

cam-cylinder, cylinder-needles, needle-cylinder provided with dogs, and the ring 51 provided with forks 49 to engage the said dogs, and combined with cams to automatically operate the said ring, and through t shog the needle-cylinder, substantially as and for the purpose described. 25th. The main shaft, its small fast pulley and flange clutch pulley E₃, and means to connect it with the said flange, and the small and large loose pulleys, and the bevel pinion M₂, combined with the cam-plate and adapted to drive it at different speeds, substantially as described. 26th. In combination, the main shaft, the small fast pulley and flange E₃, clutch pulley E₃, and means to connect it with the said flange, the small and large loose pulleys E₇, E₈, pinion M₂, cam plate actuated by it, belt E₅, E₆, means to move them, belt controller H₅, pattern surface and intermediate mechanism to actuate the belt-controller from the pattern surface, to change the speed of rotation of the cam-plate, substantially as set forth. 27th. The main shaft, the clutch pulley E₃ loose thereon, its extended sleeve, means to drive the said pulley while loose on the main shaft, the shaft G₃, means to connect it and the sleeve of the clutch pulley E₃, the cam G₄ and G₇, a pawl carrier and pawl actuated by the said cams, and a ratchet wheel and the shaft G₂, with which it is connected, combined with the shaft F₂, pattern surface or chain and connections between the said two shafts, whereby the pattern surface may be driven while the main shaft is at rest, substantially as set forth. 28th. In combination, the pawl carrier G₃, the cam G₇, means to actuate it, the forked arm 16 engaging a part of said cam, a rod to move the said arm, and pattern surface to actuate the said rod, substantially as described. 29th. The shaft G₃ and the cam G₇, means to connect it with the said shaft, the pawl carrier G₃, its roll 4 and the arm 16, having its hub placed loosely on the rod 17, combined with the said rod, its lug 18, spring 19 and with the pattern surface to move the said rod, to operate substantially as described. 30th. In combination, the cam-plate, its attached bevelled stop J, the pin n₅, the lever n₇, connections between it and the said pin, the rod n₈, lever E₁, main shaft, hub E₁ thereon, its pin 2, the flange E₃, and clutch pulley E₃, whereby the said bevelled stop, through the devices herein described, is enabled to withdraw the pin 2 from the flange to leave the main shaft at rest, substantially as and for the purpose set forth. 31st. The cam-plate, the bevelled stop J, the pin n₅, wedge or incline n₃ to support it, the pin n₄, elbow-lever n₇, against which the pin n₄ rests, and which is moved by the said pin, combined with the plunger n₁, cam to move it and the said wedge or incline, and means to actuate the said cam, the said wedge or incline being loosely connected with the said plunger, substantially as described. 32nd. The cam-plate, its stop J, the pin 65 and arm 63 to carry it, combined with a spring to lift the pin in front of the stop, to arrest the movement of the cam-plate, substantially as set forth. 33rd. The cam-plate, its stop J, the pin 65, means to move it, a cam to effect the withdrawal of the said pin at the proper time, and means to move the said cam, substantially as described. 34th. The main shaft E₄, the cam-plate, means to actuate it, a pattern surface, means to actuate it, the means substantially as described, actuated by the pattern surface, to first effect the stoppage of the main shaft and then of the cam-plate, substantially as described. 35th. The bobbin support C₂, the detecting lever C₁ pivoted therein, and adapted to enter a slot in the bobbin and be held in upright position by the yarn thereon, and the rod C₃ combined with the frame A, the semi-circular slide, the lever B₃, the steel B₂, the latch B₁ and the shipper lever, substantially as and for the purpose described. 36th. The counter shaft, means to drive it, the pulleys at one end of the counter shaft, the main shaft and means to connect it with the counter shaft, and the take-up and means to connect it with, and actuate it from the counter shaft, substantially as and for the purpose set forth. 37th. The needle-bed, plate-needles, cam-plate, and cams thereon to actuate the plate-needles, the needle-cylinder, cylinder-needles, cam-cylinder, and its cam and switch, combined with a pattern surface and intermediate devices to actuate the said cam, and with means to rotate the said plate and cylinder, substantially as and for the purpose described. 38th. In combination, the main shaft, means to operate it, the cam-plate, and intermediate connections between it and the said shaft, a stop on the cam-plate, a pulley adapted to be made fast or to run loosely with relation to the said shaft, means to move the pulley, a pattern surface, and means between it and the said pulley to turn the pattern surface while the main shaft is at rest, substantially as described. 39th. In combination, the main shaft, means to operate it, the cam-plate and intermediate connections between it and the said shaft, a pulley adapted to be made fast or run loosely with relation to the said shaft, means to move the pulley, a pattern surface, and means between it and the said pulley to turn the pattern surface while the main shaft is at rest, a pin to engage the cam-plate, and a cam actuated by the said pattern surface to control the times of movement of the said pin, for the purpose set forth. 40th. The needle-cylinder having dogs, and the ring 51 having forks, and the arm 52, combined with cams 54, 55, and with a pattern surface to actuate the same to shog the needle-cylinder, substantially as described. 41st. The cam-cylinder, cylinder-needles, needle-cylinder, cam-plate, means to move it, its yoke and the cylinder-needle yarn guide and yarn cutter attached to the said yoke, combined with the cutter to cut the yarn leading to the cylinder-needles, substantially as described. 42nd. That improvement in the art or method of preventing ribbed one-and-one knitted fabric from unravelling, which consists in changing the one-and-one stitch to cardigan stitch by introducing yarn from the cylinder-needle yarn guide in the hooks of the cylinder-needles, knitting one or more courses of cardigan stitch by means of two yarns, and drawing the yarn taken from the cylinder-needle yarn guide into long loops while knitting the last course of cardigan, all substantially as set forth.

William R. Phillips, Milford, Del., U. S., 6th March, 1884; 5 years.

Claim—1st. In combination with the outer casing having doors G and oppositely situated, the tray-supporting rollers / and guides II, the depending stationary bars e and movable bars c, and the gravity catches f pivoted in slots in said bars and having ribs f', as set forth.

2nd. In combination with the stack having depending bars e, c, the gravity-catches f having ribs f', adapted to limit the upward and downward movements of the catches by encountering the fronts of the bars, as set forth.