

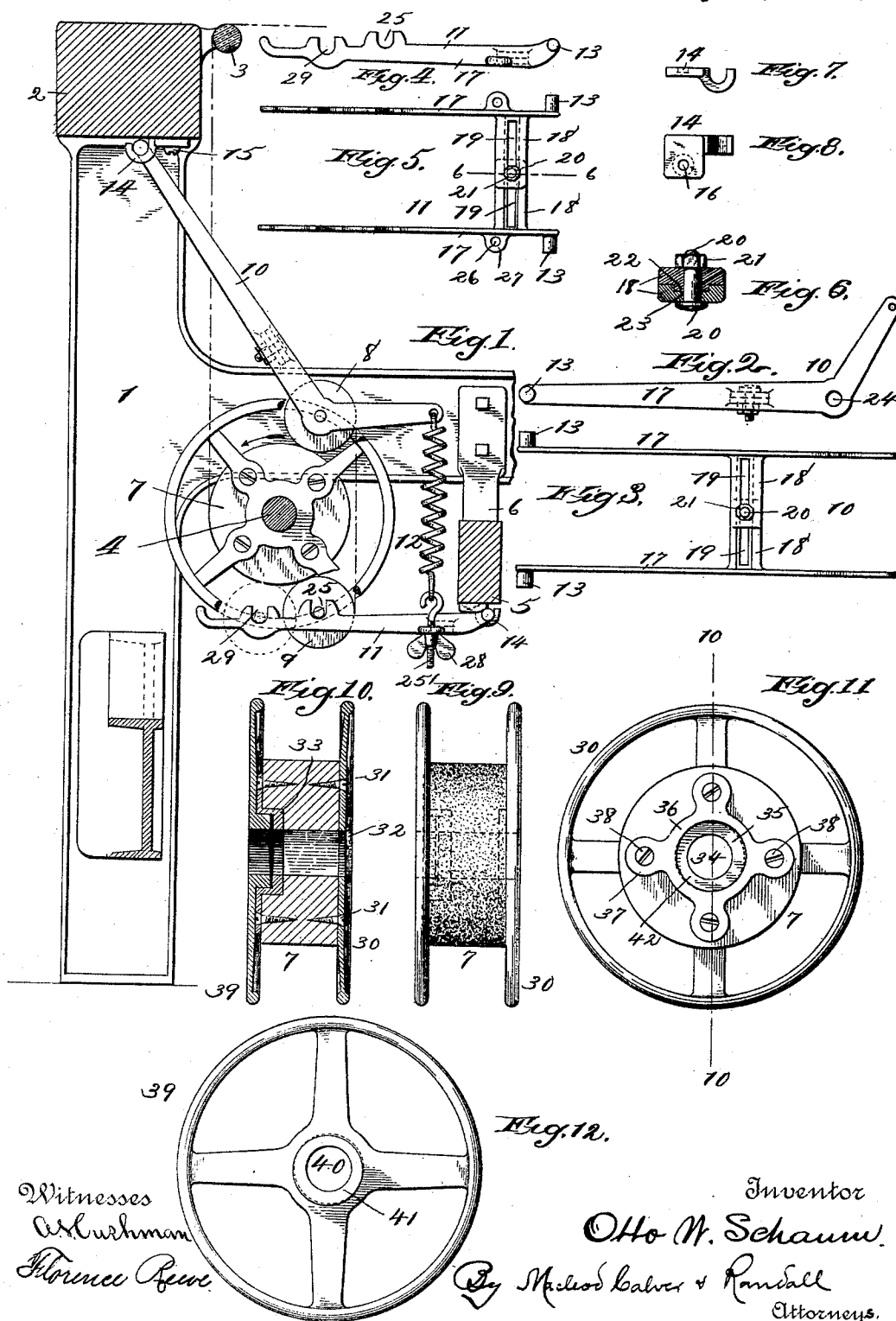
(No Model.)

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TAKE-UP MECHANISM FOR NARROW WARE LOOMS.

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TAKE-UP MECHANISM FOR NARROW-WARE LOOMS.

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To all whom it may concern:

Be it known that I, OTTO W. SCHAUM, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Take-Up Mechanism for Narrow-Ware Looms, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to take-up mechanism for looms, and particularly to that class of take-up mechanism which is designed for use on narrow ware looms.

It consists in certain novel features of construction, and novel arrangements and combinations of parts, all as will first be fully described in connection with the accompanying drawings, and then be particularly pointed out and clearly defined in the claims at the close of this specification.

The objects of my invention are to provide a simple and convenient construction and arrangement of parts for taking up or drawing forward the web of fabric as fast as it is woven in a loom of the kind above indicated, and also for winding the fabric on to a roll as fast as taken up; to provide means whereby the take-up devices may be adapted readily for use in connection with narrow fabrics of different widths; to provide for the removal at any time of the fabric which has been wound on the cloth or fabric-receiving roll; and to provide for securing the sand or take-up roll to its shaft and for releasing it therefrom when desired.

In the drawings, Figure 1 is a sectional side elevation of a narrow-ware loom with my improved take-up mechanism applied thereto. Fig. 2 is a view in side elevation of the swinging frame in which is supported the presser roll hereinafter described. Fig. 3 is a plan view of the said swinging frame. Fig. 4 is a view in side elevation of the swinging frame in which is supported the cloth-receiving roll hereinafter described. Fig. 5 is a plan view thereof. Fig. 6 is a view in section on line 6—6 in Fig. 5, with the securing bolt and its nut in elevation. Figs. 7 and 8 are views at right angles to each other illustrating one of the bearing pieces whereby the swinging frames aforesaid are pivotally held to the loom frame. Fig. 9 is a view in front eleva-

tion of the sand or take-up roll. Fig. 10 is a view thereof in section on the plane indicated by the line 10—10 in Fig. 11. Fig. 11 is a view in side elevation of the said sand or take-up roll, with the loose head or flange thereof removed. Fig. 12 is a view in side elevation of the said loose head or flange of the sand or take-up roll.

In Fig. 1 of the drawings, 1 designates one of the side frames of a loom, 2 the breast beam thereof, 3 the glass rod or roller, sometimes employed, around which the fabric passes on its way to the take-up mechanism as fast as it is woven, 4 the shaft of the take-up roll, this shaft being actuated in suitable and well-known manner to rotate it in the direction of the arrow, and 5 a cross-piece or strip which is supported from the side frames of the loom by suitable brackets, one of which is represented at 6.

At 7 is shown the sand or take-up roll which is mounted upon the shaft 4 and rotated thereby, at 8 a presser roll between which and the take-up roll the fabric passes as shown and thereby is gripped, and at 9 the cloth roll on which the fabric is wound after leaving the roll 8. The presser roll 8 is supported in a frame 10 and the cloth roll 9 in a frame 11, the former of the said frames being pivoted to the breast beam as shown, and the latter thereof to the strip 5, and the said frames are connected together by a spring or springs 12 by the action of which the rolls 8 and 9 are borne toward the surface of the roll 7 and pressed thereagainst, and whereby the roll 8 is caused to bear upon and grip the fabric passing between the same and the roll 7, both of the rolls 8 and 9 being rotated by frictional surface contact. Each of the side bars of the frames 10 and 11 is provided with a laterally projecting journal 13, and these journals are fitted to suitable bearings in bearing pieces 14 which are held by screws 15 to the loom-frame. One of these bearing pieces is shown in side elevation in Fig. 7 and in plan in Fig. 8, the hole therethrough for the passage of the securing screw 15 being shown at 16 in Fig. 8. It is desired to make provision for permitting the employment of rolls 8 and 9 which are of a width properly proportioned to that of the ribbon or other fabric which it is desired to weave at any time. I therefore make the said

frames of a construction which enables their width to be varied as desired within certain limits, thus permitting the use of rolls of the proper width to suit the ribbon or other fabric which it is desired to weave at any given time.

As shown clearly in Figs. 2 to 6 each side piece 17 of each of the frames 10 and 11 has a laterally projecting lug or plate 18 having formed lengthwise thereof a slot 19. The lugs 18 of the two side-pieces of each frame overlap, as shown clearly in Figs. 3 to 5, and are held together by a bolt 20 passing through the slots of the said lugs and receiving upon its threaded end the nut 21. When the parts of the swinging frames are adjusted to vary the width of the frames, a corresponding adjustment of the positions of the bearing pieces 14 is effected. To secure rigidity and prevent twisting, one of the lugs is formed with a rib 22 which fits into a groove 23 in the other of the lugs. The journals of the roll 8 enter the holes 24 which are formed in the side pieces of frame 10, while those of the roll 9 rest, during the regular working of the mechanism, in the notches 25 which are formed in the upper surfaces of the side-pieces of the frame 11. The free ends of the frames 10 and 11 are drawn toward each other by the spring or springs 12 shown in Fig. 1.

As shown in Fig. 1, the upper end of a spring 12 is hooked onto the free end of one of the side-pieces 17 of the frame 10, while its lower end is hooked to the upper end of a screw 25' passing through a hole 26 in a lug 27 on one of the side-pieces 17 of the frame 11, the said screw having thereon below the lug a thumb-nut 28, by turning which the tension of the spring may be adjusted as may be desired.

When a very narrow ribbon or fabric is being taken up, the adjustment of the thumb-nut will be such as to secure a comparatively slight tension of the spring or springs 12, but for a wide ribbon or fabric the spring or springs employed must be strained to a higher degree of tension. As will be observed in Fig. 1, the spring 12 is connected with the side-piece of frame 10 at a point nearer the free end thereof than that where the roll 8 is journaled, while the said spring is connected with the side-piece of frame 11 at a point below the fulcrum of the latter frame and that at which the roll 9 is journaled. Consequently, the roll 8 is borne toward the sand or take-up roll with a higher degree of pressure proportioned to the superior leverage of the spring relatively thereto. The side pieces of frame 11 have notches 29 formed therein in advance of the notches 25, and these notches 29 are intended for the reception of the journals or pintle of the cloth roll 9 at those times when it is desired to unwind the whole or a part of the ribbon or other fabric from the said cloth roll. After the said roll has been shifted forward into the position indicated in dotted lines in Fig. 1, the frame 11 is depressed to

carry the roll away from the roll 7, and a suitably shaped block or other device is inserted between the frame 11 and the surface of roll 7, the lower end of the said block being inserted into a notch or notches 25. This block, while in place, holds the roll 9 away from the surface of roll 7 and permits the ribbon or other fabric to be unwound as desired.

It is deemed highly important to be able on occasions to render the sand or take-up roll loose upon its shaft so as to be free to be revolved independently of said shaft. Various constructions and contrivances have been devised with this end in view. All, however, involve more or less complication and multiplicity of parts and are liable to derangement, breakage, and loss of parts.

The improvement which I now am about to describe possesses the merits of extreme simplicity, durability, and great fitness for the required office. In Figs. 9, 10, 11 and 12 this improvement is fully illustrated. The body of the take-up or sand roll consists as usual of a cylinder having a roughened circumference or a coating of sand or emery paper, and having a central bore to permit it to be slipped upon the take-up shaft 4. By preference, and for convenience in manipulating the parts, I attach to one end of this cylinder a flange or head 30, which is held to the cylinder by screws 31. This flange or head is centrally perforated at 32, the perforations being by preference of the right size to fit closely to the exterior of shaft 4, and when this is the case the bore of the cylinder forming the body of the roll need only be greater in diameter than the shaft 4 and need not fit the said shaft. The opposite end of the cylinder is recessed around the central bore, as shown most clearly in Fig. 10, and within the recess fits the cylindrical or ring-like boss 33. The web or diaphragm 35 at the inner end of the short cylinder or ring of the said boss is perforated at 34 to fit the shaft 4, while the flange 36 at the outer end of the boss, it fitting against the corresponding end of the cylinder forming the body of the roll, has a number of radial lugs or ears 37 through which pass securing screws 38 entering the end of the said cylinder forming the body of the roll. Against this end of the cylinder is placed a loose head or flange 39, it having a circular perforation at 40 to fit the shaft 4. This head or flange 39 is formed with a cylindrical hub 41 which enters the circular recess 42 formed in the boss 33. The said recess 42 is not concentric with the circular perforation 34, but, on the contrary, is slightly eccentric with relation thereto, as is indicated by dotted lines in Fig. 11, and the exterior of the hub 41 is slightly eccentric with relation to the circular perforation 40, as is indicated by dotted lines in Fig. 12. Hence, when the head or flange 39 is turned upon the shaft so that the throw of its eccentric hub 41 coincides in position with the throw of the eccentric recess 42, both the said flange or head and the main portion of

the take-up or sand roll will be loose upon the shaft. If, now, either the one or the other be turned upon the shaft the action of the eccentric hub within the eccentric recess will

5 cramp both the said flange or head and the main portion of the said roll tightly in place upon the shaft 4 and compel them both to rotate in unison with the said shaft.

In Fig. 1 is clearly indicated by a dotted line the course of the woven fabric or ribbon, it passing first over and partly around the glass rod or roller 3, then down to, beneath, and partly around the take-up or sand roll 7, between said roll and the presser roll 8, up,

15 over, and partly around the roll 8, and down to the roll 9, upon which it is wound.

I claim as my invention—

1. The combination with the loom-frame, and the take-up or sand roll, of the swinging frames separately pivoted to the said frame, the presser roll and cloth roll carried by the said frames, and the spring connecting the said frames and keeping the rolls carried thereby pressed toward the take-up or sand

25 roll, substantially as described.

2. The combination with the loom-frame, and the take-up or sand roll, of the swinging frames each having provisions for rendering it adjustable in width, the presser roll carried

30 by one of the said frames and the cloth roll carried by the other of said frames, and means for bearing said rolls toward the take-up or sand roll, substantially as described.

3. The combination with the loom frame,

35 adjustable bearing-pieces 14 secured thereto and an actuating roll, of a driven roll, and a supporting frame therefor composed of side pieces having pivots fitted to the said bearing-pieces and also having overlapping slot-

40 ted lugs or plates which are bolted together in relatively adjusted position, substantially as described.

4. The combination with the take-up or sand roll, and the cloth roll, of a swinging

45 frame having bearings adapted to receive the journals of the cloth roll during the normal

working of the parts, and to support an obstruction placed between the same and the take-up or sand roll after the cloth roll has been removed from its working position, and

50 also having supplemental bearings to which the said journals may be shifted when it is desired to unwind the cloth from the cloth-roll and to permit the said obstruction to be introduced, substantially as described.

55 5. The combination with the take-up shaft, and the body of the take-up or sand roll, of the perforated boss, secured to the said body at one end of the same and having the eccentrically disposed circular recess formed therein, and the loose head or flange having the

60 eccentric hub fitted within the said recess, substantially as described.

6. The combination with the take-up shaft,

65 and the body of the take-up or sand roll, recessed at one end thereof as described, of the perforated boss, fitted to the recess of the said body and having the radial lugs and the eccentrically disposed circular recess, securing means passing through said lugs to hold the

70 boss in place, and the loose head or flange having the eccentric hub fitted to the recess of the said boss, substantially as described.

7. The combination with the take-up shaft,

75 and the body of the take-up or sand roll recessed at one end thereof as described, of the head or flange fixed to one end of the said body and perforated to fit the shaft, the perforated boss entering the recess of the body

80 and having the radial lugs and the eccentrically disposed circular recess, securing means passing through the said lugs to hold the boss in place, and the loose head or flange having the eccentric hub entering the recess of the

85 boss, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

OTTO W. SCHAUM.

Witnesses:

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