

(No Model.)

J. SULLIVAN.
TROLLEY WHEEL.

No. 453,093.

Patented May 26, 1891.

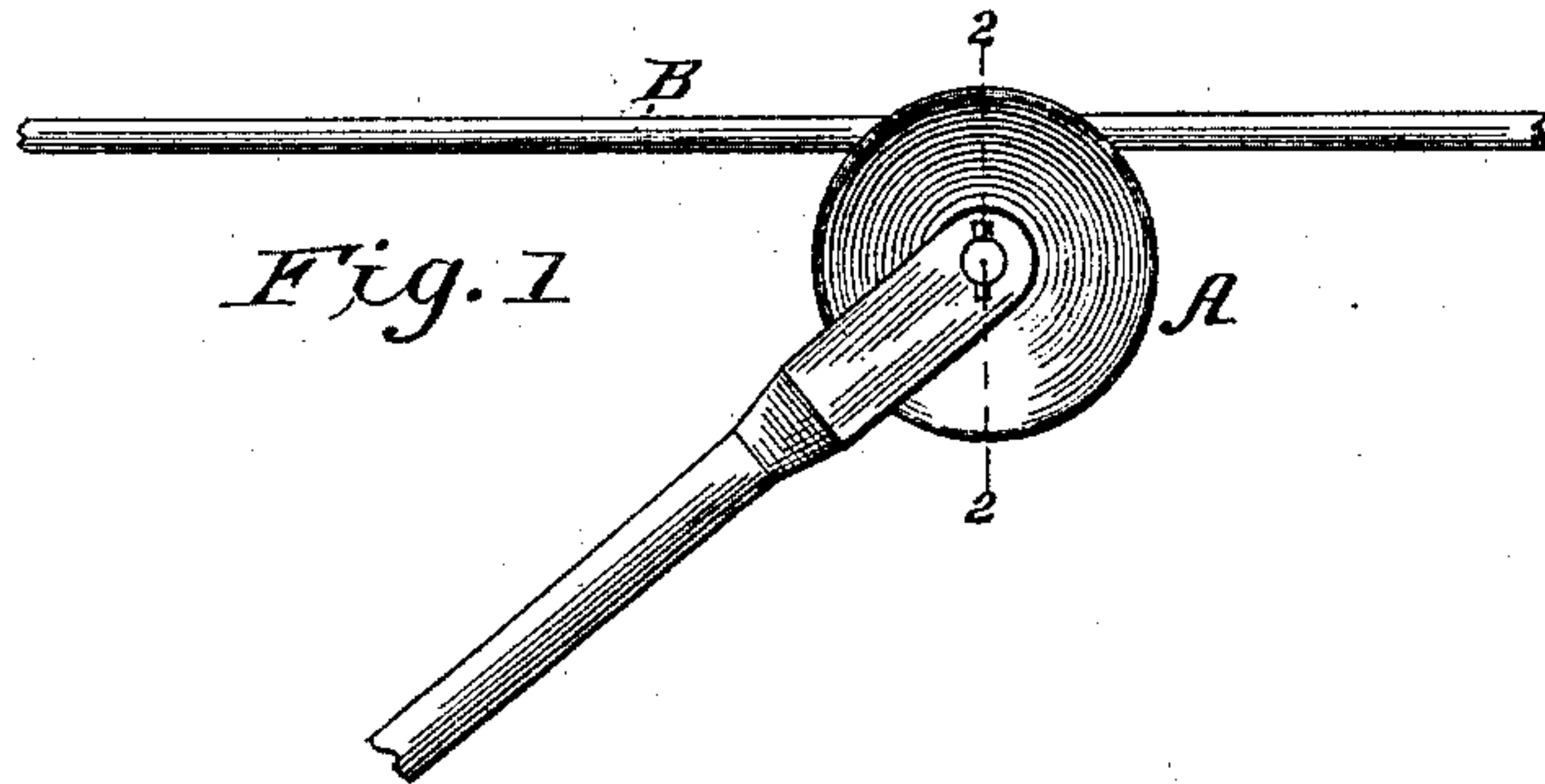


Fig. 1

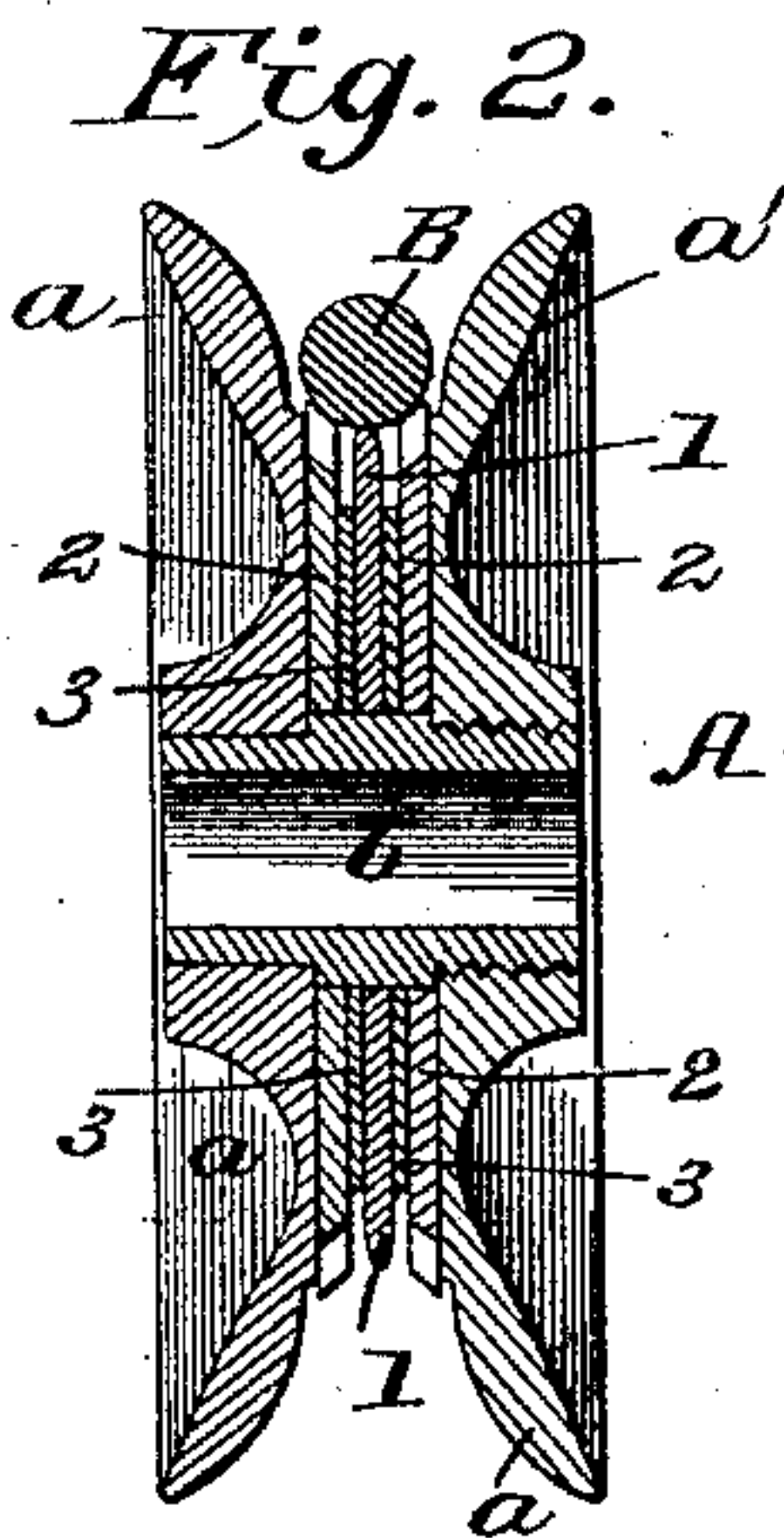


Fig. 2.

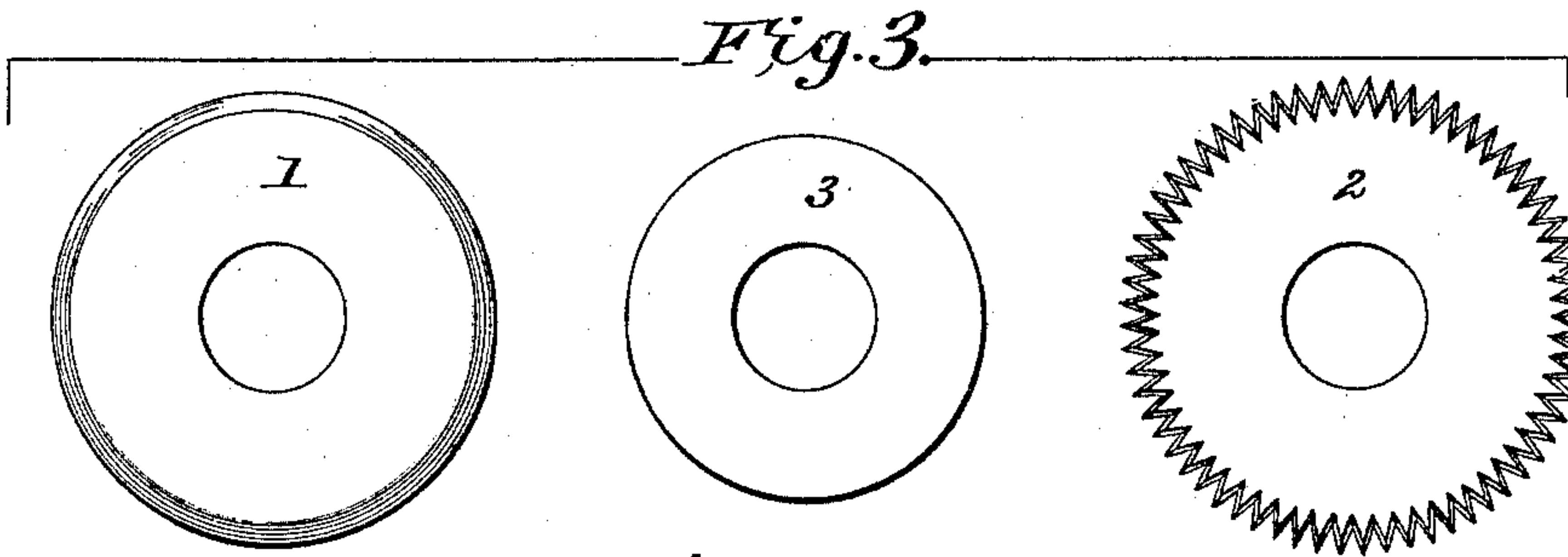
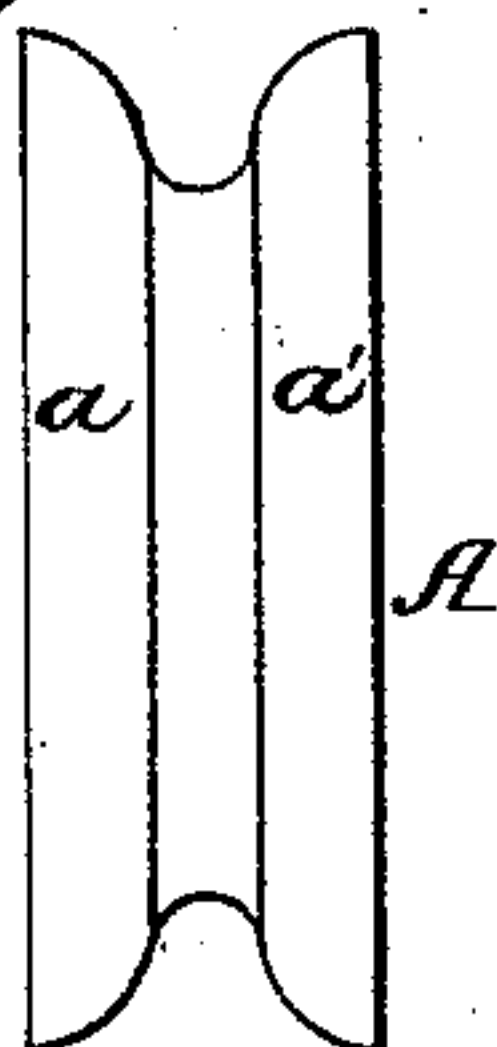


Fig. 3.

Fig. 4.



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JOHN SULLIVAN, OF WASHINGTON, DISTRICT OF COLUMBIA.

TROLLEY-WHEEL.

SPECIFICATION forming part of Letters Patent No. 453,093, dated May 26, 1891.

Application filed February 19, 1891. Serial No. 382,071. (No model.)

To all whom it may concern:

Be it known that I, JOHN SULLIVAN, of Washington, in the District of Columbia, have invented a new and useful Improvement in
5 Trolley-Wheels, of which the following is a specification.

In operating electric railways which employ the "overhead system" of conductors it is often difficult and sometimes impossible, when
10 the conducting-wire is coated with ice or very damp snow that has become compacted and frozen, to secure a good contact between such wire and the trolley-wheel through which the current is transmitted to the motor beneath
15 the car.

It is the object of my invention to provide a trolley-wheel so constructed that it will break up and dislodge such coat or covering of ice or snow and make a perfect mechanical
20 and electrical contact, thus enabling the motor to propel a car at the usual uniform speed.

In carrying out my invention I provide the trolley-wheel with toothed or corrugated portions adjacent to a central and intervening
25 circular portion that runs in contact with the overhead-wire conductor.

Details will be now described, with reference to accompanying drawings, in which—

Figure 1 is a side view showing my trolley-wheel applied to a conductor as usual in
30 practice. Fig. 2 is a cross-section, enlarged, on line 2 2 of Fig. 1. Fig. 3 is a plan or face view of certain portions of the trolley-wheel. Fig. 4 is an edge view of a trolley-wheel having a central or bearing portion adapted for
35 use when the conductor is free of ice or snow.

The trolley-wheel A is made in parts, but has the usual outturned flanges *a a'*, separated by a peripheral groove, whose bottom
40 constitutes the bearing that runs in contact with an overhead conductor B. In this case such bearing is a disk 1, having a thin beveled edge. On each side of it (1) and adjacent to a flanged portion *a a'* is arranged a
45 disk 2, having its periphery provided with teeth, which project slightly beyond the edge of the contact-disk 1, and are beveled inward to adapt them to work close to the conductor B, as shown in Fig. 2. Each of these toothed
50 disks 2 is separated from the central or contact disk 1 by means of a washer or thin flat plate 3, which is of considerably less diameter

than the toothed disks 2, for a purpose hereinafter stated. Said washers may also be varied in thickness if it be desired to place the
55 toothed disks 2 nearer or farther from each other.

The several parts 1, 2 2, and 3 3 are mounted on the sleeve or tube *b*, constituting the hub of the wheel A. One of the flanged portions
60 *a* is keyed fast on such hub *b* and the other *a'* screws on its free end, thus clamping the several disks firmly together, yet permitting them to be readily removed when worn and others substituted.

In practical operation the trolley-wheel A is pressed against and runs along the conductor B in the usual way, so that the toothed portions 2 2 work in contact with and break
65 up and dislodge the adhering coat of ice or compacted snow, thus enabling the central disk 1 to work constantly in perfect contact with the conductor B and insuring steady transmission of the propelling-current to the car-motor. A portion of the ice or snow thus
70 broken up passes into the peripheral spaces or grooves, Fig. 2, formed between the teeth of disks 2 2 and the disk 1, so that the contact of the latter is rendered more easy and certain.

I propose in some cases to provide the central disk 1 with a toothed edge instead of a
80 continuous one.

The contact-disk 1 and toothed disks 2 2 may be made of any suitable metal; but I generally employ brass for this purpose.

In Fig. 4 a solid central bearing-block is shown substituted for the disks 1 2 and plates 3 for use in ordinary weather when no coat of ice or compacted snow adheres to the conductor B. The substitution may be quickly
90 effected by screwing off the flanged piece *a'*.

What I claim is—

1. A trolley-wheel for an overhead electrical conductor, having toothed portions in the bottom of its peripheral groove, as and for the
95 purpose specified.

2. A grooved trolley-wheel for an overhead conductor, having a central contact portion and circular-toothed portions laterally adjacent thereto, as and for the purpose specified.

3. The improved grooved trolley-wheel for use with an overhead conductor, the same having a thin-edged central circular portion which runs in contact with said conductor

and circular-toothed portions arranged laterally adjacent to such contact portion, substantially as shown and described.

4. An improved grooved trolley-wheel for use with an overhead conductor, the same having a central circular contact portion and the two laterally-adjacent circular-toothed portions separated from such contact portion by a narrow space, as and for the purpose specified.

5. In a grooved trolley-wheel for use with an overhead conductor, the combination, with the thin-edged central circular bearing or contact portion, of laterally-adjacent portions

having teeth whose edges are beveled or inclined inward toward each other, substantially as shown and described.

6. The improved trolley-wheel composed of the several separable parts specified—namely, the two outer flanged portions *a a*, the contiguous peripherally-toothed disks, the washers or spacing-disks, and the central or contact disk, secured together substantially as shown and described.

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Witnesses:

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