

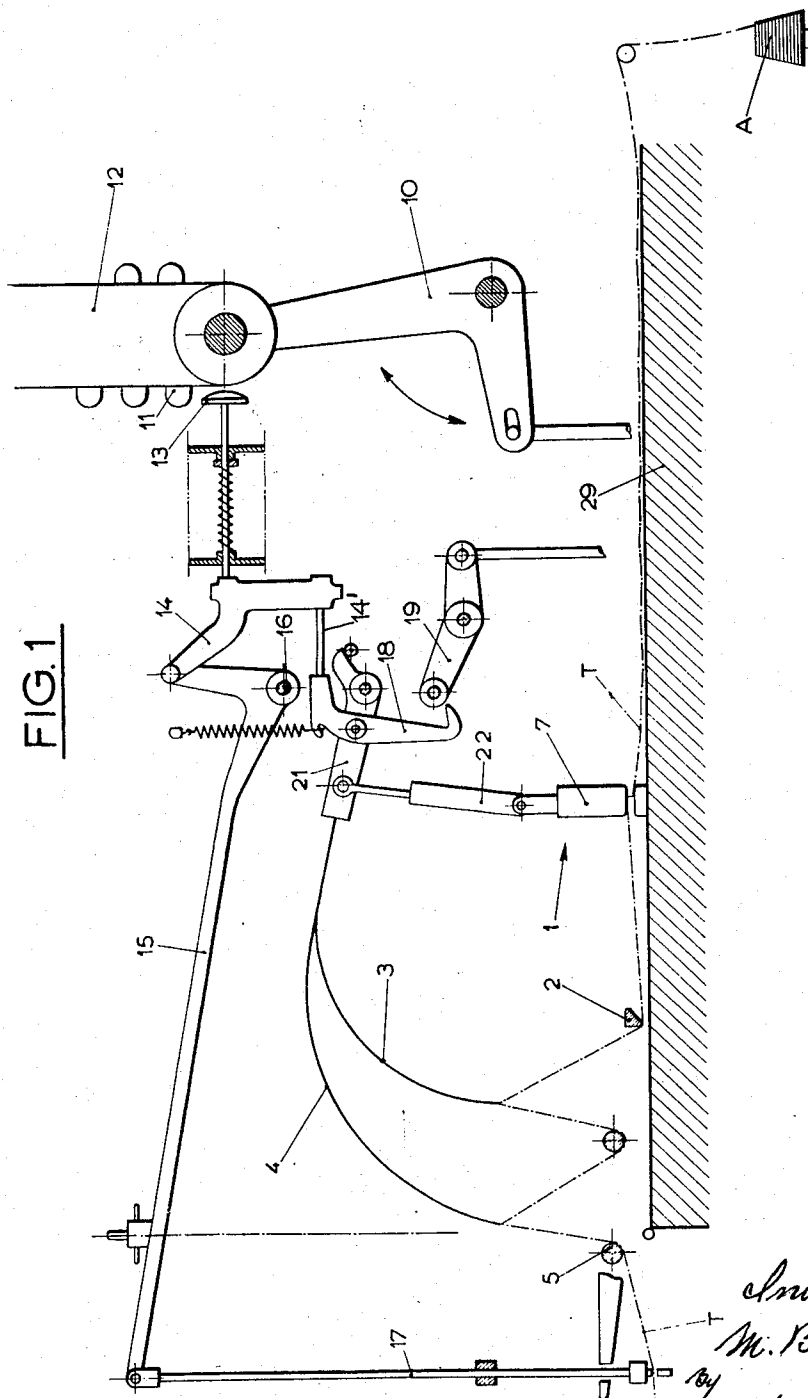
Nov. 3, 1953

M. BALLBER
NEEDLE LOOM

2,657,714

Filed Oct. 4, 1948

13 Sheets-Sheet 1



Inventor:
M. Ballber
104
E. F. Wenderoth atty.

Nov. 3, 1953

M. BALLBER
NEEDLE LOOM

2,657,714

Filed Oct. 4, 1948

13 Sheets-Sheet 4

FIG. 5

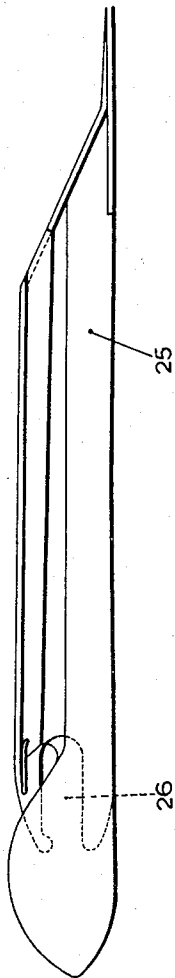


FIG. 6

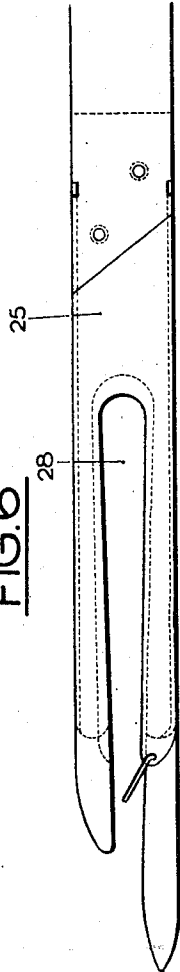


FIG. 7

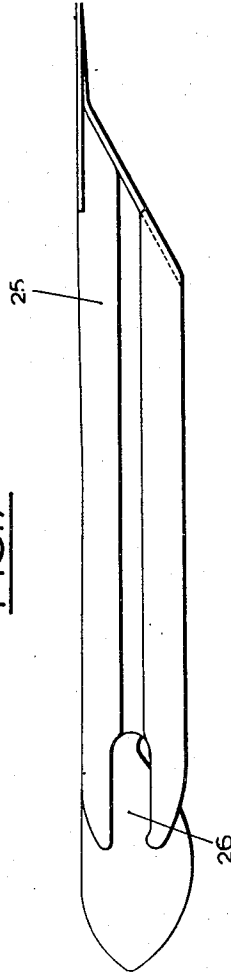
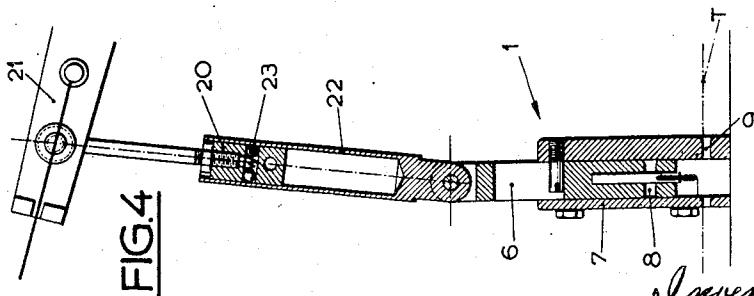


FIG. 4

Inventor:
M. Ballber
By E. F. Kenderoth
Att'y

Nov. 3, 1953

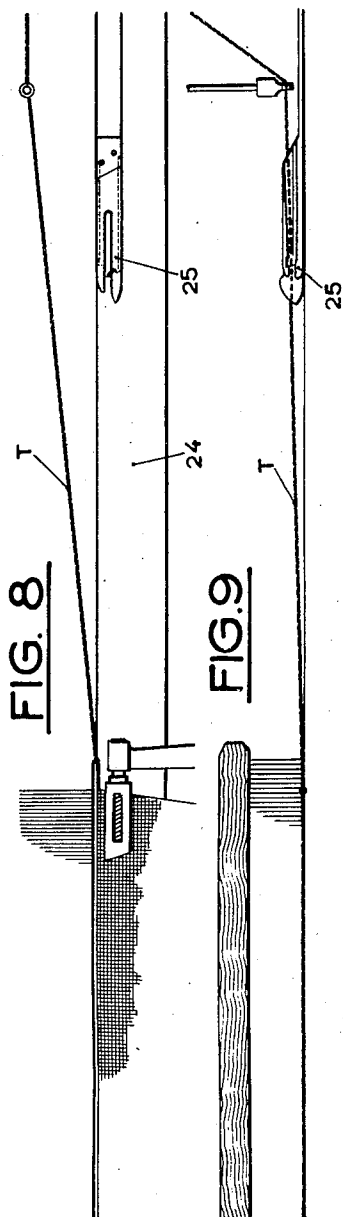
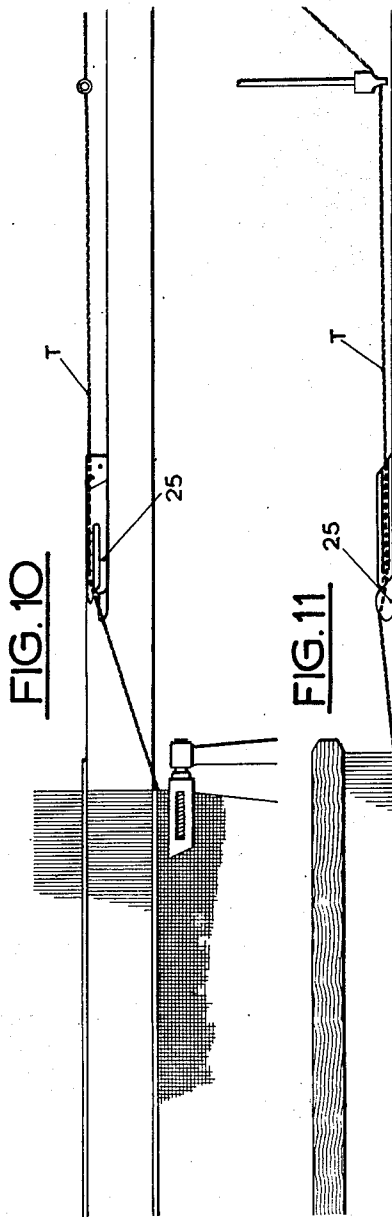
M. BALLBER

2,657,714

NEEDLE LOOM

Filed Oct. 4, 1948

13 Sheets-Sheet 5



Inventor:
M. Ballber
124 E. F. Skenderoth
att

Nov. 3, 1953

M. BALLBER
NEEDLE LOOM

2,657,714

Filed Oct. 4, 1948

13 Sheets-Sheet 6

FIG. 12

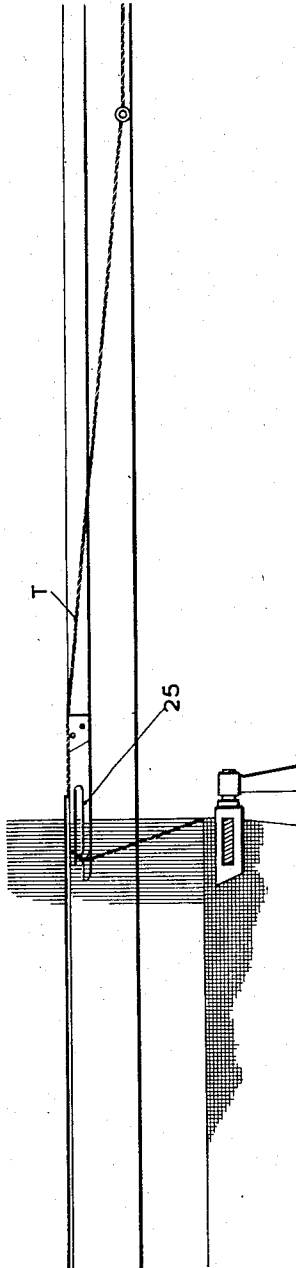
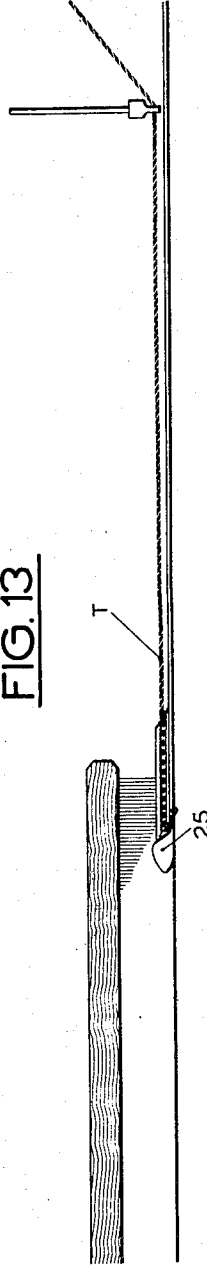


FIG. 13



Inventor:
M. Ballber
By E. F. Olander
att

Nov. 3, 1953

M. BALLBER

2,657,714

NEEDLE LOOM

Filed Oct. 4, 1948

13 Sheets-Sheet 7

FIG. 14

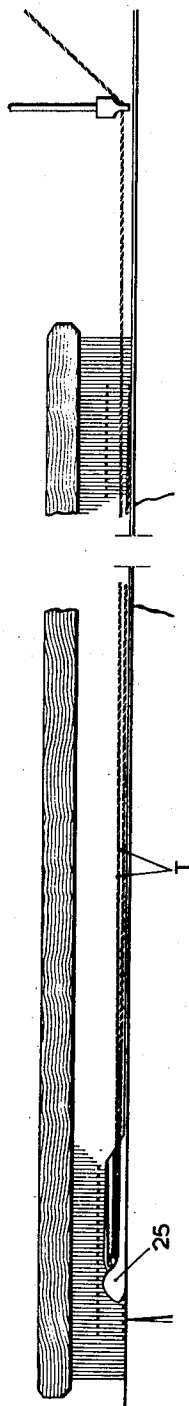
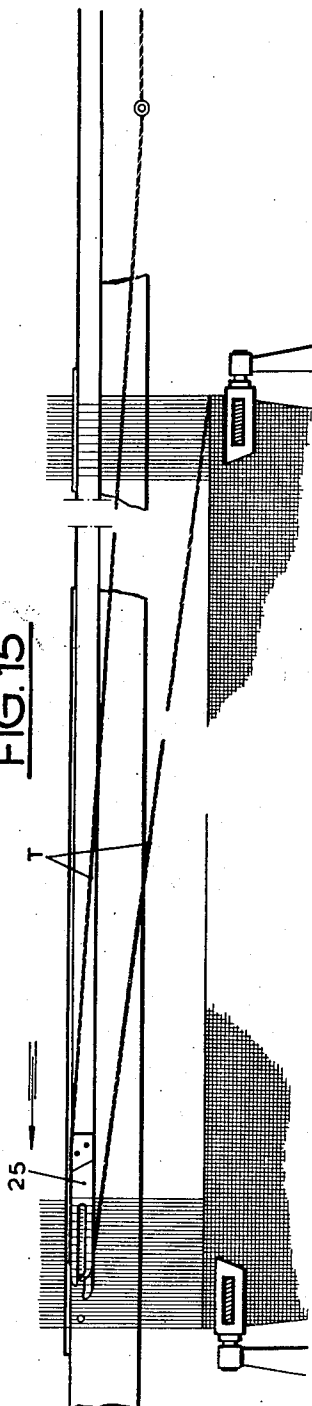


FIG. 15



Inventor:
M. Ballber
By
E. F. Kenderoth *EFK*

Nov. 3, 1953

M. BALLBER

2,657,714

NEEDLE LOOM

Filed Oct. 4, 1948

13 Sheets-Sheet 8

FIG. 16

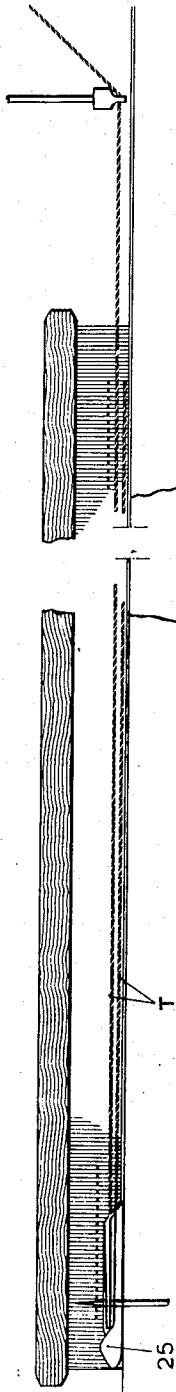
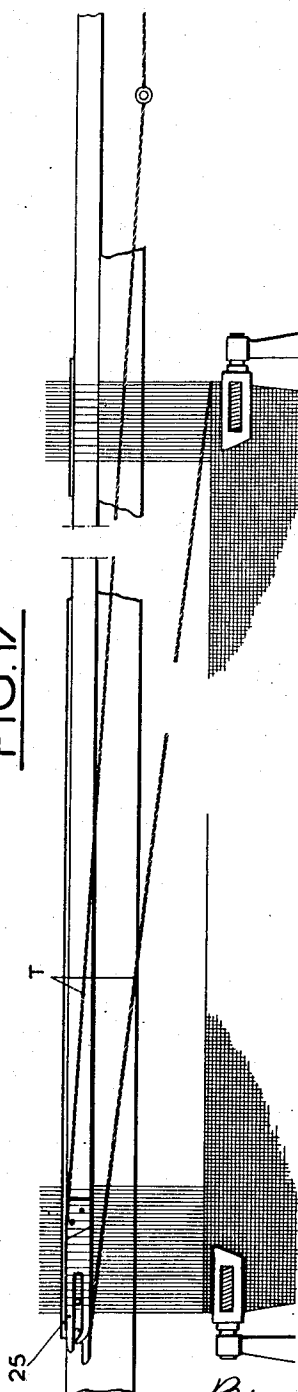


FIG. 17



Inventor:
M. Ballber,
By *E. F. Kunderoth* *Att*

Nov. 3, 1953

M. BALLBER
NEEDLE LOOM

2,657,714

Filed Oct. 4, 1948

13 Sheets-Sheet 9

FIG. 18

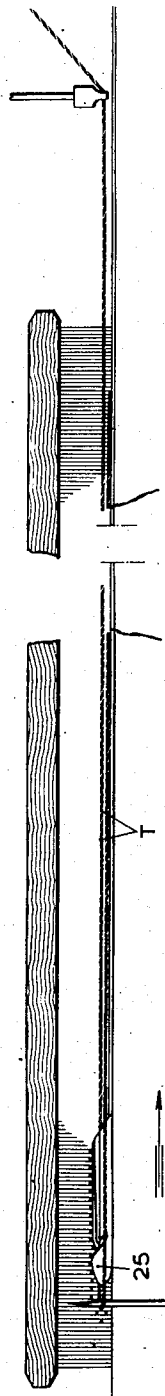
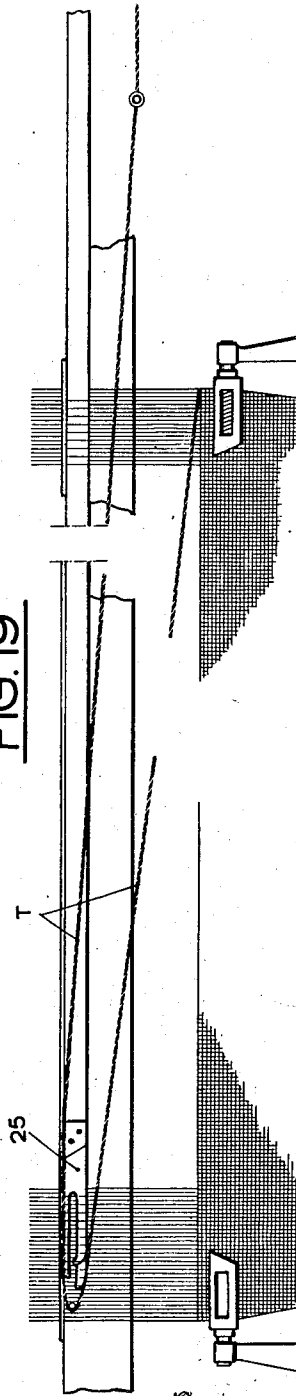


FIG. 19



Inventor:
M. Ballber
by B. F. Skenderoth atty

Nov. 3, 1953

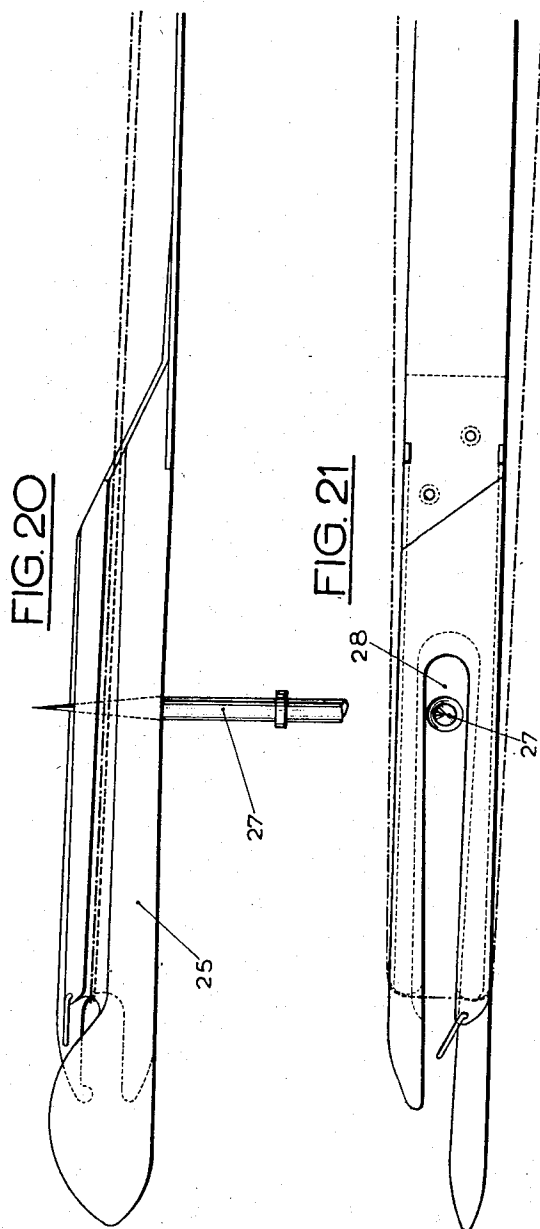
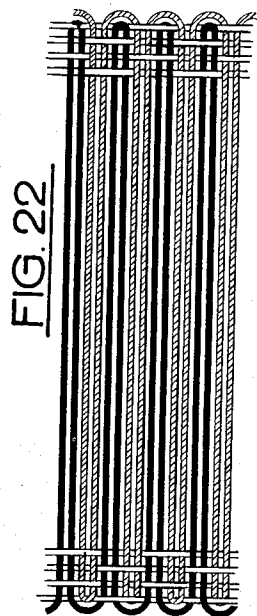
M. BALLBER

2,657,714

NEEDLE LOOM

Filed Oct. 4, 1948

13 Sheets-Sheet 10



Inventor:
M. Ballber
By E. F. Orendorff
Att'y

Nov. 3, 1953

M. BALLBER
NEEDLE LOOM

2,657,714

Filed Oct. 4, 1948

13 Sheets-Sheet 11

FIG. 25.

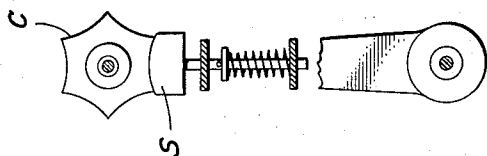


FIG. 23.

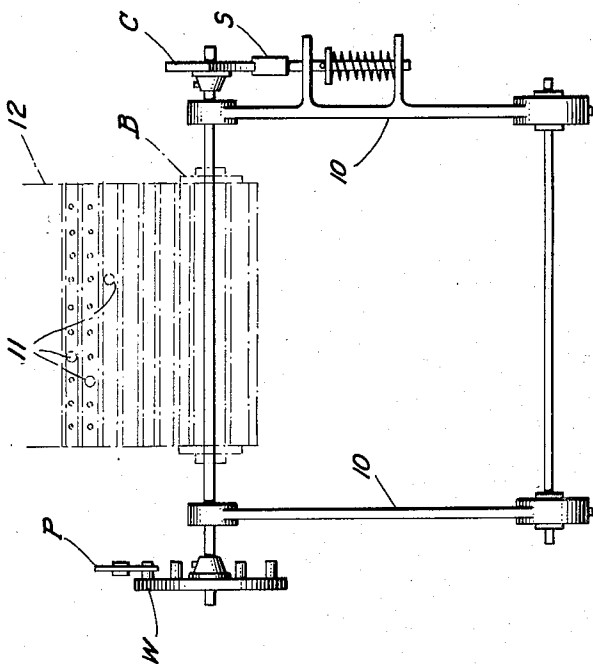
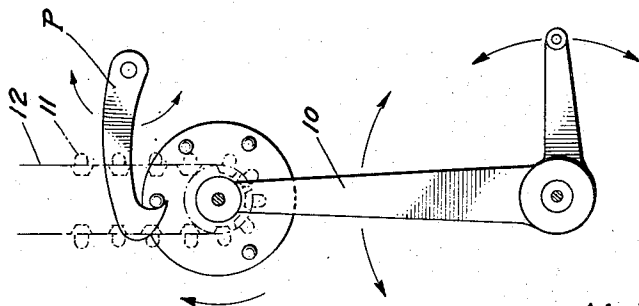


FIG. 24.



Inventor.
M. Ballber.

By *Wanderer, Lind & Ponack*
Attorneys

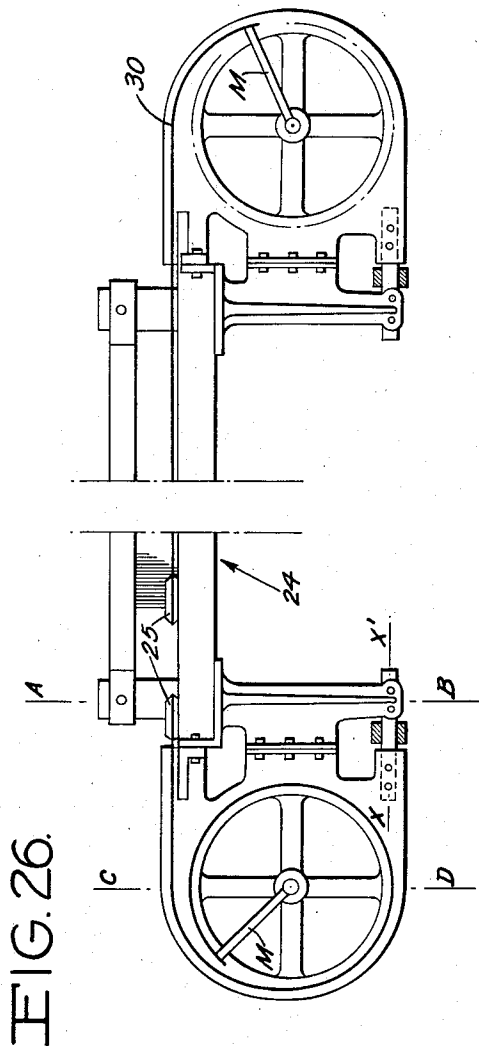
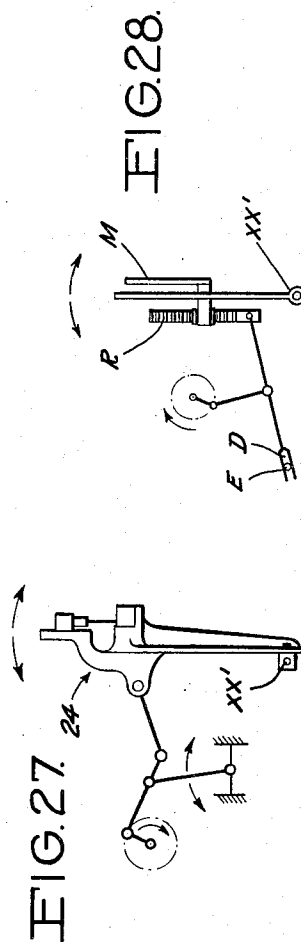
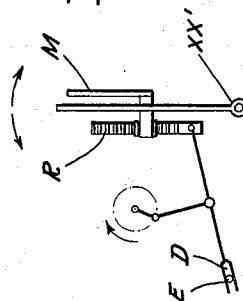
Nov. 3, 1953

M. BALLBER
NEEDLE LOOM

2,657,714

Filed Oct. 4, 1948

13 Sheets-Sheet 12



Inventor
M. Ballber.

By Wenderoth, Lind + Ponack
Attorneys

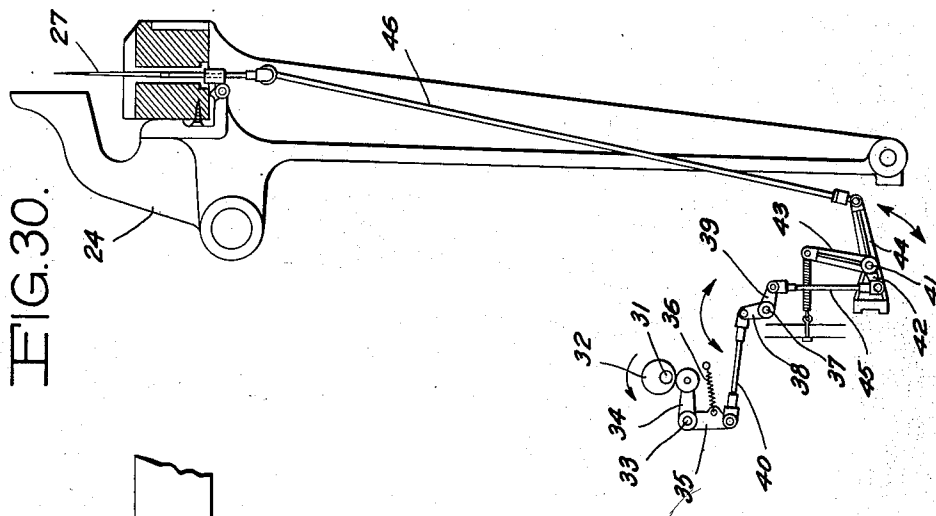
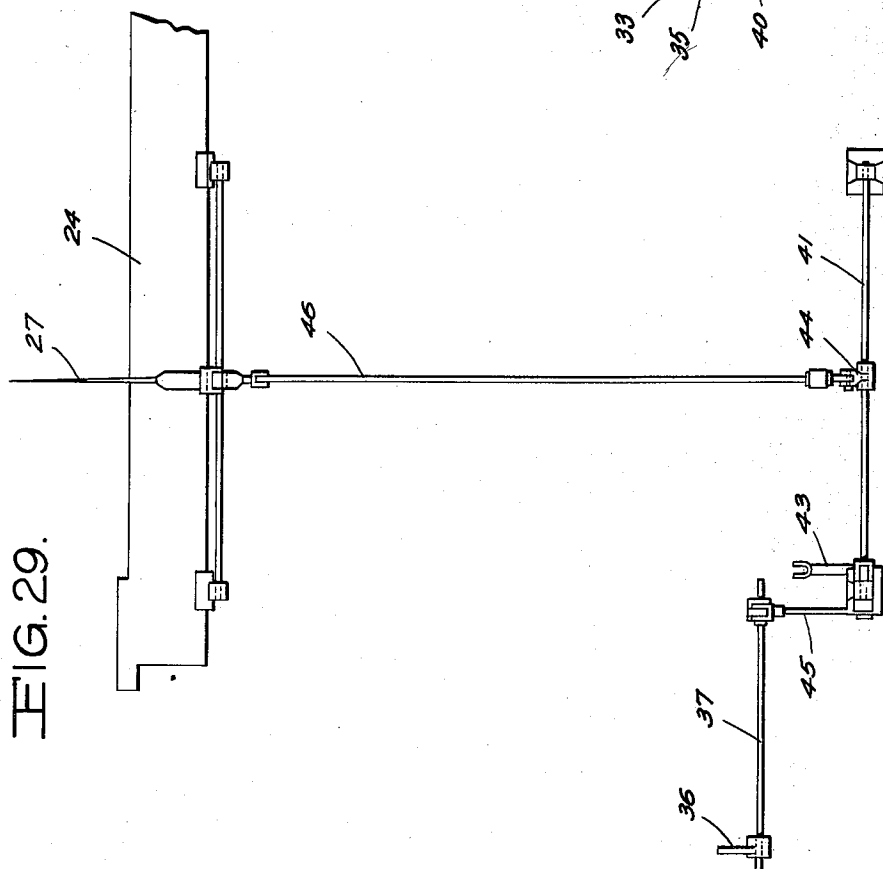
Nov. 3, 1953

M. BALLBER
NEEDLE LOOM

2,657,714

Filed Oct. 4, 1948

13 Sheets-Sheet 13



Inventor
M. Ballber.

By *Wunderlich, Lind & Ponach*
Attorneys

UNITED STATES PATENT OFFICE

2,657,714

NEEDLE LOOM

Mariano Ballber, Paris, France

Application October 4, 1948, Serial No. 52,647

Claims priority, application France July 16, 1948

7 Claims. (Cl. 139—123)

1

2

The object of my invention consists of improvements in needle looms which operate without a shuttle. The improvements of the present invention comprise the following elements taken alone or in combination:

(a) A sliding thread-clamping device holding the weft-thread in its inoperative position and in its needle threading position and releasing it in its operative position;

(b) Tightening wires, for the weft-thread, preferably high resistance wire that give an even amount of tension to the thread and form a provision of thread that cuts out all danger of breakage through inertia when threading and starting off of the needle;

(c) A weft-carrying needle of suitable shape enabling the weft to be threaded laterally through the mere motion of the batten, while the needle is drawn into the path of the latter, owing to the fact that the control sectors of the needle are rigid with the batten;

(d) The combination, together with the weft holding needle, of a weft holder for forming the selvage that ensures the locking of the weft while the needle returns into its starting position.

In order to obtain a clearer understanding of the invention, a single form of execution as an example only, without any restriction as to the scope of the invention, is illustrated in the accompanying drawings, diagrammatic in form and in which:

Figure 1 shows, for one side of the loom, the parts constituting the thread distributor and the weft selector in their inoperative position;

Figure 2 is an illustration of the same parts in the position corresponding to a threading of the needle;

Figure 3 shows the same parts in their operative position, with the needle engaged in the shed and drawing the weft;

Figure 4 is a section on a larger scale of the thread-clamping device;

Figure 5 is a side elevation of a weft-carrying needle, seen from the weaver's side;

Figure 6 is a plan view thereof;

Figure 7 is an elevational view from the batten side;

Figures 8 and 9, 10 and 11, 12 and 13, 14 and 15, 16 and 17, 18 and 19 are diagrams showing in various positions a portion of the batten of the loom illustrating the method of working of one of the weft-carrying needles;

Figures 20 and 21 show in elevational and in plan view, respectively, the way in which the needle works together with the weft holder for forming a selvage;

Figure 22 illustrates the texture of the fabric obtained on the loom that incorporates the improvements according to my invention;

Figure 23 is a partial elevational view of the control mechanism for the lags and pegs inserted therein;

Figure 24 is a partial elevational view taken at right angles to Figure 23;

Figure 25 is a partial elevational view of the retaining means for the lags;

Figure 26 is a partial elevational view of the batten and needle control means;

Figures 27 and 28 are views taken on the lines A—B and C—D, respectively of Figure 26;

Figure 29 is an elevational view of the control means for the weft holder, and

Figure 30 is a partial elevational view of the weft holder control means taken at right angles to Figure 29.

As apparent from Figures 1 to 3, the weft thread T coiled on the spool A passes through the thread-clamping means 1 and, under a guide-blade 2, to engage thread guides formed at the end of the thread tensioning means 3, 4 constituted by so-called piano wires, and then pass under a roller 5.

In the inoperative position, the thread T is clamped in the thread-clamping means 1, the structure of which is shown in detail in Figure 4. This thread-clamping means is formed by a slide 6 moving inside a stationary member 7. A hole 8 is arranged in the slide and another hole 9 is cut in the member 7. When the slide is in the position shown in Figure 4, the thread T is clamped. When the hole 8 of the slide is brought opposite the hole 9 of the member 7 on operation of the mechanism, the thread is released.

The thread tensioning piano wires 3, 4 when inoperative are in the top position shown in Figure 1, in which position they produce an even tension for the thread while forming a reserve of thread that removes any danger of breaking through inertia at the time of the threading and starting of the needle. When the loom is in this inoperative condition, there is no thread presented for threading on the needle.

Figure 2 shows the parts in threading position with the needle at the start of its travel but not yet inserted in the shed.

The selection is carried out by the lever 10 which has a reciprocating swinging motion. A peg 11 on the chain of lags 12 meets the shoe 13 that forces the assembly of levers 14 to execute a suitably defined travel.

The construction of the chain of hinged wooden lags 12 with holes therein receiving the wooden

pegs 11 which act on the shoe 13 is more clearly seen in Figure 23. The lag barrel B is driven by the pin wheel W clearly shown in Figure 24, and the pawl P when the lever 10 oscillates under the action of a cam mechanism of any known type. C (Figures 23 and 24) designates a star-shaped brake wheel rotating with the wheel W and cooperating with a spring urged shoe S for retaining the barrel B in the intervals between two rotations.

Each needle is inserted into the shed by a steel band 39 mounted over a sector for winding on and unwinding from it as shown in Figure 26, known means being provided for imparting oscillations to said sector. An object of the invention is to provide for reciprocable swinging movement of said sector with the batten 24. The referred to drawing shows only by way of example, how such a mechanism may be realized, although this form of embodiment is not a limitative one. The batten is swung by a lever mechanism actuated by a crank-shaft and the oscillation of arm M driving the steel band and needle is obtained by a crank-shaft actuating a lever system which drives a rack R (Fig. 28) and pinion; D designates a slide and E an axis adjusted to the frame, said slide being slidable around said axis.

The weft holder 27 is withdrawn before beat-up is accomplished, but the weft is held in the fabrics by the formation of a new shed and beating-up takes place with closed shed; it is to be observed that the piano wires 3 and 4 are up when the needle is out of the shed and this shed closed, so the weft is tensioned around the pointed rod forming the weft holder 27.

The slide 6 is raised as follows:

When the shoe 13 is released by the peg 11, the spring attached to the corresponding lever 18 acts to swing said lever 18 which is liberated from lever 19; in turn, lever 18 is raised and raises lever 22 and slide 6.

The change of position of the assembly 14 starts up a swinging motion of the lever 15 round its pivot 16, which causes the downward movement of the rod 17 that carries the weft thread T. The thread is then on a level with the weft holding needle. At the same time, the lever assembly 14 sets the hooked lever 18 in its operative position by means of rod 14' integral with lever 14 and which pushes on the upper part of hooked lever 18 as shown in Figs. 1, 2 and 3.

The means for driving each weft holder 27 comprises: a driving shaft 31, a cam member 32 keyed on said shaft, an axle 33 pivotally mounted on the loom frame, levers 34 and 35 secured to said axle 33, a spring 36 mounted for urging the end of lever 34 against cam 32, an axle 37 pivotally mounted on the loom frame, levers 38 and 39 secured to said axle 37, a link 40 connecting levers 35 and 38, an axle 41 pivotally mounted on the loom frame, levers 42, 43 and 44 secured to said axle 41, a link 45 connecting levers 39 and 43, a link 46 connecting lever 44 and the rear end of weft holder 27, said weft holder being slidably mounted in batten 24, a spring 47 having one end fixedly attached and the other end secured to the end of lever 42 for urging link 46 towards a position corresponding to the position where said weft holder 27 holds a weft loop.

In the operative position (Figure 3) the needle is inserted in the shed and draws the weft.

With the distributor in the threading position, the lever 19 engages a suitably set hook-lever 18 immediately before the needle enters the shed. The effect of this is to lower the piston 20 (Fig-

ure 4) through the agency of the lever 21; the piston 20 then moves inside the cylinder 22. Four balls 23 in the cylinder 22 are pressed by springs on the inner wall of the cylinder 22 forcing the latter to follow the piston in its downward movement and to immediately release the clamping arrangement by bringing the two holes 8 and 9 opposite one another, which enables the thread T to travel freely through the machine. Any excess relative travel between piston and cylinder is compensated for by the sliding of these two parts inside each other.

At this particular instant, the two thread tensioning wires 3, 4 set on the lever 21, are themselves lowered and consequently, tension being removed, the thread is completely free throughout its run.

The weft-holding needle 25 as shown in Figures 5 to 7 is controlled by a steel blade rolled over a sector swinging with the batten 24 (Figures 8, 10, 12, 14, 16, 18 and 26).

The procedure of threading the weft on the needle and forming the selvages is explained in the following.

Figures 8 and 9 correspond to the threading position (Figure 2) of the thread distributor. The needle 25 when drawn into the swinging movement of the batten 24 meets on its way the thread T that has been lowered to its level by the rod 17. The weft then slips automatically into a groove 23 of the needle 25 (Figure 5). The threading is thus obtained (see Figures 10 and 11).

Figures 12 and 13 correspond to the operative position (Figure 3) of the thread distributor. As will be seen in these figures, the needle enters the shed while taking with it the weft T.

Figures 14 and 15 correspond likewise to the operative position of the thread distributor (Figure 3).

When the needle reaches the end of its travel, the weft holder 27 serving for the formation of the selvage (see Figures 16, 20, 21 and 29) comes into action. This is placed, when the needle reaches the end of its travel (Figure 16) opposite a vertical slot 28 cut in the needle (see Figures 6, 20 and 21) and, under the influence of a suitable control device, it goes into this slot. In this position, the weft holder 27 locks as it were the weft quite securely (see Figure 16) while the needle returns to its starting point and is released from the shed that closes.

At the instant when the weft holder 27 engages the weft on the needle at the end of the travel of the latter, the slide 6 of the thread-clamping means 1 is raised to the upper limit of its travel thereby bringing about the immediate clamping of the thread therein. There is then a return to the threading position (Figure 2). At the same time, the thread tightening wires 3-4 rise and give the weft the required amount of tension for its proper positioning in the shed before the latter is closed.

At the end of the return travel of the needle, the thread distributor resumes its inoperative position as illustrated in Figure 1.

The loom is provided with two needles 25 (Figure 26) and two weft holders 27, only one of which is shown in Figure 28, that operate alternately, on each side of the loom, that is likewise furnished with two sets of thread distributors each of which feeds the corresponding needle.

The thread distributing gear of the invention takes up very little space in depth (in the nature of 13 mm.) and this special feature enables sev-

eral of these to be arranged in series, without involving any mechanical difficulty. Consequently it is practical to weave with six, eight and even twelve various weft colors on each side. Selected colors are obtained in accordance with the desired texture of the fabric, by means of the pegs 11 suitably arranged in accordance with the desired pattern.

A weft stop-motion device of any desired known means, actuated by electric or mechanical means, may be provided on each thread distributor, and this device can then control the immediate stoppage of the loom in the event of breakage of one of the weft threads. Such a breakage cuts out the tension of the thread effected by the tensioning wires 3-4, the latter consequently can rise again and work a mechanical control device or else close an electric contact. Thin blades straddling the threads could also be used, in the event of a thread breaking, and fall on a mechanical or electric device located underneath the table 29 of the distributor.

Use might also be made of another weft stop-motion device operated by the tension of the thread between the thread clamping means and the thread tensioning wires 3-4.

Figure 22 shows the texture of the fabric obtained with the loom as described above and the formation of selvages, with the black thread coming from the left side and the streaked thread from the right side, said fabric being similar to that obtained with the loom disclosed in my French patent lodged on April 10, 1942, for "Improvements to Weaving Looms Without Shuttles."

The chief advantages obtained by the loom incorporating the improvements according to my invention are as follows:

1. The weft is practically continuous through the possibility of making use of spools of large capacity.

2. The weft is brought in smoothly without any jerking motion.

3. The loom runs quietly.

4. Two picks are inserted in the shed, the effect of which is to double the theoretical speed as to output.

5. The loom may handle any textile fibers without undergoing any alteration.

6. The greater portion of the handling preparatory to starting the work (spooling, etc.) is eliminated.

7. Finally, working with several colors in the weft becomes entirely practical, while the mechanical structure remains extremely simple.

Having now described my invention, what I claim is:

1. A shuttleless weaving loom of the type including a pair of substantially horizontally extending, eyeless weft needles disposed symmetrically on either side of said loom and each fixed at one end of a respective metal strip adapted to be extended horizontally transversely to said loom and whose other end is attached to a related swinging sector on which said metal strip is adapted to be wound, comprising: a batten to which both said sectors are attached; said needles each being formed with a vertical slit at the front end thereof and being adapted to seize sideways an uninterrupted weft thread extending generally in the horizontal plane defined by said needles thereby inserting in turn a double weft throughout the width of a corresponding shed; means for horizontally positioning a weft thread in said horizontal plane thereby allowing said thread to be seized by the related needle prior to

insertion within said shed; clamping means for clamping said weft thread; means for actuating said clamping means when said weft thread is seized by the related needle and for releasing said clamping means as said weft thread is passed through said shed; a pair of vertically slidable weft holders in the form of pointed rods arranged at either side of said loom; means for imparting a vertical reciprocating movement to said weft holders for inserting said weft holders into the vertical slit in the related needle and for retracting said weft holder from the closed shed prior to beating up; and tensioning means for securing tension of said weft thread in the shed when the related needle is retracted.

2. A shuttleless weaving loom of the type including a pair of substantially horizontally extending, eyeless weft needles symmetrically arranged on either side of said loom and each fixed to one end of a respective metal strip adapted to be passed transversely to said loom and having the other end thereof attached to a related swinging sector on which said metal strip is adapted to be wound, comprising: a batten to which said sectors are attached; said needles being formed with a vertical slit and a horizontally extending slit of lesser depth than said vertical slit at the front end thereof, said horizontal slit being adapted to seize sideways an uninterrupted weft thread extending in the horizontal plane defined by said needles to pass in turn a double weft formed from said weft thread throughout the width of a shed; means for positioning horizontally said weft thread in said horizontal plane; clamping means for clamping said weft thread; means for actuating said clamping means when said weft thread is seized by the related needle and for releasing said clamping means as said weft thread is engaged within the shed; a pair of substantially vertical pointed rods arranged on either side of said loom; means for imparting a vertical reciprocating movement to said pointed rods to force said rods into said vertical slit in the related needle and to retract said pointed rods just prior to beating up; and tensioning means for insuring tension of said weft thread when introduced in the shed as the related needle is retracted.

3. A shuttleless weaving loom of the type including a pair of substantially horizontally extending, eyeless weft needles symmetrically arranged on either side of said loom and each fixed to one end of a respective metal strip adapted to be passed transversely to said loom and having the other end thereof attached to a related swinging sector adapted to wind and unwind said metal strip thereon, comprising: a batten to which said sectors are attached; said needles having a horizontally extending vertical slit at the front end thereof adapted to seize sideways an uninterrupted weft thread positioned in the horizontal plane defined by said needles thereby inserting in turn said weft thread in the form of a double weft throughout the width of a shed; a vertical rod provided with an eye receiving the weft thread therethrough; lever means controlling said vertical rod to impart to the same vertical reciprocating movement thereby bringing the same in said horizontal plane; clamping means for clamping said weft thread; means for actuating said clamping means when said weft thread is seized by the related needle and for releasing said clamping means as said weft thread is engaged within the shed; a pair of vertically slidable pointed rods arranged on either side of said

loom; means for applying a vertical reciprocating movement to said pointed rods to force said rods into said vertical slit in the related needle, thereby holding the loop formed by said double weft, until the shed is closed and to retract said rods just prior to beating up; and tensioning means for insuring tension of said weft thread when introduced in the shed as the related needle is retracted.

4. A shuttleless weaving loom of the type including a pair of substantially horizontally extending, eyeless weft needles symmetrically arranged on either side of said loom and each fixed to one end of a respective metal strip having the other end thereof attached to a swinging sector adapted alternately to wind and unwind said metal strip thereon, comprising: a batten to which said sectors are attached; said needles having a horizontally extended vertical slit at the front end thereof adapted to seize sideways an uninterrupted weft thread positioned in the horizontal plane defined by said needles thereby inserting in turn said weft thread in the form of a double weft throughout the width of a shed; a vertical rod provided with an eye receiving said weft thread therethrough; lever means controlling said vertical rod to impart to the same a vertical reciprocating movement thereby bringing the same in said horizontal plane; a substantially vertical cylinder formed with a pair of diametrically opposed ports; a piston reciprocable in said cylinder and provided with a transversely extending hole therethrough, said weft thread passing through said ports and said hole; lever means controlling said piston; a fixed stop adapted to arrest said piston in the position where said ports and hole are in register; resilient means inserted between said lever means and said piston; a pair of vertically slidable pointed rods arranged on either side of said loom adapted to hold the loop formed by said double weft thread; means for applying a vertical reciprocating movement to said pointed rods for forcing said rods into said vertical slit in the related needle, thereby holding said loop, until the shed is closed, and for retracting said rods just prior to beating up; and tensioning means for insuring tension of said weft thread when introduced in the shed upon retraction of the related needle.

5. A shuttleless weaving loom of the type set forth including a pair of substantially horizontally extending, eyeless weft needles symmetrically arranged at either side of said loom and each fixed to one end of a respective metal strip adapted to be extended transversely to said loom and having the other end thereof attached to a related swinging sector adapted to wind and unwind said related metal strip thereon, comprising: a batten to which said sectors are attached; said needles being formed with a vertical slit and a horizontally extending slit of lesser depth than said vertical slit at the front end thereof, said horizontal slit being adapted to seize sideways an uninterrupted weft thread when extending in the horizontal plane defined by said needles thereby inserting in turn a double weft formed from said weft thread throughout the width of a shed; means for positioning horizontally said weft thread in said horizontal plane; clamping means for clamping said weft thread; means for actuating said clamping means when said thread is seized by the related needle and for releasing said clamping means as said weft thread is engaged within a shed; a pair of vertically slidable pointed rods on either side of said

loom; means for applying a vertical reciprocating movement to said rods to insert the same into said vertical slit in the related needle, thereby maintaining the loop formed by said weft thread, until the shed is closed and to retract said pointed rod just prior to beating up; a swinging lever controlled by said clamping means; a pair of piano wires attached to said swinging lever at one end and formed with an eye at the free end thereof, through which said weft thread passes; fixed guiding means for said weft thread cooperating with said eyes in said piano wires thereby enabling said thread freely to pass in straight line when inserted in the shed and causing said thread when clamped to assume a zig-zag path to be tensioned when a double weft is positioned within a shed.

6. A shuttleless weaving loom of the type including a pair of substantially horizontally extending, eyeless weft needles symmetrically arranged on either side of said loom and each fixed to one end of a respective metal strip having the other end thereof attached to a related swinging sector adapted to wind and unwind said metal strip thereon, comprising: a plurality of supply sources for respectively different weft threads; a batten to which said sectors are attached; said needles being formed with a vertical slit and a horizontally extending slit of lesser depth than said vertical slit at the front end thereof, said horizontal slit being adapted to seize sideways a selected uninterrupted weft thread when extending in the horizontal plane defined by said needles thereby inserting in turn a double weft formed by said selected weft thread throughout the width of a shed; means for positioning horizontally said selected weft thread in said horizontal plane; clamping means for clamping said selected weft thread; means for actuating said clamping means upon said selected weft thread being seized by the related needle and for releasing said clamping means as said selected weft thread is engaged within the shed; selecting means including a lag chain, a plurality of transversely projecting pegs inserted in said lag chain at predetermined positions, and lever means associated with each of said weft threads, respectively, and controlled selectively by said pegs and operating said positioning means and said clamping means for said selected weft thread; a pair of vertically slidable pointed rods arranged on either side of said loom; means for applying a vertical reciprocating movement to said pointed rods to force said rods into said vertical slit in the related needle until the shed is closed and to retract said rods just prior to beating up; and tensioning means for insuring tension of said weft thread when introduced in the shed upon retraction of the related needle.

7. A shuttleless weaving loom of the type including a pair of substantially horizontal, eyeless weft needles symmetrically arranged on either side of said loom and each fixed to one end of a respective metal strip having the other end thereof attached to a related swinging sector on which said metal strip is adapted to be wound, comprising: a plurality of supply sources for respectively different weft threads; a batten to which said sectors are attached; said needles being formed with a vertical slit and a horizontally extended slit of lesser depth than said vertical slit at the front end thereof, said horizontal slit being adapted to seize sideways a selected uninterrupted weft thread extending in the horizontal plane defined by said needles thereby in-

serting in turn a double weft formed from said selected weft thread throughout the width of a shed; for each of said weft threads a vertical rod provided with an eye receiving the related weft thread therethrough; lever means controlling said vertical rod to impart to the same a vertical reciprocating movement thereby positioning said selected weft thread in said horizontal plane; a substantially vertical cylinder formed with a pair of diametrically opposed ports; a piston reciprocable in said cylinder and provided with a transversely extending hole therethrough, said related weft thread passing through said ports and said hole; first lever means controlling said piston; a fixed stop arresting said piston in the position where said ports and said hole are in registration; resilient means inserted between said lever means and said piston; a pair of vertically slidable pointed rods on either side of said loom; means for applying a vertical reciprocating movement to said rods to insert the same into said vertical slit in the related needle, thereby maintaining the loop formed by said selected weft thread until the shed is closed and to retract said pointed rod just prior to beating up; a swinging lever controlled by said first lever means; a pair of piano wires attached to said swinging lever at one end, and formed with an eye at the free end thereof through which said selected weft thread passes; fixed guiding means for said weft thread cooperating with said eyes in said piano wires, thereby enabling said select-

ed thread freely to pass in straight line when inserted in the shed and causing said selected thread when clamped to assume a zig-zag path to be tensioned when a double weft is positioned within a shed; selecting means including a lag chain, a plurality of transversely projecting pegs inserted in said lag chain at predetermined positions; and second lever means associated with each of said weft threads, respectively, and operated selectively by said pegs and controlling said related vertical eye rod and said first lever means.

MARIANO BALLBER.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
441,796	Graner	Dec. 2, 1890
639,018	Brun	Dec. 12, 1899
681,004	Skinner et al.	Aug. 20, 1901
831,322	Brooks	Sept. 18, 1906
2,013,230	Best	Sept. 3, 1935
2,202,226	Nichols	May 28, 1940
2,209,839	Long	July 30, 1940
2,389,091	Shuttleworth	Nov. 13, 1945
2,407,773	Fletcher	Sept. 17, 1946

FOREIGN PATENTS

Number	Country	Date
248,120	Germany	June 15, 1912
396,961	Great Britain	Aug. 17, 1933