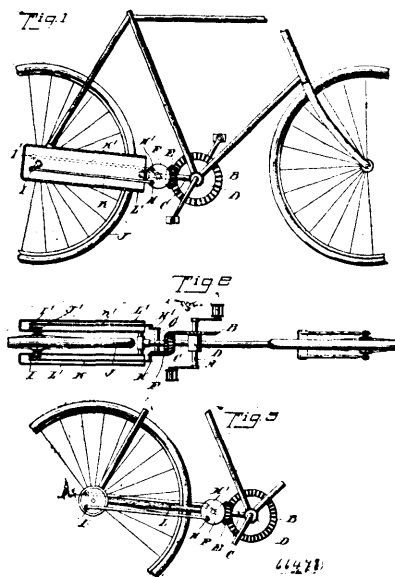


wardly extending flanges, the plates of each pair being hinged together, said pairs of plates being set side by side between the inner and outer tires with their hinges extending along the line of the centre of the tread, said plates being provided with depressions on their outer surfaces, and the outer tire, inner tire, and plates being moulded together, substantially as described.

No. 66,478. Chainless Bicycle. (*Bicycle sans chaînes.*)

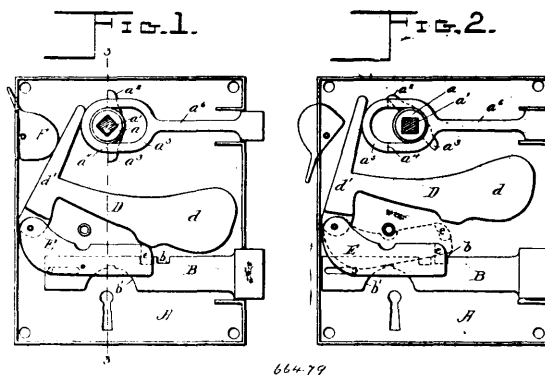


Axel Harland Thomas Hansen, Buenos Ayres, Argentine Republic
5th March, 1900; 6 years. (Filed 22nd July, 1899.)

Claim.—1st. The combination in a bicycle or the like, of a drive shaft or pedal shaft carrying a driving wheel on one side of the machine's longitudinal centre, a pinion located on the other side of said centre and operatively connected with the rear wheel or driven wheel, and a transmission wheel engaging said driving wheel and pinion and mounted to rotate about an axis extending longitudinally of the machine in the central plane thereof. 2nd. The combination in a bicycle or the like, of a drive shaft or pedal shaft carrying a driving wheel on one side of the machine's longitudinal centre, a pinion located on the other side of said centre and operatively connected with the rear wheel or driven wheel, and a transmission wheel engaging the rear face of said driving wheel and the front face of the pinion, said transmission wheel being mounted to rotate about an axis extending longitudinally of the machine in the central plane thereof. 3rd. The combination in a bicycle or the like, of a drive shaft or pedal shaft carrying a bevel driving wheel on one side of the machine's longitudinal centre, a bevel pinion located on the other side of said centre and operatively connected with the rear wheel or driven wheel, and a double bevel transmission wheel mounted between said driving wheel and pinion to rotate about an axis extending longitudinally of the machine in the central plane thereof, the front bevel teeth of said transmission wheel meshing with the driving wheel and the rear bevel teeth of the transmission wheel meshing with the pinion. 4th. The combination in a bicycle or the like, of a drive shaft or pedal shaft carrying a driving wheel on one side of the machine's longitudinal centre a pinion located on the other side of said centre, a transverse shaft on which said pinion is mounted, the shaft carrying crank members on each side of the machine, crank members on the rear wheel or driven wheel, rods connecting the crank members on each side of the machine, and a transmission wheel engaging said driving wheel and pinion mounted to rotate about an axis extending longitudinally of the machine in the central plane thereof. 5th. The combination in a bicycle or the like, of a drive shaft or pedal shaft carrying a driving wheel on one side of the machine's longitudinal centre, a pinion located on the other side of said centre, a transverse shaft on which said pinion is mounted, the shaft carrying on opposite sides of the machine crank members set at an angle of 90° to each other, similarly set crank members on the rear wheel or driven wheel, rods connecting the crank members on each side of the machine, and a transmission wheel engaging said driving wheel and pinion and mounted to rotate about an axis extending longitudinally of the machine in the central plane thereof. 6th. The combination in a bicycle or the like, a rear wheel or driven wheel having crank members, a transverse shaft likewise carrying crank members, rods connecting the crank members on the same side of the machine, means for driving said transverse shaft, and tubular bars enclosing said connecting rods, the bars forming a part of the bicycle frame. 7th. The combination in a bicycle or the like, of a drive shaft or pedal shaft carrying a

driving wheel on one side of the machine's longitudinal centre, a rear stay extending as a single bar rearward from the crank hanger, in the longitudinal central plane of the machine, a transmission wheel mounted to rotate on said single central rear stay, and engaging said driving wheel, and a pinion operatively connected with the rear wheel or driven wheel and engaging the transmission wheel. 8th. The combination in a bicycle or the like, of a drive shaft or pedal shaft carrying a driving wheel on one side of the machine's longitudinal centre, a pinion located on the other side of said centre, a transverse shaft on which said pinion is mounted, said shaft carrying crank members on each side of the machine, crank members on the rear wheel or driven wheel, rods connecting the crank members on each side of the machine, tubular bars forming a part of the bicycle frame and enclosing said connecting rods, and a transmission wheel engaging said driving wheel and mounted to rotate about an axis extending longitudinally of the machine in the central plane thereof.

No. 66,179. Lock. (*Serrure.*)



Cephas Ezra Martin, Newbury, and William John Magrath, Belleville, both in Ontario, Canada, 5th March, 1900; 6 years.
(Filed 19th August, 1899.)

Claim.—1st. A springless lock, comprising a casing, a latch and a lock bar slidably mounted therein, a stop bar pivoted in said casing and adapted to engage said lock bar and hold the same in its locked or unlocked position, a weighted lever pivoted in said casing and engaging said latch and adapted to normally bear upon the said stop bar to hold the same in its operative position, substantially as described. 2nd. A springless lock, comprising a casing, a latch and a lock bar slidably mounted therein, a stop bar pivoted in said casing and adapted to engage said lock bar and hold the same in its locked or unlocked position, a lever pivoted in said casing having a weighted arm adapted to normally bear upon said lock bar and hold the same in its operative position, a lug carried by said lever and held in constant engagement with said latch by said weighted arm, substantially as described. 3rd. A springless lock, comprising a casing, a latch and a lock bar slidably mounted therein, a stop bar pivoted in said casing and adapted to engage said lock bar and hold the same in its locked or unlocked position, a weighted lever pivoted in said casing and held in engagement with said latch and adapted to normally bear upon the said stop bar to hold the same in its operative position, and a cam plate pivoted in said casing and adapted to be thrown into engagement with said lever, whereby both the latch and lock bar are held in their locked position, substantially as described.

No. 66,180. Machine for Making and Stringing Tags.
(*Machine pour faire et attacher les étiquettes.*)

Joseph T. Kavenagh, Philadelphia, Pennsylvania, assignee of Walter Sabin McKinney, Chicago, Illinois, both in the U.S.A., 5th March, 1900; 6 years. (Filed 2nd May, 1899.)

Claim.—1st. In a tag machine, the combination of a reciprocating needle, with an oscillating gripper adapted to engage the string, a lever around which the string is looped by the gripper jaws to draw out the string and elongate the loop, and means for moving the lever towards and away from the needle, substantially as specified. 2nd. In a tag machine, the combination of a reciprocating hollow needle, with a plug for intermittently clamping the string to the needle, an oscillating gripper adapted to engage the string, a lever around which the string is looped by the gripper, means for moving the lever towards and away from the needle, means for cutting the string, and a knot former for knotting the ends of the string, substantially as specified. 3rd. In a tag machine, a gripper composed of an L-shaped sleeve, a pair of jaws, a longitudinally movable plug within the sleeve, and means for converting the reciprocating motion of the plug into an opening and closing motion of the jaws, substantially as specified. 4th. In a tag machine, the combination of a rotatable sleeve with a sectional spring plug having a conical head, a pin engaged by the plug, and a pair of jaws operatively con-