2 Sheets—Sheet 1.

J. H. MOONEY.

Double Chain-Stitch Sewing-Machine.

No. 222,298. **Patented Dec. 2, 1879.**

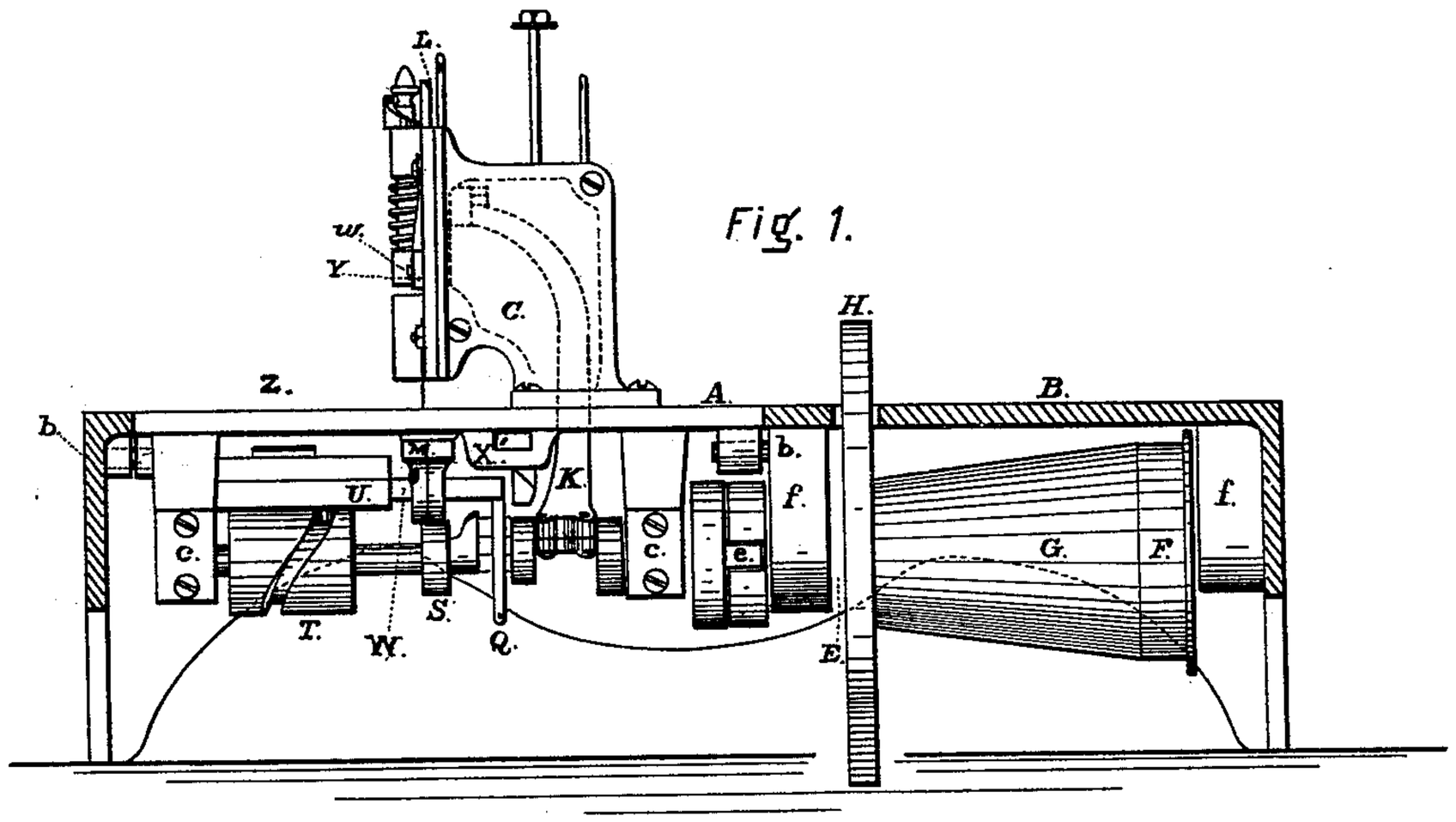

Fig. 1.

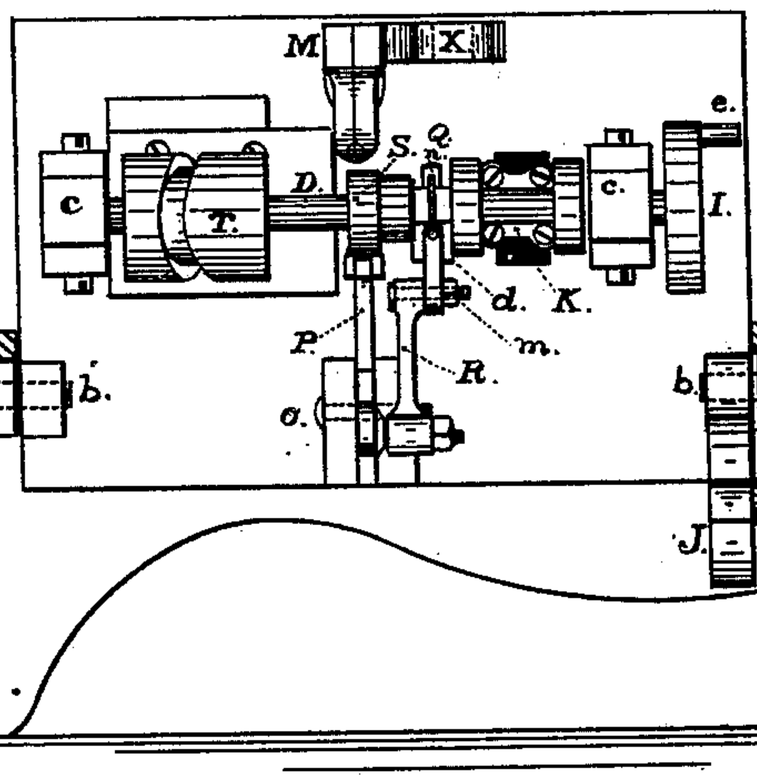

Fig. 2.

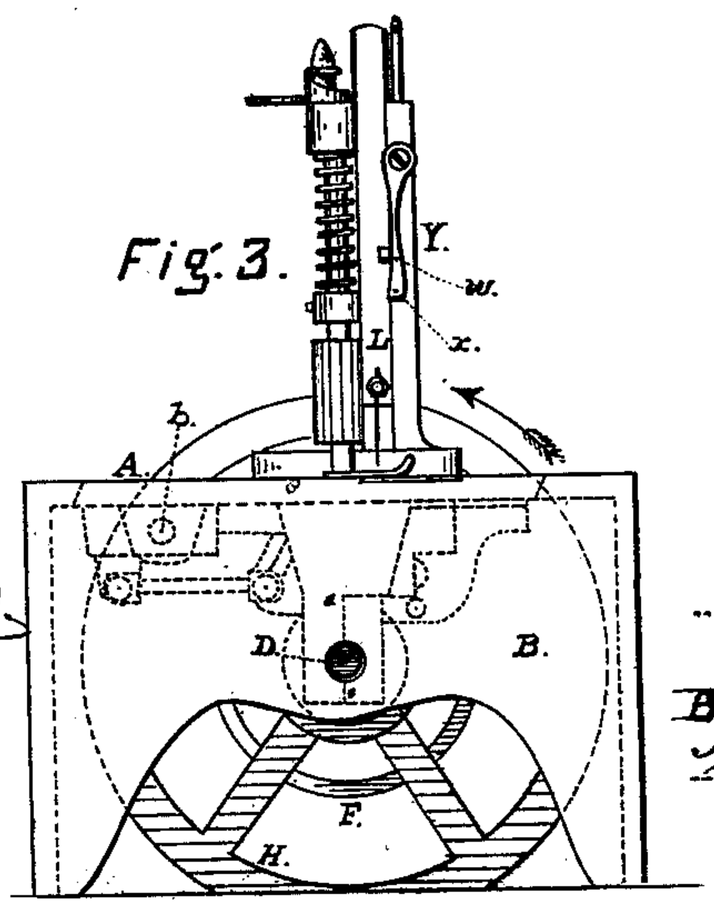

Fig. 3.

Witnesses:

Edward C. Osborn

H. L. Stinner

Inventor:

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By Munn & Smith

his Attys.

2 Sheets—Sheet 2.

J. H. MOONEY.

Double Chain-Stitch Sewing-Machine.

No. 222,298. Patented Dec. 2, 1879.

Fig. 8.

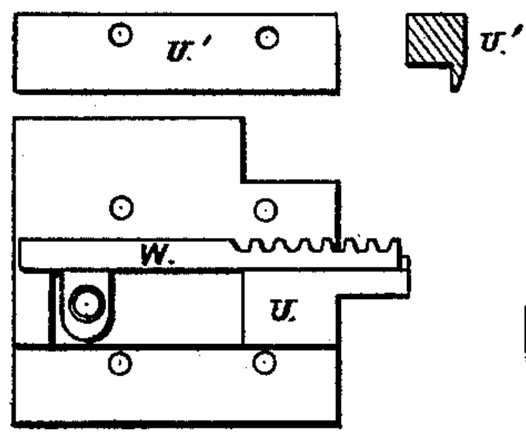
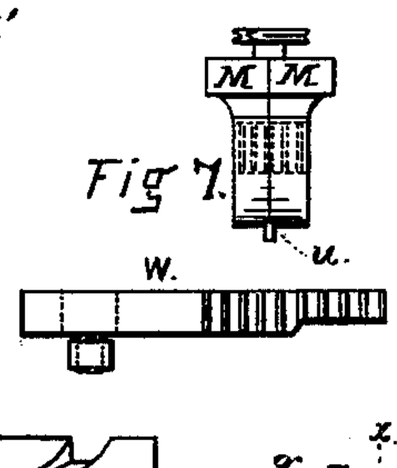


Fig. 7.



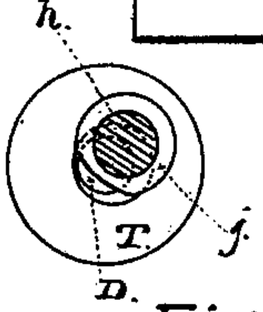


Fig. 6.

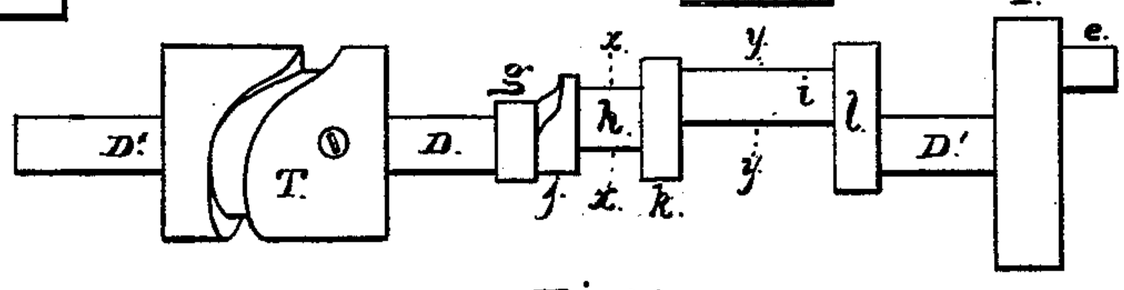


Fig. 4.

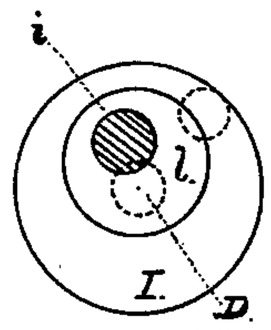


Fig. 5.

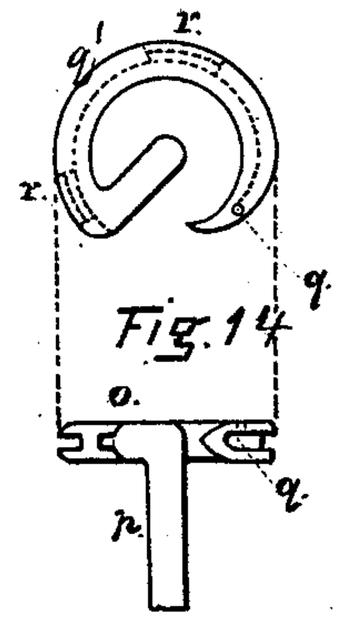


Fig. 14.

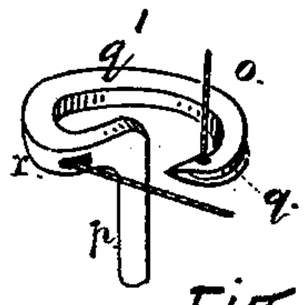


Fig. 13.

Fig. 9.

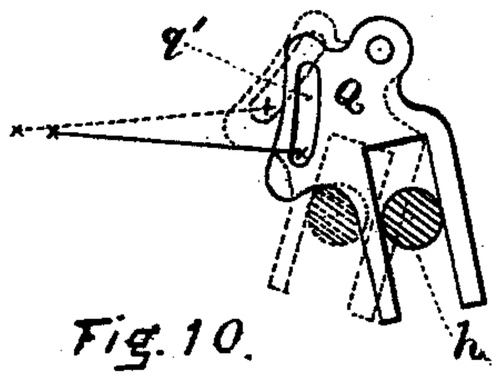


Fig. 10.

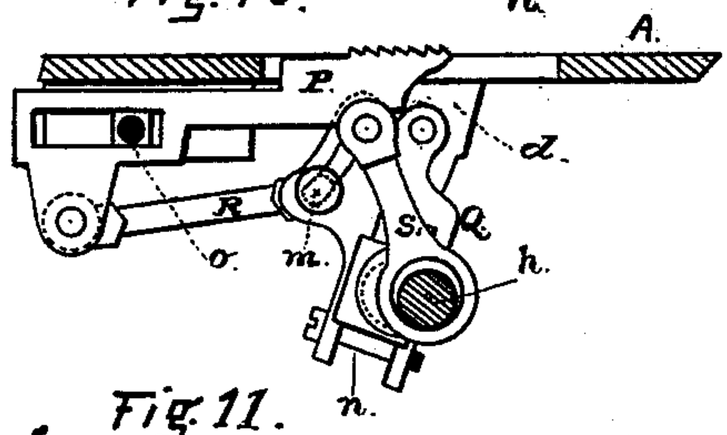
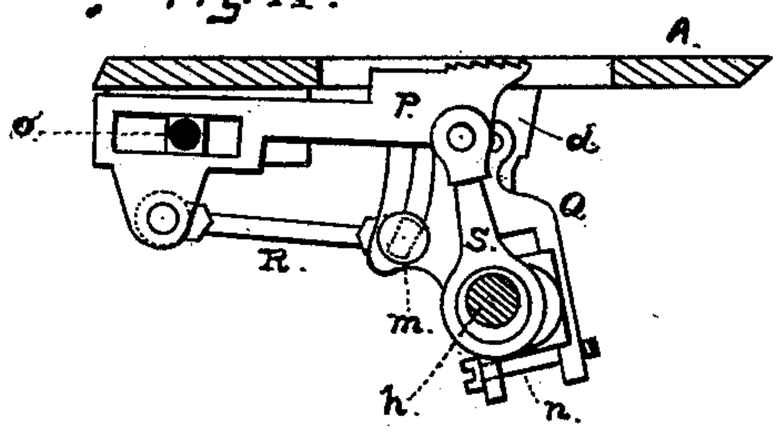


Fig. 11.



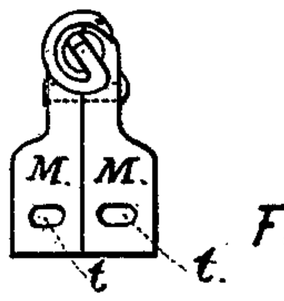


Fig. 15.

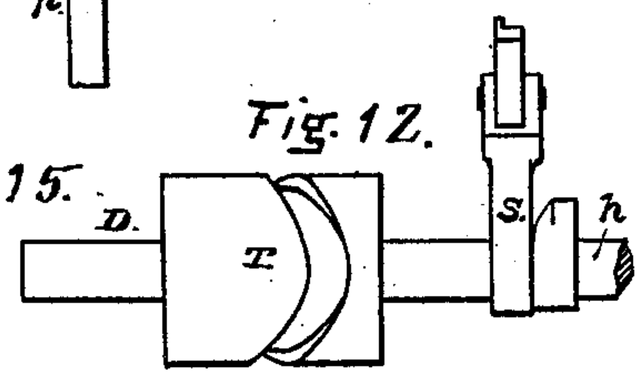


Fig. 12.

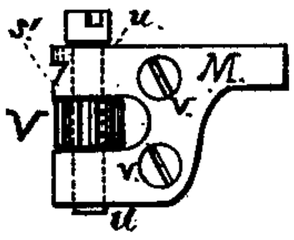


Fig. 16.

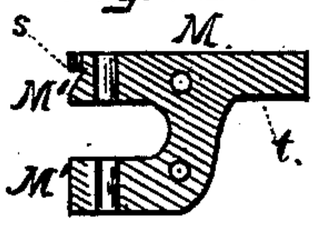
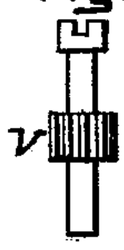


Fig. 17.



Witnesses:

Edward C. Osborn.

L. L. Skinner

Inventor:

John Mooney

By C. W. M. Smith

his Atty.

UNITED STATES PATENT OFFICE.

JOHN H. MOONEY, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO EDINGTON DETRICK, OF SAME PLACE.

IMPROVEMENT IN DOUBLE-CHAIN-STITCH SEWING-MACHINES.

Specification forming part of Letters Patent No. **222,298**, dated December 2, 1879; application filed June 14, 1879.

To all whom it may concern:

Be it known that I, JOHN H. MOONEY, of the city and county of San Francisco, in the State of California, have made and invented a certain new and useful Improvement in Double-Chain-Stitch Sewing-Machines, which invention is fully set forth and described in the following specification and the accompanying drawings, in which—

Figure 1 is an elevation of my machine, partly in vertical section. Fig. 2 is a similar view, but with the bed-plate of the machine turned back upon its hinges to expose the working parts. Fig. 3 is an end elevation, taken from the left-hand side of Fig. 1. Fig. 4 is an elevation of the shaft, on which are formed all the eccentrics for actuating the different mechanisms of the needle, feed, and looper. Figs. 5 and 6 are sections through the lines *x x y y* of Fig. 4. Fig. 7 represents the curved rotary looper and its driving rack and pinion. Fig. 8 shows the bearing-block for the rack. Figs. 9, 10, 11, and 12 show, in detail, the parts that produce the back-and-forth horizontal and the rising-and-falling vertical movements of the feed-bar. Fig. 13 is a perspective view of the curved rotary eye-pointed looper. Fig. 14 is a detail view, showing the plan and side view of the looper. Figs. 15 and 16 are detail, plan, and side views of the divided bracket that holds the looper and its driving-spindle. Fig. 17 is a view of the looper-spindle and pinion.

My invention relates to improvements in bag-sewing machines; and it consists in certain improvements therein, as hereinafter more fully set forth, and pointed out in the claims.

In the drawings, A is the bed-plate or supporting-table, on which are the bearings for the operative parts. It is hinged at *b b* to and within an opening in the stand or supporting-frame B, so that it can be turned up and back for access to the parts beneath.

B is the supporting-stand, on which are bearings *f f* for the driving-shaft. C is the upright post or standard that supports the needle-bar and other parts. It is made of narrow width, so that the right hand of the operator can be passed around to reach and control the work on the farther side of the machine, and the opening around the needle hole and feed is contracted and made only large enough to permit the easy passage of the edges of the work, but not large enough to allow the hand or arm to be introduced through it in handling the work.

D is the eccentric-shaft that actuates all the parts of the feed and the stitch-forming mechanisms. It has two axial portions, D′ D′, and three eccentrics, *g h i*, which are all cast in one piece. The eccentric *g* produces the vertical movements of the feed-bar. The eccentric *h*, between the disks *j k*, gives the horizontal movements of this bar, and the eccentric *i*, between the disks *k l*, actuates the upright arm connected to the needle-bar.

E is the actuating-shaft, provided with the loose pulley F, and the cone driving-pulley G, and a balance-wheel, H.

I J are the coupling-disks that connect the actuating-shaft with its driving-shaft. I is secured on the end of the shaft D, and is provided with an eccentric pin or stud, *e*, which is received and held in a slot in the circumference of the disk J on the shaft E when the table A is turned down and the two shafts are brought in line. When the disks are turned to present the slot and stud to the front, as shown in Figs. 1 and 2, the two shafts will readily couple and uncouple as the bed-plate A is lowered or is raised up.

K is the needle-actuating arm, secured at its lower end around the eccentric *i*, and at its upper curved end to the needle-bar L.

M M are the two halves or parts forming the supporting-bracket for the rotary curved looper. These halves have upper and lower bearings M′ M′ for the looper-spindle, and they are held together by screws *v v*. The slotted holes *t t* are made to receive screws that secure the bracket to the bed-plate, and the needle-hole *s*, to receive the point of the needle in its downward movement, is made to extend down to an inclined ledge formed or cut into the face of the bearing, so that the needle-hole leads out through this inclined surface, instead of running entirely through to the pinion.

By this means the dirt, lint, &c., from the table and work above, or from the threads of the looper and needle, cannot be carried down and lodged in around the pinion or the spin-

dle, but is caused to pass out at the side of the bearing.

W is the rack, which works in a straight path in its bearing-block U, and gears into the pinion on the looper-spindle. It is driven by the rotary grooved cam T on the shaft D, and by its action the looper is driven with a rotary reciprocating motion.

i is the curved rotary reciprocating looper, with a shank, *p*, that enters a hole at the bottom of the cross-slot *u* in the end of the bracket M M.

The outer rim of the looper has the usual thread-groove; but the eye *q* is made in the upper horizontal face at the point, instead of through the inner vertical side.

By this construction the under thread, extending from the eye, is kept always on the top of the looper, and cannot be caught between the needle and the inner rim of the looper during their operations. The under thread also is not liable to be drawn under the looper-point, and the enchainment of the two threads is better insured.

The lower edge of the outer rim of the looper, at the point and immediately below the eye *q*, is chamfered off to expose the eye and facilitate the introduction of the thread upward from below.

P is the feed-bar, having a serrated part, which works in a slot in the bed-plate, and a slotted end held and sliding upon a fixed stud or pin, *o*, in the lugs on the under side of the plate A.

The forked oscillating plate Q produces the horizontal movements of the feed-bar. It is pivoted to a bearing, *d*, on the bed-plate above the line of the eccentric-shaft D, and connection between it and the rear end of the feed-bar P is made by the rod R. One end of this rod is pivoted to the extension on the end of the feed-bar, and the other end is pivoted on a square-shouldered clamping-bolt, *m*, secured in the curved slot. This end of the rod is adjustable in the slot both toward and away from the center of oscillation of the plate Q at *d*, and the length of horizontal movement is altered by changing this bolt *m* in the slot. This slot being placed upon one side of the center of motion, the change in the length of movement of the feed-bar P is produced at one end only, and the feed-bar begins its forward-feeding movement always from the same point.

The forked ends of the oscillating plate Q embrace and slide upon a box, within which the eccentric *h* works, and a screw-pin, *n*, secures their lower ends.

The arm S, with a ring that embraces the eccentric *g*, is pivoted beneath and to the forward end of the feed-bar, and produces the vertical movements of the bar at the beginning and termination of its horizontal movements.

T is the rotary grooved cam, of proper shape to give the reciprocating motions to the rack W at the required intervals.

U is the block that holds and guides the rack W. By its construction the rack is held always in line, and in a solid bearing for its entire length; and by removing the part U′ and filing its face the wear of the parts is readily taken up, and the feed-rack will be caused to work smoothly and in line again when the part is replaced and tightened up by the screws.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The shaft D′ D′ D, provided with the eccentrics *g h i*, in combination with the arm K, needle-bar L, forked oscillating plate Q, pivoted rod R, rod S, and feed-bar P, and the cam T, rack W, looper-shaft *p*, provided with pinion V, and looper *q′*, substantially as described, and for the purposes set forth.

2. The supporting-bracket M M, composed of halves, united by set-screws, as set forth, and provided with the needle-hole *s*, and inclined ledge *s′*, in combination with the looper-spindle, having pinion V, rack W, and cam T, substantially as described, and for the purposes set forth.

3. The combination of the feed-bar P, shaft D, provided with the two eccentrics *g h*, the vertically-reciprocating arm S, the forked oscillating plate Q, the pivoted connecting-rod R, and the pin *o*, on which the bar P slides, all constructed and applied to operate substantially as described.

4. The curved looper *q′*, having the lower edge of its outer rim, at its point and immediately below its eye, chamfered to expose the eye, and provided with a thread-groove, and an eye, *q*, made in the upper horizontal face of the looper, near its point, substantially as described, and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 14th day of March, 1879.

JOHN H. MOONEY. [L. S.]

Witnesses:
C. W. M. SMITH,
EDWARD E. OSBORNE.