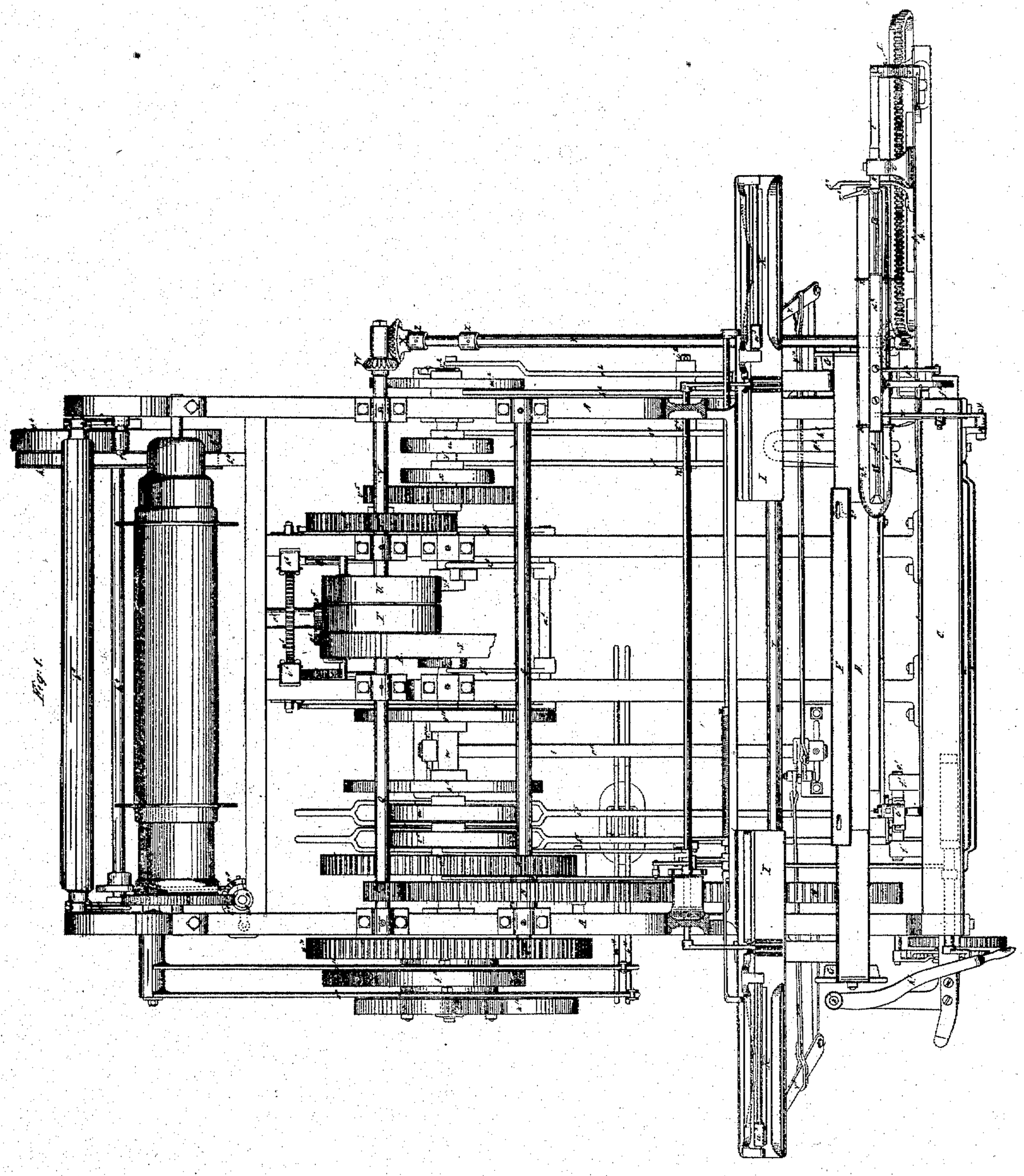
Sheet 1- 6 Sheets.

E. B. Bigelow.
Carpet Loom.

No. 5,020. Patented Mar. 20, 1847.

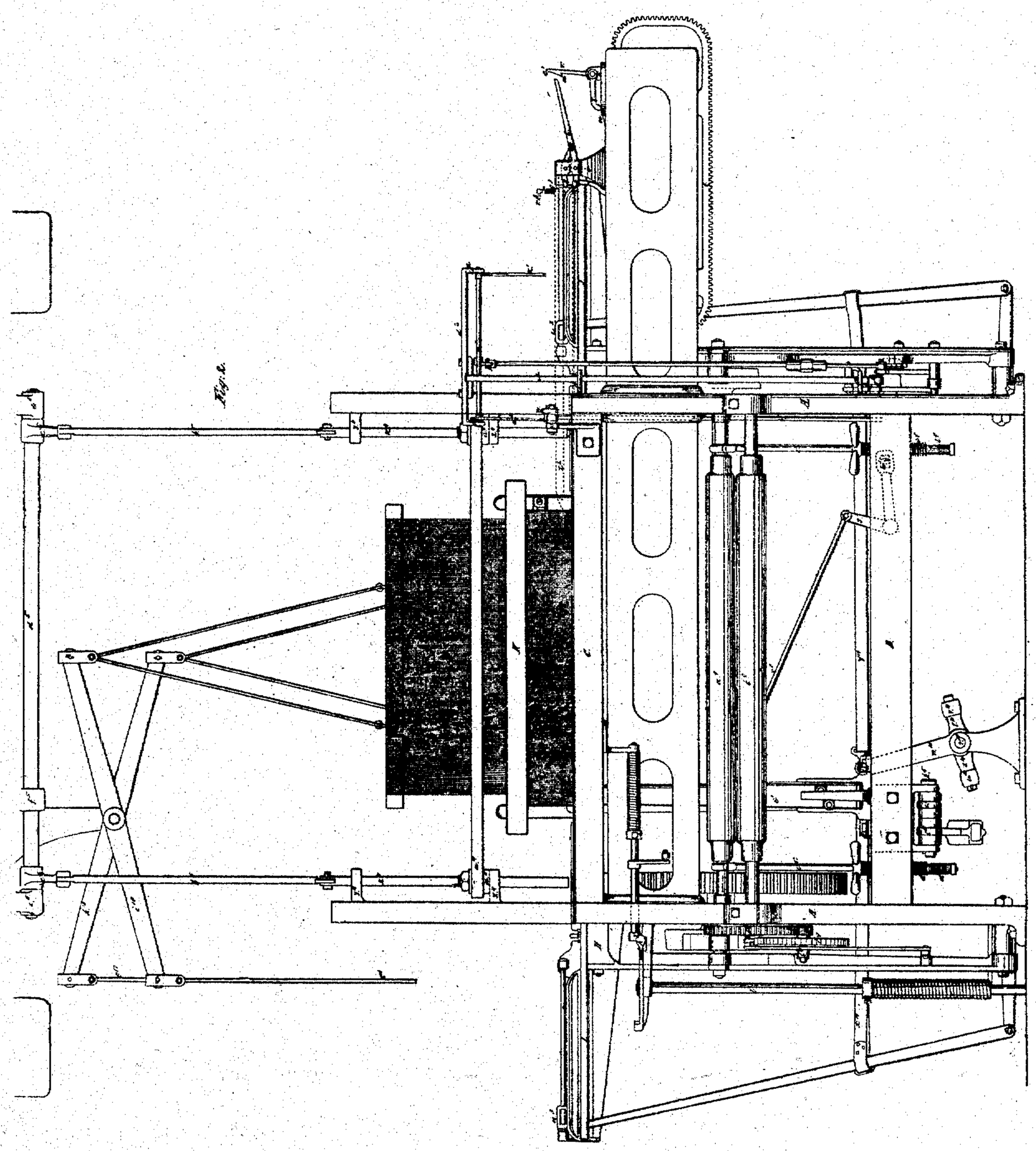
Fig. 1.



E. B. Bigelow.
Carpet Loom.

No. 5020. Patented Mar. 20, 1847.

Fig. 2.



E. B. Bigelow.

Carpet Loom.

Sheets - 6 Sheets.

No 5,020.

Patented Mar. 20, 1847.

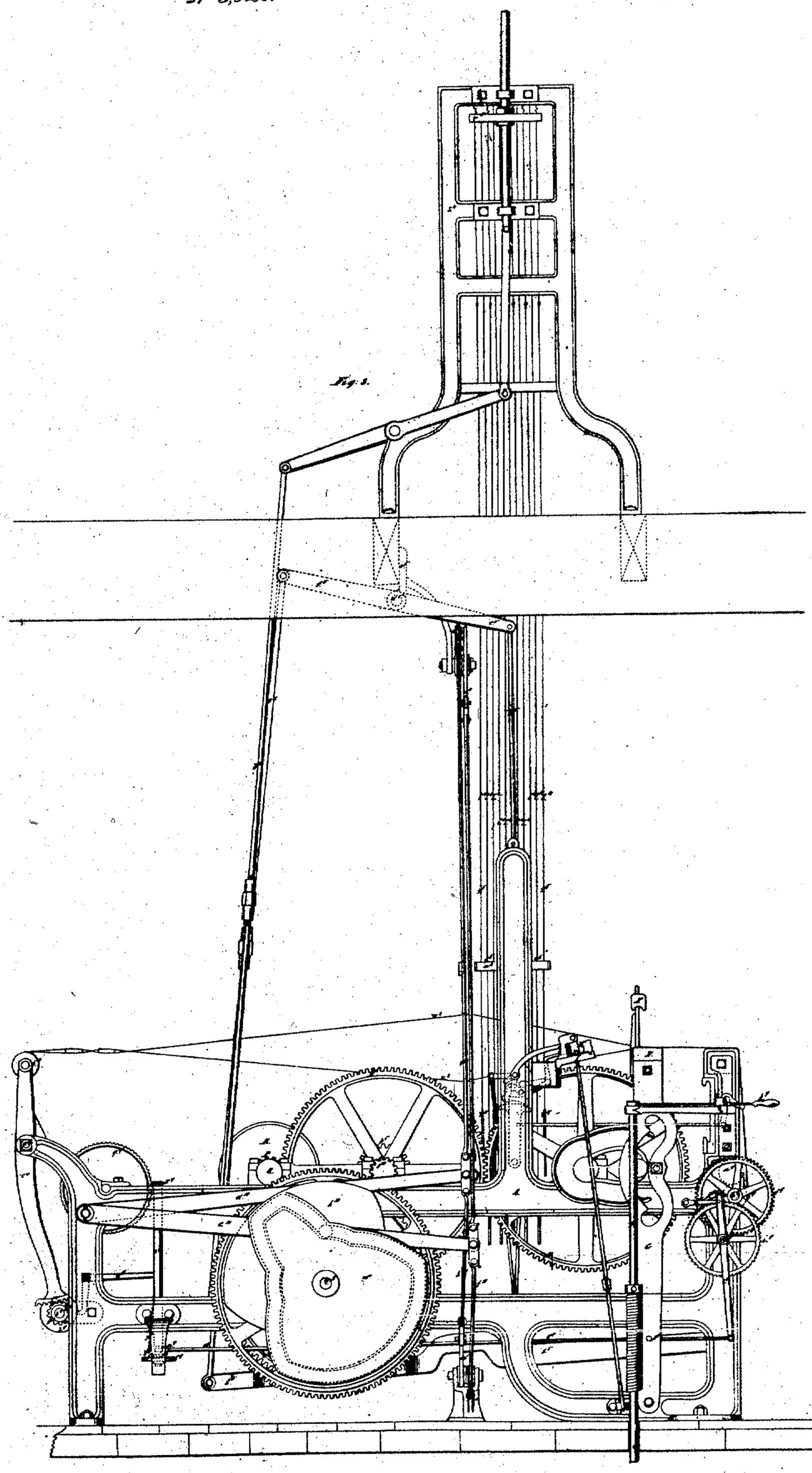


Fig. 1.

Sheet 4 - 6 Sheets.

E. B. Bigelow.

Carpet Loom.

No 5,020. Patented Mar. 20, 1847.

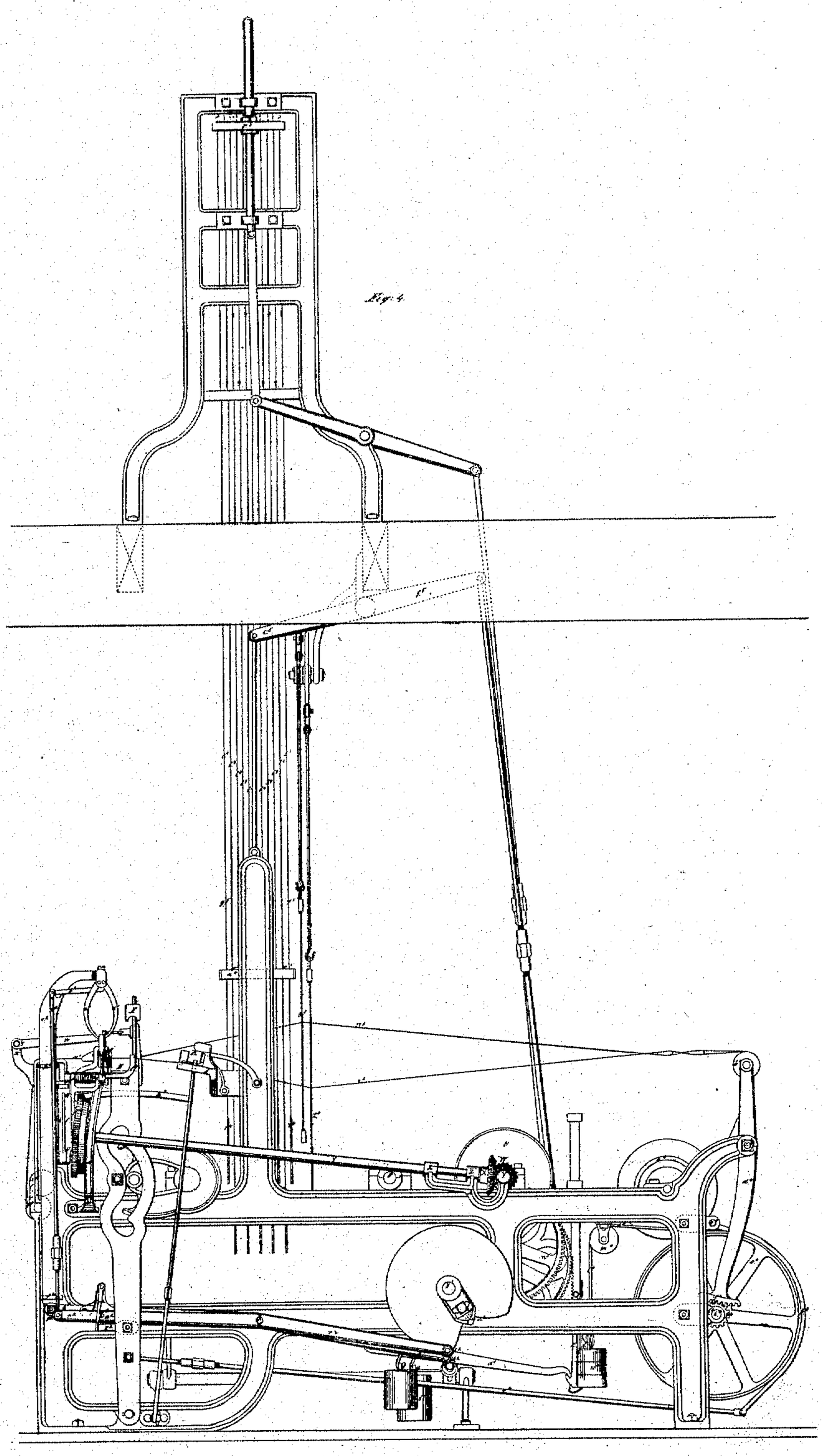


Fig. 4.

Sheet 5-6 Sheets.

E. B. Bigelow.

Carpet Loom.

No. 5,020.

Patented Mar. 20, 1847.

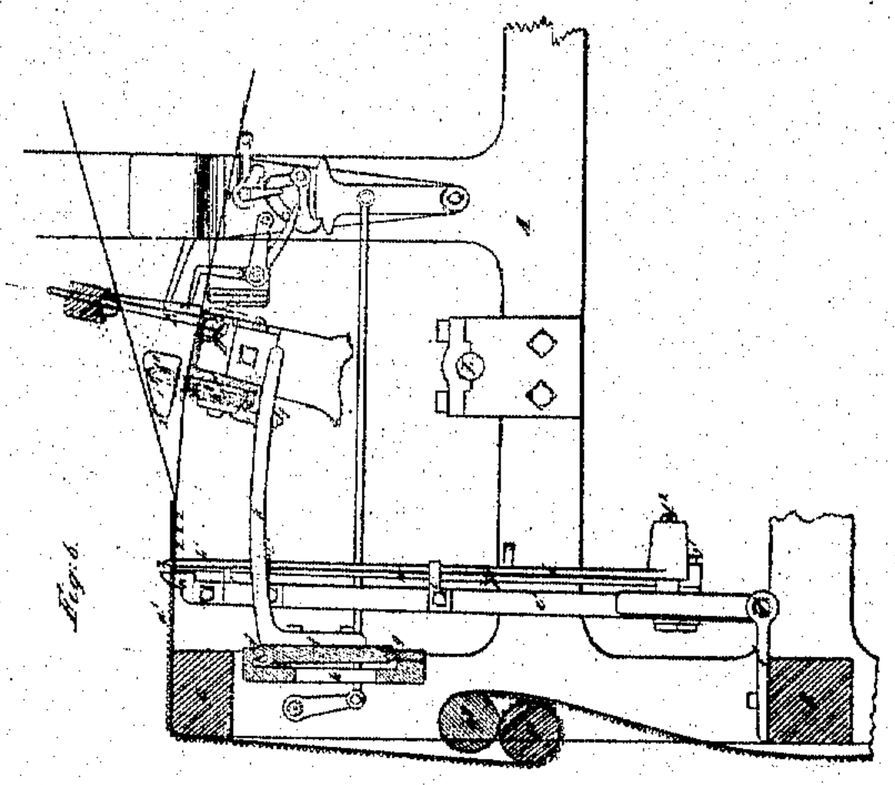


Fig. 9.

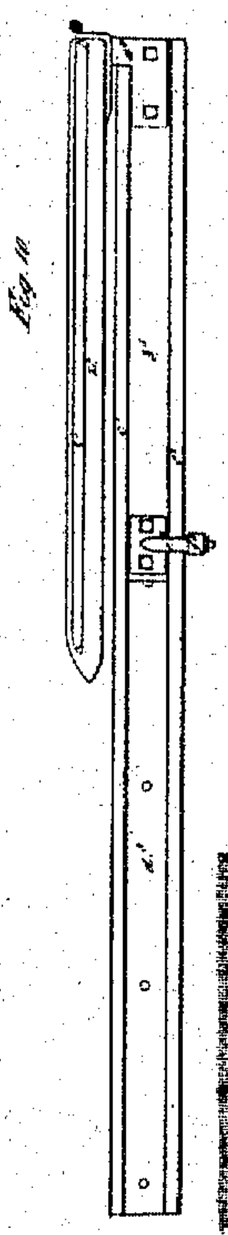


Fig. 10.

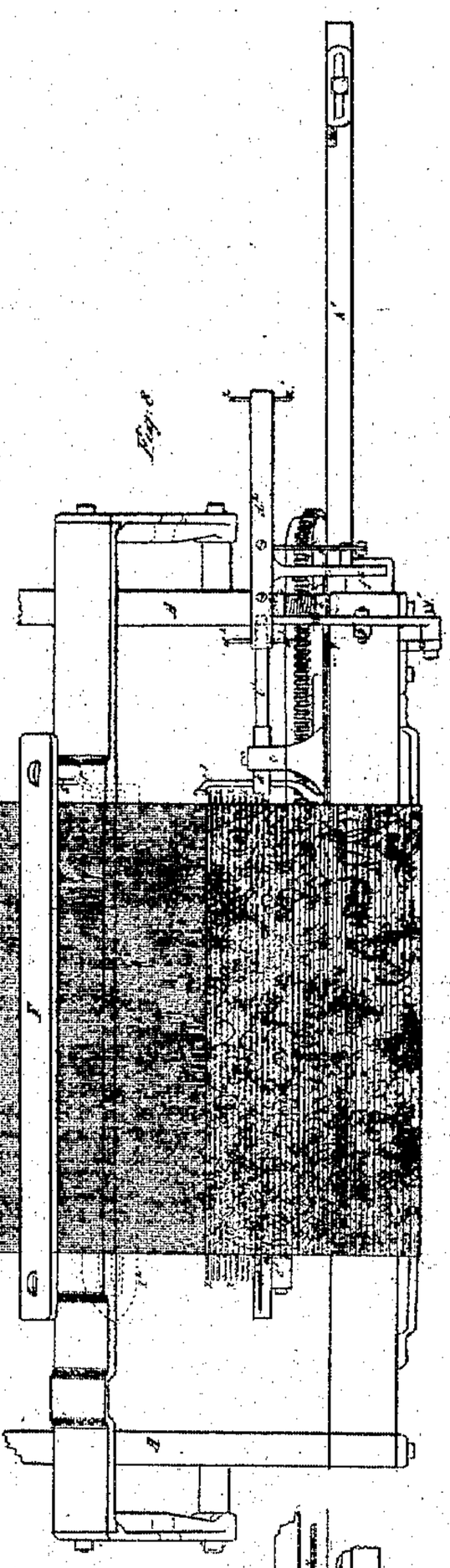


Fig. 8.

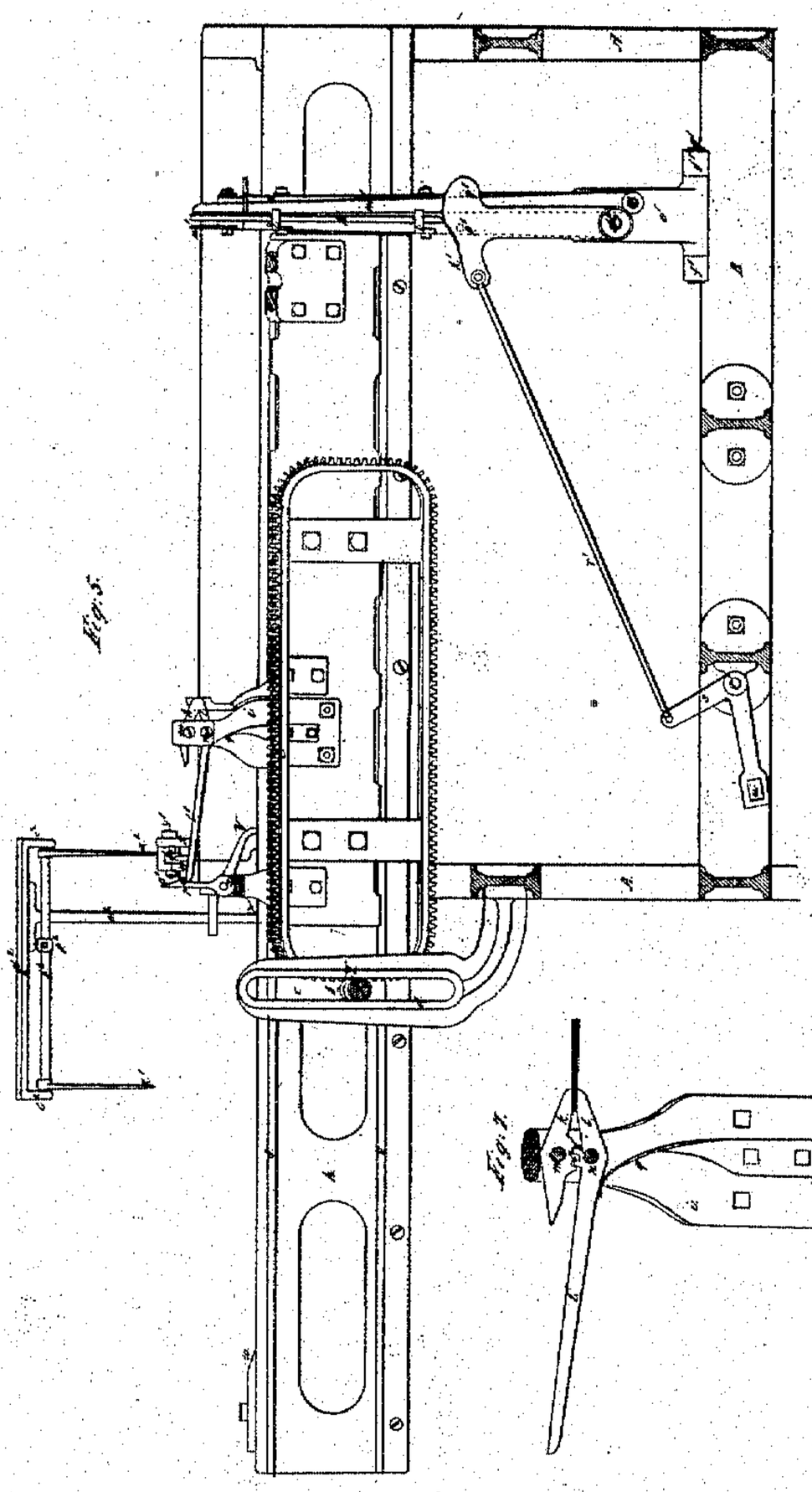


Fig. 5.

Fig. 7.

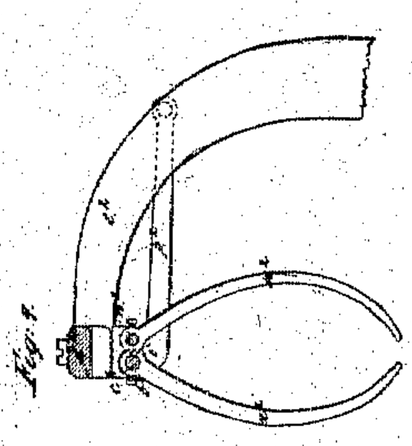


Fig. 6.

Fig. 13.

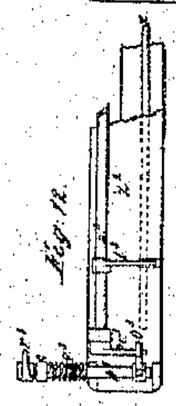


Fig. 12.

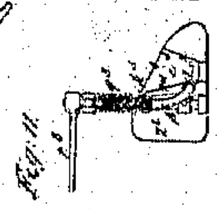


Fig. 11.

E. B. Bigelow.

Carpet Loom.

Sheet 6 - 6 Sheets.

No. 5,020.

Patented Mar. 20, 1847.

Fig. 11.

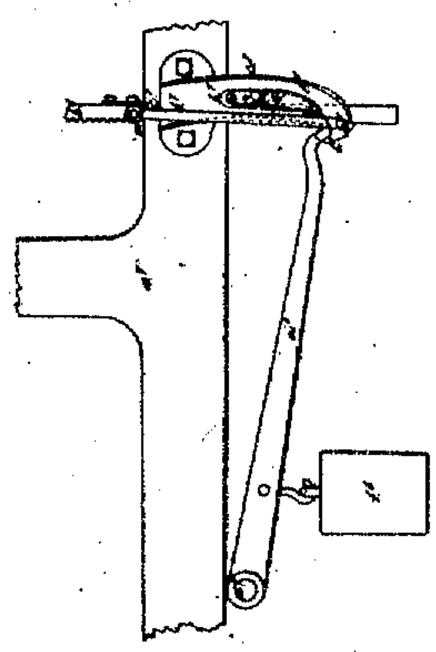


Fig. 12.

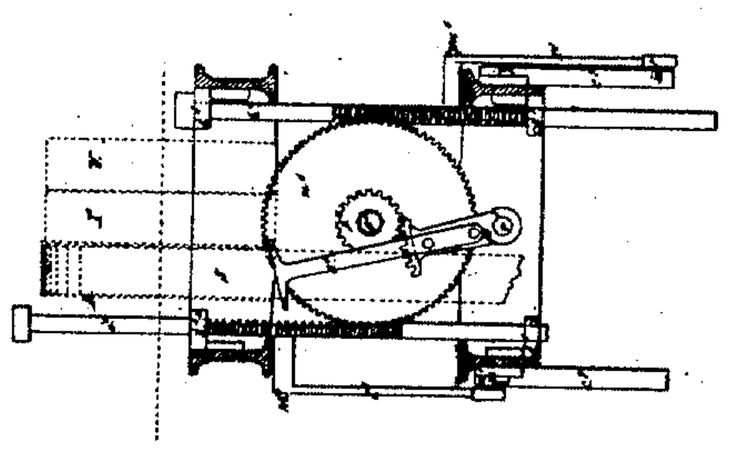


Fig. 13.

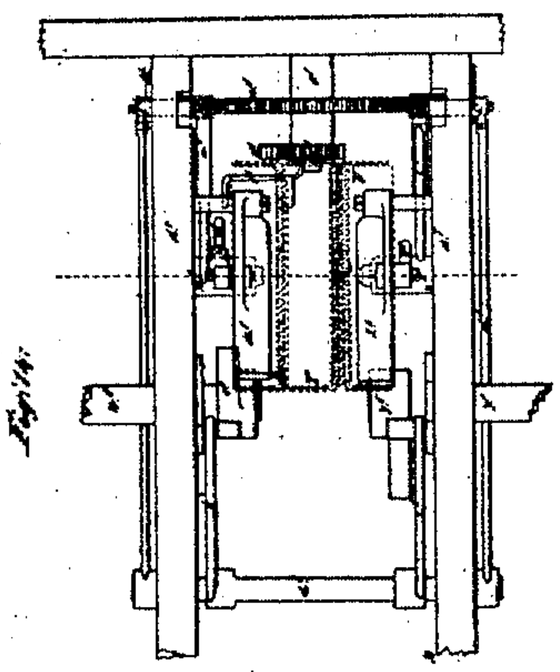
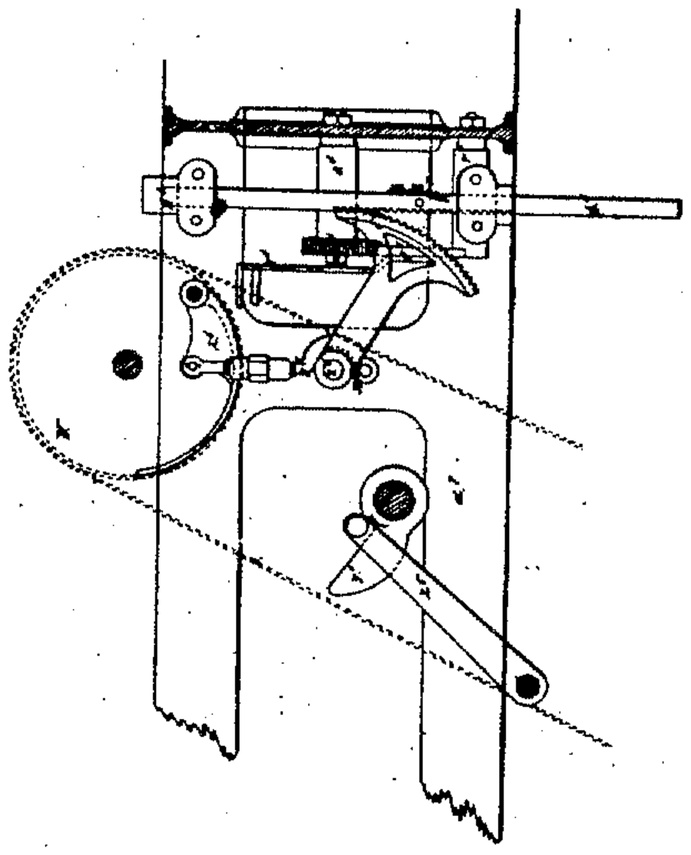


Fig. 14.



UNITED STATES PATENT OFFICE.

ERASTUS B. BIGELOW, OF BOSTON, MASSACHUSETTS.

BRUSSELS LOOM.

Specification forming part of Letters Patent No. 5,020, dated March 20, 1847; Reissued September 11, 1849, No. 144.

To all whom it may concern:

Be it known that I, ERASTUS B. BIGELOW, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machinery for Weaving Brussels Carpeting or Such other Fabrics as May be Successfully Produced Thereby, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a front elevation; Fig. 3, an elevation of the left side, representing the Jacquard frame as connected with the loom, and Fig. 4, a like elevation of the right side. The other figures will be referred to in their appropriate places.

The same letters indicate like parts in all the figures.

The character of the first part of my invention consists in making the mechanism which weaves the cloth or forms the body of the fabric separate and having a distinct organization from the mechanism which operates the figuring wires, removes them from under the pile or figuring loops and introduces them under the open figuring warp, each of these having a distinct and separate organization, and being operated separately, and connected by an intermediate mechanism which starts one of them as it arrests the other by shifting what communicates the motive power from the one to the other.

The character of the second part of my invention consists in taking the figuring wires from the apparatus which removes them from under the pile or woven figuring loops, by means of fingers or their equivalents which receive and transfer them to the apparatus by which they are introduced under the figuring warps. And the third part of my invention consists in the method of introducing the wires under the figuring warps by means of a box into which they are dropped, which box (or its equivalent), is carried under the figuring warps, drops the wire and is then moved back.

In the accompanying drawings (A, A) represent the two sides of a properly adapted frame connected by suitable cross ties (B). The lay (C) with its race beam (D), reed (E), reed bar (F), and swords (G, G), but without shuttle boxes, is made and operated as represented in the drawings and in manner corresponding with that described in the Letters Patent granted to me on the 18th of August, 1846, for my improved loom for weaving ingrain carpeting, or these may be made in any other appropriate manner, as this makes no part of my present invention. The cams that operate the lay are on the cam shaft (L) on which there is a cogged wheel (M) that engages with another cogged wheel (N) on an intermediate shaft (O) that receives motion from a pinion (P) on the driving shaft (Q) of this part of the machinery. On the intermediate shaft (O) there is a pinion (p^5) which drives, by the cogged wheel (o^5), the shaft (n^5) to which it is attached, and on this shaft are the two picker cams (p^{10}, q^{10}) that alternately act on rollers (w^{10}, v^{10}) on the ends of arms (s^{10}, t^{10}) of a horizontal arbor (r^{10}) to the other end of which is attached an arm (w^{10}) for the purpose of operating the pickers (u^3) by means of the picker staffs (v^3) connected with it by the straps (y^{10}) (x^{10}). This same shaft (n^5) carries two other cams (m^5) and (s^5), the one (s^5) for the purpose of depressing a lever (l^5) that turns on a fulcrum pin (k^5) on the lever cross bar (B), and this lever is connected at (h^5) by a rod (g^5) with an arm (f^5) on an upper horizontal shaft (d^5) that has its bearings in the boxes (e^5, e^5) from which project two other arms (c^5, c^5) and opposite to the one (f^5); and to these two arms are suspended the movable comber board (u^4) by the two connecting rods (b^5) and the slide rods (x^4, x^4) that slide in bearings (y^4, y^4) and (z^4, z^4), the rods (x^4, x^4) having shoulders to sustain the comber board in its lowest position. The cam is so formed as to depress the lever to elevate the comber board for the purpose of elevating the figuring warps at the required time that the common harness may work the linen or foundation warp without interfering with the figuring warp. This method of elevating the figuring warp has been secured to me by letters patent granted for improvements in the manner of mounting the loom &c., and bearing date the 30th of May 1842, to run for fourteen years from

the 1st of May 1842 in the specification of which will be found a full, clear, and exact description of the nature and object of the invention and the mode of operation. There is another lever (i^5) similar to and by the side of the lever (l^5) and operated by the cam (m^5) which is connected with, and operates the jacquard. On the said intermediate shaft (O) there is another pinion (o^{10}) which engages with a cog wheel (n^{10}) on a tubular arbor that runs on a stud projecting from the frame, and to this arbor are attached the two harness cams (a^{10}) and (b^{10}) that operate the harness (y^3) by the usual connection of levers (c^{10}, d^{10}), connecting rods (e^{10}, g^{10}) and second levers (h^{10}, i^{10}). The woven fabric is taken up after passing over the breast beam (C) by passing between two rollers (a^9, b^9), the upper one (a^9) being used to make pressure on the other (to insure the drawing of the fabric) by means of two rods that pass through one of the cross ties (B), and provided with helical springs (d^9, d^9); and the lower one (b^9) receives the regular take up motion to insure the regularity of the figures, the apparatus which gives this motion consisting of a cogged wheel (f^9) on the roller (b^9) which engages with a pinion (g^9) on the arbor of a ratchet wheel (i^9) operated at each beat of the lay by a hand (k^9) on the end of a lever (l^9) connected with one sword of the lay at (p^9) by a jointed connecting rod, a pawl (n^9) being employed to prevent the ratchet wheel from turning back.

The linen or foundation warp (w^3, x^3) is given out from the warp beam (a^4) by a connecting rod (o^9), one end of which is jointed to the sword of the lay at the same point (p^9) to which the take up motion is connected, the other end being jointed to one end of a lever (u^9) that turns freely (as represented by dotted lines in Fig. 3) on a vertical arbor (s^9) which has a crown ratchet wheel (t^9) actuated at each beat of the lay by a hand (v^9) on the opposite end of the lever (u^9), and as this ratchet wheel and arber are turned, motion is given to the warp beam by an endless screw (r^9) on the uper end of the arber, the threads of which take into the cogs of a spur wheel (q^9) on the shaft of the warp beam.

For the purpose of regulating the let off motion the foundation warps from the warp beam pass over a whip roller (b^4) that has its bearings in the upper end of two levers (c^4) (d^4) that vibrate on centers (e^4), and the lower end of each of these levers is provided with a segment rack (f^4) the teeth of which engage with pinions (g^4) on each end of a shaft (h^4) and on this shaft there is a cam (z^9) against the periphery of which one arm (represented by dotted lines in Fig. 3) of a lever (w^9) that turns on a stud pin (x^9) bears, the other arm of this lever being connected with the ratchet hand (v^9) by a chain (y^9), and the diameter of this cam is such that so long as the end of the lever (w^9) bears on its greatest diameter the ratchet hand is held up and does not act on the ratchet wheel to turn the warp beam and give out the warp; but so soon as the tension of the warps become so great on the roller (b^4) as to overcome the force of a weight (n^4) attached to one end of a strap (l^4) that passes over a roller (m^4) and is attached to and extends partly around the periphery of a brake wheel (o^4) on the before mentioned shaft (h^4), this shaft is turned and brings the reduced diameter of the cam to the arm of the lever which permits the ratchet hand to act on the ratchet wheel and give out the warp, so that the giving out of the warp is entirely regulated by its tension on the roller (b^4) over which it passes. This mode of giving out the warp I do not claim, and the same end may be accomplished. To prevent the lay, when beating up the weft, from causing the warp beam to give out warp, there is a brake (p^4) fitted to the periphery of the brake wheel (o^4) with one end jointed at (q^4) to the frame and the other by a connecting rod (r^4) to the sword (G) of the lay so that as the lay beats up the brake is drawn up to the brake wheel and holds fast the let off motion.

I have thus far described the general organization of that part of the mechanism which is employed in forming the foundation and weaving in the fabric, in which I make no claim to invention as the several movements of which it is composed are well known; but in the arrangement the parts are so located, generally on one side, as to leave free space for the location and operation of the second part of the mechanism, or that which is employed in operating the figuring wires.

The shuttle boxes (K, K) instead of being attached to, and making part of the lay are permanently attached to the sides of the frame by means of the plates (I, I), the ends of the race board of the lay being properly adapted to pass under them when the lay is thrown back so that the shuttle can pass over the race board back and forth from one shuttle box to the other.

Before proceeding to the description of the second part of the mechanism, I will simply state that the jacquard frame (s^4) is applied in the usual manner, and so located as to have the cords (t^4 &c), (through the mails of which the figuring warps pass,) in front of the harness (y^3, z^3) that works the linen or foundation warps. These cords pass through holes in the movable comber board, and are provided each with a knot (q^5) so that by lifting the comber board all the figuring warps are

lifted up clear of the foundation warps, to admit of working these without interruption from the figuring warps.

At the commencement of each operation the first part of the mechanism is set in motion to weave the foundation web in the usual manner of weaving ordinary cloth, which therefore needs no further description than that given above, as this part of the mechanism makes no part of my present invention, except so far as I have given it an organization and arrangement which adapts it to the second part of the mechanism, so that the two shall work in succession.

During the first series of operations the comber board (u^4) is lifted by the cam (m^5) to raise the jacquard harness, and in like manner the jacquard is operated by the cam (s^5) to raise that portion of the figuring warp which is to form the figuring loops or pile at the next operation, these two operations being performed by the first part of the mechanism. And at the end of the weaving in operations and before the first part of the mechanism is arrested the comber board is permitted to descend to let down that portion of the figuring warp which is not to form the surface; and so soon as this is effected the first part of the mechanism is arrested and the second part started by the following arrangement, more particularly represented in Figs. 14, 15, 16, and 17, Plate 6.

On the shaft (n^5) of the jacquard and comber board cams, there is a cam formed arm (c^6) which gradually lifts an arm (b^6), (projecting from an arbor (a^6)) and which then, by its form, permits it to fall back to its original position by the force of a weight (f^6) on another arm or lever (d^6) on the same arbor. The end of this weighted lever is hook formed and in descending catches onto a pendant hook (l^6) (Z^6) jointed at (m^6) to a vertically sliding rack (h^6) provided with cogs on two of its faces, those on one face engaging with a cogged wheel (n^6) that turns on the stud pin (o^6), and those on the other face engaging the cogs of a sector rack (t^6) that turns on a stud pin (v^6). As the lever (d^6) draws down the rack (h^6) it turns the cogged wheel (n^6) on the arbor of which there is a pinion (p^6) that engages with a sector rack (q^6) that vibrates on the stud pin (r^6), and to this is attached a belt shifter (s^6), so that the descent of this rack shifts the driving belt (s) from the pulley (R) on the driving shaft (Q) of the first part of the mechanism, and transfers it to the driving pulley (U) on the driving shaft (V) of the second part of the mechanism which is thus started as the first part is arrested. As the driving belt is shifted from one driving pulley to the other, it passes over a loose pulley (T) to prevent strain on the mechanism. And at the same time it is necessary to arrest the momentum of the machinery from which the driving power has been removed. This is effected by the sector rack (t^6) to the hub of which there is a short arm (x^6) connected by means of an adjustable connecting rod (y^6) with a brake (z^6) which is thus forced against the inner periphery of the driving pulley to arrest by friction all the moving parts. On inspection of the drawings it will be seen that there is a like arrangement of parts on the other side for the purpose of shifting the driving belt back from the second to the first part of the mechanism in which (y^5) is the cam formed arm that acts on the arm (z^5) of the arbor (a^6) from which projects the weighted lever (e^6) that catches on the pendant hook to draw down the double rack (i^6) to vibrate the cogged wheel (n^6) and sector rack (u^6) that operates the brake (a^7) within the pulley (U) by the connecting rod (y^6). As the levers (d^6) and (e^6) move together and alternately act on the pendant hooks, that one of the sliding double racks may be lifted as the other is drawn down, provision is made alternately to place the pendant hooks out of the way, which is effected in the following manner, viz: As the pendant hook is drawn down by the lever (d^6), a pin (represented by dotted lines in Fig. 17) that projects from the pendant hook runs within the flanges of a plate (a^7, b^7, c^7) and in front of a spring (e^7) (attached to the plate by screws (f^7, g^7, h^7) and at the end of the downward motion forces back the spring and gets behind it, so that when the lever (d^6) is moved down at the next operation by the lever (e^6), which operation carries up the pendant hook, it (the hook) is carried back to avoid catching the end of the lever by the curved form of the spring; and so soon as it passes above the top of the spring it is forced forward to catch the end of the lever at the next operation by a spring (i^7) attached to the rack.

The first part of the mechanism having been stopped and the figuring warps placed in a condition to receive the wires over which the figuring loops are to be formed, and the driving belt shifted to the pulley (U) on the driving shaft (V) of the second part of the mechanism, the second series of operations commence, which are for introducing a wire under that portion of the figuring warp which is to be formed into loops, at the same time drawing out a wire from under the wrought figure, and then transferring this wire to the apparatus which is to introduce it under the figuring warp at the next operation. The details of the arrangement of the apparatus for operating the figuring wires are more closely represented on Plate 5, Fig. 5 being a vertical cross section taken in front of the lay,

looking from the back; Fig. 6 a vertical section taken in the direction of the warps; Fig. 7 a section taken through and in the length of the pincers; Fig. 8, a horizontal section taken just above the lay; Fig. 9, a vertical section taken through the arbors of the fingers for transferrring the figuring wires; Fig. 10 a separate view of the box for introducing the figuring wire to show its connection with the carriage to which it is attached; and Figs. 11, 12, and 13 separate sections of the box for introducing the figuring wires to exhibit the arrangement of parts for dropping them.

On the end of the driving shaft (V) there is a miter wheel (W) that engages with a similar wheel (X) on one end of a shaft (Y) that turns in collars (Z, Z) of a frame (a) that is attached to, and turns freely on the end of the driving shaft (V) to admit of the vibration of the shaft (Y) independently of the motion of the driving shaft, in the usual manner of making a mangle wheel motion, the other end of the shaft being free to turn and slide in a groove (c) in a bracket (d) attached to the side of the frame; and to the extremity of this shaft is attached the mangle pinion (b) which acts on the external mangle rack (e) to give a reciprocating rectilinear movement to a main carriage (f) and all the parts attached to it, the said plate sliding between ways (g, g) projecting from a plate (h) attached to the frame just below the breast beam (C) and projecting sufficiently beyond the frame on the right to admit of carrying the main carriage (f) and the parts attached to it out of the way during the operation of weaving. The mangle rack at the ends is for a short distance straight and vertical instead of being semi-circular as usual, that all the mechanism which is carried by it may remain in a state of rest for a short time at the end of each motion, while the mangle pinion is carried up or down.

From the carriage (f) projects an arm (h^3) having a slot (g^3) in which slides a bolt (e^3) projecting from a secondary carriage (b^3) that slides in ways (e^3, e^3) in a plate (d^3) attached to the front of the lay so that by this connection the secondary carriage can move with the lay and when the main carriage is moved by the mangle motion this secondary carriage is also carried with it. To the right hand end of this secondary carriage is attached at (a^3) a long box (z^2) with one end made in the form of a shuttle to admit of its free passage between the warps—the said box having a hopper like opening (i^3) at the bottom of sufficient length and width to receive and discharge through the bottom thereof a figuring wire; but within this hopper, at equal distances apart, there are three curved arms (l^3) (two only are shown in the drawings) projecting from an arbor (z^3) that runs the whole length of the box and having its bearings in the ends thereof, one end of the said arbor being provided with another arm (m^3) jointed to an arm (o^3) of a short vertical arbor (p^3) surrounded by a helical spring (q^3) and provided with an arm (r^3) at the upper end. The tension of the helical spring always tends to turn the arbor which it surrounds to keep, by the described connections, the curved arms (l^3) up, so as to support the figuring wire; but when the arm (r^3) of the vertical arbor is brought into contact with a projection (s^3) on the bar (F) of the lay, when the box (z^2) is carried in under the figuring warps, as represented by dotted lines in Fig. 8, the curved arms are thrown open and the figuring wire dropped, the arms being closed by the tension of the helical spring so soon as the box is withdrawn from the open shed by the mangle motion.

The carriage (f) which, as described above, communicates motion to the box that carries the figuring wires, also carries the pair of pincers that withdraw the wires (z) from under the figuring loops. A standard (i) projects upward from this carriage to the upper end of which at (m) and (n) are jointed the two jaws (k, l) that constitute the pincers—the two being provided with segment cogs (o, p) to insure their opening and closing together. The lower jaw (l) has an arm (l') which, when the jaws are closed, is held under a catch (d' r) on the end of an arbor (s) carried by a standard of the carriage (f); and around this arbor is a helical spring (t) which bears the catch toward the arm (l') of the jaws, there being an arm (v) on the same arbor the end of which runs on the upper edge of the plate (h). When the carriage is started by the mangle pinion, at the commencement of the second series of operations, the jaws are open, and are carried toward the right hand selvage of the fabric as the box with the figuring wire moves under the figuring warp, and when these approach the end of this motion that wire (z) which is to be drawn out from under the formed loops must be pushed partly out and toward the open pincers. This is effected by a mechanism attached to an arm (e') that vibrates on an axle (g') in boxes (f' f') attached to the front tie piece (B) of the frame. At the upper end of this arm there is a plate (n') which is borne (by a spring of any kind, or a weight that acts on the arm), against the first of the series of wires (z) which is to be withdrawn, several being retained under the figuring loops to prevent the tension of the warps and the operation of the loom from drawing out the formed loops. A wedge formed instrument (h') that slides in brackets (i', i') attached

to the arm (e') is then forced up between the wire that is to be drawn out and the one next to it, by a cam (k') that turns on a stud pin (l^2) on the arm, and the cam is vibrated to force up the wedge by a cam (x') on a shaft (y') that receives motion from the driving shaft (V) by a train of wheels and pinions (u^5, v^5, w^5, x^5), the proportions of this train being such as to give the shaft (y') one revolution for the complete series of motions performed by the second part of the mechanism. This cam is so formed and situated on its shaft as to elevate the wedge at the proper time by acting on a lever (v') that turns on a fulcrum pin (w') and acts on a bent lever (u', s') that turns on a fulcrum pin (t') the said lever being connected by a rod (r') with the cam (k'). So soon as the wedge is forced up the surface of the cam (k') is then concentric to admit of its farther vibration without moving the wedge, the object of giving a farther vibration to the cam (k') being to move a lever (m') that vibrates on a stud pin (o') on the same arm, to force the wire (z) toward the pincers—that face of the lever which acts on the point of the wire being grooved for this purpose—the cam (k') acts on this lever to vibrate it to and fro by means of two pins (p', q'), shown in Fig. 5 by dotted lines, the pins being placed so far apart as to admit of the vibration of the cam (k') sufficiently far to elevate the wedge before it acts on the pushing lever, as one motion should follow the other. The operations just described which separate and push out the figuring wire take place as the pincers move toward the wire, and when the wire is introduced between the jaws of the pincers they are closed by forcing down the arm (l') of the under jaw until caught and held by the catch (d') which is effected by a lever (w) that turns on a stud pin (y) on a standard (x) this lever being connected by a jointed rod (b') with one end of a lever (s^4) that vibrates on the stud pin (w', t^4) the other end of this lever being acted upon at the appropriate time to close the pincers by a cam (u^4) on the shaft (y').

The moment that the pincers have grasped the wire, which takes place at the same time that a similar wire is dropped from the box under the figuring warp, the mangle pinion during the operation of grasping the wire passes up that portion of the end of the mangle rack which is straight and vertical and which therefore does not move the carriage that carries the pincers and wire box; but so soon as the wire is grasped the mangle pinion begins to move back the carriage, and at the end of the back motion the arm (v) of the latch of the pincers is carried up an inclined plane (u) on the plate (h) which forces back the latch (d') and permits the spring (q) to force open the jaw and liberate the wire which falls into the transferring apparatus which will now be described.

There is a sliding standard (e^2) which slides vertically in brackets (f^2, f^2) attached to the side of the frame, and to the top of this standard is attached a horizontal top piece (d^2) with the ends (c^2, c^2) bent down to receive the journals of two small arbors (b^2, n^2), to which are attached near each end curved fingers (a^2, a^2) and (z', z'), two at each end, their hubs being provided with cogs (o^2) that engage each other, so that by turning one of the arbors by an arm (p^2) attached to it the two pairs of fingers can be made to open and close. The outer end of the arm (p^2) is connected by a jointed rod (q^2) with one end of a lever (r^2) that vibrates on a stud pin (i^2) the other being provided with a roller (s^2) to receive and communicate motion to the parts in connection from a cam (t^2) on the shaft (y') and attached to the face of another cam (m^2) which acts upon a roller (k^2) on the end of another and similar lever (h^2) on the same stud pin, the other being provided with a roller (g^2) on which the lower end of the standard (e^2) rests and by which it is elevated and permitted to descend. To the lever (h^2) there is jointed a pendent catch (v^2, w^2) which catches onto a projection (x^2) on the other lever (r^2) for the purpose of connecting and disconnecting the two levers at given periods in the operation of the mechanism.

During the operation of introducing and withdrawing the wires the two levers are disconnected and the standard (e^2) is kept at the highest position by the roller on the lever that operates it being acted upon by that part of the cam wheel (m^2) which is concentric, and the fingers are kept open by the preponderance of the parts on that end of the lever (r^2) connected with the fingers. The parts being thus situated, as the pincers approach their drawing out movement, the standard with the fingers opened begins to descend by the rotation of the cam (m^2) the depression (n^2) in which passes the roller (k^2) and permits that end of the lever (h^2) to rise by the weight of the standard &c. resting on the other end, and as the standard descends, the points of the opened fingers pass below the wire in the pincers, and then the cam (t^2) acts on the roller of the lever (r^2) and closes the fingers under the wire which is dropped into them by the opening of the pincers, and the wire is there held by connecting the two levers together by the catch (v^2, w^2). The parts remain in this situation until the driving belt is shifted back from the driving pulley (U) of the second part of the mechanism to the driving pulley (R) of the first part, which

is effected as described above. This sets in motion the weaving in operation and the first beat of the lay brings the box which conveys the wire under the figuring warp under the fingers and at the same time a projection (y^2) on the sword (G) of the lay liberates the catch (v^2, w^2) and permits the lever (r^2) to descend and open the fingers to drop the wire into the box preparatory to the next operation of introducing the wire under the figuring warps.

After the driving power has been shifted back to the weaving in or first part of the mechanism, the jacquard frame is operated by the cam (s^5) and its connections to let down the figuring warps that were thrown up to form the figuring loops that they may be woven in, and when the lay has made one beat for this purpose, the comber board is elevated to lift the figuring warps out of the way of the operations of the linen or foundation warps, as above described.

From the foregoing it will be obvious that the parts of this mechanism which I claim as my invention can undergo many modifications without changing the principle of my invention, as for instance, instead of using the mechanism above described for shifting the belt from one driving pulley to the other, a clutch may be substituted; or any other arrangement of mechanical means which will shift the belt from one to the other, or clutch and unclutch the parts, the object being to start one part of the mechanism as the other is arrested, a brake being used for each separate organization, so that the moment the driving power is shifted the brake shall act to arrest the momentum of the moving parts. Again instead of using fingers that open and close to receive and deliver the figuring wires, hooked arms may be employed and connected with an arbor, so that they can turn to pass under the wire to receive it from the pincers and in like manner turn to drop it into the box which carries it under the figuring warps. And instead of the hopper and shuttle formed box for receiving and introducing the wires, arms such as are employed in the box to close and open the bottom for the delivery of the wire may be used without the box by giving them a greater curve, as the main object is to give the wire ample support as it passes between the warps. But notwithstanding all the modifications of which my invention is susceptible, the mode fully described and represented of applying the principles or characteristics of my invention which distinguishes it from all other things before known, I deem the best,—my object in referring to the others being simply to show that I have contemplated other modes.

What I claim therefore as my invention and desire to secure by Letters Patent, is—

1. Giving to the two parts of the mechanism, that which weaves the cloth or forms the body of the fabric and the one which operates the figuring wires, a separate and distinct organization, substantially as described, when these are connected and combined by an intermediate mechanism which shifts the motive or driving power from one to the other, substantially as described.

2. And in combination with this I also claim the employment of the two brakes to arrest the momentum of the moving parts to prevent any conflict in the operations of the two parts of the mechanism, as described.

3. I also claim the method substantially as above described of taking the figuring wires and transferring them one by one to the apparatus which introduces them under the figuring warps, as described.

4. And finally, I claim the method, substantially as described, of carrying and dropping the figuring wires under the figuring warps by means of a sliding box or its equivalent which supports the wire, as described.

E. B. BIGELOW.

Witnesses:
WM. C. APPLETON,
CHAS. T. MURDOCH.

Disclaimer.

To the Commissioner of Patents:

The petition of ERASTUS B. BIGELOW, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, respectfully represents that he has, by assignment duly recorded in the Patent Office, become the sole and exclusive owner of Letters Patent of the United States originally issued to himself, dated 20th of March, A. D. 1847, and reissued 11th September, A. D. 1849, for Improvements in Brussels Looms; that he has reason to believe that through inadvertence and mistake certain claims made in the specification of the said reissue patent are too broad, including that of which he was not the inventor.

Your petitioner, therefore, hereby enters his disclaimer to the second claim of said reissue patent, being in the following words: "I claim in combination with a loom for weaving such looped fabrics as herein designated, the employment of a box, trough, or the equivalent thereof, for receiving and holding the figuring wires, preparatory to their being introduced under the figuring warps substantially as described"; also to the third claim of said reissue, in part, that is to say, whereas it now reads "I claim the fingers, or their equivalents, which receive the figuring wires from under the pile or figuring loops, in combination with the trough, box, or the equivalent thereof, into which they are deposited, preparatory to the introduction of them under the figuring warps, substantially as described," your petitioner disclaims the fingers as the means of withdrawing the figuring wires from the pile; he means to claim them only as receiving and supporting the figuring wires immediately upon their withdrawal from the pile or figuring loops, in combination with the trough, box, or the equivalent thereof into which they are deposited preparatory to the introduction of them under the figuring warps, substantially as described.

The above disclaimer is to operate to the extent of the interest in said Letters Patent vested in your petitioner, who has paid ten dollars into the Treasury of the United States, agreeably to the requirements of the act of Congress in that case made and provided.

Executed at Boston, the 19th day of December, A. D. 1860.

E. B. BIGELOW.

In presence of—

CANSTEN BROWNE,
J. E. MAYNADIER.

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