

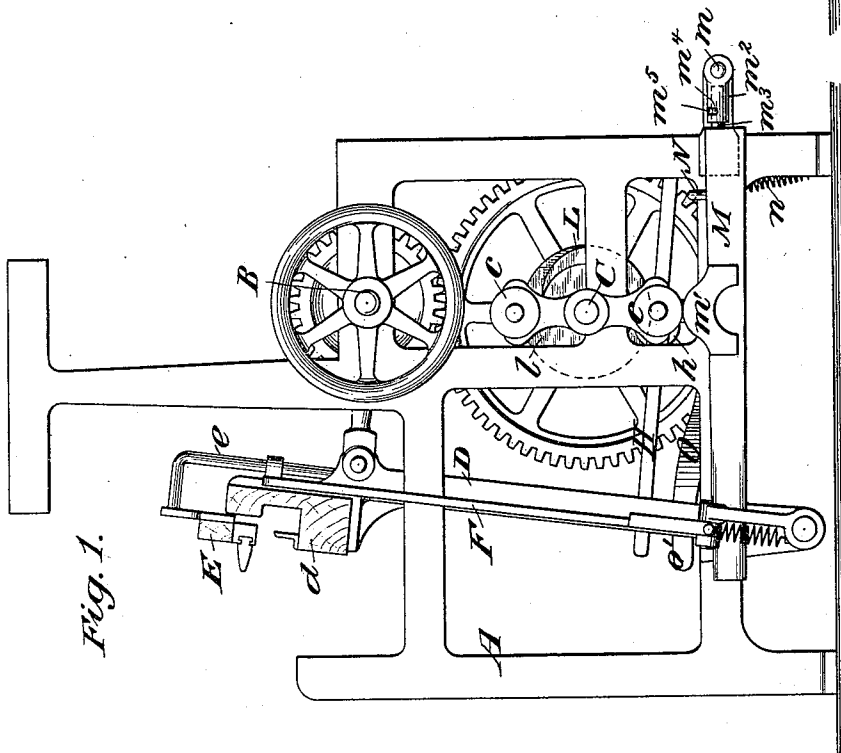
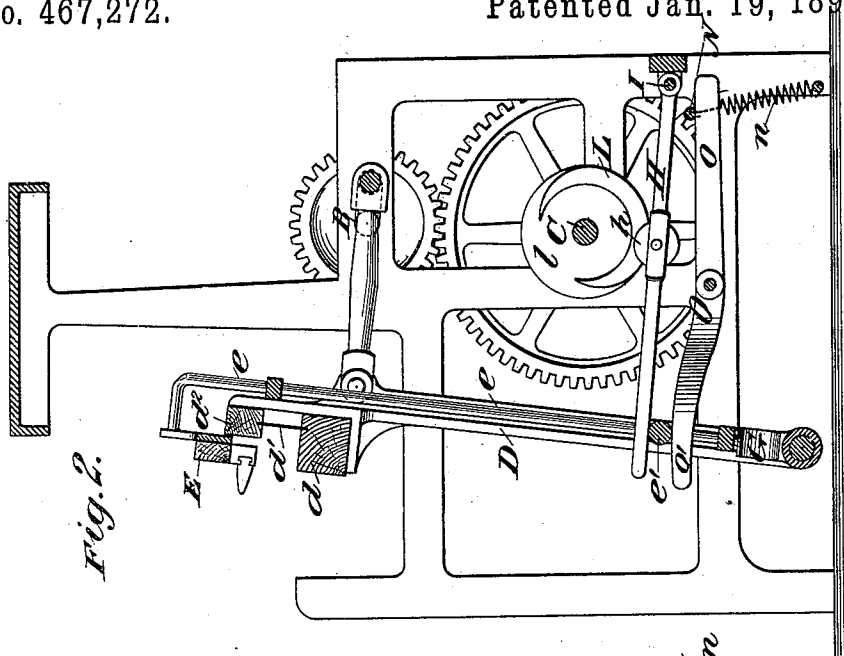
(No Model.)

2 Sheets—Sheet 1.

E. BARTON.
SWIVEL LOOM.

No. 467,272.

Patented Jan. 19, 1892.



Witnesses:
R. H. Haywood
Fred Haynes

Inventor:
Edwin Barton
by attorneys
Brown & Howard

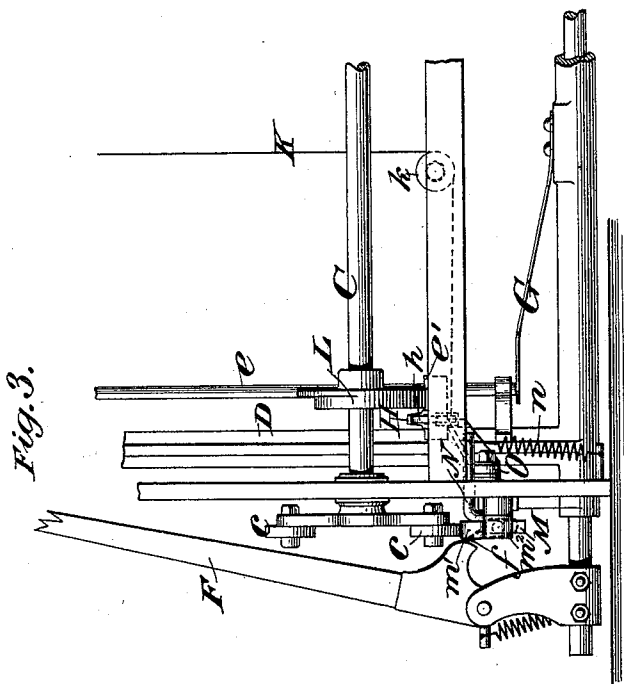
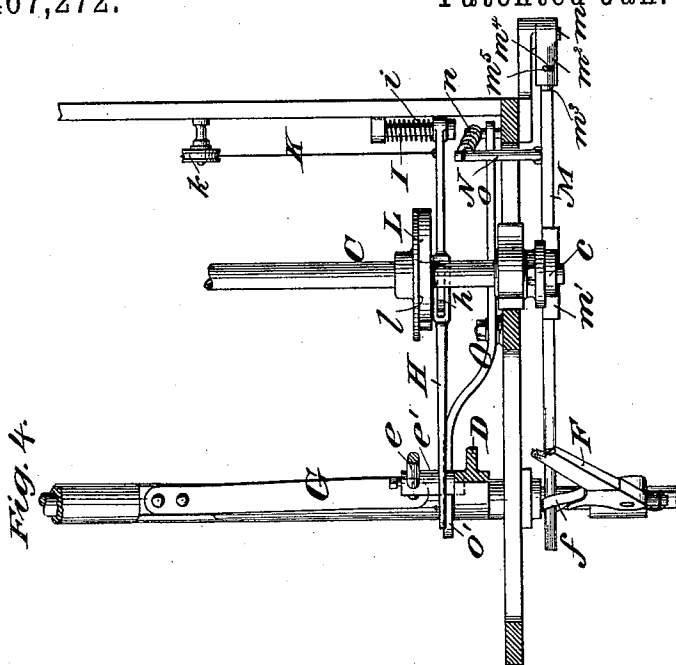
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UNITED STATES PATENT OFFICE.

EDWIN BARTON, OF PATERSON, NEW JERSEY.

SWIVEL-LOOM.

SPECIFICATION forming part of Letters Patent No. 467,272, dated January 19, 1892.

Application filed June 24, 1891. Serial No. 397,306. (No model.)

To all whom it may concern:

Be it known that I, EDWIN BARTON, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful
5 Improvement in Swivel-Looms, of which the following is a specification.

My invention relates to an improvement in swivel-loom in which the mechanism for calling the swivel-shuttles into play serves to
10 throw the fly-shuttle-operating mechanism out of play.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

25 Figure 1 is an end view of a loom, certain parts being omitted. Fig. 2 is a vertical transverse section of the same. Fig. 3 is a partial view in rear elevation; and Fig. 4 is a partial plan view, certain of the parts being shown
30 in section.

A represents the main frame of the loom; B, the drive-shaft; C, the cam-shaft; D, the lay-swords; *d*, the lay-sole; *d'*, the reed; *d''*, the rail; E, the swivel-shuttle beam; *e*, the vertically-movable rods for bringing the swivel-shuttles into and out of use, and F the picker-staffs.

The several parts above named may be of the ordinary form and arrangement, such, for
30 example, as found in the well-known loom structure in which a single series of swivel-shuttles is employed.

My present invention contemplates the lowering of the swivel-shuttle beam at such intervals as shall be determined by the pattern in the Jacquard mechanism, which may be employed in connection with the loom and the disengagement of the picker-staff-operating treadle from its actuating mechanism by
35 the calling of the swivel-shuttle-operating mechanism into play.

The vertically-movable rod *e* for raising and lowering the swivel-shuttle beam rests at its lower end upon a spring G, the tension of
45 which tends to hold it in elevated adjustment, and hence the swivel-shuttles out of play. The rod *e* has fixed thereon a laterally-extending stud or bearing-piece *e'*, on which the free end of an operating-arm H is adapted to bear, the opposite end of said arm H being pivoted upon a pintle I, fixed to a portion of the main frame. The arm H has a lateral

movement upon its pintle I against the tension of a spring *i*, in the present instance shown as a spiral spring surrounding the pintle I. The lateral movement of the arm H on
55 its pintle is effected by means of a cord K, leading from the arm H around a guide-pulley *k*, and thence to the Jacquard mechanism. (Not shown.) The said lateral movement of the arm H is intended to bring it in position to be depressed by an operating-cam L, fixed to rotate with the cam-shaft C, and at the point where the said arm H engages the cam it is provided with an anti-friction roller *h*.
60 The cam L is sufficiently reduced, or, as shown in the present instance, cut away, leaving a space *l*, at which point in the revolution of the cam the arm H may be moved laterally, so as to bring the roller *h* in vertical alignment with the cam L, and thereby cause the arm H, and hence the rod *e*, to be depressed as the cam is rotated. When the pull upon the cord K is released by the Jacquard mechanism, the spring *i* will throw the arm H in
65 the direction to release the roller *h* from the cam, and the rod *e* will then be permitted to lift under the tension of the spring G and the swivel-shuttles will be thrown out of play.

The treadle for operating the picker-staff 30 is represented by M, and has a swivel-joint between its pivotal point *m* and the point where the shoe *m'* is located. In the present instance the joint is formed by means of a socket-piece *m''*, in which a rounded portion
75 *m'''* of the treadle loosely fits, the said socket-piece being provided with a circumferential slot *m''''*, which receives a stud *m'''''* fixed to the rounded portion *m'''*, by which a limited rotary movement is permitted to the part of the
80 treadle carrying the shoe *m'*. When in normal position, the shoe *m'* is in position to receive the knockers *c* carried by the cam-shaft, which, through the strap connection *f* of the picker-shaft with the treadle, operate the
85 picker-staff at the proper intervals. The limited rocking movement of the part of the treadle carrying the shoe *m'* is sufficient to throw the shoe off to one side sufficient to clear it from engagement with the said knock-
90 ers, and such rocking movement is effected as follows: A laterally-extending arm N projects from the side of the treadle M, as clearly shown in Fig. 4, and a lever O, pivoted to the
95 100

main frame, has one of its arms *o* projecting laterally underneath the laterally-extending arm *N*, and its other arm *o'* extending forwardly underneath the lateral projection *e'* on the rod *e*. The construction and arrangement are such that when the rod *e* is in adjustment and the swivel-shuttles out of play, the arm *o'* of the lever *O* will rest in proximity to the under side of the projection *e'*, and its arm *o* will rest in proximity to the under side of the arm *N*, with the treadle in position to bring its shoe into engagement with the knockers. When, however, the rod *e* is depressed to bring the swivel-shuttles into play, it will rock the lever (*O*) in the direction to elevate the arm *o* and thereby lift the arm *N* and rock the treadle *M* outwardly, so as to bring the shoe *m'* out of position to engage the knockers. The treadle will be so held out of position so long as the rod *e* is depressed, and when the latter is elevated the treadle will be rocked again into position to engage the knockers by the tension of a spring *n*, in the present instance secured at one end to the arm *N* and at the opposite end to a projection on the main frame.

From the above it follows that when, under the control of the Jacquard mechanism, the swivel-shuttles are called into play, the same movement will throw the treadles out of engagement with the knockers, and hence throw the fly-shuttles out of play, and that when the swivel-shuttles are allowed to resume their position out of play the fly-shuttles will be again called into play.

It is to be understood that the mechanism which I have herein illustrated and described is located at one end of the loom, and that a similar set of mechanism is located at the opposite end of the loom. (Not shown.)

What I claim is—

1. The combination, with the picker-staff, the swivel-shuttle mechanism, and the knockers, of a treadle in position to be engaged by the knockers, that portion of the treadle which is subject to be engaged by the knockers having a rocking movement in a plane transverse to the longitudinal axis of the treadle, means for connecting the treadle with the picker-staff, and means for rocking that portion of the treadle which engages the

knockers out of the path of the knockers when the swivel-shuttle mechanism is called into play, substantially as set forth.

2. The combination, with the swivel-shuttle mechanism and means for calling it into play, of the picker-staff, the swiveled treadle, means for connecting the treadle with the picker-staff, means for operating the treadle to communicate motion to the picker-staff, and a connection between the treadle and the mechanism for calling the swivel-shuttles in play, whereby the rocking movement of the swiveled treadle in a direction transverse to its vibratory movement is controlled by the said mechanism for calling the swivel-shuttles into play, substantially as set forth.

3. The combination, with the rising and falling swivel-shuttle beam and a sliding rod connected therewith, of a vibrating arm having also a lateral movement transverse to the direction in which it vibrates, a loose connection between the free end of the arm and the rod connected with the swivel-shuttle beam, a connection leading from the arm to the Jacquard mechanism, a cam for operating the vibrating arm, fly-shuttle-operating mechanism, and a lever under the control of the said rod, connected with the swivel-shuttle beam, for throwing the fly-shuttle mechanism out when the swivel-shuttle is brought into play, substantially as set forth.

4. In combination, the swivel-shuttle beam, a spring-actuated rod as a support for the beam, a cam-actuated arm for moving the rod against the tension of the spring, the picker-staff, the treadle, means for connecting the treadle with the picker-staff, knockers for operating the treadle and hence the picker-staff, the portion of the treadle adapted to engage with the knockers having a rocking movement in a plane transverse to the longitudinal axis of the treadle out of the path of the knockers, and a lever engaged with the treadle and the said beam-supporting rod and under the control of said rod to throw the treadle out of engagement with the knockers, substantially as set forth.

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