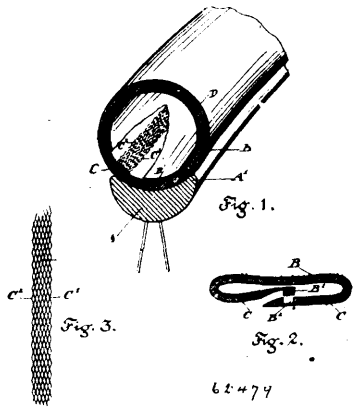
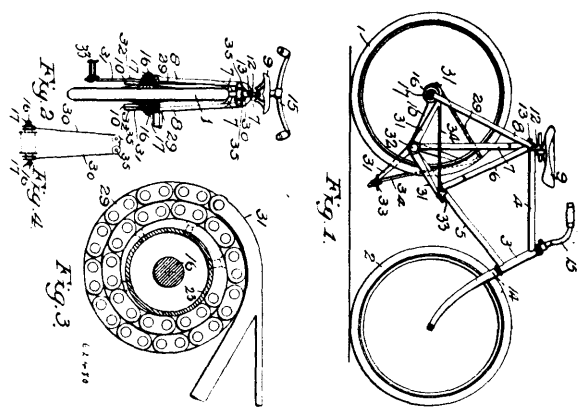
consequent rigidity of the bands, substantially as described. 3rd. The combination of a wheel-rim and an automatically-attachable



pneumatic tire having a pair of narrow primarily-flexible bands of diagonally-woven wire fabrics in its sides, the inflation of the tire causing a distortion and consequent rigidity of the bands, substantially as described.

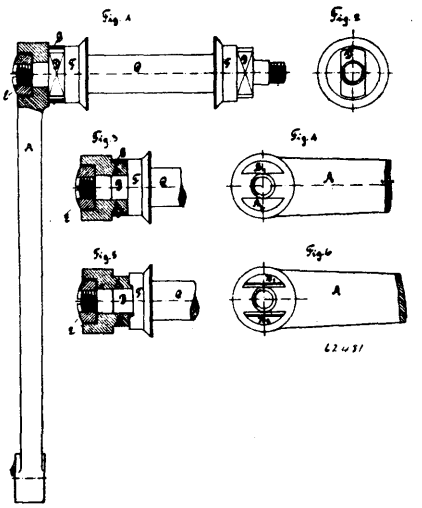
No. 62,480. Cycle. (*Cycle.*)



Thomas Hill, River Falls, Wisconsin, U.S.A., 26th January, 1899; 6 years. (Filed 30th August, 1898.)

Claim.—1st. A clutch device, comprising two parts rotatable independently of each other, one having ratchet-teeth and the other carrying one or more pawls, and the pawl-ring provided with passages through which the free ends of said pawl or pawls pass, said ring having a limited rotary movement with respect to one section of said clutch, and having frictional engagement with the other section thereof, whereby said pawl or pawls are rendered silent in their action on said ratchet-teeth, substantially as described. 2nd. A clutch device, comprising two parts rotatable independently of each other, one having ratchet-teeth and the other carrying a series of pawls, one of which pawls is spring-held in advance of the others, and a pawl-ring with which said pawls engage, said ring having a limited rotary movement with respect to one of said clutch sections and having frictional engagement with the other section thereof, substantially as described. 3rd. The combination with the wheel-hub provided with the internal ratchet-teeth, of the pair of loose hubs provided with a pawl-disc or flange, the series of pawls mounted on said pawl-disc and engageable with said ratchet-teeth, one of which pawls is mounted for limited endwise movement and is spring-held in advance of the others, and the loose pawl-ring through which said pawls work, said pawl-ring being mounted for a limited rotary motion with respect to the pawl-disc and having frictional engagement with the flange of said wheel-hub, substantially as described. 4th. In a cycle, the combination, with the wheel-hub provided with two series of ratchet-teeth 50, and with the loose pawl-ring in frictional engagement with the hub, of the independent drums 23, provided with pawls 38 and 39, adapted to engage the ratchet-teeth 50, and means for alternately rotating said drums, for the purpose set forth. 5th. In a cycle, the combination, with the wheel-hub provided with the two series of ratchet-teeth 50, and with the loose pawl-ring 44, in frictional engagement with the hub, of the drums 23, each carrying a series of pawls connected to said pawl-ring and adapted to engage said ratchet-teeth, for the purpose set forth. 6th. In a cycle, the combination, with the wheel-hub provided with a series of ratchet-teeth and with the loose pawl-ring in frictional engagement with the hub, of the independent drums 23, each provided with pawls adapted to engage said ratchet-teeth, levers pivoted upon the bicycle-frame and provided with suitable pedals, chains arranged upon said drums and connected to said levers and means for winding said chains upon said drums. 7th. In a cycle, the combination, with the wheel-hub provided with suitable ratchet-teeth, of the drums mounted upon the axle of said wheel and provided with pawls adapted to engage said ratchet-teeth, pivoted levers mounted upon the cycle-frame and provided with suitable pedals, chains connected to said levers and to said drums, a cord 30, oppositely wound upon said drums and passing over suitable pulleys upon the cycle-frame, for the purpose set forth. 8th. In a cycle, the combination, with the wheel-axle 16, provided with the cone-bearings 18 and 19, of the wheel-hub arranged upon said axle and with a series of pawls 21, between said hub and said bearing 19, the independent drums 23, arranged outside of said wheel-hub, with the series of balls 25, arranged between each of said drums, and the cone-bearings 18 and 19, means for rotating said drums and means connecting said drums with said hub, for the purpose set forth.

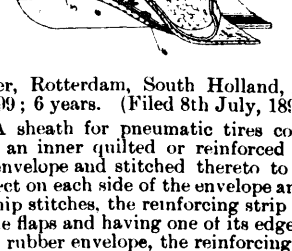
No. 62,481. Method of Securing Cranks to Axles.
(*Méthode d'assujetir les manivelles aux essieux.*)



John Hayden, Brantford, Ontario, Canada, 26th January, 1899; 6 years. (Filed 16th August, 1898.)

Claim.—In a crank connection a crank with the hub partially removed to form two opposing jaws provided with means to prevent their spreading and an axle terminating into a reduced and screwed end, the bigger part reaching partly into the crank hub by being simultaneously reduced to form corresponding flat surfaces to supplement the jaws and both held together by a nut, substantially as and for the purposes set forth.

No. 62,482. Bicycle Tire. (*Bandage de bicycles.*)



Jacob Reepmaker, Rotterdam, South Holland, Netherlands, 26th January, 1899; 6 years. (Filed 8th July, 1898.)

Claim.—1st. A sheath for pneumatic tires comprising an outer rubber envelope, an inner quilted or reinforced canvas of greater width than the envelope and stitched thereto to form overlapping flaps which project on each side of the envelope and have their edges reinforced by whip stitches, the reinforcing strip 4 stitched to outer edge of one of the flaps and having one of its edges abutting against one edge of the rubber envelope, the reinforcing strip 7 secured to the under side of the other overlapping flap, a longitudinal row of eyelets formed through the reinforcing strip 4, and the overlapping flap to which it is attached, a series of loops secured to the opposite overlapping flap, said loops projecting through said eyelets, and a lacing cord passed the ends of the loops to secure them in said eyelets, substantially as set forth. 2nd. The combination with the rim of a wheel and the sheath of a pneumatic tire, and the lacing cord for said sheath, said rim having orifices, of the bracket 13 having an orifice, the lever 12 fulcrumed on said bracket and provided with an orifice, and a short arm 10 adapted to clamp said lacing cord in said bracket, the orifices in the bracket and the rim of the wheel registering, while the orifice in the lever is at one side of the registering orifices, substantially as set forth.