

No. 867,934.

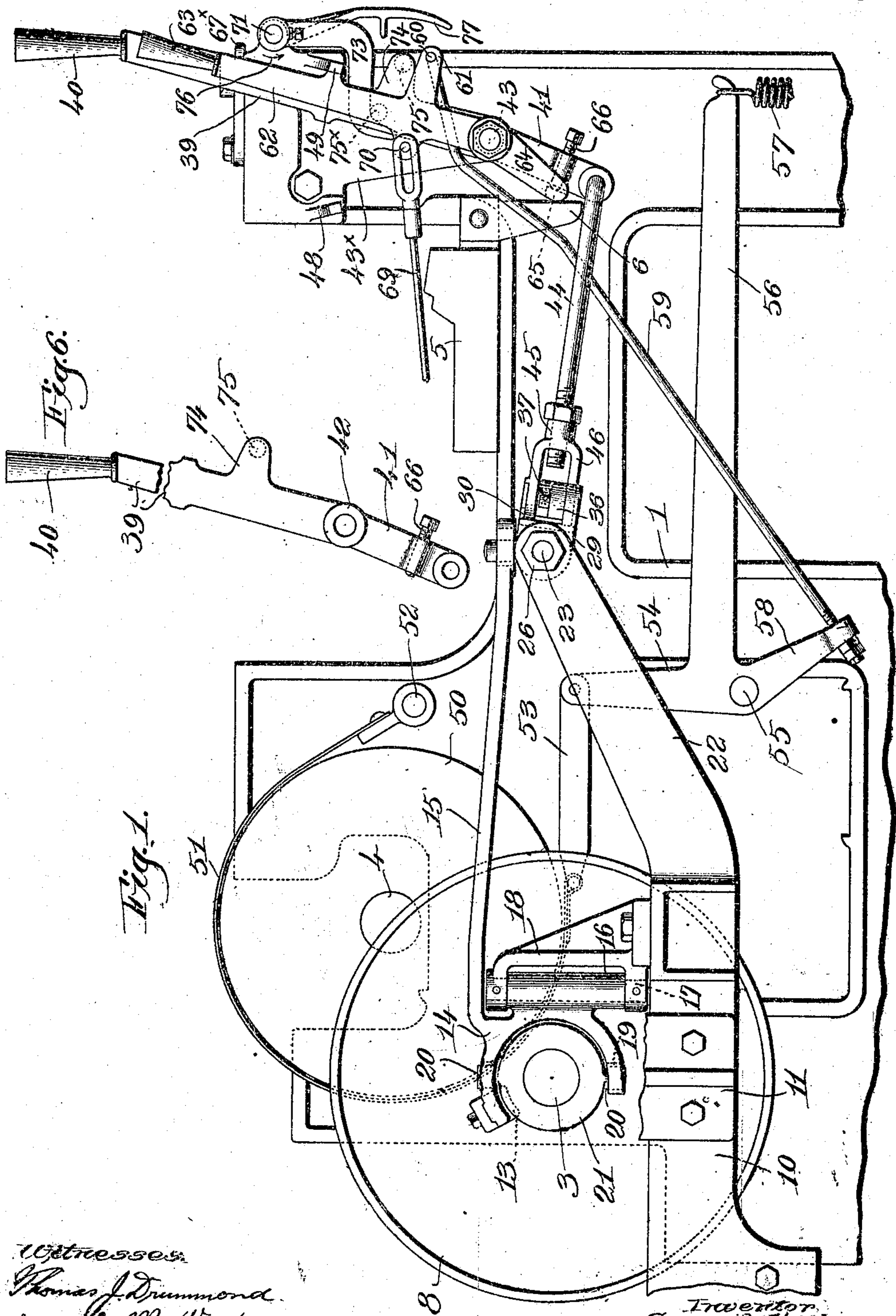
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G. B. AMBLER.

STARTING AND STOPPING MECHANISM FOR LOOMS.

APPLICATION FILED MAR. 26, 1907.

2 SHEETS—SHEET 1.



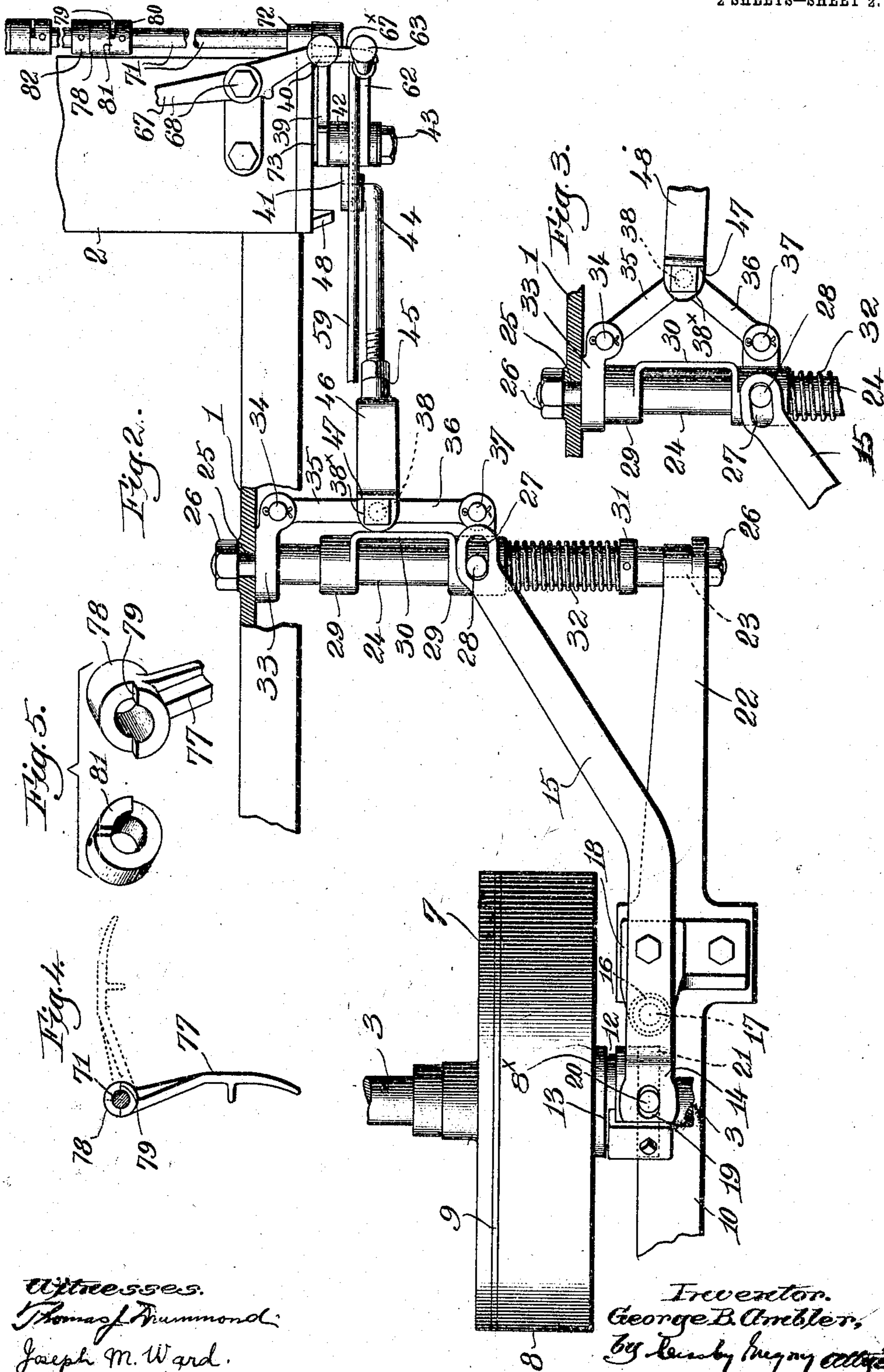
Witnesses:
Thomas J. Drummond.
Joseph M. Ward.

Inventor
George B. Hamlen
by Leroy Sugan attys.

G. B. AMBLER.
STARTING AND STOPPING MECHANISM FOR LOOMS.

APPLICATION FILED MAR. 25, 1907.

2 SHEETS—SHEET 2.



Witnesses.
Thomas Drummond.
Joseph M. Ward.

Inventor.
George B. Ambler,
by Lemby Maymy

UNITED STATES PATENT OFFICE.

GEORGE B. AMBLER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY,
OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

STARTING AND STOPPING MECHANISM FOR LOOMS.

No. 867,934.

Specification of Letters Patent.

Patented Oct. 8, 1907.

Application filed March 25, 1907. Serial No. 364,212.

To all whom it may concern:

Be it known that I, GEORGE B. AMBLER, a citizen of the United States, and a resident of Hopedale, county of Worcester, State of Massachusetts, have invented an

5 Improvement in Starting and Stopping Mechanisms for Looms, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

This invention has for its object the production of
10 novel and efficient mechanism for starting and stopping the operation of a loom, and comprehends numerous valuable features of construction, arrangement and operation, as will appear at length hereinafter.

In the usual loom construction the power is thrown
15 on or off the loom by or through a controller usually termed a shipper, which is movable in a longitudinally-slotted plate from stopping to running position, and vice versa. The slot in the plate is provided with a notch at or near one end, to engage and hold the ship-
20 per in running position, against the action of a spring acting, when the shipper is moved out of the notch, to move said shipper to stopping position. Such shipper movement is in a path parallel to the front of the loom, but herein, among other novel features, I have
25 arranged the shipper to move in a path parallel to the loom side, and I have also dispensed with the notched holding plate.

It is of advantage for the shipper to move parallel to the loom side, rather than at right angles thereto, for
30 various practical reasons, one of which is that any of the various devices for automatically causing movement of the shipper to stopping position operates in the same, or substantially the same, direction. With the old and prior structures the function of these
35 knocking-off devices is simply to push the shipper out of its holding-notch, and it is then started toward stopping position in a path at right angles to its initial movement, the second movement being effected by the spring controlling the shipper.

40 When a loom bangs off it is highly desirable that the shipper be thrown to stopping position as quickly as possible, so that the brake can act and help in stopping the loom. By my present invention the quickness of operation of the shipper and the devices controlled
45 thereby is increased, as the initial movement of the shipper toward stopping position is in the same direction as the final movement, the knock-off devices imparting some of the shipper movement.

By means of a novel construction of the intervening
50 connections between the shipper and the power shifting device, (in the present embodiment of my invention a clutch,) the force required to move the shipper to and from running position is reduced to a minimum.

When the shipper is in running position it is inert, as
55 there is no force tending to move it from a position of

rest, and there is no necessity for the use of any device to keep it in running position. Hence I am enabled to dispense entirely with the well-known holding plate now in use.

While the shipper is inert in its running position any
60 movement thereof of the slightest toward the stopping position will, through the connections between the power shifter and the shipper, cause the instant continuation of such shipper movement to stopping position. I have so arranged the controller for the brake
65 that it is impossible for the brake to be applied unless the shipper is off, that is, not in running position, but the brake may be released when the shipper is in stopping position.

The automatic devices for effecting loom stoppage
70 act through the brake controller upon the shipper or power controller, rather than upon the shipper itself, so that if the loom is stopped automatically the brake is applied. I have also made provision for starting the
75 loom from different points at the front of the loom, the arrangement being such that but little force is required to start the loom. Should the loom hang off before its normal speed of operation is established no breakage can result, because the power acting to effect
80 loom stoppage cannot be readily resisted by the operator.

The various novel features embodied in my present invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

While I have herein shown the power shifting device as a clutch it will be manifest that my invention is not restricted thereto, and it is used herein for the purpose of illustrating one practical form in which my invention may be embodied.

Figure 1 is a left hand side elevation of a sufficient portion of a loom, with one embodiment of my invention applied thereto, the parts being shown in the position assumed when the loom is running; Fig. 2 is a top plan view of the mechanism shown in Fig. 1, and in the
85 same position, a portion of the loom side being broken out; Fig. 3 is a detail in plan of the toggle and adjacent parts, when the toggle is broken or off center; Fig. 4 is a side elevation of one of the starting handles, one member of the lost-motion connection between the handle
90 and the starting rod or rock-shaft being omitted; Fig. 5 is an enlarged perspective view of the two members of the lost-motion connection, to be referred to; Fig. 6 is a separate view of the shipper, in side elevation and broken out above its fulcrum hub.

The loom-side 1, breast-beam 2, main driving shaft 3, and crank-shaft 4, may be and are of usual construction, a frog 5, Fig. 1, being mounted on the loom-side, to be moved by the protector mechanism (not shown and of well known construction) when the shut-
105 110

tle is improperly boxed, the forward end of the frog having a depending bunter 6 rigidly secured thereto, for a purpose to be described.

I have herein shown the power shifting device as a friction clutch, one member 7, Fig. 2, being fast on the driving shaft 3, the other member 8 being loosely mounted on said shaft and movable toward and from the fast member, the latter having a suitable facing 9 of leather or other suitable friction-producing material. The loose member 8 is made as a pulley and is adapted to receive a belt by which power is transmitted from any suitable source, not shown. The outer end of the shaft 3 is extended beyond the clutch and in practice is supported in a bearing or a heavy bracket 10 bolted to the loom-side, only the base 11 of the bearing being shown in Fig. 1, and being wholly omitted in Fig. 2. The hub 8^x of the loose member 8 has an annular groove 12 in which travels a follower 13 fixedly secured to the yoke-like portion 14 of a laterally movable lever 15, provided with a sleeve-hub 16 fulcrumed on a vertical pivot-pin 17, see dotted lines Fig. 2, in the stand 18 bolted onto the bracket 10. The arms of the yoke-like portion 13 are slotted at 19 to receive loosely opposite studs 20 extended radially from a collar 21 slidably mounted on the shaft 3 adjacent the hub of the clutch member, swinging movement in one direction of the lever 15 on its fulcrum 17 acting through the then abutted faces of the collar 21 and the hub 8^x of the member 8 to set the clutch, release thereof being effected by action of the follower 13 in the groove 12 of the hub when the lever is swung in the opposite direction.

At its front end the bracket 10 is extended upward and forward at 22 and has rigidly connected with its end the reduced extremity 23 of a rod 24, the inner end of said rod being also reduced as at 25 and extended through a hole in the loom-side 1, nuts 26 screwed onto the reduced ends of the rod holding it securely in position. Said rod is parallel to the driving-shaft 3 and extends under the front end of the lever 15, which is slotted at 27 to receive loosely a stud or pin 28 upturned from the outer end of a skeleton sleeve, herein shown as comprising tubular portions 29 slidably mounted on the rod 24 and rigidly connected by a bridge 30.

Between the outer end of the sleeve and an adjustable collar 31 on the rod 24 I interpose a rather light spiral spring 32, the normal tendency thereof being to move the sleeve toward the loom-side, but the main function of the spring is to retain set a toggle, to be described, when the lever 15 has been swung to close the clutch, a separate and stronger spring, to be hereinafter referred to, serving to move the shipper into stopping position when the toggle is broken.

In Fig. 2 the toggle is shown as set and the spring 32 is maintaining it in that condition against accidental shock or jarring due to the operation of the apparatus. At the inner end of the rod 24 is fixedly held a collar 33, to which is pivotally connected at 34 one member or arm 35 of a toggle, the other member or arm 36 thereof being pivoted at 37 on the outer end of the sleeve, said toggle members being jointed together by a pin 38 at their inner ends.

When the toggle is set, Fig. 2, the three centers 34, 37 and 38 are nearly aligned, and the lever 15 is positioned to throw the clutch into operation, the spring 32 then acting to hold the toggle set and thereby maintain

the clutch in operation, as shown clearly in Fig. 2, the center 38 being just past the line passing through the centers 34, 37, to the left thereof, Fig. 2. At such time there is no force acting to break the toggle, as will be obvious, the whole tendency of the spring 32 then being directed to maintain the parts in the position shown. It will be equally manifest that the slightest movement of the joint 38 to the right, viewing Fig. 2, past the line passing through the centers 34, 37, will instantly enable the spring 32 to expand as the toggle is fully opened or broken, the open position of the toggle being shown in Fig. 3.

The setting of the toggle and the initial breaking thereof are effected by a controller or shipper comprising, as herein shown, a long upper member 39 provided with a handle 40, and a shorter lower member 41, said members being rigidly connected by a short hub 42 which is fulcrumed on a stud 43 extended from a bracket 43^x to the loom-side. A transmitting member or link 44 is pivotally connected at its front end with the lower member 41 and its rear end is threaded and screwed into the head 45 of a fork 46 which receives between its ends the overlapped ends of the toggle members 35, 36, the pin 38 connecting them passing through holes in the fork and having a squared head 38^x held from turning by a shoulder 47 on the fork. When the toggle is set, as in Fig. 2, the ends of the fork 44 rest against the bridge 30 of the sliding sleeve on the rod 24, the bridge thus serving as a stop to limit movement of the joint 38 to the left. The bracket 43^x is bolted to the loom-side and depends as shown in Fig. 1, said bracket having stops 48, 49 extended laterally therefrom, the former limiting swinging movement of the shipper when it is in stopping position, while the stop 49 serves a similar purpose, but it has another and more important function, to be referred to hereafter. It will be seen that when the toggle is set, the shipper then being in running position, Figs. 1 and 2, there is no force whatever tending to move the shipper from such position, the shipper being practically inert.

The toggle mechanism requires very little power on the shipper to effect initial movement of the latter from running position, and as has been stated this initial movement breaks the toggle, the completion of the shipper movement to stopping position and movement of lever 15 to release the clutch, being effected by a spring 57 to be referred to. So, too, by virtue of the rapid and powerful action of the toggle device and the difference in the lengths of the shipper members 39, 41 it is a very easy matter to throw on the power. In actual practice this mechanism enables the weaver to throw the shipper into running position with one finger of a broad loom, whereas it has been necessary heretofore on such looms to brace the feet and use considerable strength to pull the shipper over.

Herein the loom is shown as provided with brake mechanism, comprehending an annular member 50, Fig. 1, fast on the crank-shaft 4, and partly encircled by a band member 51, fastened at one end to a stud 52 on the loom-side and connected at its other end by a link 53 with one arm 54 of a bell-crank fulcrumed at 55 on the loom-side. Said bell-crank has a long, forwardly extended arm 56 adapted to be depressed by a suitable actuator, herein shown as a heavy spring 57, the lower end of said spring (not shown) being attached to a fixed

point on the loom frame. When the actuator is free to act the bell-crank is rocked to tighten the band 51 on the annular member 50, such application of the brake topping the loom promptly and effectively. A third arm 58 depends from the bell-crank below and in front of its fulcrum 55, and has loosely connected with it one end of a rod or link 59, the other end of the link being pivotally connected at 60, Fig. 1, with an ear 61 extending forward from a controller, shown as a lever arm 62 fulcrumed near its lower end on the stud 43 side by side with the shipper. At its upper end the controller is provided with a handle 63, located below and at one side of the handle 40 of the shipper, but within a convenient distance therefrom. The controller extends below the fulcrum 43 for a short distance, at 64, and has a lateral toe 65 turned toward the loom-side and extended across and back of the lower member 41 of the shipper. I prefer to mount on said member 41 an adjustable stop 66 to cooperate with the toe, the adjustment enabling me to accurately set the parts in a very convenient manner. When the controller 62 is thrown forward the link 59 turns the bell-crank against the force of the spring 57 and releases the brake, and when the controller is engaged by the stop 49 the centers 60 and 43 are substantially in alinement with the point of connection between the link 59 and the arm 58, or just past dead-center, as shown in Fig. 1. The pull of the spring 57 then acts to hold the controller against the stop 49, with the brake off.

In order to apply the brake the controller 62 must be thrown to the left, Fig. 1, carrying the upper end 60 of the link 59 past the fulcrum 43, and immediately the actuator 57 operates, completing the throw of the controller and applying the brake, and simultaneously moving the shipper to stopping position. Such movement of the controller is impossible, however, unless the shipper is thrown to release the clutch, for the movement of the controller acts through the toe 65 and stop 66 to initially move the shipper from running position, breaking the toggle, and the spring 57 completes such movement, carrying the shipper to stopping position against the stop 48, and effecting release of the clutch before the brake is applied. In other words the brake cannot be applied if the shipper is in running position, although the shipper may be thrown from such position by hand without applying the brake, and the brake can be released, obviously, when the shipper is in stopping position. When the latter is in such position and is moved to running position the stop 66 acts upon the toe 65 and moves the controller to release the brake before the power is actually thrown on.

When the loom is at rest and the brake on the operator can grasp the handle 63 and move the controller to effect release of the brake without moving the shipper. Thereafter the operator can throw on the power, a little at a time, without the brake holding the loom, and this is at times advantageous in picking the shuttle from one box to the other for convenience in handling, or for matching the pick. All the automatic devices are arranged to act through the brake controller, so that the shipper will be thrown off and the brake applied thereafter.

In the drawing the knock-off lever 67, fulcrumed at 68 on the breast-beam, is the usual lever adapted to be swung by outward movement of the fork-slide upon

detection of filling absence, the outer end of the lever being prolonged at 67^x to engage the controller 62 and move it from its position shown in Figs. 1 and 2 when loom stoppage is called for by the occurrence of a filling fault. So, too, when a warp fault occurs the warp-stop-motion will act upon the controller, as for instance through the slotted rod 69 cooperating with a stud 70 on the controller, Fig. 1, said rod being moved rearwardly when the warp-stop-motion operates. As such stop-motion forms no part of my present invention, and inasmuch as various arrangements thereof are well known in the art I have not herein illustrated the same.

If the protector mechanism operates and moves the frog 5 forward the bunter 6 will act upon the brake controller, and the latter will throw off the shipper, and the movement of the frog is not completed before the shipper has operated to throw off the power, and the brake has been applied, any undue and opposing strains on the loom mechanism being thereby prevented. As the shipper and the brake controller move in paths parallel to each other and to the loom side it will be seen that their movements are in the direction in which the automatic knocking-off devices act, so that response to the operation of such devices is instantaneous, and the action is very direct. As very little force is required to effect initial movement of both the controller and the shipper from running position the work required of the automatic knocking-off devices to initiate movement of the controller and shipper is reduced to a minimum.

I may start the loom from any one of a number of different points at the front of the loom, this being of great advantage in practice, especially on a broad loom, for the weaver can give his close attention to the cloth, or to operations removed from the shipper when the loom is started up. To accomplish this object I mount a starting rod or rock-shaft 71 in suitable bearings 72, (one of which is shown herein) on the front of the breast-beam, said rod having attached to it a depending, hooked arm 73, clearly shown in Fig. 1, adjacent the inner face of the upper member 39 of the shipper. The latter has on its front edge an ear 74 provided with a lateral pin 75 movable into the dotted line position 75^x, Fig. 1, when the shipper is in stopping position, and into engagement with the hooked arm 73. If now the rod 71 be turned in the direction of arrow 76, Fig. 1, the arm 73 will be swung forward, and acting on the pin 75 will throw the shipper forward to running position, the arm returning to the position shown in Fig. 1 when the rod 71 is released. A number of handles 77 are mounted on the rod and have a lost-motion connection therewith, each handle having a hub 78 loose on the shaft and provided on one face with a diametral shoulder 79, Figs. 4 and 5. Adjacent such shouldered face is a collar 80, secured to the shaft and having its face cut away to leave a quadrantal projection 81, Fig. 5, the lower edge of which is adapted to engage with the shoulder 79 when the handle 77 is hanging down, in normal position, Figs. 1 and 4.

When the handle is swung upward to dotted line position, Fig. 4, the shoulder 79 will engage the upright face of the projection 81, so that there is a movement of the handle of about 90° without effecting any change in the position of the starting rod 71. Any additional lift of the handle above the dotted line position, Fig. 4, will act to turn the starting rod in the direction of arrow

76, Fig. 1, and thereby operatively move the hooked arm 73, to move the shipper to running position if the loom is at rest when such turning of the rod is effected.

A positioning collar 82 on the rod holds the hub of the handle 77 in proper relation to the collar 80.

By reason of the lost motion between the handles and the starting rod it is necessary to move a handle substantially to horizontal position before any effect is had upon the starting rod, and then there is a lifting movement, much less in degree, to operate said rod, so that there is no tendency to apply undue force. As a matter of fact very little force is required to start the loom with this device, and if the loom should bang off before it had gotten fully under way there is no liability of breakage, for the frog acts so directly upon the shipper that it would be difficult to resist, through a handle 77, the frog action even should the weaver try to resist it.

With a starting device operated by the foot the weaver is apt to throw on his whole weight when starting the loom, and in such event if the loom bangs off at once the power is kept on in such a way that something is apt to break.

I prefer to locate a starting handle at each side of the cloth, and one at the far end of the loom, and if desired another may be placed at the shipper side.

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

1. In a loom, a brake, an actuator therefor, a controller for the actuator, a shipper, a fixed fulcrum on which the shipper and controller are pivotally mounted side by side, and means to effect movement of the shipper to stopping position by movement of the controller to cause the actuator to apply the brake, movement of the shipper to running position acting through said means to cause release of the brake by or through the controller.

2. In a loom, a shipper, a brake, a controller therefor mounted adjacent the shipper, means adapted to effect movement of the controller to apply the brake by or through an abnormal operation of the loom, and a device on the controller to cooperate with the shipper and prevent movement of the controller to apply the brake while the shipper is in running position.

3. In a loom, means, including a shipper, to throw the power on and off, a starting rod extended along the front of the loom, an arm thereon to act upon the shipper and move it to running position by turning of the rod, and handles mounted at intervals on the starting-rod and having a lost-motion connection therewith, whereby when a handle has been moved to take up the lost motion the rod will be turned to act through its attached arm and move the shipper to running position.

4. In a loom, in combination, a brake, a controller therefor having a lateral projection, a shipper with which the projection cooperates, a fixed fulcrum on which the controller and shipper are mounted side by side, movement of the controller to apply the brake acting through the projection to effect movement of the shipper to stopping position, and a starting instrumentality operative manually at different points at the front of the loom to move the shipper to running position and by such movement acting through the projection on the controller to effect release of the brake.

5. The combination, in a loom, of a shipper, a brake, a controller therefor mounted independently of the shipper, and means to effect movement of the shipper to stopping position by movement of the controller to apply the brake, said means permitting a reverse movement of the controller independently of the shipper, to release the brake.

6. The combination, with a brake, of a controller therefor, a shipper, and means to prevent movement of the controller to apply the brake while the shipper is in running

position while permitting independent movement of the controller to release the brake when the shipper is in stopping position.

7. The combination, with a brake, of a controller therefor, a shipper, a fixed fulcrum on which the controller and shipper are separately pivoted, and means to cause the controller to release the brake by or through movement of the shipper to running position while permitting independent movement of the controller to release the brake when the shipper is in stopping position.

8. The combination, with a brake, and a controller therefor, of a shipper, said controller and shipper being pivotally mounted side by side, and a lug on the controller to engage the shipper and prevent movement of the controller to apply the brake unless the shipper is simultaneously moved to stopping position, movement of the controller independently of the shipper when in stopping position releasing the brake and effecting disengagement of the lug from the shipper.

9. The combination, with a brake, and a controller therefor, of a shipper, said controller and shipper being pivotally mounted side by side, a lug on the controller, and an adjustable stop on the shipper, to be engaged by the lug when the controller is moved to apply the brake, such engagement of the lug and stop causing movement of the shipper to stopping position when the controller is moved to apply the brake.

10. The combination, in a loom, of a shipper, a fixed fulcrum on which it is pivotally mounted, a brake, a controller therefor also pivotally mounted on said fulcrum, separate devices adapted to act upon the controller and cause the brake to be applied upon improper boxing of the shuttle or failure of the filling, and means whereby operation of the controller effects movement of the shipper to stopping position.

11. The combination, in a loom, of a shipper, a fixed fulcrum on which it is pivotally mounted, a brake, a controller therefor also pivotally mounted on said fulcrum, and on dead-center when the brake is released, a frog, a bunter thereon to engage the controller and swing it off dead-center to effect the application of the brake when the frog is moved, and means to move the shipper to stopping position by or through such movement of the controller.

12. The combination, in a loom, of a shipper, a fixed fulcrum on which it is pivotally mounted, a brake, a controller therefor also pivotally mounted on said fulcrum, adjacent the shipper, a toe extended laterally from the controller and adapted to cooperate with the shipper when the controller is moved to apply the brake, to thereby move the shipper to stopping position, fixed stops to limit angular movement of the shipper, and a toggle device connected with the shipper and maintaining the shipper in running position when the toggle is set.

13. In a loom, in combination, brake mechanism, including a lever and an actuator therefor, a pivotally mounted controller connected with said lever, to hold the latter against the action of its actuator, a shipper, and means to prevent movement of the controller to release the connected lever when the shipper is in running position while permitting independent movement of the controller to release the brake while the shipper remains in stopping position.

14. In a loom, means to throw the power on or off, brake mechanism, a controller for each of said instrumentalities, said controllers moving in adjacent paths parallel to the loom side, and means whereby movement of the brake-mechanism controller to apply the brake effects movement of the power-controller to throw off the power, said means permitting release of the brake by movement of its controller independently of the power-controller when the power is off.

15. In a loom, in combination, a clutch, an actuating lever connected therewith, a spring acting through the lever to effect release of the clutch, a toggle to move the lever to set the clutch, a shipper, and a transmitter between it and the toggle, movement of the shipper to running position straightening the toggle and setting the clutch, the centers of the toggle at such time being held in set position and the toggle acting through the transmitter to maintain the shipper in running position.

10. In a loom, a clutch, a spring to release it, a shipper, connections between it and the clutch, said connections including a toggle to set the clutch when movement of the shipper to running position throws the toggle members just over dead-center, and a separate spring to retain the toggle members in such position.

17. In a loom, in combination, a device to shift the power on and off, a lever connected therewith, a fixed stud extending from the loom-side, a sleeve movable thereon and pivotally connected with the lever, toggle members jointed together and at their opposite ends connected with the sleeve and a fixed part of the loom, respectively, a spring acting upon the sleeve to maintain the toggle members set, a shipper, a link connecting it with the joint of the toggle, movement of the shipper to running position setting the toggle members just over dead-center, moving the sleeve against the action of the spring and causing the power-shifting device to throw on the power, the toggle members when set acting through the link to maintain the shipper in running position, and a strong spring acting upon the lever to cause the shifting device to throw off the power when the shipper is moved to break the toggle.

18. In a loom, in combination, actuating means including a clutch, a spring to release the clutch, a sleeve, a light spring acting thereon, a toggle one of whose members is connected with the sleeve, the other member being fixedly pivoted, a shipper, and a link connecting it with the joint of the toggle, movement of the shipper to running position acting through the link to set the toggle with its members over dead-center and moving the sleeve against the stress of the light spring, the latter then acting to retain the toggle set, the shipper remaining inert in running position.

19. In a loom, in combination, actuating means including a clutch, a spring to release the clutch, a toggle one of whose members is fixedly pivoted, a connection between the other member and the clutch, a light spring to maintain the toggle set, a shipper, a fixed fulcrum therefor near its lower end, and a link connecting the shorter arm of the shipper with the joint of the toggle, movement of

the shipper to running position acting through the link and against the light spring to set the toggle and throw the clutch into operation, the shipper remaining inert when in running position, initial movement of the shipper from such position breaking the toggle and permitting the clutch-releasing spring to act through the toggle to release the clutch and complete the movement of the shipper to stopping position.

20. The combination, with a clutch, a shipper, and connections between it and the clutch, said connections including a toggle to set the clutch when movement of the shipper to running position throws the toggle members just over dead-center, of a spring to retain the toggle members in such position, and a stronger spring to throw the shipper to stopping position and release the clutch when the toggle is broken by initial movement of the shipper from running position.

21. The combination, with a clutch, of a lever connected therewith to throw it into and out of operation, a toggle one of whose members is fixedly pivoted and the other member pivotally connected with said lever, setting of the toggle moving the lever to throw the clutch into operation, a shipper, a transmitter connecting it with the toggle, to set or break the latter and thereby govern the clutch, and a spring cooperating with the toggle to retain it set, the transmitter at such time retaining the shipper inert in running position.

22. The combination, with a clutch, a shipper, and connections between it and the clutch, said connections including a toggle to set the clutch when movement of the shipper to running position throws the toggle members just over dead-center, of a spring to throw the shipper to a stopping position and release the clutch when the toggle is broken by initial movement of the shipper from running position.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

GEORGE B. AMBLER.

Witnesses:

CLARE HILL DRAPER,
EUGENE BEAUDRY.