

central call-cam for the front bar and the pair of call-cams and call-jacks for the rear bar, substantially as described. 18th. In combination in a knitting machine, the needles, the knitting cams, the call-jacks, the call-cam and detent means for holding the jacks in either forward or backward, substantially as described. 19th. In combination, the knitting machine, the needles, the stitch-cam, the jack having the notch and the inclined end and the holding dog adapted to engage the inclines to hold the jack in either position, substantially as described. 20th. In combination with the two sets of spring needles, the single series of sinkers, the means for operating the sinkers, the single presser-wheel for one row of needles, the two presser-wheels for the second row of needles, and the cams in the cam-bars adapted to operate the needle of the second row after those of the first row, substantially as described. 21st. In combination, in a knitting machine, the independently operated needles, the needle cams, the sinkers, the rotary dial and means for operating the sinkers, the thread-guide and carrier and a detachable driving connection for the carrier arranged to shift the same to locate the guide in advance of the sinkers and of the needle cams and means for releasing the said connection, substantially as described. 22nd. In combination in a knitting machine, the independently operated needles, the needle-cams, the sinkers with means for operating them independently, the thread-guide carrier, the thread-guide arranged to move to and from its point of work, a detachable driving connection, operating means therefor and means for retracting the thread-guide from its point of work to permit the sinkers to pass, substantially as described. 23rd. In combination in a knitting machine, the independently operated needles, the needle-cams, the sinkers with operating means therefor, the thread-carrier, the thread-guide having movement thereon to and from the point of work, the detachable driving connections for the carrier adapted to shift and drive it in advance of the sinkers on each stroke, and means for retracting the thread-guide to allow the sinkers to pass and for returning the guide to the working point on the opposite side of the sinkers, substantially as described. 24th. In combination, the needles, the cams therefor, the thread-carrier and guideway, the thread-guide on the carrier, the two sliding dogs arranged to move transversely of the carrier, the projections on the dogs extending into the guideway and the inclines on the guideway for operating the dogs through the said projections. 25th. In combination, the needles, the cams, the thread-carrier, the guideway therefor, the thread-guide, the driving means comprising the spring-pin, the two dogs on the carrier and means for operating the dogs reversely, said spring pin being arranged to pass by one of the dogs on each stroke, substantially as described. 26th. In combination, the needles, the cams, the thread-carrier, the guideway, the driving means, the two sliding dogs movable transversely of the carrier to engage the same, the said dogs having rack-teeth and the intermediate pinion engaging the racks and the means for operating one of the dogs on each stroke, including the inclines on the guideway and the projections on the sliding dogs to engage the same, substantially as described. 27th. In combination, the needles, the cams, the series of sinkers with opening means therefor, the driving means for the thread-carrier, the thread-guide pivoted on the carrier and the cam-bar having the inclines and adapted to engage and retract the thread-guide to pass the sinkers, substantially as described. 28th. In combination, the call-bar extending lengthwise of the needle row, the racking-bar also extending lengthwise thereof and means for operating the bars, substantially as described. 29th. In combination the needles, the cams, the sinkers, the travelling dial, means for rotating the same and means for operating the sinkers, the non-rotating shield, the thread-carrier, the guide therefor, the detachable connection between the carrier and the shield, the pivoted thread-guide and the cam-bar on the shield for operating the thread-guide, substantially as described. 30th. In combination, the knitting needles, the cams and the travelling knock over device moving transversely of the needles, and acting on the under side of the fabric and under the needles as the same are retracted to cast off the stitches, substantially as described. 31st. In combination the needles, their cams, the travelling knock off finger and the travelling evener finger in rear of the knock over finger, said fingers moving transversely of the needles and below the same and fabric, substantially as described. 32nd. In combination the needles, the cam-bars, the knock off finger moving transversely of and below the needles, and the bar carrying the same connected to the cam bars, substantially as described. 33rd. In combination the needles, the cam-bar, the knock off finger movable transversely of and below the needles, the bar carrying the same, and the detachable connection between the same and the cam-bar, substantially as described. 34th. In combination with two needle beds, and two sets of needles, one bed being in a lower plane than the other, means for operating the needles to produce a ribbed fabric, and a travelling knock over finger and means for operating the same to act in conjunction with the needles of the lower bed, substantially as described. 35th. In combination with the needles operating independently of each other, the movable knock off means arranged below the needles, to move fabric from the ends of the needles to aid in the knocking off action, said knock off means operating below the fabric and in conjunction with the retracted needles, substantially as described. 36th. In combination the needles, their cams, the call-jacks and their cams, the rocking call-bar for throwing the needles into action through their jacks, and the means for operating the bar comprising

the arms, the links, the cam on the main shaft and the rock-shaft operated thereby and connected to the links, substantially as described. 37th. In combination in a knitting machine, the needles, the call-jacks, the needle-cam, the call-cam, and the call-bar for throwing the needles into action through the call-jacks, substantially as described. 38th. In combination the needles, the needle-cam, the call-jacks and the jack racking bar with means for operating the same to retract the call-jacks, substantially as described. 39th. In combination the needles, their cams, the rock-shaft, the call-bar carried thereby for throwing the needles into action and the racking bar also carried by the rock-shaft, substantially as described. 40th. In combination the needles, their cams, the call-jacks and call-cam, the jack racking bar extending lengthwise of the machine, and means for reciprocating the racking bar laterally to throw the call-jacks out of action, substantially as described. 41st. In combination, in a knitting-machine, the needles, their sliding cams, and the driving mechanism therefor comprising a drive-gear with means for operating it, the transmitting gear meshing therewith and arranged to oscillate, the pinion carried on the axis of the oscillating gear, the reciprocating continuous rack meshing with the pinion, the cam track, the projection engaging the same and controlling the oscillation of the transmitting gear and the connection from the reciprocating rack to the sliding cams, substantially as described. 42nd. In combination in a knitting machine, the needles, the sliding cams and the driving mechanism comprising the drive gear with operating means therefor, the oscillating frame journaled on the axis of the drive gear, the transmitting gear journaled on said frame, the pinion on the axis of said transmitting gear, the continuous rack, the cam track, the roller on the axis of the pinion engaging therewith and the drive rod connected with the slide bars and connected to the continuous rack, substantially as described. 43rd. In combination in a knitting machine, the needles, the sliding cams, the drive rod, the driving mechanism for the same for imparting a uniform movement thereto, and a multiplying lever connected to the sliding cams and drive rod and having a shifting fulcrum to impart a uniform motion to the sliding cams and moving parallel with the movement of the drive rod, substantially as described. 44th. In combination in a knitting machine, the needles, their sliding cams, a drive rod, its actuating mechanism adapted to give said rod a uniform motion, a multiplying lever with its loose end provided with a rocker, a bed for that rocker, and means to connect the rocker and bed, substantially as described. 45th. In combination with the spring needles and transfer cams, the transfer prongs, means for operating them substantially in the arc of a circle, and means for giving them a falling and rising movement in addition thereto, substantially as described. 46th. In combination with the spring needles and transfer cams, the transfer prongs, means for operating them through the loops along the stems of the needles toward the hooks and for lifting them, means for shifting them laterally when the needles have been retracted from beneath them, and means for retracting the narrowing prongs along the stems of the needles from the hooks when the needles are advanced beneath them, substantially as described. 47th. In combination with the spring needles, the transfer prongs arranged over the needle stems, means for advancing and retracting the needles, means for operating the prongs along the stems of the needles toward and from their hooks and for making contact between the prongs and needles, substantially as described. 48th. In combination with the spring needles, and transfer cams, transfer prongs, the sliding block, the prong holder carried thereby and movable in relation thereto, the prong shifter having curved ways for the sliding block and the stationary cam path on the prong shifter for controlling the movement of the prong holder, substantially as described. 49th. In combination, the needles, transfer cams, the transfer prongs, the shifting block, the means for operating the transfer prongs and the means for shifting the block comprising the push block, a connection therefrom to the shifting block, and means for operating the push block, substantially as described. 50th. In combination, the needles, transfer cams, the transfer-prongs, the shifting block, means for operating the transfer device, the push-block, a connection therefrom to the shifting block, the rotary shaft, a connection therefrom to the push-block and means for rotating the shaft step by step, substantially as described. 51st. In combination, the needles, transfer-cams, the transfer-prongs, means for operating the same, the shifting block therefor, the push-block, a connection therefrom to the shifting block the grooved rotary shaft, means for operating it step by step, the sliding pawl operated thereby and the rack bar connected to the pushed-block, substantially as described. 52nd. In combination, the needles, transfer-cams, the transfer-prongs means for operating the same, the shifting block therefor, the push-block at the ends of the machine connected to the shifting block, the block, the rotary shaft and means to operate the block therefrom, the pinion on the shaft, the gear meshing, therewith and mean for operating the gear step by step, substantially as described. 53rd. In combination in a knitting machine, the transfer-prongs and means for advancing and retracting the same consisting of rotary cams connected between the same and the transfer-prongs and means for changing the relation between the cams at each successive narrowing movement, substantially as described. 54th. In combination in a knitting machine, the transfer-prongs, devices for advancing the said prongs and devices for retracting the same, means for actuating the said devices and changing their relation at each successive narrowing action and connection between the said devices