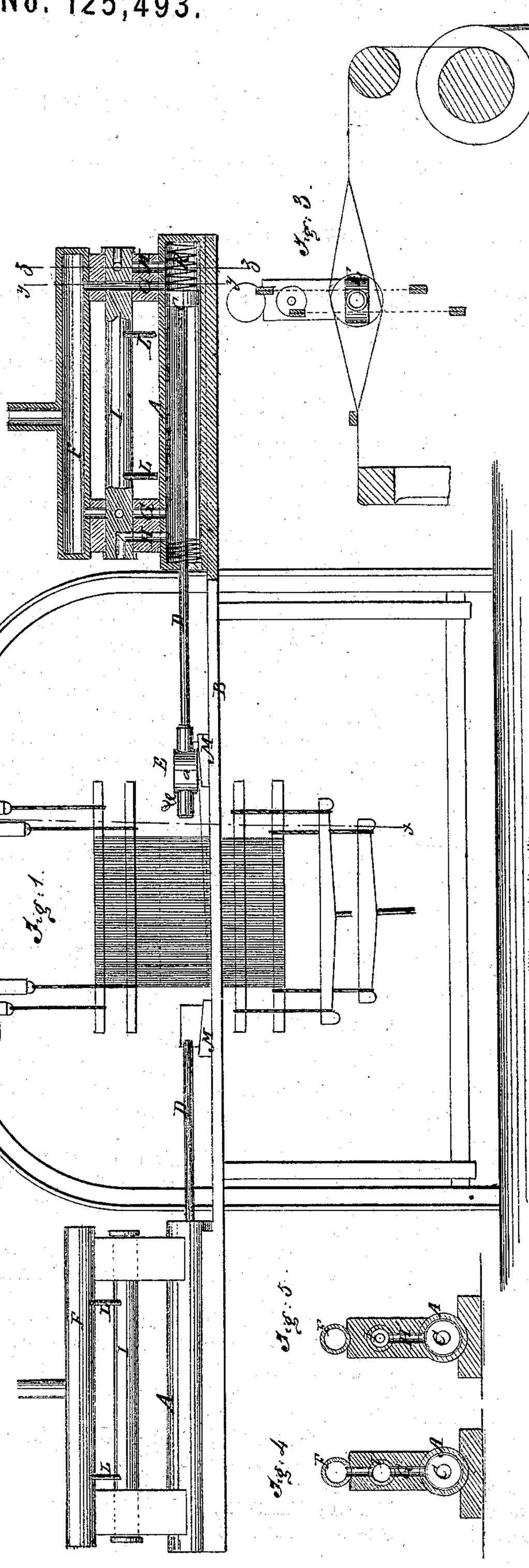
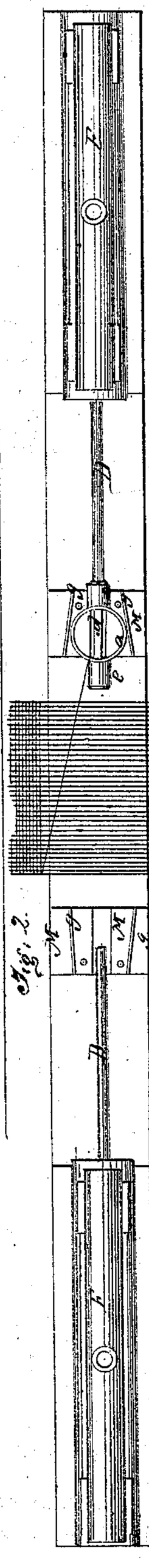
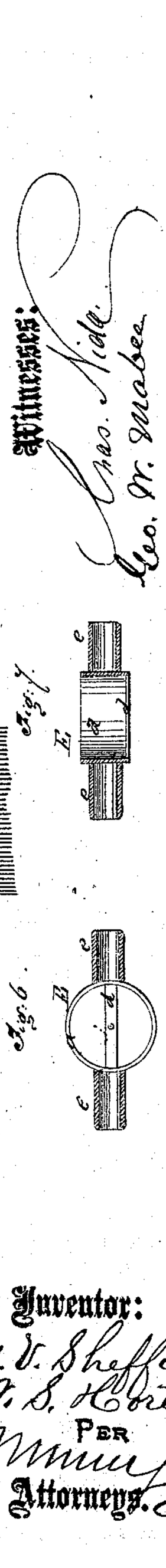
GEORGE V. SHEFFIELD & W. S. HORTON.

Improvement in Loom Shuttle Actuating Mechanism.

No. 125,493. Patented April 9, 1872.







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IMPROVEMENT IN LOOM-SHUTTLE ACTUATING MECHANISMS.

Specification forming part of Letters Patent No. 125,493, dated April 9, 1872.

Specification describing a new and useful Improvement in Looms, invented by GEORGE V. SHEFFIELD and WALTER S. HORTON, of Providence, in the county of Providence and State of Rhode Island.

Our invention consists of the application of steam or air, or otherwise-actuated pistons, with long projecting rods to the lathe of a loom, for carrying the bobbin through the shed, a carrier for the bobbin being used that is adapted to be carried on the end of the piston-rods when moved through the shed, and delivered to a holder or receiver ready for the rod on the other side, and the ends of the rods being magnetized to insure the holding of the carrier as they move backward with it through the shed.

Figure 1 is a partial front elevation of a loom with our improvement applied, a part being sectioned. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a cross-section on the line *x x* of Fig. 1. Fig. 4 is a section on the line *y y* of Fig. 1. Fig. 5 is a section on the line *z z* of Fig. 1. Fig. 6 is a horizontal section, and Fig. 7 is a vertical longitudinal section of a bobbin-carrier adapted to be carried by the improved bobbin-carrying apparatus, which is the subject of our invention.

Similar letters of reference indicate corresponding parts.

A represents two steam or air cylinders, mounted on the lathe B, one at each end, in the place of the ordinary shuttle-boxes, each of which has a piston, C, with a long rod, D, projecting in the crosswise direction of the loom, and capable of reaching through the shed, and withdrawing from the warp far enough to leave space for the bobbin-carrier E to clear the warp. Each cylinder is also provided with a steam or air chest, F, induction and exhaust ports G H, and a valve, I, by which to work the piston in the manner of ordinary steam or air engines; and they are also provided with springs K, for cushioning the piston at each end of the stroke. The valve will be shifted by any suitable moving part of the loom coming against arms or projections L, of any kind, on said valve, or connected with it in any way; or, the engines being moved with the lathe, the movement of the valve may be effected by the said projections coming against any fixed part of the loom. In this example, the carrier consists of a band or wide ring, *a*, arranged in a horizontal plane, with a cross-bar, *d*, at the bottom, and a short tube, *e*, projecting from two opposite sides. The bobbin, which is wound so as to unwind from the center, is placed in the carrier, and the weft threaded through a hole, *f*, in said bar, to be drawn out as the carrier is moved forward and back by the pistons, which alternately engage it by entering their respective tubes *e* on said carrier. At each side of the warp-threads, and under the positions where the carrier stops, is a block, M, rising slightly above the top of the lathe, with the upper surface slightly descending toward the center of the loom, with two wings, *g*, rising vertically from the upper surface and slightly converging toward the cylinders. The bobbin-carrier is received upon these blocks between the wings at the return of each rod D, and the rod withdraws lightly, leaving the carrier ready to be taken by the opposite rod after the beat and a new shed has been formed, when said opposite rod comes through, enters the tube, secures the carrier by the action of its magnetized end, and carries it back to the opposite side and leaves it, in like manner, ready for the next operation.

Any kind of friction devices may be used to retain the carrier between the wings *g* after the rod has been disconnected and while the lathe is beating up; or the magnetic attraction of the rod may be utilized for the purpose, the separation of the rod from the carrier not being so great but that the magnetic influence will be strong enough to retain the carrier; but the rod must not be so near that it will cause the opposite rod to fail of taking the carrier.

The object of the inclination of the upper surfaces of the blocks M is to prevent the liability of the carriers to strike the ends of the blocks in passing over them.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The combination of the magnetized piston-rods D D, bobbin-carrier E having sockets *e*, and the block M with wings *g*, said rods being actuated by steam, air, or other medium, all as shown and described.

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