

S. G. Mendenhall.
Hand Loom.

No 22,533.

Patented Jan. 4, 1859.

Fig. 1

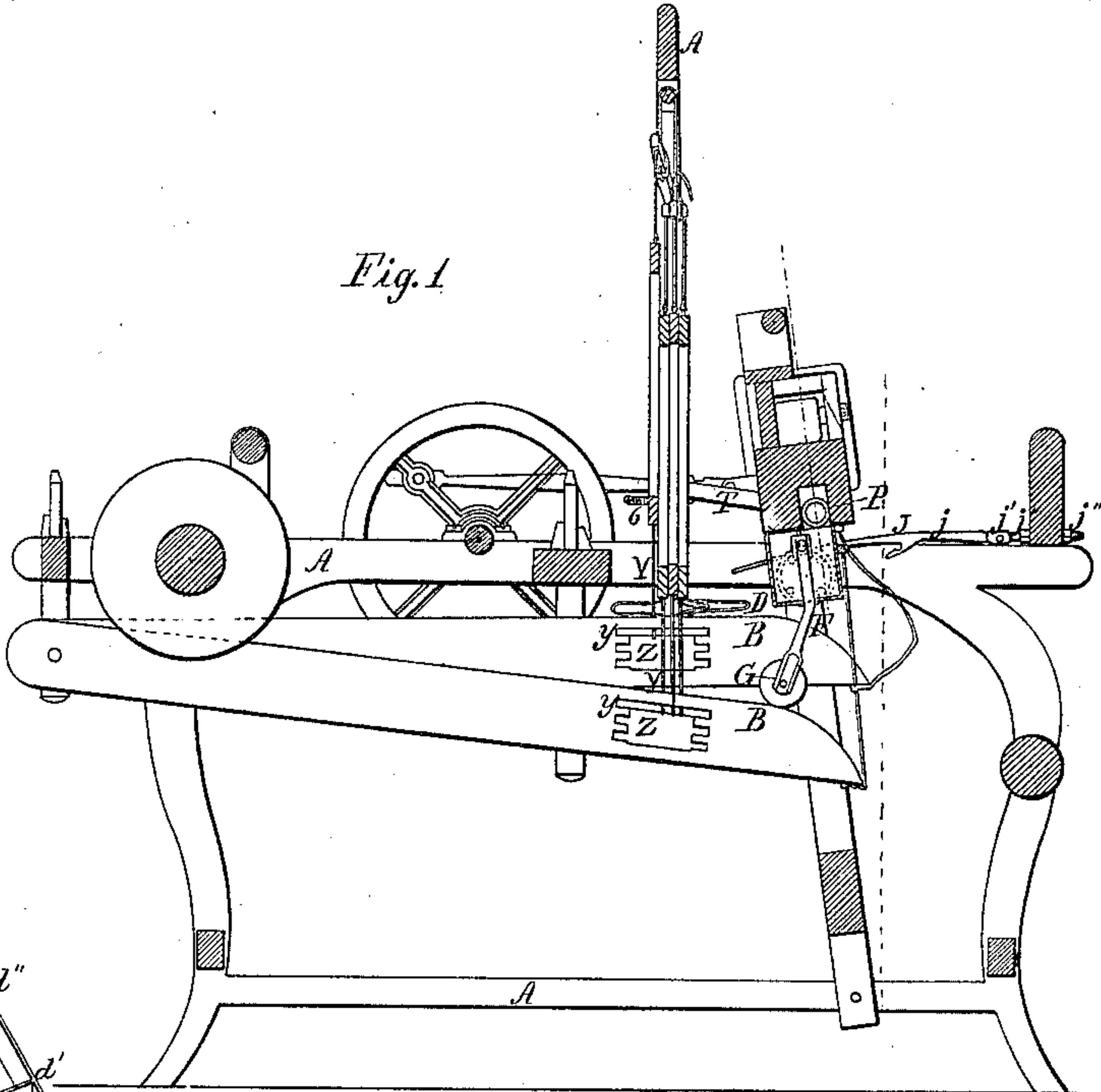


Fig. 3

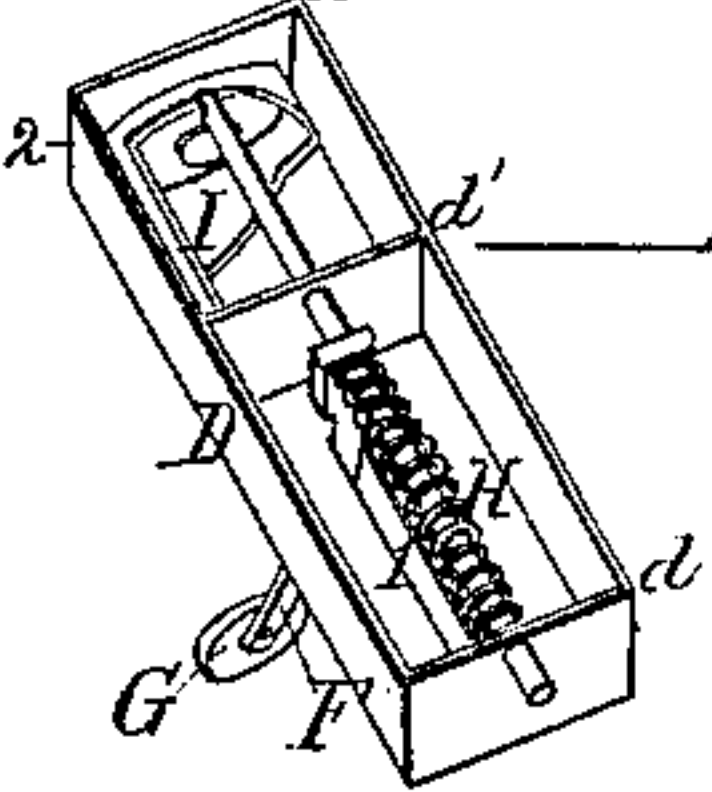


Fig. 2

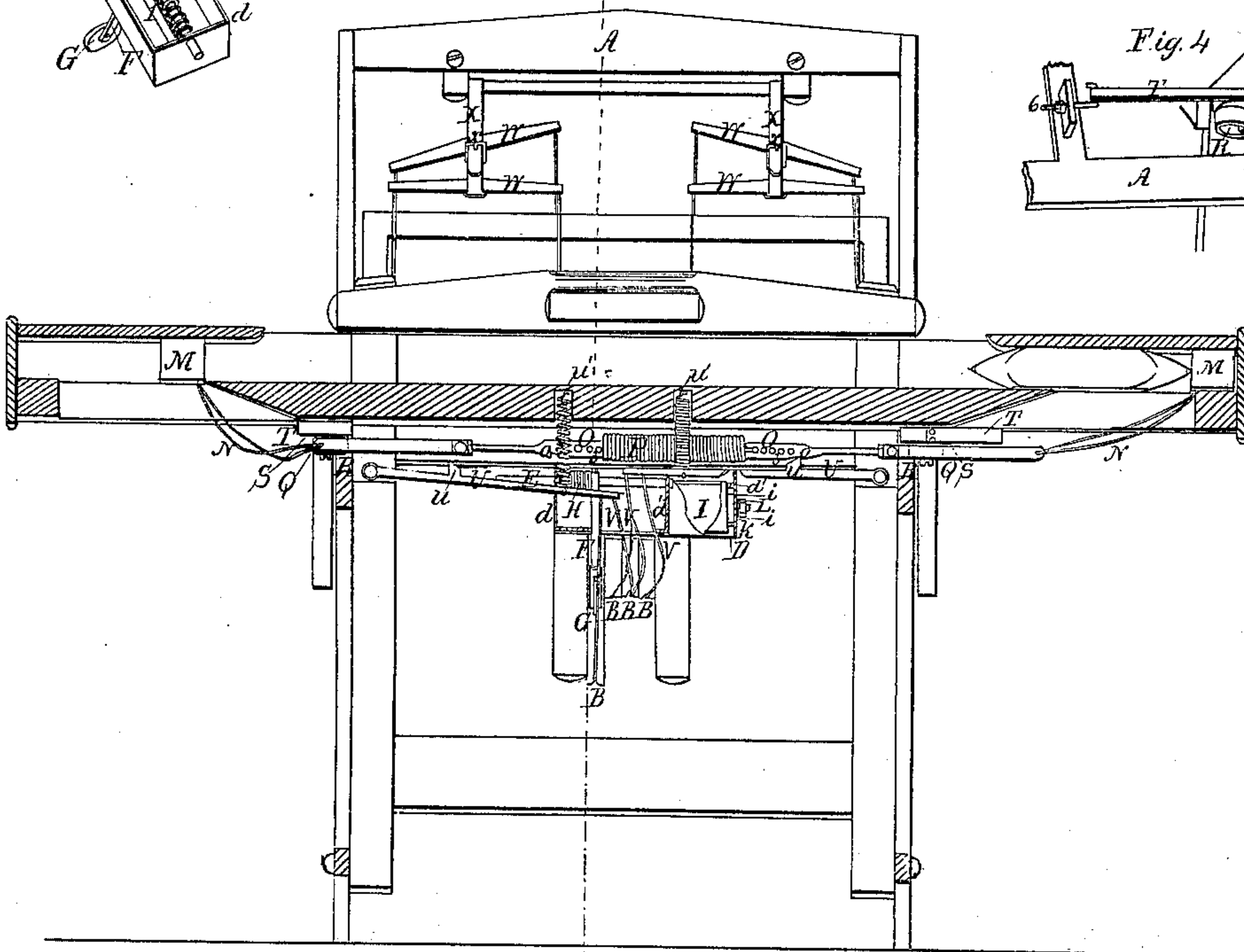
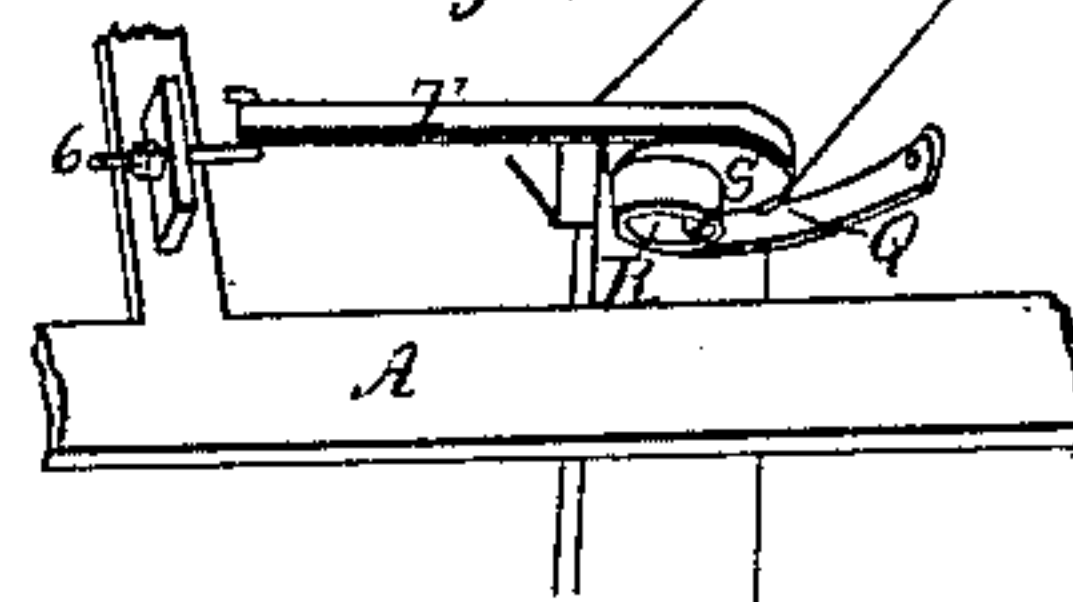


Fig. 4



Witnesses

Geo. S. Knight
S. S. S. S.

Inventor

S. G. Mendenhall

UNITED STATES PATENT OFFICE.

STEPHEN C. MENDENHALL, OF RICHMOND, INDIANA, ASSIGNOR TO ISAAC LAMB, OF SAME PLACE.

LOOM.

Specification of Letters Patent No. 22,533, dated January 4, 1859.

To all whom it may concern:

Be it known that I, STEPHEN C. MENDENHALL, of Richmond, Wayne county, Indiana, have invented a new and useful Improvement in Hand-Looms, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification.

My invention relates to, 1st, a provision in which the treadles are actuated by a roller which projects from the bottom or lay, and which (in addition to the forward and backward motion in common with the batten) has an intermittent lateral motion by which it is made to act successively on the several treadles. 2nd, a provision for throwing the shuttle by a compact arrangement of springs and triggers within the lay. 3rd, a provision for the ready adjustment of the harness.

Figure 1 is a longitudinal section at line $x x$ Fig. 2. Fig. 2 is a transverse section at line $y y$ Fig. 1. Fig. 3 represents a portion of the treading mechanism. Fig. 4 represents a portion of the picker mechanism.

A is a suitable framework adapted to support the various operating parts.

The upper front edges of the treadles B are formed into inclined planes, to adapt them for receiving the action of the treading mechanism as follows:—Attached to the under side of the batten C is a box D having three heads or cross plates d, d, d , two of which d, d' , are perforated to hold and guide a sliding rod E, from whose mid length there projects rectangularly an arm F, having at its lower end a friction roller G. The sliding rod E, with its arm F, I style the carrier E F. A spiral spring H causes the inner end of the rod E to press the edge of a scroll cam I, having four steps as represented. At the back of the cam I are four pins i which by impinging against a hook J attached to the breast beam, compel the cam I, to rotate through the fourth of a circle, at each forward stroke of the batten. The shank j of the hook J is hinged at j' , so as to allow it to yield to the motions of the batten and is screw threaded and provided with nuts j'', j''' , to enable its adjustment toward and from the cam. A slot 1 in the bottom of the box D permits the lateral play of the arm F, and a slot 2 in the side of said box provides for the traverse of the hook J. A gum cushion K inserted beneath the top L, affords sufficient equable

traction to hold the scroll cam to any position at which it may be placed.

By the above arrangement, the roller G, at each retrograde stroke of the batten, strikes one of the treadles and then the next one in succession from right to left, thus traversing the range of treadles at every four strokes.

The shuttle throwing mechanism consists as follows:—The picker block M, is at each end connected by a picker strap N to a sliding catch O having a tooth or spur o . Two of these sliding catches are attached, each to its respective end of a spiral spring P within the batten. To each sliding catch O, there is also attached a strap Q which is fastened to an eccentric pin or wrist R upon the pulley S, journaled to the batten. A series of holes 3, in each sliding catch, enable its adjustment in or out so as to act with greater or less force on the shuttle. From the pulley S, a strap T is carried backward, and made fast to a set screw 6 in the frame so that with every advance of the batten, the strap Q pulling at the sliding catch O, draws out the spring sufficiently for the spur o to engage in a similar spur u on the spring trigger U, which trigger is hinged to the batten. Each end of the batten has a complete set of the above described picker apparatus.

Cords V, connecting the treadles with the triggers cause the alternate release of the latter from the sliding catches. Small spiral springs u' , return the triggers to their upper position ready for engagement with the sliding catches upon the retraction of the latter by the straps Q. It will be seen that the eccentric wrist R acts with diminished force on the strap as the batten approaches its effective position in forcing up the weft and thus tends to an equalization of power. It will also be observed that the picker mechanism is placed in the closest possible relation to the shuttle thus attaining great compactness of arrangement and avoiding lost motion and back lash. Also that the treadles are operated automatically directly from the batten, in a simple compact and effectual manner.

The heddles or harness W are suspended from the frame by customary straps X and buckles x . The lower cords or straps Y terminate in cross pins or buttons y which at the discretion of the operator are inserted

in either one of a series of notched mortises Z in the treadles B. This device, in connection with the buckles on the upper straps, enables the height and depth of the shed in the warp to be accurately and quickly adjusted.

I claim herein as new and desire to secure by Letters Patent—

1. The treadle roller G carrier E, F and spring H in combination with the scroll cam I arranged in the box D, for the purpose of operating the treadles substantially in the manner described.

2. The hook J having an adjustable and hinged attachment to the breast beam when combined with a set screw to determine its position, and operating on the scroll cam in the manner set forth.

3. The combination with the treadle of the graduated series of mortises Z and pin y

for the purpose of regulating the width of the shed.

4. The combination of the picker spring P sliding catches O trigger U and straps Q T for the purpose of throwing the shuttle as set forth.

5. The combination of the double eccentric pulleys R, S, and straps Q T with the set screw b arranged substantially in the manner described for the purpose of expanding the picker spring P in such a manner as to equalize the power at each forward motion of the lay or batten.

In testimony of which invention, I hereunto set my hand.

S. C. MENDENHALL.

Witnesses:

GEO. H. KNIGHT,
B. WEST.