

J. E. RIELLY.

SPRING WHEEL.

APPLICATION FILED SEPT. 21, 1907.

923,707.

Patented June 1, 1909.

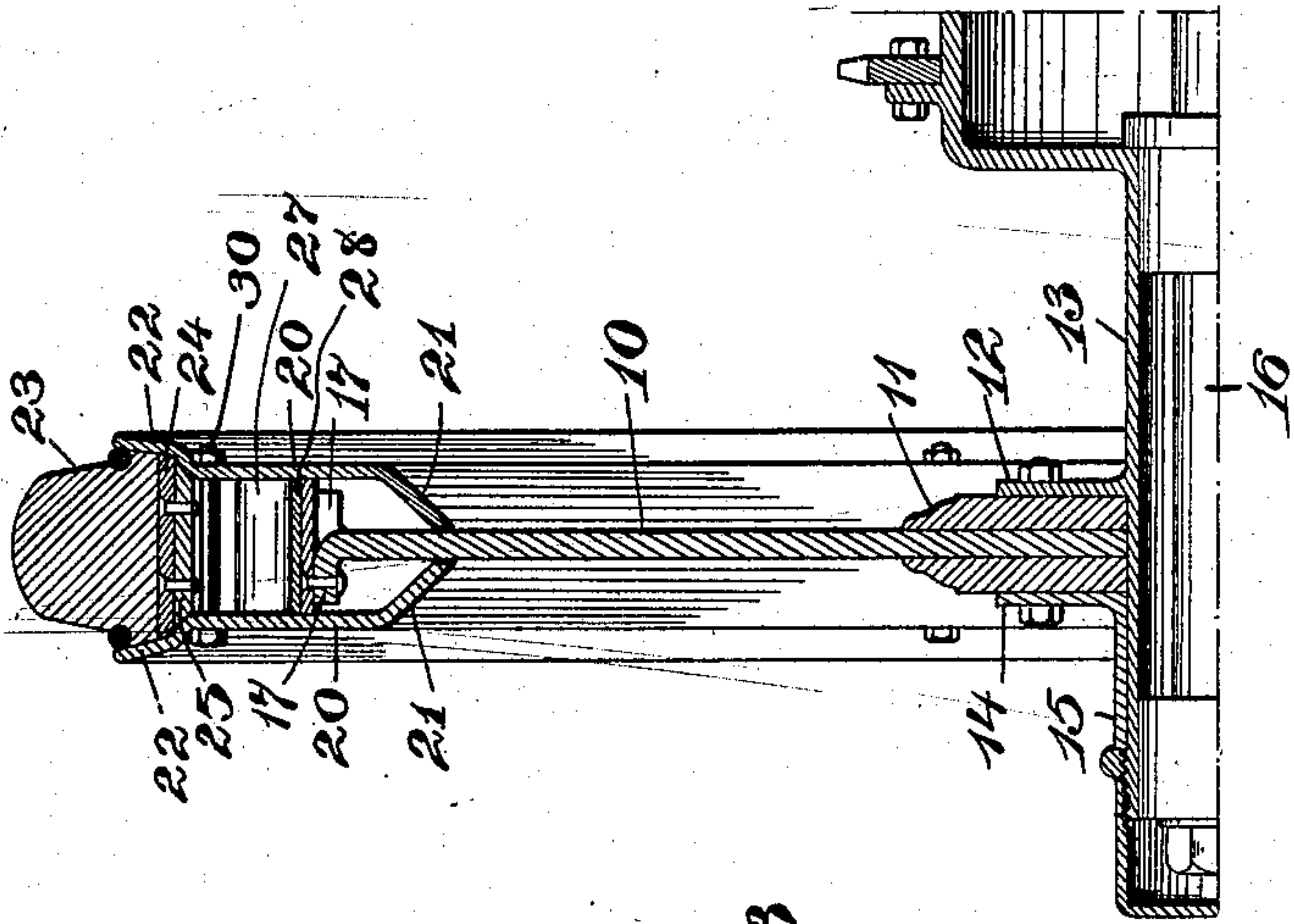


Fig. 2

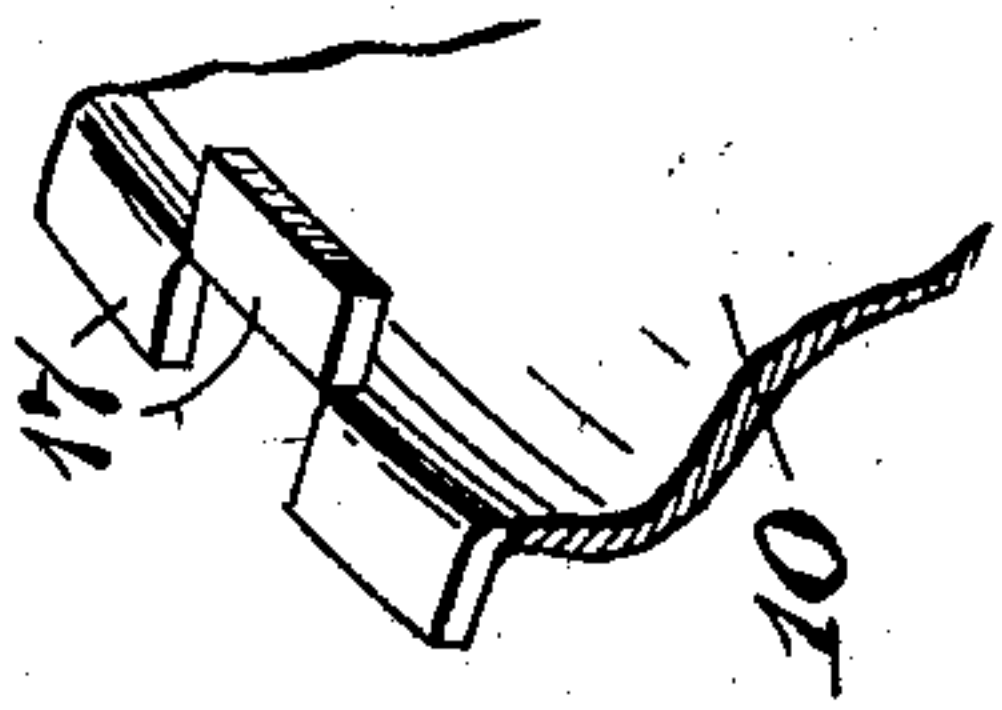


Fig. 3

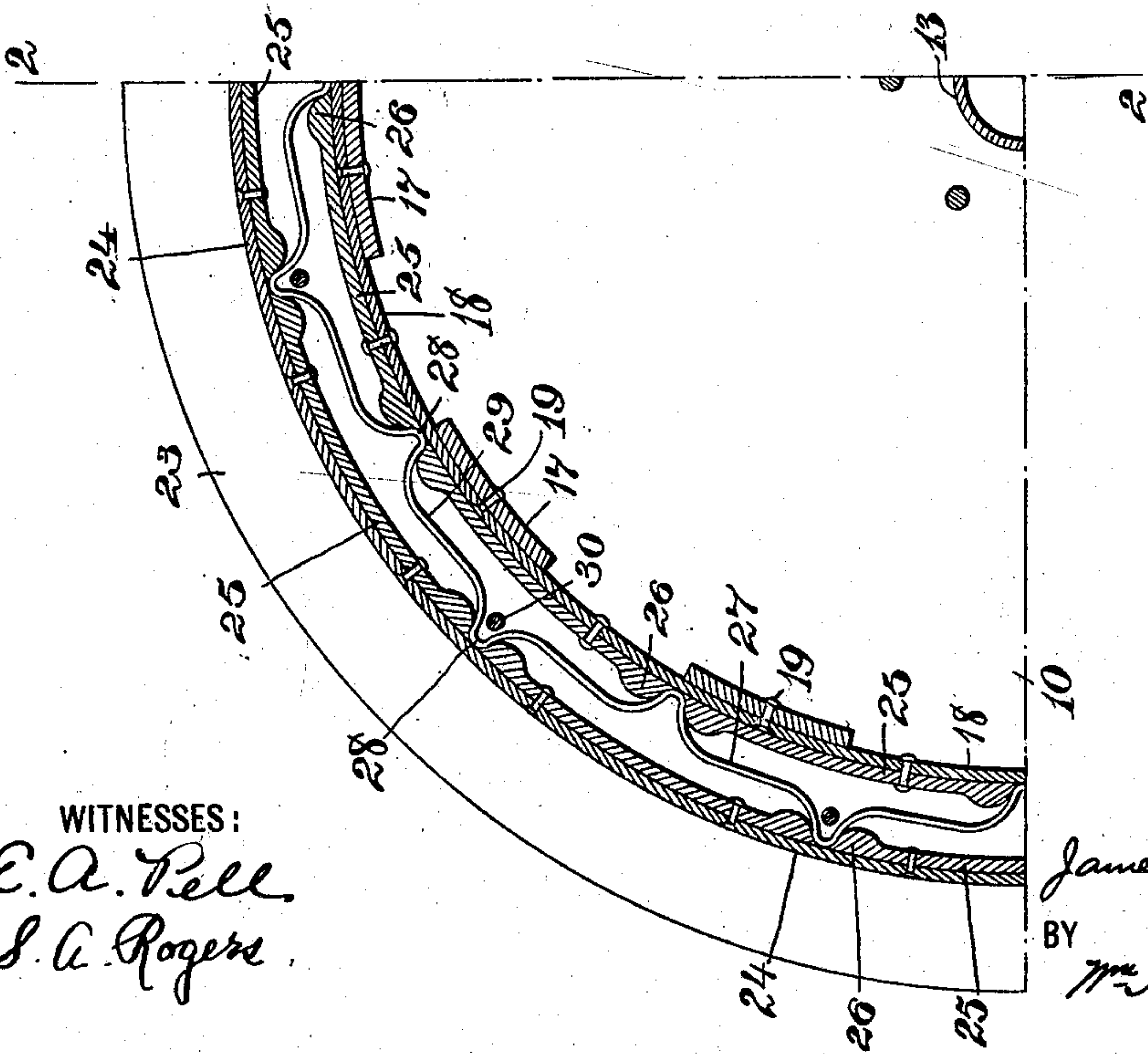


Fig. 1

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# UNITED STATES PATENT OFFICE.

JAMES E. RIELLY, OF NEWARK, NEW JERSEY.

## SPRING-WHEEL.

No. 923,707.

Specification of Letters Patent.

Patented June 1, 1909.

Application filed September 21, 1907. Serial No. 393,879.

*To all whom it may concern:*

Be it known that I, JAMES E. RIELLY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Spring-Wheels; 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to a wheel that has a body portion having a felly thereon, a rim surrounding the felly at a distance therefrom, the space between the felly and the rim being occupied by a spring adapted to be compressed radially, so that the vehicle to which the wheel is attached rides easily, the spring being also in engagement with the felly and the rim, to transmit torsional strain from one to the other.

A new feature of the device is the shape of the spring, which is made of a band of sheet metal and with raised portions to fit indentations in the felly and rim, straight portions of the spring being adapted to bear the torsional strain and also to take up the spring action of the wheel.

A further novel construction embodied in the wheel is a body portion formed of a disk with an annular ring secured thereto to form the felly, and a rim to envelop the felly and extend to, and bear on, the disk, but having a sliding relation therewith.

The invention is illustrated in the accompanying drawings, in which:

Figure 1 is a view of a quarter of a wheel with the felly and rim in section. Fig. 2 is a section on line 2—2 in Fig. 1. Fig. 3 is a perspective view of the outer edge of the disk of the wheel.

The wheel comprises a disk 10 which is secured between blocks 11, and these in turn are between a flange 12 of the hub 13 and the flange 14 of the sleeve 15. The hub 13 revolves on the axle 16 through the medium of any of the well known bearings, preferably roller bearings. The disk 10 is radially slit at intervals on its periphery to form tongues 17, which are bent down alternately on opposite sides as in Fig. 3, to form a circular support for the felly-band 18 which is secured to the tongues 17 by rivets 19. Bearing on the

disk 10, on both sides thereof, are the side plates 20, see Fig. 2, having the inclined portions 21, the plates passing in substantially parallel relation and having diverging outer edges 22, to hold a tire portion 23. The annular rim band 24 lies between the side plates 20 and supports the tire. The felly and rim with the side plates 20 will thus be seen to form a chamber for the spring of the wheel. Bolts 30 pass through the plates 20 to secure them together, the bolts being preferably disposed to pass on the inside of projecting portions of the spring, as will be seen hereafter.

On the inner face of the rim band 24 and the outer face of the felly-band 18 are placed blocks 25, which are preferably made of hard wood, for economy's sake and also on account of the light weight. These blocks 25 have an enlargement 26 on each end of each block, and there is a slight space left between the abutting enlarged ends. A spring 27 is placed between the felly and rim, and is provided alternately on its opposite sides with rounded projections 28 to fit in the spaces between the enlargements 26 of the blocks 25. Between the projections 28, the spring 27 has approximately straight portions 29 that are substantially concentric with the periphery of the wheel. When compression between the felly and the rim takes place the projections 28 are spread slightly, and the major portion of the strain comes on these projections, the parts 29 taking up the balance.

When a torsional strain is put upon the spring to transmit power from the felly to the rim or vice versa, as in starting or braking, the projections 28 are forced in between the enlargements 26 to bind tighter and the portions 29 of the spring 27 receive a longitudinal strain, and the more strain the tighter the projections 28 are wedged in their respective openings.

The whole wheel is preferably made of metal except the block 25 and the tire, and the stability and compactness of the wheel are apparent.

Having thus described my invention what I claim is:—

1. A spring wheel having a felly and a rim with a space between them, the opposed faces of the felly and the rim having spaces for the reception of parts of a spring, and a spring made of a continuous strip of metal, the strip having its major portion substantially central of the space and approximately



concentric with the periphery of the wheel, the spring having projections at intervals to enter the spaces.

2. A spring wheel comprising a hub, a disk  
5 secured thereto, a felly band secured to the periphery of the disk, side plates to inclose the felly and a portion of the disk, a rim band between the side plates and surrounding the felly band at a distance therefrom, blocks  
10 placed on the opposite faces of the bands and disposed to have openings between the adjacent blocks, and a spring concentric to the bands and being bent to form projections to fit in the openings between the blocks.

15 3. A spring wheel comprising a hub, a disk secured thereto, the disk being slitted and

then bent over to form tongues on both sides thereof, a felly band secured to the tongues, a pair of side plates to inclose the felly and a portion of the disk, a rim band between the  
20 side plates, bolts passing through the side plates, and a spring between the felly band and the rim band, contacting with the bands and held against torsional movement.

In testimony, that I claim the foregoing, I  
25 have hereunto set my hand this 30th day of August, 1907.

JAMES E. RIELLY

Witnesses:

AZRO L. BLAKE,  
WINONA BLAKE.