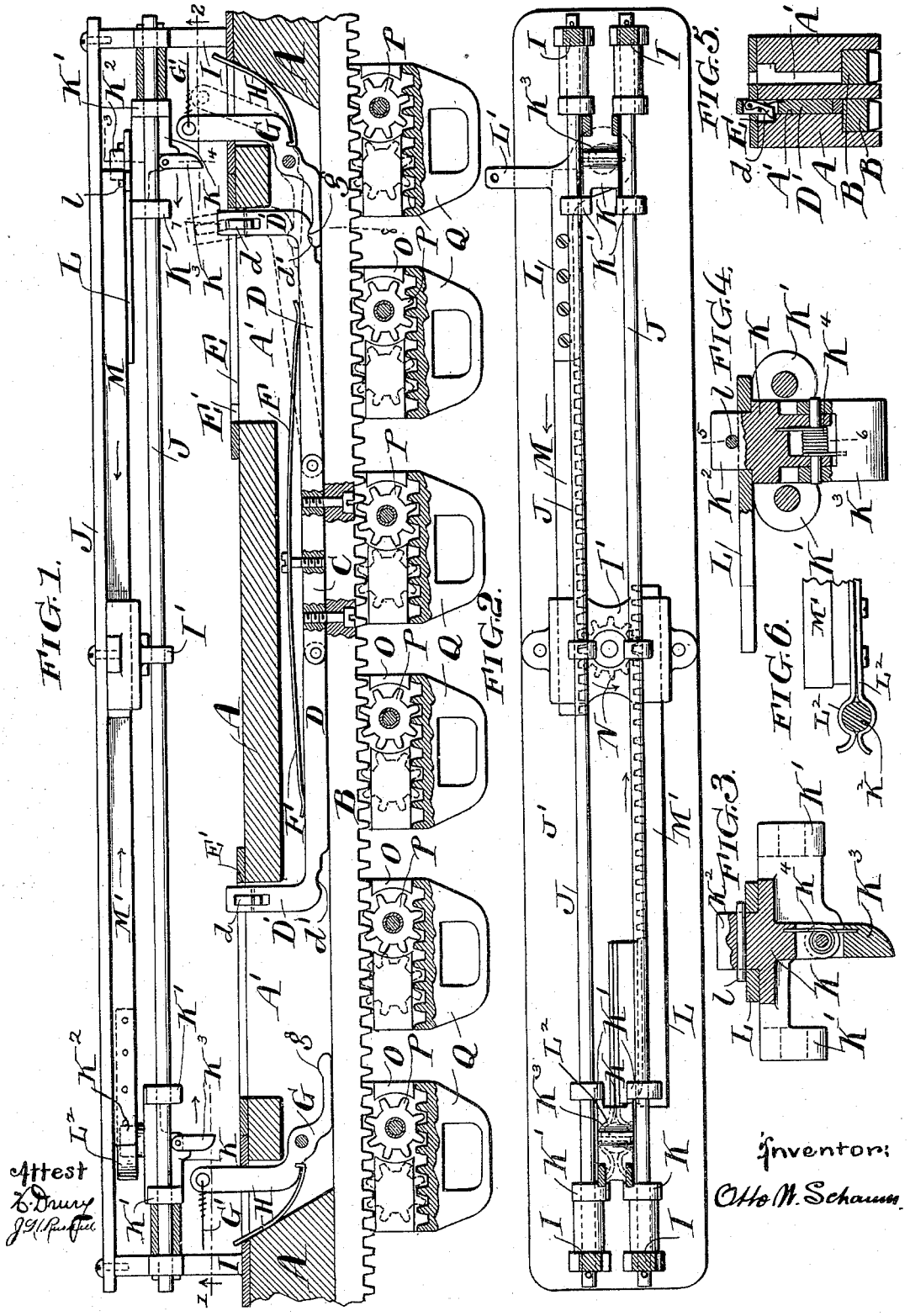
(No Model.)

O. W. SCHAUM.

SWIVEL LOOM

No. 493,654. Patented Mar. 21, 1893.



UNITED STATES PATENT OFFICE.

OTTO W. SCHAUM, OF PHILADELPHIA, PENNSYLVANIA.

SWIVEL-LOOM.

SPECIFICATION forming part of Letters Patent No. 493,654, dated March 21, 1893.

Application filed July 1, 1892. Serial No. 438,669. (No model.)

To all whom it may concern:

Be it known that I, OTTO W. SCHAUM, of the city and county of Philadelphia, State of Pennsylvania, have invented a certain new and useful Improvement in Swivel-Looms, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to swivel looms and particularly to the devices which actuate the racks which in turn actuate the swivel shuttles, my object being principally to simplify and perfect what I may call the wiper mechanism used for this purpose, and also to improve the mechanism in some other details.

My invention will be best understood as described in connection with the drawings in which it is illustrated and in which—

Figure 1 is an elevation partly in section of the beam and its attachments. Fig. 2 is a plan of the wiper mechanism taken on a section line 1—2 of Fig. 1 and looking upward. Fig. 3 is a sectional view on the line 5—6 of Fig. 4. Fig. 4 a sectional view on the line 3—4 of Fig. 1, Fig. 5 a sectional view on the line 7—8 of Fig. 1, and Fig. 6 a detail of construction.

A indicates the shuttle supporting beam; as shown, it is adapted for use with two rows of shuttles having racks B B secured at its bottom and corresponding slots A′ A′ formed through it above said racks. To each rack is secured a bar C at each end of which is pivoted a rod or bar D having a turned up end D′ which extends up in slot A′ to or above the top of the beam; at the top of end D′ is a small catch *d* which, when the end is thrust up, catches in the top of the beam, or, as shown, on a correspondingly slotted metal plate E secured on top of the beam, and holds the end D′ up in the path of the wipers until it is pushed to a point E′ where a recess in the plate permits the catch to fall together with the rod D. In addition to the weight of the rod D I prefer to employ a spring F to draw and hold them normally down. The ends D′ of the rods are elevated at proper times by means of levers G which are normally held in the position shown by springs H but which are moved to throw up the end D′ above them as shown in dotted lines at Fig. 1 by means of cords G′ actuated by the Jacquard mechanism, not shown. The swivel shuttle blocks are indicated at O, the shuttles at Q and the spur-gears connecting the racks and shuttles at P.

In all of the above noted particulars the device shown is similar to that shown and claimed as new in my pending application filed May 20, 1891, Serial No. 393,475.

The first feature of improvement to which I will call attention is the provision of a catch or latch adapted to hold the rack normally stationary, that is, to prevent that tendency of the rack and its attachments to move which arises from the jar of the machine. I form this catch in the rods D in any convenient way, preferably by forming a recess *d* in the rod and formation of corresponding projection *g* at the end of the lifting lever G. The engagement of the recess and projection as shown at the right of Fig. 1 tends to hold the rod and rack stationary preventing a tendency to move, due to the jar of the machine.

Next referring to the wiping devices which act upon the ends D′ of the rods when they are elevated. My device as shown, is new and quite different from the devices shown in my former application.

I, I are standards secured to the beam A and supporting guide rods J J, also as shown a wooden brace strip J′.

M M′ are rack bars longitudinally movable in guides in bracket I′, and arranged with their teeth facing each other and engaged with opposite sides of pinion N so that they will always move in reverse directions. The rack bar M is secured to the projection K^2 of one wiper carrier K by means of a metal plate L secured to the rack bar by screws and to the lug K^2 by a pin *l* as shown in Figs. 3 and 4. The bar M′, however is, as shown, secured to the other carrier by a fork spring L^2 which embraces the lug K^2 as shown in Fig. 6, and has a flared extension from each arm as there shown. K^3 are the wipers which are pivotally secured to the carriers K so that they can fold inwardly from the normal position shown, and preferably springs K^4 are used to hold the wipers normally in their extended operative position.

The wipers are given a reciprocating motion by moving one of the racks; as shown, an arm L′ on plate L is provided for attachment

to some convenient device for giving the motion. As the wipers move in they engage any lever arm D′ which may be thrown up at the time and push it along until it comes to a recess E′ which permits it to fall; this of course moves the connected rack bar and the appropriate line of shuttles. In moving back, the wipers fold in and upwardly on their hinges to pass over the lifted end of any raised arm D′, and in case both wipers in moving forward or to the center come in contact with lifted arms D′ attached to the same rack, as may sometimes occur, the wiper attached to rack M′ is pushed back, the fork spring L^2 yielding and thus preventing accident to the machinery. The spring L^2 will, when the rack M′ moves outwardly, spring again around the lug K^2 and thus reattach the wiper to its appropriate rack bar.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a swivel-shuttle supporting beam A, guides as J suitably supported on said beam, wiper carriers K K supported on said guides, hinged wipers supported on said carriers racks M M′, one attached to each carrier and arranged facing each other as shown, and a spur pinion arranged between and in engagement with both racks, all substantially as specified.

2. In combination with a swivel shuttle supporting beam A, guides as J suitably supported on said beam, wiper carriers K K supported on said guides, wipers K^3 pivotally attached to each carrier, racks M M′, one attached to each carrier and arranged facing each other as shown and a spur pinion arranged between and in engagement with both racks, all substantially as specified.

3. In combination with a swivel shuttle supporting beam A, guides as J suitably supported on said beam, wiper carriers K K supported on said guides, a rack M secured to one carrier, a rack M′ secured to the other carrier by a yielding connection L^2, said racks being arranged to face each other, and a spur pinion N placed between and in engagement with both racks.

4. In combination with a swivel, shuttle supporting beam A, racks B having pivotally attached rods D D′ formed with a recess as d' on their under sides, and a detent adapted to fit in said recess and hold the rods and their attached racks steady.

5. In combination with a swivel, shuttle-supporting-beam A, a rack having pivotally attached rods D D′ formed with a recess as d' on their under sides and lifting levers G formed with a detent at their ends adapted to engage said recess.

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Witnesses:
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