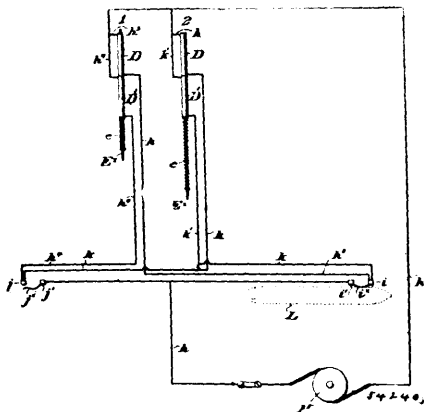


and out of circuit, a core or magnetizable device, a warp thread eye, and devices connective of said eye and said core, substantially as set



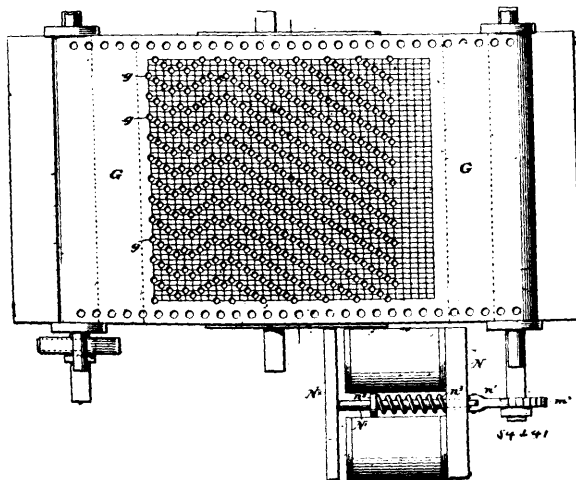
forth. 2nd. In a loom, a warp thread eye, a magnetizable core and a solenoid or magnetic coil, one of said last mentioned devices being fixed and the other movable, a connection between the movable device and the eye, and means, tripped or controlled by a moving part of the loom, for varying or changing the condition of the solenoid to occasion the movement of the warp thread eye, substantially as set forth. 3rd. In a loom, in combination, a pair of solenoids having hollow bores and disposed in axial alignment, an electric circuit, means actuated by a moving part of the loom for throwing said solenoids alternately into and out of circuit, a core disposed within said solenoids, a warp thread eye, and devices connective of said eye and said core, substantially as set forth. 4th. In a loom, in combination, a pair of solenoids having hollow bores and disposed in axial alignment, an electric circuit, means actuated by a moving part of the loom for throwing said solenoids alternately into and out of circuit, a core disposed within said solenoids, a spring for normally maintaining the core in balance midway between the solenoids, a warp thread eye, and devices connective of said eye and said core, substantially as set forth. 5th. In a loom, in combination, a pair of solenoids mounted in multiple circuit, normally open switches mounted in the multiple circuits and disposed in the path of a moving part of the loom, a warp thread eye, a magnetizable core, and means connective of said eye and said core, substantially as set forth. 6th. In a loom, in combination, a pair of solenoids having hollow bores and disposed in axial alignment and mounted in multiple, normally open switches mounted in the multiple circuits and disposed at the respective ends of the shuttle race, a warp thread eye, and means connective of said eye and said core, substantially as set forth. 7th. In a loom, in combination, a series of sets of solenoids, each set consisting of two solenoids having hollow bores and disposed in axial alignment, a main circuit connected with a dynamo or other source of supply, one division of the main circuit having branches in circuit with the respective solenoids, the two solenoids of each set being arranged in multiple circuit, and the several sets being mounted in multiple circuit, conductors from different sets terminating in a common terminal, other conductors from the different sets terminating in another common terminal, and means for switching said terminals alternately into circuit with the main line, magnetizable cores corresponding in number to the number of sets of solenoids, one employed in connection with each set, eyes or similar devices for engaging the warp thread, and suitable connections between said cores and said eyes, substantially as set forth. 8th. In combination with a dynamo or source of energy, two sets of solenoids, each set provided with a core connected to a warp thread eye, a conductor leading from said dynamo having branches in circuit respectively with each of the solenoids, the branch connected with the upper solenoid of the first set and the branch connected with the lower solenoid of the second set leading from said solenoids to a common terminal, and the branch connected with the lower solenoid of the first set and the branch connected with the upper solenoid of the second set leading from said solenoids to a common terminal, a second branch conductor leading from said dynamo, one branch of the same being provided with a terminal in the vicinity of the first terminal mentioned, with which it is adapted to be connected by a switch, and the other branch being provided with a terminal in the vicinity of the second terminal mentioned, with which it is adapted to be connected by a switch, and means for automatically moving said switches, substantially as set forth.

No. 54,241. Loom. (*Métier*.)

Elmer Gates, Chevy Chase, Maryland, 2nd December, 1896; 6 years. (Filed 12th November, 1896.)

Claim.—1st. In a loom, in combination, a series of warp thread eyes, a series of electrically-actuated devices connected with said eyes, a dynamo or source of electric energy having a main conductor, one division of which is provided with branches in circuit with said electrically-actuated devices, and the other of which is pro-

vided with a common terminal, terminals in circuit with said branches adapted to make contact with the common terminal, a



sheet of non-conducting material, provided with conducting spaces interposed between said terminals and the common terminal, an electrically-actuated means controlled by a moving part of the loom, for occasioning the travel of said sheet, substantially as set forth. 2nd. In a loom, in combination, a pattern sheet embodying conducting spaces or openings, a roll in contact with said sheet, electrically-actuated mechanism adapted to occasion the rotation of said roll, a conducting wire leading to said mechanism and equipped with a switch adapted to be thrown by a moving part of the loom, substantially as set forth. 3rd. In a loom, in combination, a sheet adapted to be moved longitudinally, rolls upon which said sheet travels, a drum adapted to positively engage with said sheet, a magnet provided with an armature, mechanism connective of said armature and drum, a dynamo, wires leading from said dynamo to said magnet, a switch mounted on said wire and arranged in the path of, so as to be operated by a moving member of the loom, substantially as set forth. 4th. In a loom, in combination, a sheet adapted to be moved longitudinally, rolls upon which said sheet travels, a drum adapted to positively engage said sheets, a magnet provided with an armature, a dynamo, wires leading from said dynamo to said magnet, a switch mounted on said wire and arranged in the path of, so as to be operated by a moving member of the loom, a toothed wheel mounted on said drum, a pin connected to said armature, a pawl connected to said pin and engaging said toothed wheel, and a spring which tends to carry the armature away from the toothed wheel, substantially as set forth. 5th. In a loom, in combination, a sheet adapted to be moved longitudinally, rolls upon which said sheet travels, a drum adapted to positively engage with said sheet, a magnet provided with an armature, mechanism connective of said armature and drum, a dynamo, wires leading from said dynamo to said magnet, a normally open switch mounted on said wires and arranged in the path of, so as to be encountered by the shuttle, substantially as set forth. 6th. In a loom, in combination, a dynamo, two main conductors leading from said dynamo, a series of sets of solenoids, each set consisting of two, a series of branches from one of the main conductors, two of which branches lead to and are so connected with each set of solenoids as to place the individual solenoids of each set in multiple circuit, terminals mounted upon each of said branches, which terminals are located in proximity to and adapted to make contact with the other of the main conductors, a sheet of non-conducting material, provided with conducting spaces, interposed between said terminals and said second branch, cores adapted to be reciprocated by said solenoids, and heddle eyes connected with said cores, substantially as set forth. 7th. In a loom, in combination, a dynamo, two main conductors leading from said dynamo, a series of sets of solenoids, each set consisting of two, a series of branches leading from one of the main conductors, two of which lead to and are so connected with each set of solenoids as to place the individual solenoids of each set in multiple circuit, terminals mounted upon each of said branches, which terminals are located in proximity to and adapted to make contact with the other branch of the main conductor, a sheet of non-conducting material provided with conducting spaces interposed between said terminals and said second branch, cores adapted to be reciprocated by said solenoids, heddle eyes connected with said cores, and electrically-actuated mechanism for occasioning the movement of the sheet, substantially as set forth.

No. 54,242. Loom. (*Métier*.)

Elmer Gates, Chevy Chase, Maryland, U.S.A., 2nd December, 1896; 6 years. (Filed 12th November, 1896.)

Claim.—1st. In a loom, in combination with a reed frame, a coil or solenoid, a magnetizable device, one of said devices being fixed and the other movable, the movable device being connected to said