

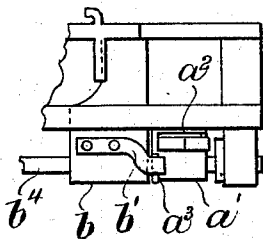
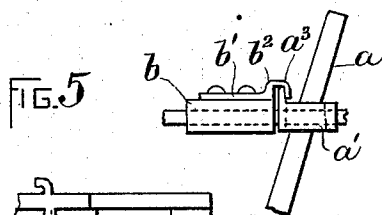
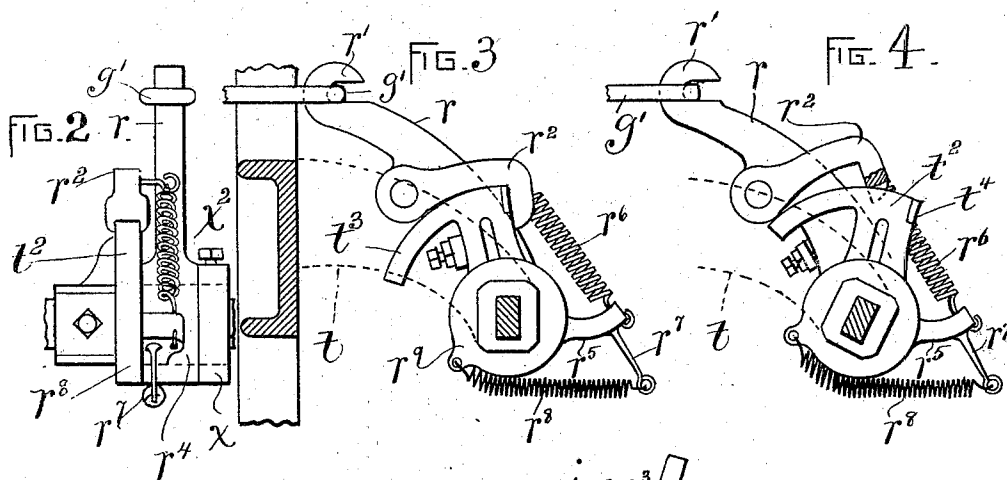
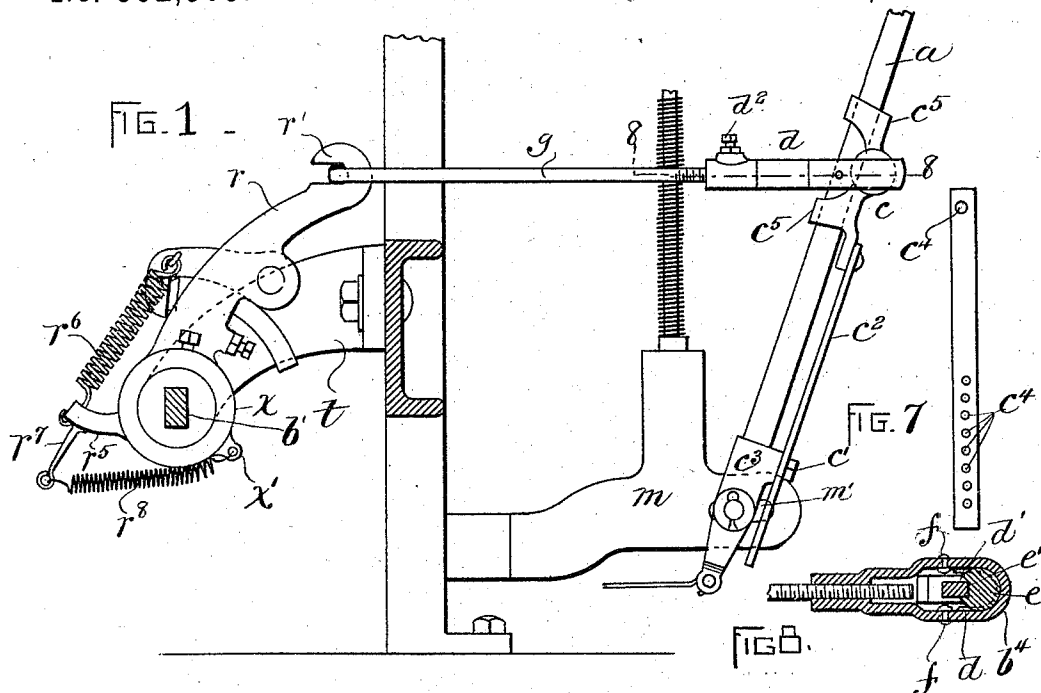
(No Model.)

2 Sheets—Sheet 1.

L. C. WERNER.
RELIEF MOTION FOR LOOMS.

No. 552,563.

Patented Jan. 7, 1896.



WITNESSES:

J. D. Hammon
Rollin Abell

INVENTOR.

Louis C. Werner
By Wright Brown & Quincy
Atty.

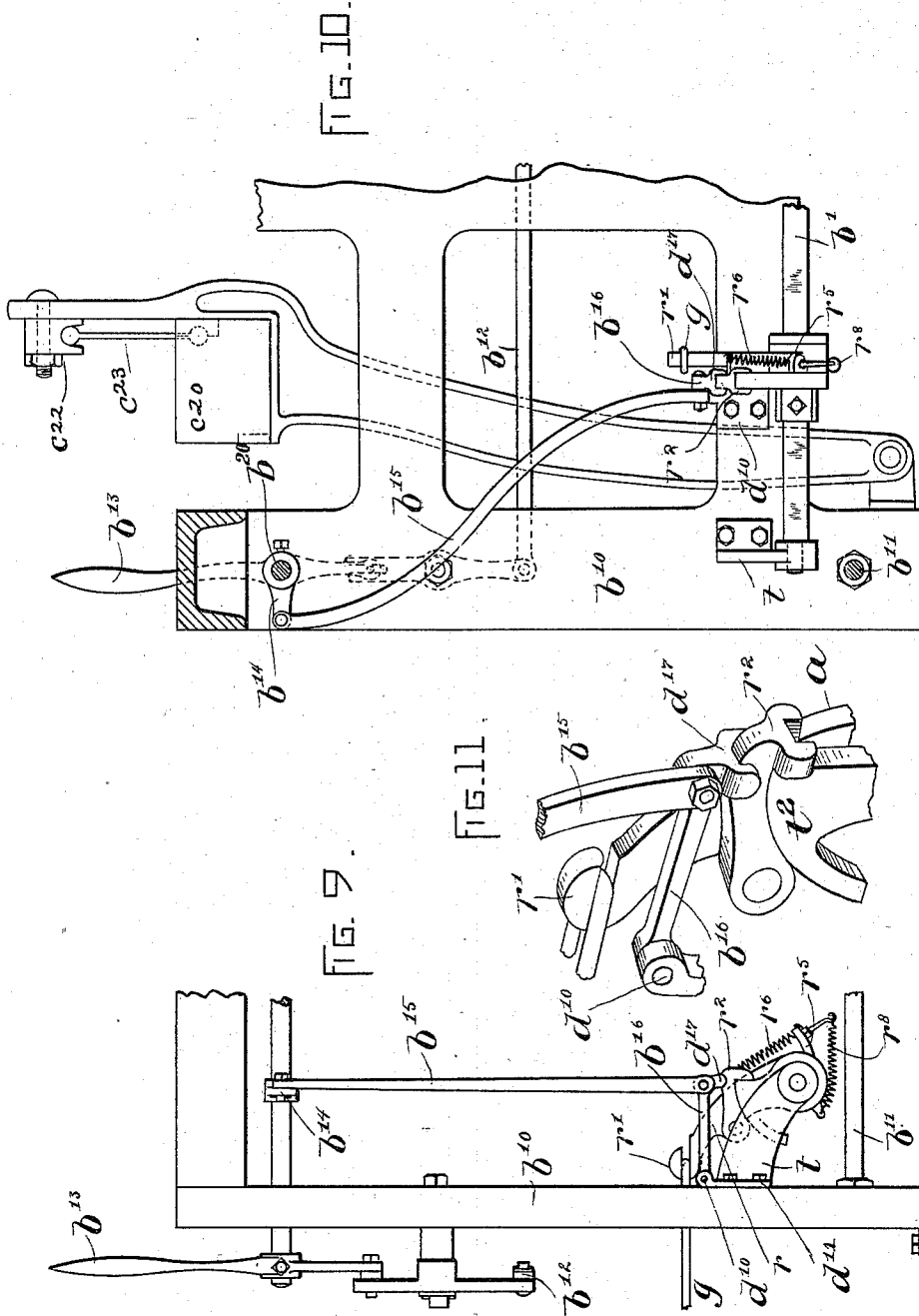
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2 Sheets—Sheet 2.

L. C. WERNER.
RELIEF MOTION FOR LOOMS.

No. 552,563.

Patented Jan. 7, 1896.



WITNESSES:

A. D. Harrison
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UNITED STATES PATENT OFFICE.

LOUIS C. WERNER, OF BROAD BROOK, CONNECTICUT.

RELIEF-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 552,563, dated January 7, 1896.

Application filed October 26, 1894. Serial No. 527,022. (No model.)

To all whom it may concern:

Be it known that I, LOUIS C. WERNER, of Broad Brook, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Relief-Motions for Looms, of which the following is a specification.

My invention relates to a clutch mechanism constituting a relief-motion for use in connection with a picker-motion, and has for its object, among other things, to provide means whereby the rocker-arm may be released and the shipper-rod operated to stop the loom should any unusual strain come upon the picker-stick.

My invention consists in certain novel features of construction and arrangement of parts, which will be fully hereinafter described and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings and the characters marked thereon, which form a part of this specification, like characters designating like parts or features, as the case may be, wherever they occur.

In the drawings, Figure 1 is a view of a portion of the loom, showing my invention associated therewith. Fig. 2 is a front view of the clutch mechanism. Fig. 3 is an end view of the clutch mechanism, showing the parts in operative position. Fig. 4 is a similar view showing the parts released from operative connection with the rocker-shaft. Fig. 5 is a detail view showing the picker-stick, picker-block and picker in operative connection. Fig. 6 is a detail view showing the arrangement of the picker and its associated parts in the shuttle-box. Fig. 7 is a detail view of the adjusting-strap. Fig. 8 is a sectional view taken on the line 8 8 of Fig. 1. Fig. 9 is a view similar to Fig. 1, showing the connection between my relief-motion and the shipper-rod, the connection between the relief-motion and the picker-staff being omitted for the sake of clearness. Fig. 10 is an end view of Fig. 1, looking from the inside of the loom-frame. Fig. 11 is a detail showing the connection between the relief-motion and the shipper-rod.

a represents a picker-stick, preferably of steel, pivoted at its lower end in a slot m' of a projecting arm m .

a' represents a picker-block provided with a slot a^2 , in which the stick plays.

b represents the picker provided with a finger-piece b' , having a finger b^2 arranged to engage a projection a^3 on the picker-block.

Both the picker and picker-block are constructed and arranged to travel at one end on a rod b^4 and at the other end in a slot in the shuttle-box. (Not shown.) By this arrangement the picker can travel back and forth in a straight line uninfluenced by the upward thrust of the picker-stick which plays up and down in the slot a^2 .

c is a sleeve having two arms c^5 engaging the picker-stick. c^2 is an adjustable connector secured to the lower arm of said sleeve at one end and at its other end secured to a lug on the casting c^3 by means of a screw c' . This connector is provided with a series of holes c^4 , by means of which the sleeve may be adjusted to any desired position on the stick.

g is the rocker-rod provided at one end with a loop engaging a hook r' on the end of the rocker-arm r . At its other end said rocker-rod may be provided with screw-threads for engagement with a hollow head d of a loop d^4 , the rod being retained in said head by means of a set-screw d^2 . The loop is provided upon its interior with horizontally-arranged flanges d' on both upper and lower edges. e is a ball cast on said sleeve arranged to play in the said loop to form a ball-and-socket bearing. f are pins inserted in the loop to prevent the ball from leaving the flanges. The ball is provided with a slot e' , in which the picker-stick rests.

b' is the rocker-shaft. On said shaft is mounted loosely the rocker-arm r and a coupler t^2 fast upon said shaft, said rocker-arm and coupler being retained in place by collars x , rigidly secured to said rocker-shaft by set-screws x^2 . The rocker-shaft is carried by the arms t .

r^2 is a dog pivoted on the rocker-arm and arranged for detachable engagement with the coupler t^2 . Said dog is provided with a slot at its free end in which the arc-shaped portion t^3 of the coupler can play, thus keeping the dog always in alignment with the coupler. The coupler is provided with a radial portion t^4 , with which the dog engages.

r^6 is a spring connected at one end with the free end of the dog and at the other end with a lug r^5 , projecting from the hub of the rocker-arm. r^8 is a spring connected at one end with an arm r^7 , projecting from the lug r^5 , and at its other end with a lug x' on one of the collars x . The spring r^6 serves to return the dog to its engagement with the coupler, and the spring r^8 serves to draw the rocker-arm forward so that its dog can engage with said coupler.

The parts being constructed and arranged as shown and described, it will be seen that the picker-stick plays up and down in the slot in the picker-block, driving the picker to and fro in a straight line. By means of the sleeve c , I am enabled to adjust the throw of the picker and at the same time to so connect the rocker-arm with the rocker-rod and with said sleeve as to allow a lateral play of the picker-stick.

The coupler and its associated parts being in the position shown in Fig. 3, with the coupler in engagement with the dog, the picker-stick will be moved back and forth as the rocker-arm moves. Now, should any unusual strain be brought upon the picker-stick, the dog and coupler are so arranged that under such circumstances the free end of the dog will be released from the coupler, thus releasing the rocker-arm and leaving the coupler free to rock with the shaft.

The picker-block and adjustable sleeve may be made of aluminum, if desired.

Referring now to Figs. 9, 10, and 11, in which my relief-motion is shown connected to the shipper-rod in order to stop the loom should the picker meet with any obstruction, the connection between the relief-motion and the picker-stick being omitted in these views for the sake of clearness, b^{12} represents the usual shipper-rod connected and operated in the ordinary way by a lever b^{13} mounted upon the usual shaft b^{20} . b^{14} represents an arm fast upon said shaft to which a lever b^{15} is pivoted, this lever at its lower end being pivoted to the free end of a lever b^{16} pivoted at d^{10} to a casting d^{11} secured to the loom-frame b^{10} . The free end of this lever is provided with a saddle d^{17} constructed and arranged to straddle and ride upon the top of the dog r^2 .

From the foregoing it will be seen that as long as the picker meets with no obstruction the relief mechanism will move back and forth with the parts in normal position, the

saddle d^{17} and its lever resting upon the dog r^2 , which plays back and forth in said saddle without affecting the lever b^{16} . Should, however, the picker meet with any obstruction, as has already been described, the dog r^2 will be thrown upward, releasing the rocker-arm, and leaving the coupler free to rock with the shaft, as heretofore described. This upward movement of the dog r^2 will give an upward thrust to the lever b^{15} , turning the usual shaft b^{20} , and by the connections operating the shipper-rod to stop the loom.

In Fig. 10, c^{20} represents the lay, c^{21} the lay-sword, c^{22} the hand-rail, and c^{23} the reed, these being of the usual construction, shown here merely to clearly exhibit the invention in relation to the other parts of the loom. b^{11} represents one of the rods connecting the parts of the frame.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim, and desire to secure by Letters Patent, is—

1. In combination a rock shaft, a rock arm loosely mounted on said shaft and provided with a pivoted pawl, a coupler rigidly mounted on said shaft adjacent to said arm, said coupler comprising an arm adapted to engage said pawl, an arc-shaped portion upon which the free end of said pawl can ride, a spring connecting said pawl to said rock arm, and a spring connecting said rock arm to a collar on said shaft, substantially as and for the purpose set forth.

2. In combination a rock shaft, a rock arm, a picker-stick, a rock rod connecting said stick and arm, a dog pivoted upon said arm, a shipper rod mechanism, a pivoted lever provided at one end with a saddle arranged to ride upon said dog, and a lever connecting said lever with said shipper rod mechanism, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 6th day of October, A. D. 1894.

LOUIS C. WERNER.

Witnesses:

HENRY FREY, Jr.,
JOHN FORD.