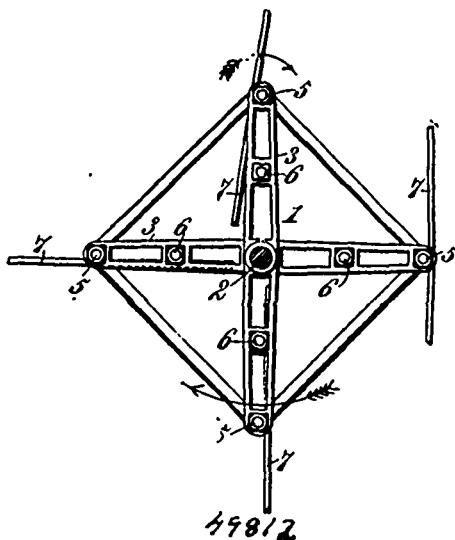


purpose herein described. 9th. In a sled or sleigh a combination of cross-bars J^1 and J^2 , one or both being composed of two transverse parallel sides of steel or other metal, or a combination of wood and metal and removed from each other by a space sufficient to receive the swinging arms O O which are placed therein all arranged as and for the purpose hereinbefore described.

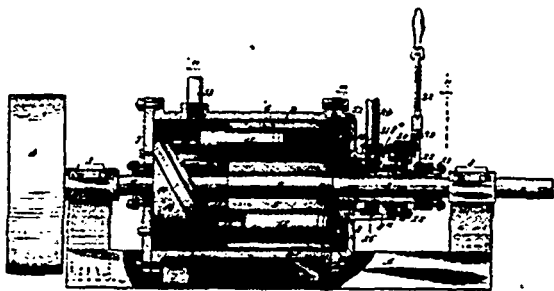
No. 49,812. Current-Wheel. (Roue à courant.)



William Park, Fredonia, New York, U.S.A., 29th August, 1895; 6 years.

Claim.—1st. A current-wheel consisting of a skeleton frame, and flat wings pivotally mounted upon radial members of said frame, substantially as described. 2nd. A current-wheel consisting of a skeleton frame composed of radial members rigidly mounted on a central shaft, and flat wings pivotally mounted on said radial members, the point of pivotal attachment being upon one side of the central line of each wing, substantially as described. 3rd. A current-wheel consisting of a shaft, radial portions composed of parallel bars connected at their ends and at points between their ends, braces arranged in parallelism with the shaft and connecting said radial portions, and flat wings mounted pivotally on the other braces, the point of attachment being upon one side of the centre of each wing, substantially as described.

No. 49,813. Steam Engine. (Machine à vapeur.)



Richard Garstang, Alton, Illinois, U.S.A., 29th August, 1895; 6 years.

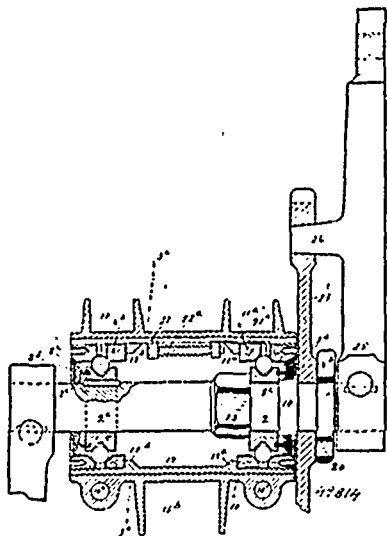
Claim.—In an engine, the combination of a shaft, a cylinder mounted on the shaft and provided with a plurality of pistons, an inclined, grooved, stationary block, an anti-friction ring, and one or more series of rolls placed between the block and the ring, substantially as and for the purpose set forth.

No. 49,814. Bicycle Bearing. (Coussinet de bicyclette.)

Horace E. Dodge and John F. Dodge, both of Detroit, Michigan, U.S.A., 29th August, 1895; 6 years.

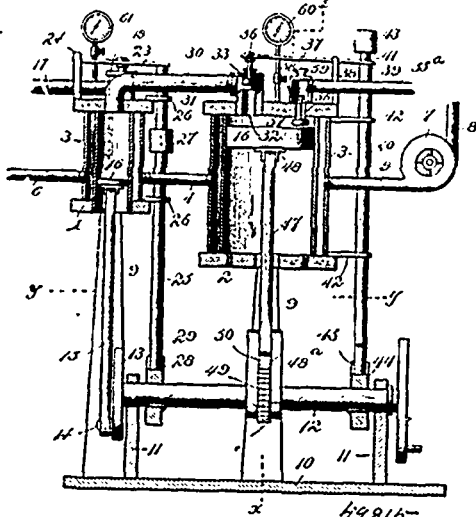
Claim.—1st. In a bearing for wheel hubs, the combination of a shell provided with a bearing groove at each end, an axle provided with a bearing groove at each end, an axle provided with counter bearings, one of which is rigid and the other of which is adjustable along the axle, substantially as specified. 2nd. In an axle bearing for wheels, an outer split case provided with means whereby it may

be attached to the vehicle frame, and with means whereby it may be contracted on an inner shell, an inner split shell, ball bearing



cones adapted to be inserted in the inner shell, and an axle provided with cone bearings, substantially as described. 3rd. In an axle bearing for wheels, an outer split shell, provided with means whereby it may be contracted, an inner split shell threaded at its ends, threaded cone bearings adapted to engage with the inner shell and knurled on their inner faces, a spring pressed holder adapted to engage the knurled faces, substantially as described. 4th. In an axle bearing for wheels, a combination with a case and outer or hollow cone bearings, an inner or right cone bearing, a soft gasket and means for holding the same spaced from the cone, whereby an oil duct is formed around the axle between the gasket and the bearings, substantially as described. 5th. In an axle bearing, in combination with a case and hollow cone bearings disposed at the ends of said case, an axle and cone bearing thereon, one of said cone bearings being free to move longitudinally along the axle, whereby the cones are self adjusting to bring the cones and hollow cones into opposing engagement with interposing balls, substantially as specified. 6th. In combination with ball bearing axle and shell, provided with opposing annular cavities, the walls being adapted to interlock, and a gasket adapted to be pressed by the walls of one cavity against the bottom of the other, substantially as described. 7th. In combination with a crank axle and crank arm, a detachable sprocket secured to the crank arm, substantially as described. 8th. In combination with the crank shaft, the holding nut 24, and the crank arm 25, provided with a projection 26, adapted to engage the sprocket-wheel and drive the same, substantially as described.

No. 49,815. Steam Engine. (Machine à vapeur.)



William R. Dow, Alameda, California, U.S.A., 29th August, 1895; 6 years.

Claim. 1st. In a steam engine, the combination of separate upright live and exhaust steam cylinders having lower open ends