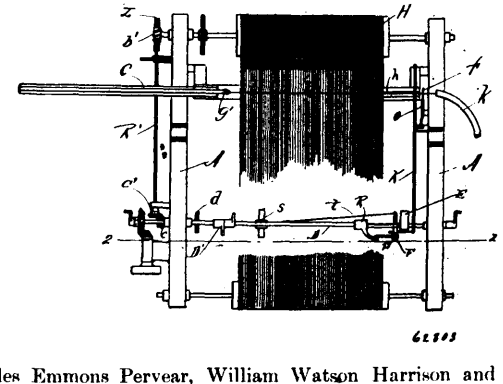
the purposes described. 4th. An apparatus for the purposes described, comprising a suitable supporting frame having drive wheels, and having detachable vertically projecting brace members and a rain or sun shield connected to such members and disposed longitudinal of the apparatus, said shield being constructed to form a scow when inverted, as set forth. 5th. An apparatus as described, comprising a main or drive wheel mounted thereon, a supplemental or ice wheel journalled on such frame and geared with the main wheel, substantially as shown and for the purposes described. 6th. An apparatus for the purposes described, comprising a supporting frame and main drive wheel, detachable and adjustable handles, an ice wheel journalled on such handles and geared with the main wheel, substantially as shown and described. 7th. In an apparatus as described, the combination of the main frame, the drive wheel, the detachable runner, and clamp devices secured to the runner adapted to engage the wheel, said devices having elastic bearing blocks on which the said wheel is adapted to rest, as and for the purposes described. 8th. An apparatus for the purposes described, comprising a frame formed of longitudinal sections, a wheel mounted in each section, clamp devices for holding the said sections joined with the wheels in close relation, and a detachable rim having ice spurs or ribs, said rim being common to both wheels and means for holding said rim to such wheels, substantially as shown and described. 9th. In an apparatus as described, the combination with the supporting frame, said frame having vertical guides, of bearing boxes vertically adjustable in the guides, the axle journalled in such boxes, and the wheel fixedly held on the axle, substantially as shown and described. 10th. An apparatus for the purposes described, comprising a frame formed in two longitudinal sections, each having a supporting or drive wheel, clamp devices for interchangeably connecting the said frame sections, whereby to bring the wheels closely together or separated as specified, handle members adjustably and detachably connected to such frame sections, and a foot-operated brake mechanism for engaging the wheels having detent devices for holding the brakes to their operative position, substantially as shown and for the purposes described. 11th. In an apparatus as described, the combination with the longitudinal frame sections, said sections having clamp members 12, of clamp devices consisting of a bolt threaded at one end, a clamp shoe 15, having a smooth aperture for the passage of the said bolt, and a similar clamp 15^a, opposing the clamp 15, having a threaded aperature for the threaded end of the bolt, as specified. 12th. In an apparatus as described, the combination with the frame sections and the supporting-wheels, and means for propelling the apparatus, of vertically adjustable slide boxes for the spindles of the wheels, said boxes being mounted on spring cushion timbers, substantially as shown and described. 13th. An apparatus for the purposes described, comprising a frame formed of longitudinal sections, each section comprising longitudinal and vertical timbers detachably connected and having slide bearings, a combined drive and supporting-wheel for each section having its spindle mounted in said bearings, clamp devices for securing the two sections together to form them into one fixed frame body, handle members detachably and adjustably connected to the frame sections, runners detachably connected to the frame sections and having clamps for securing the wheels, foot operated brake devices on each frame section, said frame sections having guards covering the periphery and the outer sides of the wheels, all being arranged substantially as shown and described.

No. 62,803. Loom for Weaving Hair Cloth.

(*Métier pour tisser le drap.*)

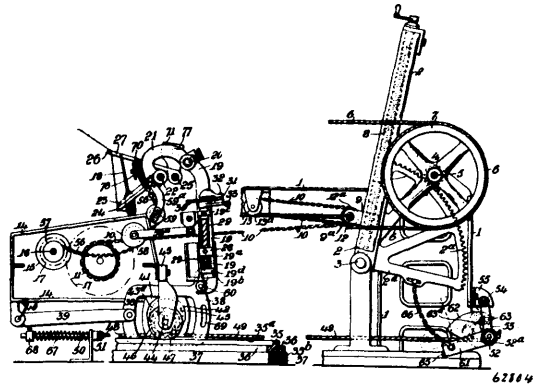


62803

Charles Emmons Pervear, William Watson Harrison and John Holt, all of Pawtucket, Rhode Island, U.S.A., 6th March, 1899; 6 years. (Filed 12th October, 1898.)

Claim.—1st. The combination of the driving shaft, a cam fast thereon, an auxiliary shaft to operate the heddles, a cam arranged to slide on said auxiliary shaft, and engages with the cam on the driving shaft, a feeler to indicate a miss-pick, the mechanism operated by a cam on the driving shaft to move the sliding cam when indicated by the feeler, substantially as described. 2nd. The combination of the driving shaft, a cam fast thereon, an auxiliary shaft to operate the cloth take up roll, a sliding cam held on said auxiliary shaft and engaging with the cam on the driving shaft, a feeler held to vibrate across the top of the lay, mechanism operated by a cam on the driving shaft and governed by the feeler device, to slide said sliding cam, mechanism connecting said auxiliary shaft with the cloth take up roll, and the cloth take up roll, substantially as described. 3rd. The combination of the driving shaft, a cam fast on said shaft, an auxiliary shaft, a cam sliding on said auxiliary shaft, a cam sliding on said auxiliary shaft, a gear on said auxiliary shaft, a short shaft held in a bearing on the end frame, a gear on said short shaft engaging with the gear on the auxiliary shaft, a bevel gear on the outer end of the short shaft, a horizontal shaft held in bearings across the end frame, a bevel gear on one end of said horizontal shaft engaging with the bevel gear on said short shaft, a worm on the front end of said horizontal shaft engaging with a worm gear on the cloth take up roll, a cloth take up roll, a feeler, and mechanism operated by a cam on the driving shaft to slide the said cam on the auxiliary shaft, substantially as described. 4th. In a stop motion for a loom, a driving shaft, a cam fast thereon, an auxiliary shaft, a cam sliding thereon, a feeler held to vibrate across the top of the lay, in combination with mechanism arranged to move the cam on the heddle operating shaft out of engagement with the driving cam and prevent the changing of the heddles when the nipper fails to take a hair, substantially as described. 5th. In a stop motion for a loom, the combination of a lay, a nipper to draw the hair into the shed, a feeler arranged to be struck by a hair when one is drawn in by the nipper, and mechanism for preventing the operation of the cloth take up roll when the nipper fails to take a hair, substantially as described. 6th. The combination of the lay, a driving shaft, a cam fast on said shaft, a nipper to draw a hair into the shed, a short horizontal lever held on a stand attached to the loom frame, a feeler pendant from one end of said short lever, an inverted T lever pivoted to the loom frame and arranged to have its upright arm strike the end of said horizontal lever when that lever is level, a short vertical shaft held in bearings on the end frame, a two armed dog held on and turning with said vertical shaft, a rod connecting the arm with cam on the heddle operating shaft, with cams fast on the driving shaft, to operate said dog and T-lever, substantially as described. 7th. In a hair cloth loom, the combination of a nipper, a short horizontal lever held to swing on a bearing, a feeler pendant from one end of short lever in the path of the hair weft, an inverted T-lever, pivoted on the loom frame, and arranged to have its upright arm strike the end of said horizontal lever when said lever is level, a dog, a cam fast on driving shaft to operate said dog, said T-lever arranged to throw the dog out of the path of movement of said cam, mechanism connecting said dog with the heddles, and the cloth take up rolls substantially as described.

No. 62,804. Mule. (*Mule.*)



62804

Joe Ramsden, Arthur Turton Taylor and James Ramsden, 10*a* Park Square, Leeds, York, England, 6th March, 1899; 6 years. (Filed 10th November, 1898.)

Claim.—1st. In a self-acting mule, the combination with the quadrant, of a set of moveable pulleys carried by the sliding block on the quadrant screw and a set of fixed pulleys carried in a bracket bolted to the side-framing of the headstock, and the re-duplication of the winding chain by passing it around the pulleys in each set alternately and finally attaching it to the sliding block, substantially as set forth. 2nd. In self-acting mules, a screw of varying pitch for lowering the position of the faller leg, as the building proceeds and gradually raising the front faller wire to guide the yarn in successive chases one above or upon the other, and the means for actuating said screw. 3rd. In self-acting mules the combination with the faller leg, of a separate or detached foot forming a part of said leg and adapted to be slided up and down thereon, a screw of variable pitch carried by the faller leg and working through a nut attached to the said foot for lengthening and shortening the faller leg, and the means for actuating the screw, substantially as set forth. 4th. In a self-actuating mule, for crosswinding the yarn, a rocker or frame actuated by means of a cam or eccentric for raising and lowering the faller leg, arranged and operated, substantially as herein shown and