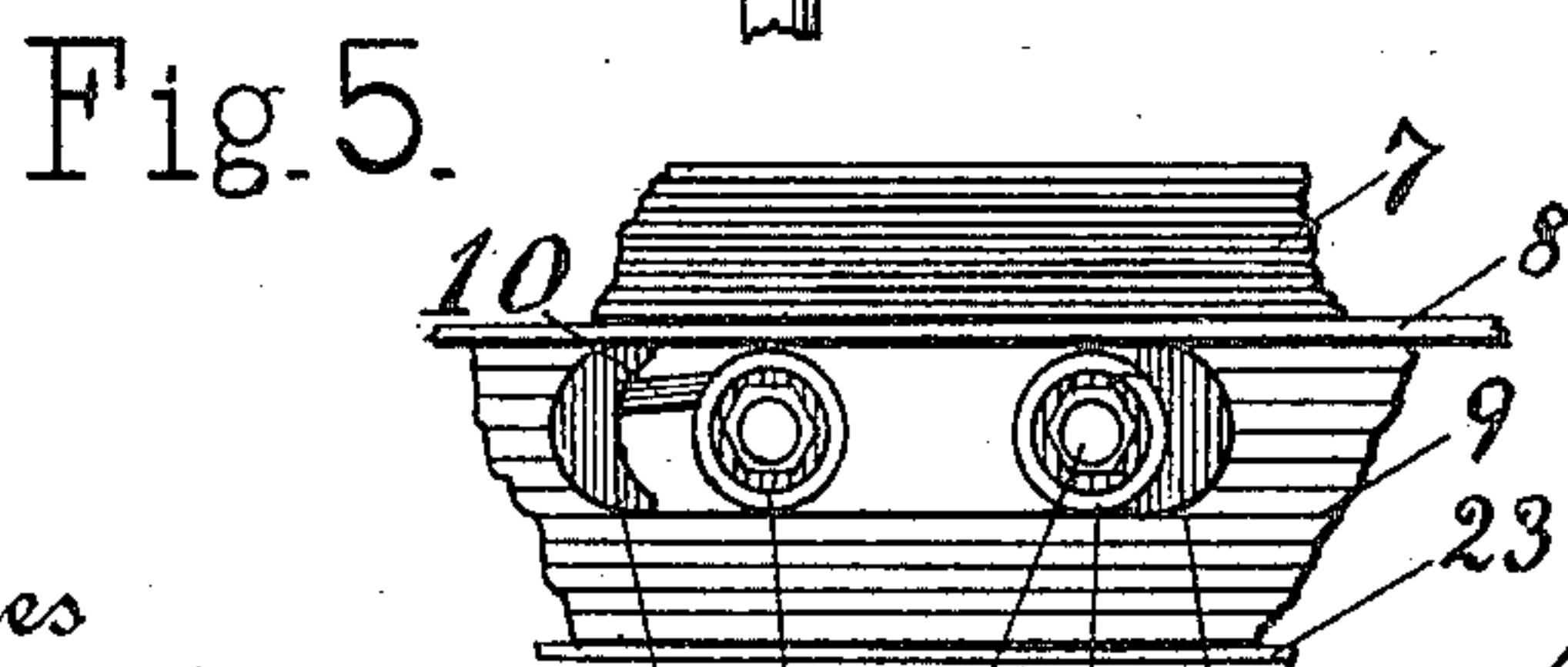
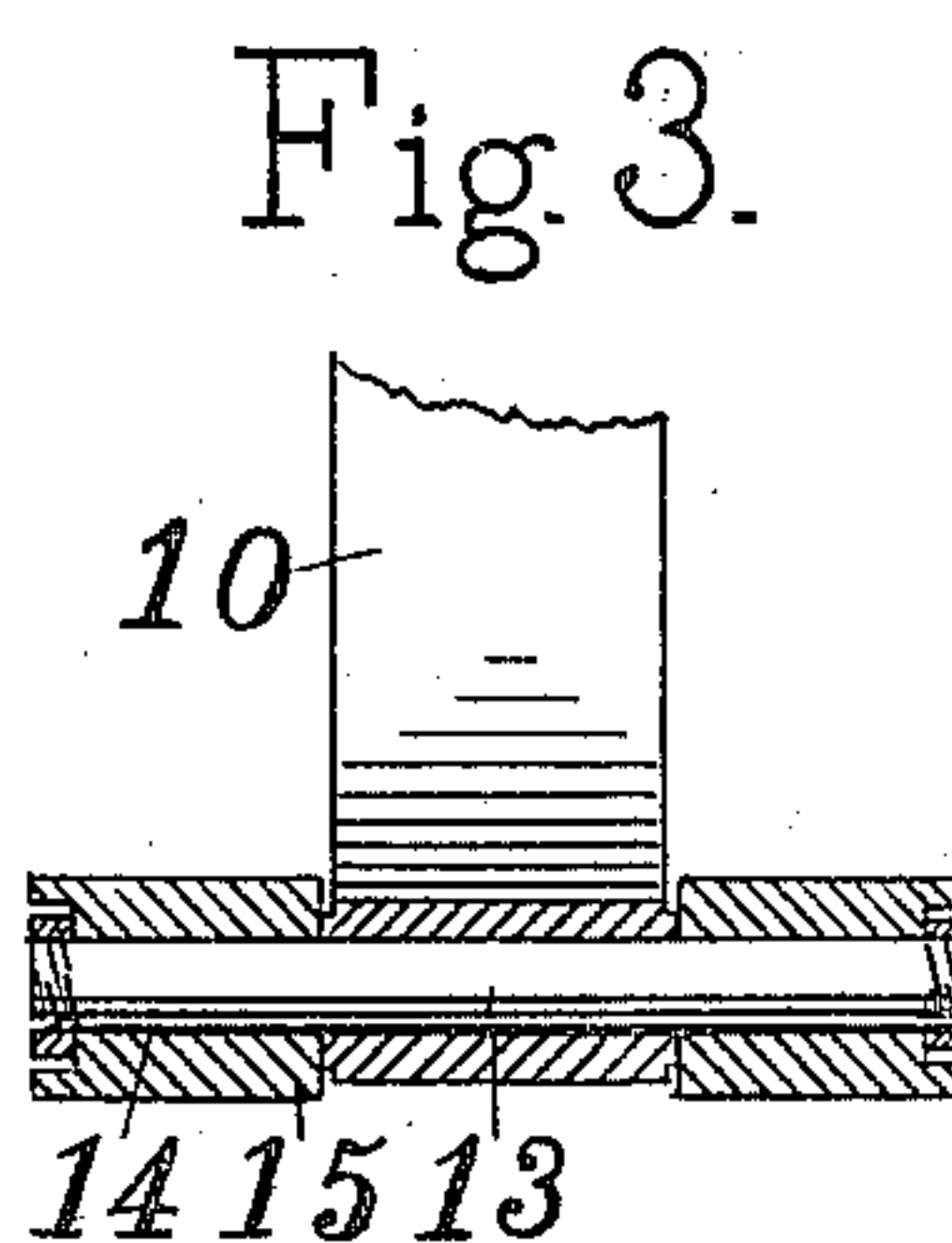
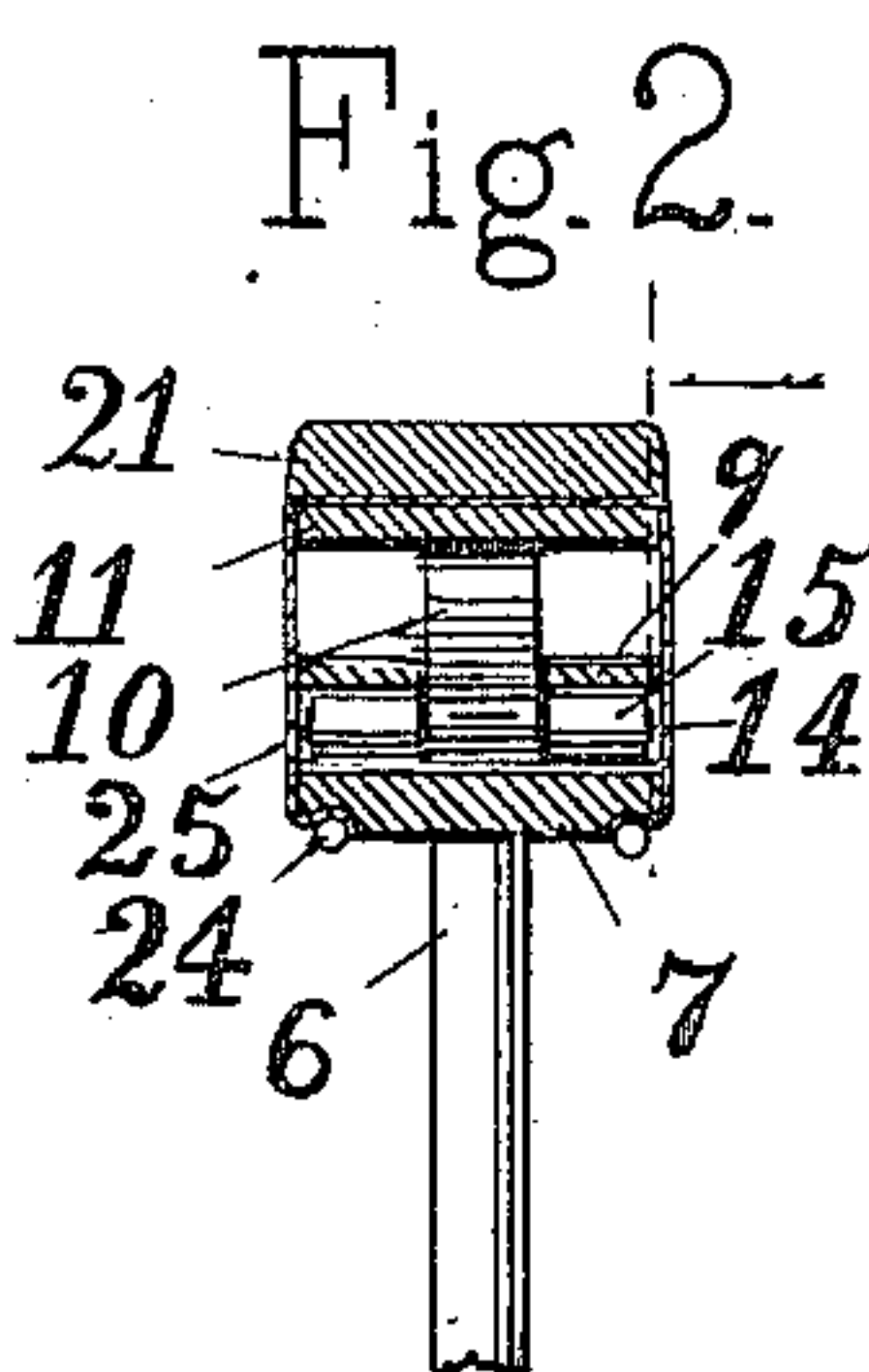
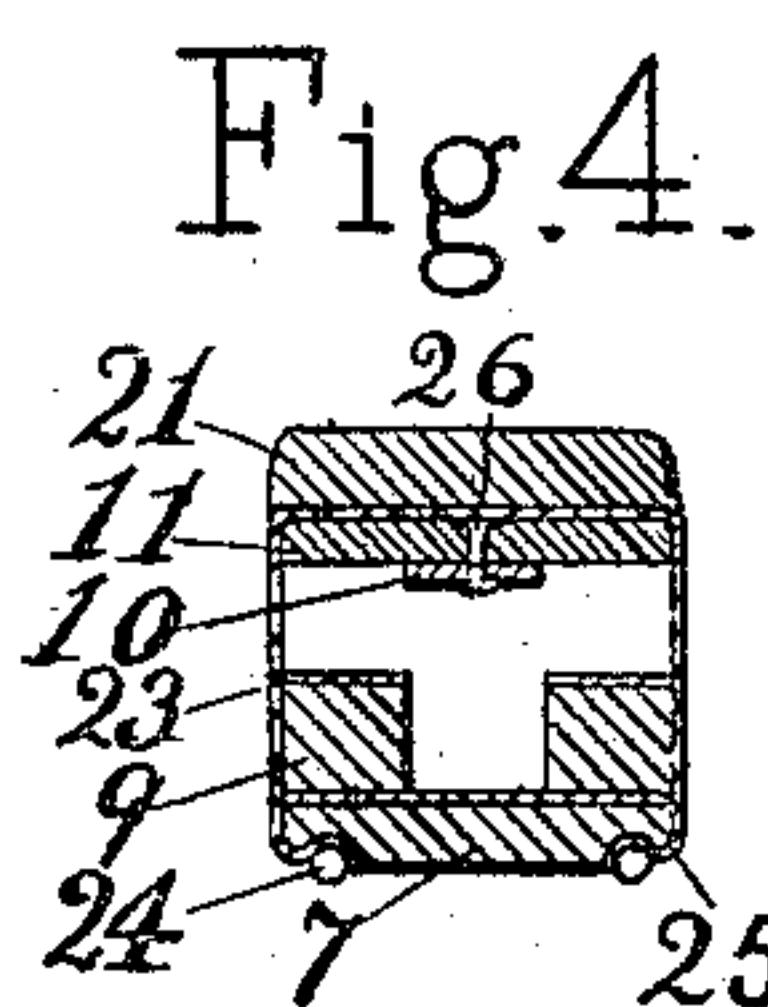
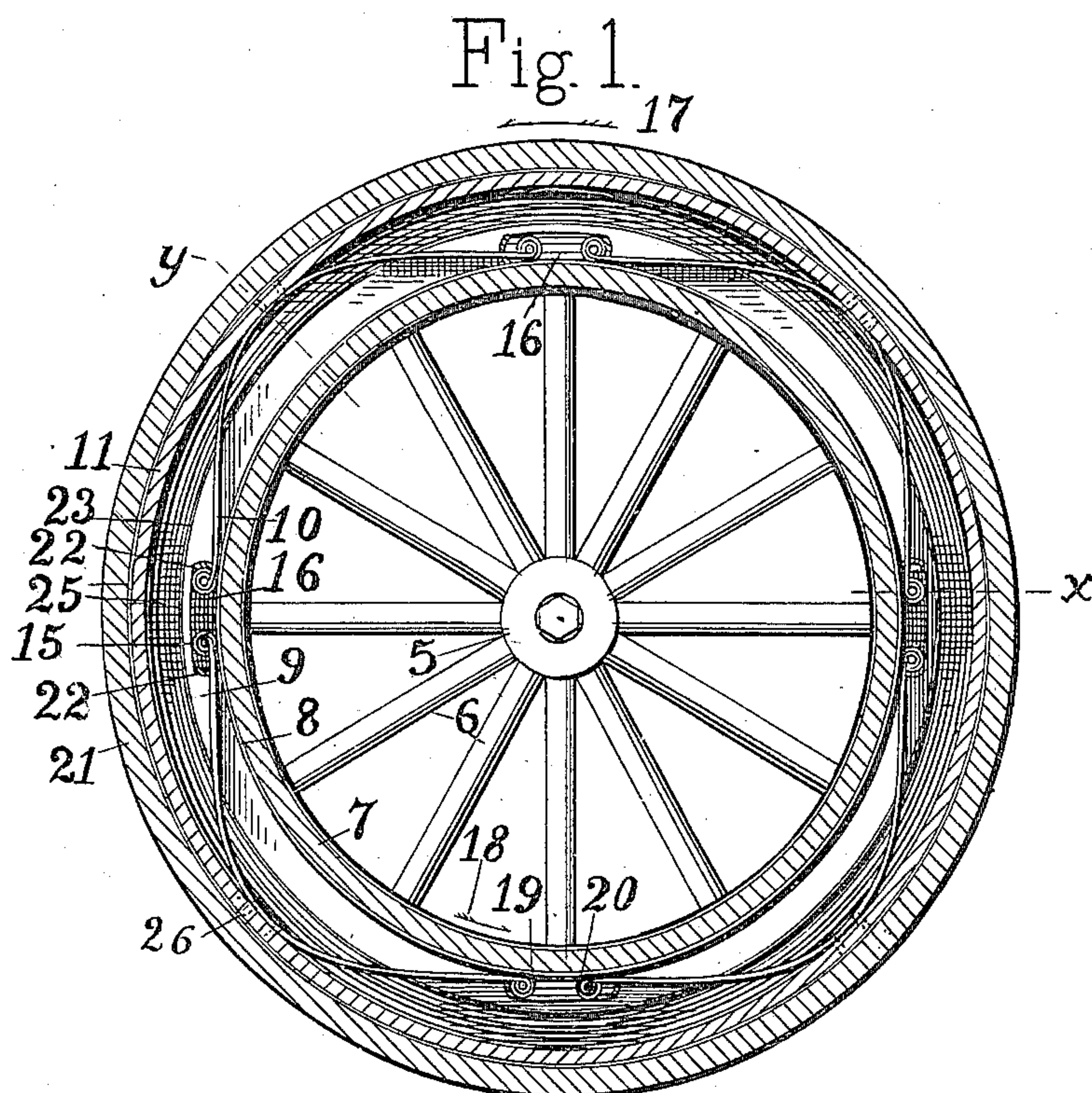


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WHEEL.
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964,215.

Patented July 12, 1910.



Witnesses

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WHEEL.

964,215.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MASON J. CLARK, a citizen of the United States, residing at Newark Valley, in the county of Tioga and State of New York, have invented certain new and useful Improvements in Wheels, of which the following is a specification.

This invention relates to vehicle wheels of the class designed to have elastic tread without using pneumatic tires. Its object is to adapt mechanical springs at the circumference of the wheel to take up the jolt and jar in service, and to properly communicate the driving power from the hub to the tread of the wheel in such wheels as are used by motive power vehicles.

To this end my invention consists in the construction and combination of parts forming a wheel hereinafter more fully described and particularly set forth in the claim, reference being had to the accompanying drawings in which—

Figure 1 represents in side elevation, partly in vertical section, a wheel according to my invention. Fig. 2 shows a transverse section at line x of Fig. 1. Fig. 3 shows in longitudinal section the anti-friction rollers at the end of a spring. Fig. 4 shows a transverse section at the line y , midway the spring. Fig. 5 is a side view of a portion of the inner rim and one of the two groove rims at a slot.

Numeral 5 represents a hub of the wheel, 6 the spokes, 7 the inner rim and 8 a thin metallic band. Upon this band I fix two rims 9, at a distance apart to form a groove in which springs 10, may freely play yet be prevented by the rims from sidewise movement. These springs are of the semi-elliptic style and may comprise one or more leaves each. A stiff rim 11, is secured in any usual manner such as by bolts 26 to the midway portion of each spring. In each end of the spring is fixed an axle 13, having laterally projecting arms 14, upon which are mounted rollers 15, to roll on the band 8, in slots 16, in the rims 9. These slots are open just enough to give free circumferential play to the rollers, but are limited in length so that the side rims 9, pull upon and rotate the rim 11. Rubber cushions 22, are inserted to prevent a thumping noise of the rollers when an obstacle is suddenly struck by the wheels. Let us suppose the wheel to be

moving to the left, as indicated by the arrow 17. The rims 9, rotating in the direction of the arrows 17, and 18, will engage the rollers 19, thereby pulling upon the springs and the rim 11, and forcing the latter to rotate and to roll upon the ground. This advance of rims 9, leaves the rollers 20, at the other end of the springs, away from the ends of the slots, thus giving the rollers free room to play to accommodate the extensile motion of the springs on rough roads. If the hub rolls the other way the rims 9 at the other end of each slot act with similar results to turn the wheel backward.

While the groove between the rims 9, is wide enough to permit free resilient motion of the springs, yet these rims are so close to the sides of the springs as to prevent them from being forced laterally by the strain of passing quickly around corners. Bands 23, are firmly set on the rims 9, to strengthen them both radially and laterally. When it is desirable, a cushion-like tread may be secured by usual means, such as a rubber tire 21. To keep gravelstones, etc. from clogging the movement of the springs or of the rollers, the sides of the wheel rim are covered in by a shield 25, of flexible sheet material held on by hoops 24. If the inner rim were of stiff metal it might serve in the place of a wooden rim 7, and its band 8. The inner rim and the two side rims should be of stiff material.

So far as the characteristics of this invention are concerned, it does not matter what takes the place of hub and spokes. If these wheels are used on a vehicle that is pulled along by external force the pulling action will be at the other end of the springs, but less forcible.

Though in action one end of the whole group of springs is always engaged for pulling, yet pressure on any spring causes the engaged end to move a little out of engagement and the other end to move freely.

Having thus fully described my invention, what I believe to be new and desire to secure by Letters Patent is set forth in the following claim:

In wheels, an inner rim; two side rims mounted over the inner rim, forming a groove between them, and having horizontal slots in them; semi-elliptic springs mounted in the said groove and having at each end

a pair of rollers fitted to play in the said slots; a cushion located in each end of each slot, the length of the slots being proportioned to engage the rollers at one end in
5 going forward and at the other end in going backward; and a stiff outer rim secured upon the springs at their midway portions.

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

MASON J. CLARK.

Witnesses:

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