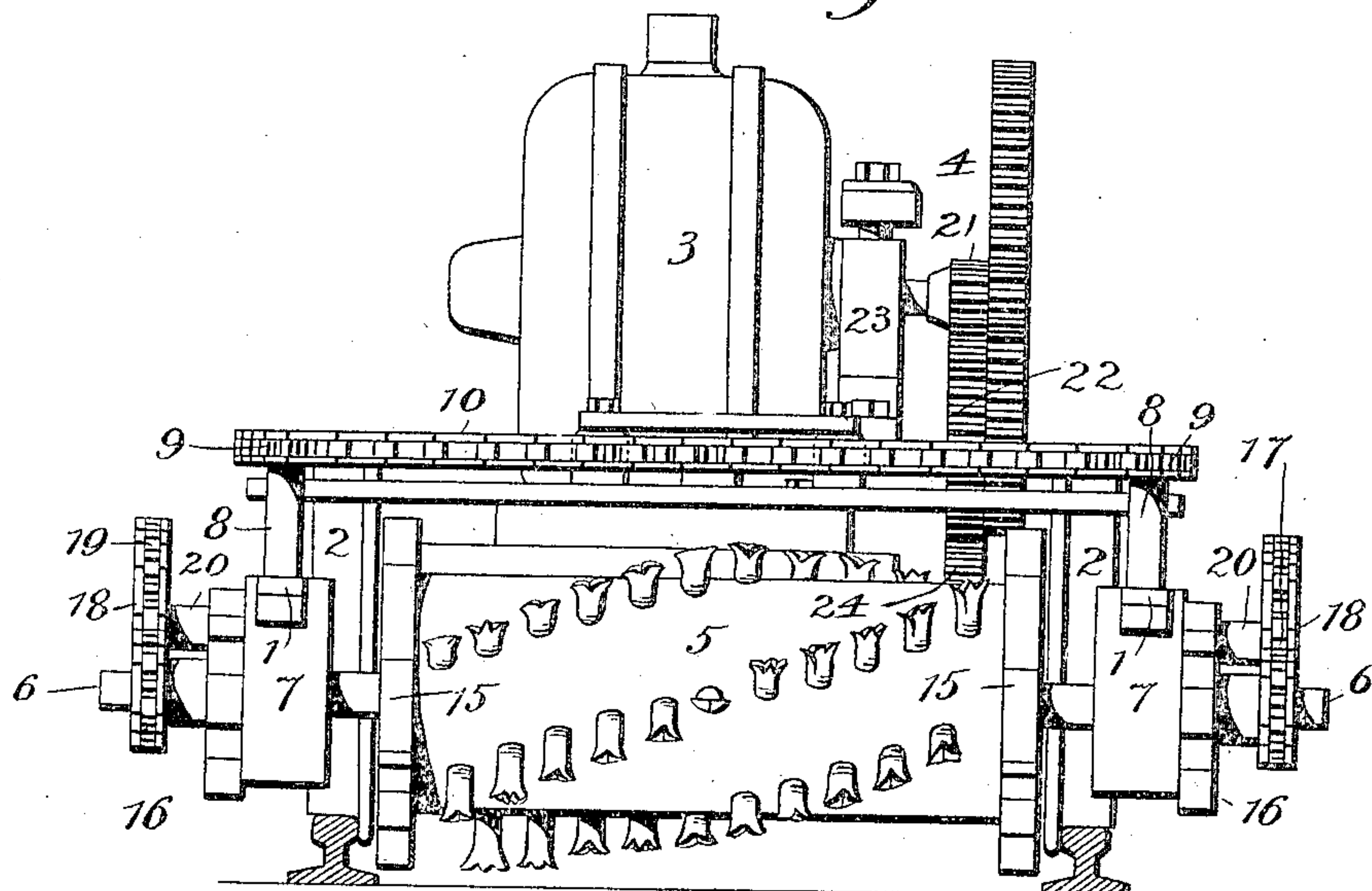
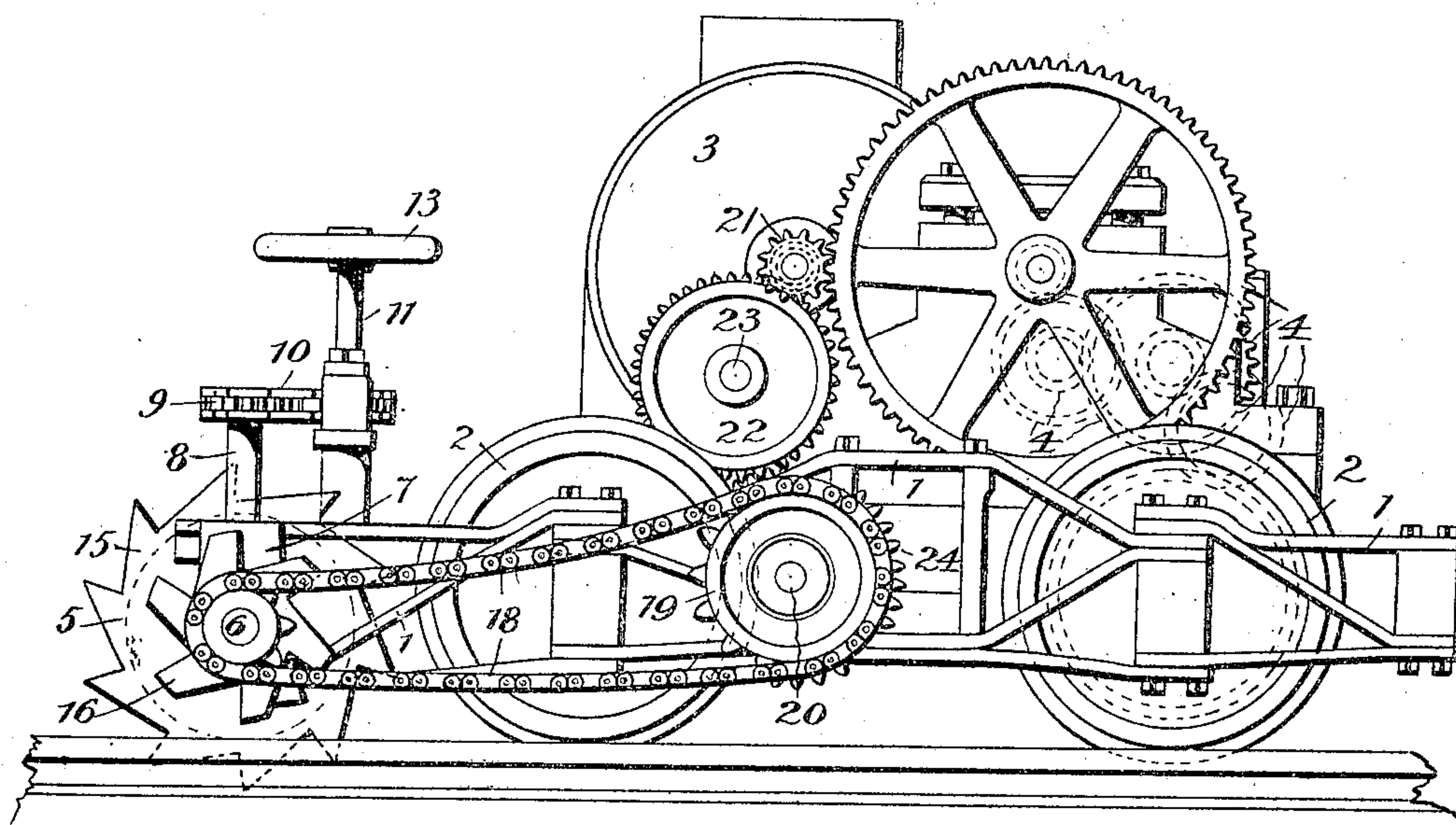


Fig. 2.



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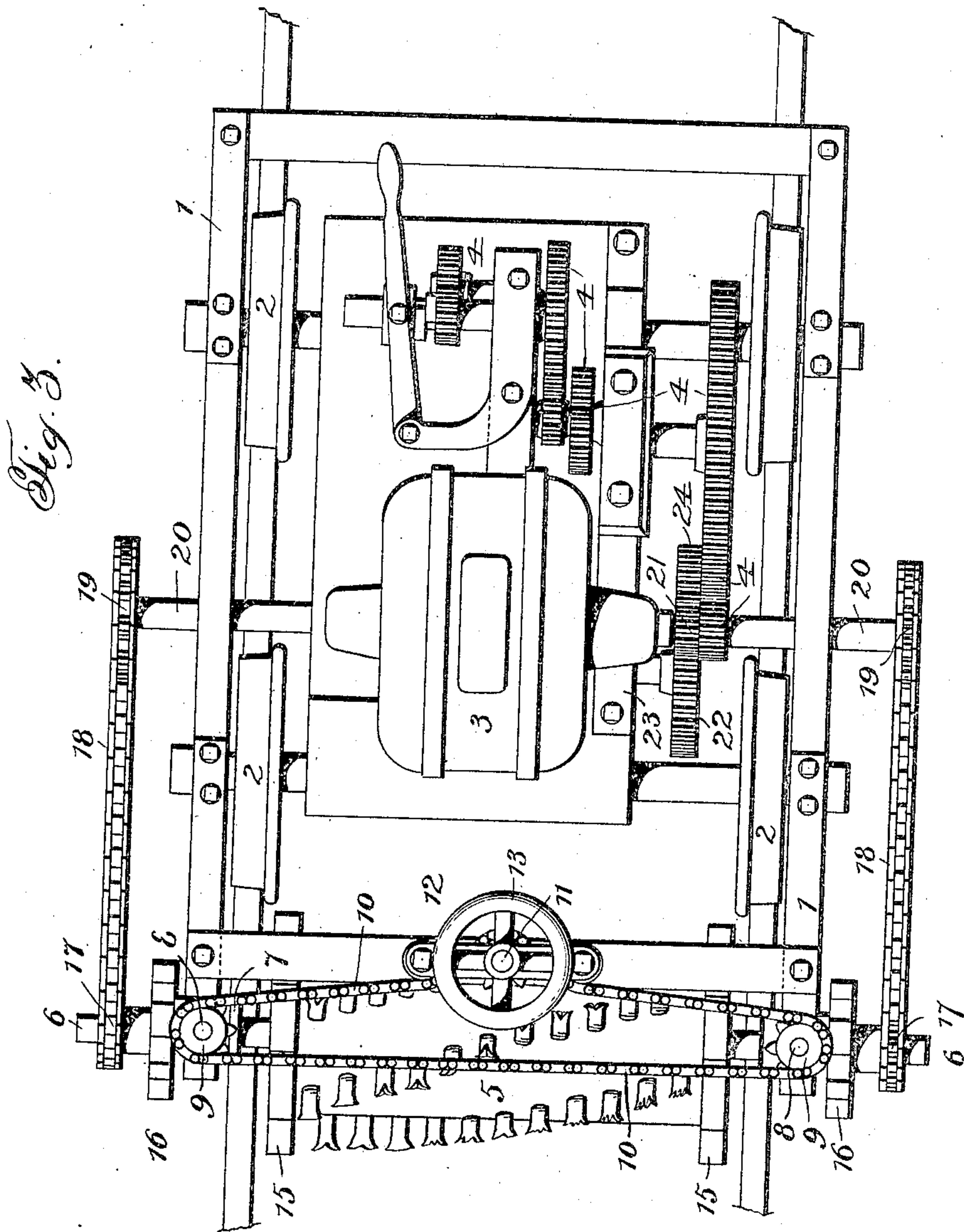
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE

WILLIAM H. PERRY, OF CONCORD, NEW HAMPSHIRE.

ICE-CUTTER FOR SURFACE RAILWAYS.

No. 812,873.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed October 5, 1905. Serial No. 281,432.

To all whom it may concern:

Be it known that I, WILLIAM H. PERRY, a citizen of the United States, and a resident of Concord, in the county of Merrimack and State of New Hampshire, have invented certain new and useful Improvements in Ice-Cutters for Surface Railways, of which the following is a specification.

This invention relates to improvements in ice-cutters for surface railways.

The object of the present invention is to provide a device of the character stated designed to effectually break ice and hardened snow which accumulate upon the road-bed of surface railways both between and immediately contiguous to the sides of the tracks, thereby conditioning the ice and snow for easy removal by a sweeper or other cleaning medium; and to the accomplishment of this end the invention contemplates the provision of a machine which is exceedingly simple in construction, one having great durability under the heavy conditions of service to which it is subjected, and one which is highly efficient for the purposes for which it is designed.

The invention consists, substantially, in the novel construction, combination, and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claims, and while but one form of the invention is herein disclosed it is obvious that the same is susceptible of various modifications, and the right is accordingly reserved to change or vary the invention as falls within the spirit and scope thereof.

In the accompanying drawings, Figure 1 is a front elevation of the herein-described cutter. Fig. 2 is a side elevation thereof. Fig. 3 is a plan view.

Referring in detail to the drawings, the numeral 1 designates the frame of the herein-described machine, which frame is mounted upon truck-wheels 2, and associated with said frame is a driving element 3, in the present instance illustrated as an electric motor. It is apparent, however, that any other motor might be substituted for the form herein shown.

The motor 3 is intended for operating the cleaner to be hereinafter described; but it is also intended to propel the machine, and to the accomplishment of this end a train of gearing 4 is interposed between the driving-shaft of the motor and one of the axles of the

truck. This gearing may be of any well-known or improved construction and is shown herein as of the construction illustrated in a companion application filed October 5, 1905, Serial No. 281,431.

Arranged at the front of the machine is a rotary drum 5, said drum being carried by a shaft 6, which shaft is journaled in suitable bearing-blocks housed within casings 7, and which blocks are vertically adjustable in said casings through the medium of upwardly-extending shafts 8, each of which carries a sprocket-wheel 9, over which a sprocket-chain 10 travels, said chain being actuated by a sprocket-wheel 11, carried by a staff 12, to which is connected a hand-wheel 13 for the operation of said staff. This specific means for adjusting the shaft 6 is covered by the companion application hereinbefore referred to, and further reference is therefore unnecessary.

The drum 5 is provided with a plurality of metallic pins or lugs 14, arranged spirally thereof and extending from end to end of the same, the free ends of said pins or lugs being suitably shaped in order to engage and break up the ice and hardened snow between the tracks. Mounted at each end of the drum 5 and running at the inner sides of the rails are cutter-disks 15, which are provided with peripheral cutting-teeth, and mounted upon the same shaft with the drum 5 and the disks 15 are additional cutting-disks 16, which latter are arranged to run upon the outer sides of the rails and closely contiguous thereto. It will thus be seen that not only the ice and snow between the tracks is effectually broken but that which is accumulated immediately contiguous to the inner and outer sides of the rails will also be effectually broken up by the cutters 15 and 16, and consequently the ice and snow so broken may be easily removed by a sweeper or other medium and the tracks maintained entirely free of such accumulations.

The shaft 6 is preferably provided at each of its ends with a sprocket-wheel 17, over which sprocket-wheels sprocket-chains 18 are designed to travel, and said chains 18 also engage sprocket-wheels 19, mounted on opposite ends of a transversely-arranged shaft 20, journaled upon the truck-frame.

As before stated, the motor 3 is adapted to actuate the drum 5 through the medium of the shaft 20 and the gearing just described, and said motor is connected to said shaft 20

through the medium of a pinion 21, carried by the driving-shaft of the motor. The pinion 21 meshes with an idler-gear 22, journaled upon a suitable support 23, carried by the truck-frame, and said idler-gear in turn meshes with a gear 24, carried by the shaft 20. Thus it will be seen that rotary movement is imparted to the shaft 20 from the motor and that said shaft transmits said rotary movement to the rotary drum 5, which is thus caused to operate and attack the accumulation of ice and snow upon the road-bed.

From the foregoing description the operation of the herein-described cutter is clearly apparent, and after the motor has been set in operation it will be seen that through the medium of the gearing 4 the machine will be propelled along the track. By means of the pinion 21 and the gears 22 and 23 motion will be imparted to the shaft 20, and as the drum 5 rotates under the influence of said shaft 20 the pins 14 and the cutters 15 and 16 attack the ice and hardened snow and effectually break up the same. The drum 5 can be readily adjusted either toward or away from the road-bed through the medium of the shafts 8, the sprocket-chain 10, and the hand-wheel 13, so that the cutters may be changed in relation to the ice and snow in accordance with the thickness of the latter.

Having thus described my invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a rotary drum carried by said frame, gearing interposed between the driving element and said drum for rotating the latter, and cutters carried by said drum and arranged thereon at points to attack the ice and snow at both sides of the track-rails.

2. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a rotary drum carried by said frame, gearing interposed between the driving element and said drum for rotating the latter, cutters carried by said drum and arranged thereon at points to attack the ice and snow at both sides of the track-rails, and means for adjusting the posi-

tion of the drum and cutters in relation to the track-bed.

3. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a rotary drum journaled upon said frame, gearing interposed between the driving element and said drum for rotating the latter, cutting elements arranged in spiral relation upon said drum and extending from end to end thereof, and cutting-disks also carried by the drum and arranged in such relation to the track-rails as to attack the ice and snow at both sides of the latter.

4. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a rotary drum journaled upon said frame, gearing interposed between the driving element and said drum for rotating the latter, cutting elements arranged in spiral relation upon said drum and extending from end to end thereof, cutting-disks also carried by the drum and arranged in such relation to the track-rails as to attack the ice and snow at both sides of the latter, and means for adjusting the position of the drum and cutters in relation to the track-bed.

5. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a drum journaled upon said frame, a series of cutting elements arranged in spiral relation upon said drum and extending from end to end thereof, cutting-disks also carried by said drum and arranged at points to attack the ice and snow at both sides of the track-rails, a shaft journaled upon the truck-frame and geared to the driving element, and gearing interposed between said shaft and said drum for rotating the latter.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Concord, in the county of Merrimack and State of New Hampshire, this 7th day of September, 1905.

W. H. PERRY.

Witnesses:

JOSIE E. MCGUIRE,
LAWRENCE PERRY.