

No. 765,495.

PATENTED JULY 19, 1904.

P. V. LABONTÉ & I. GUERTIN.
WARP STOP MOTION FOR LOOMS.

APPLICATION FILED AUG. 21, 1903.

NO MODEL.

2-SHEETS—SHEET 1.

FIG. 1.

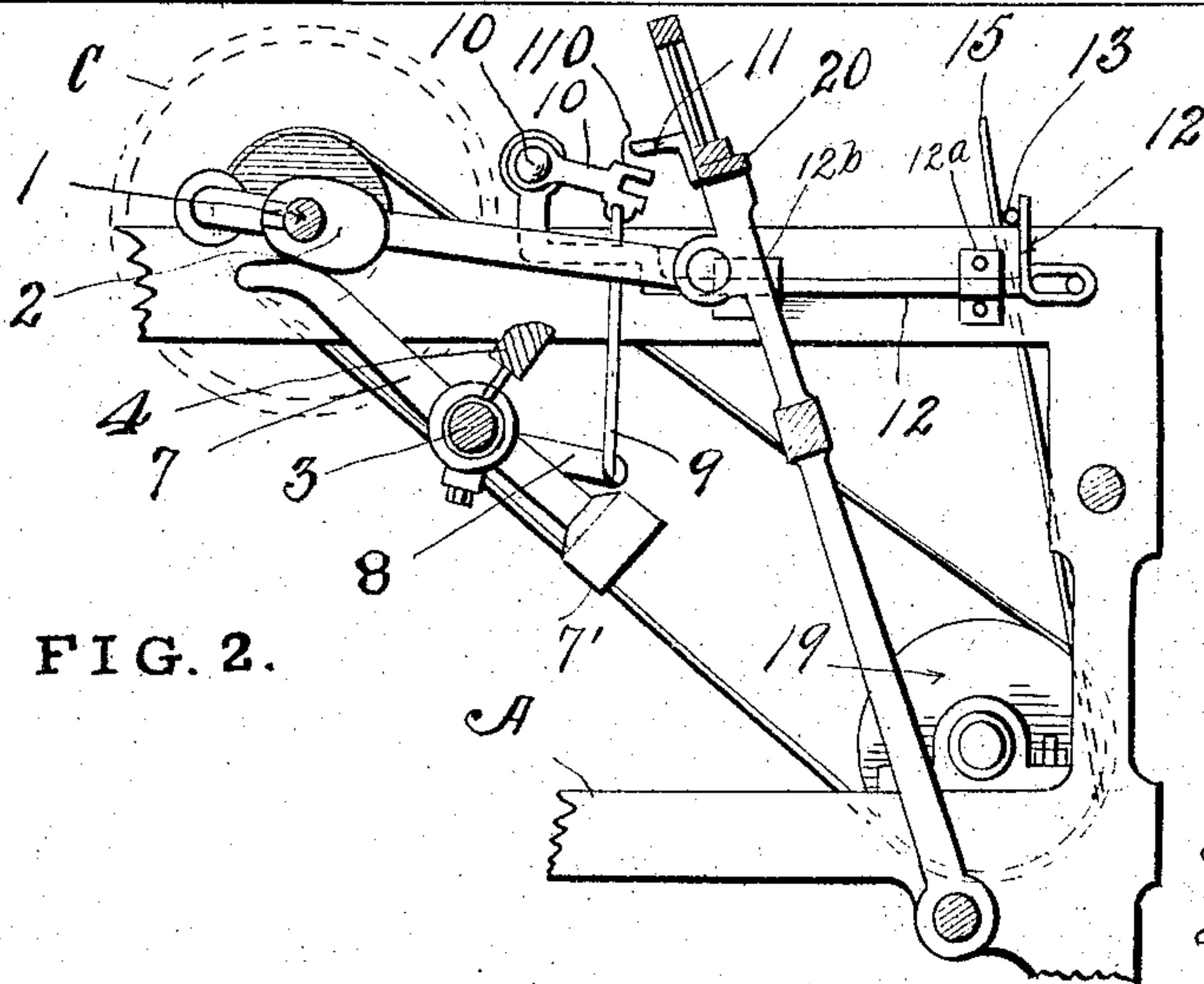
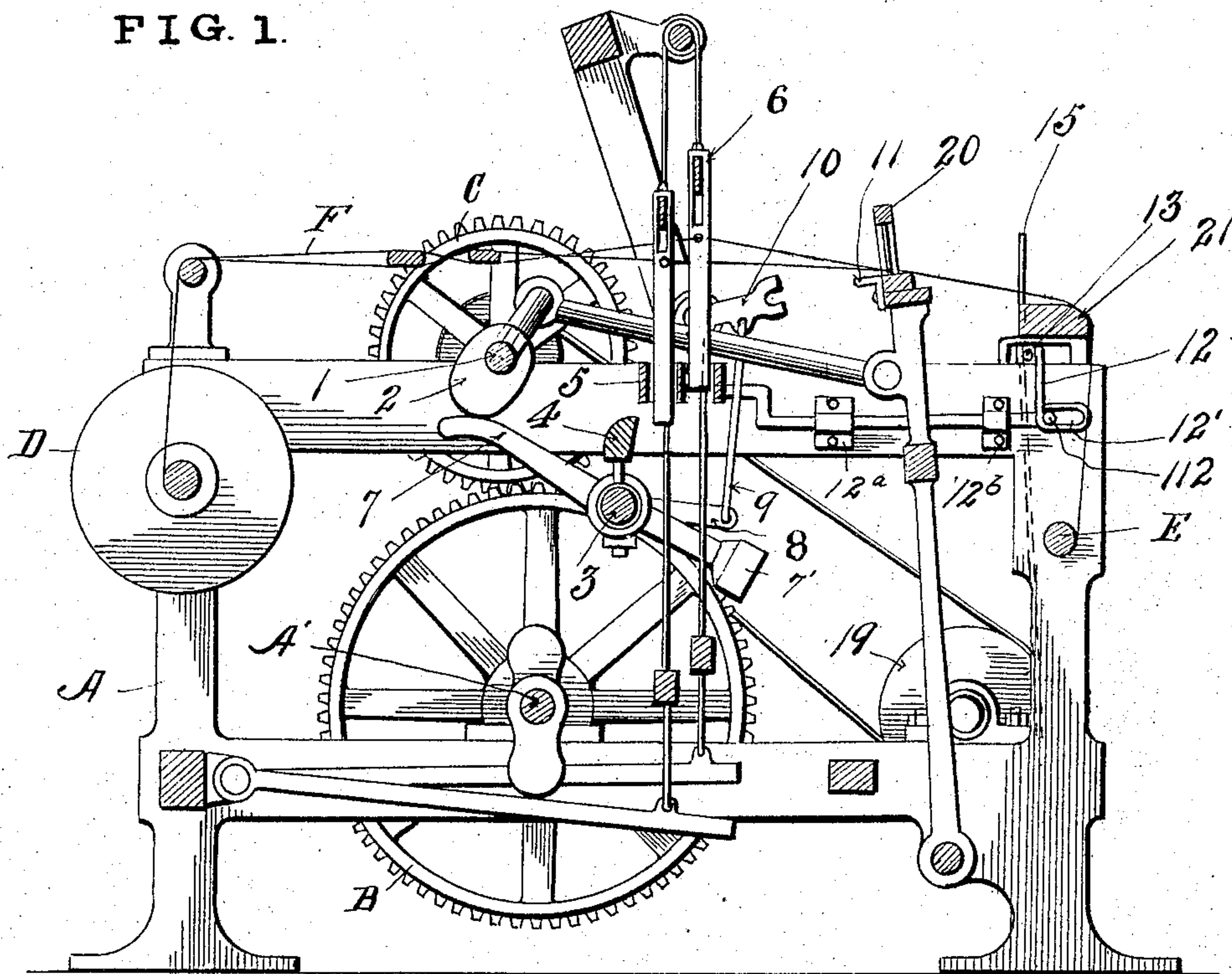


FIG. 2.

Witnesses

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2 SHEETS—SHEET 2.

FIG. 3.

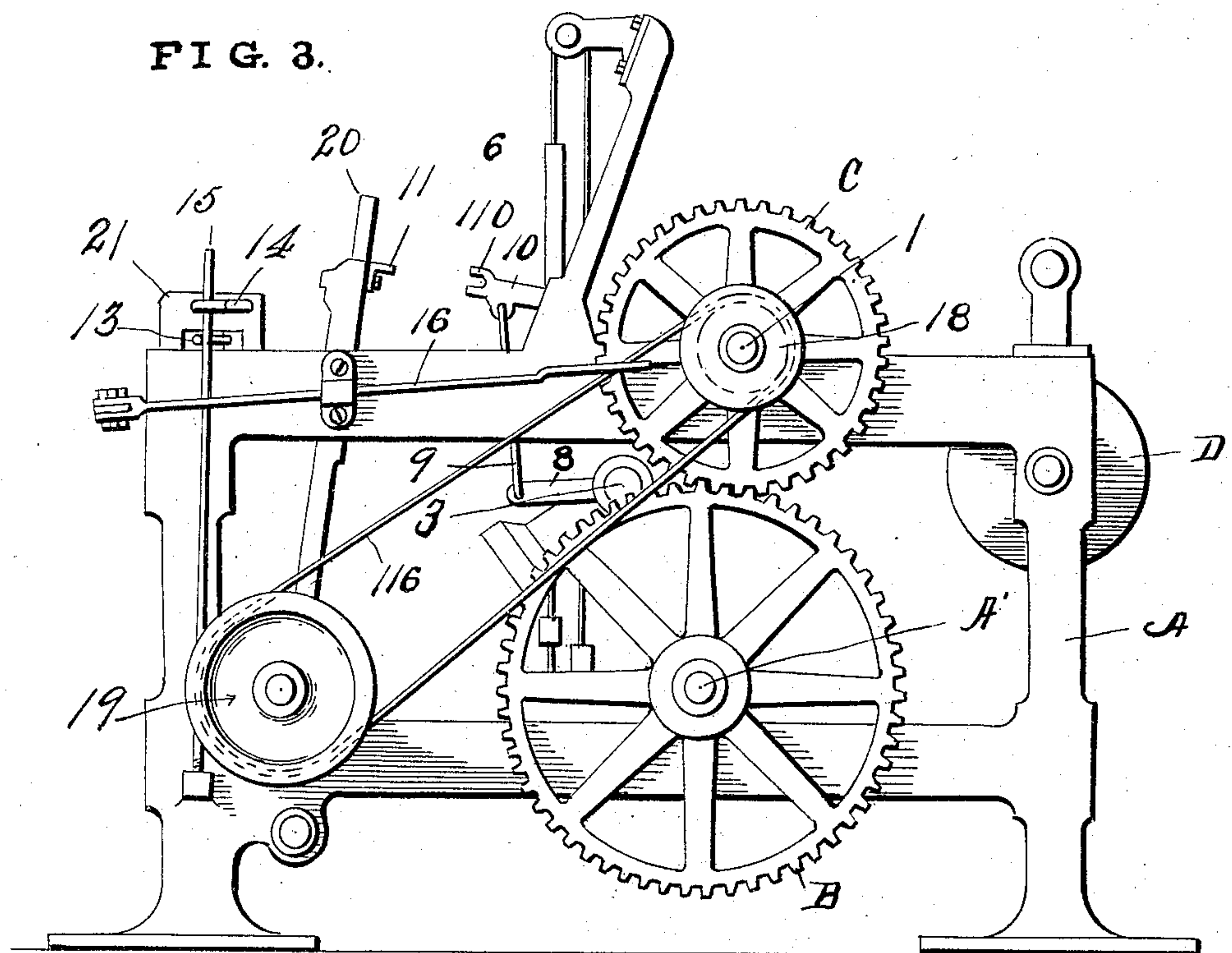
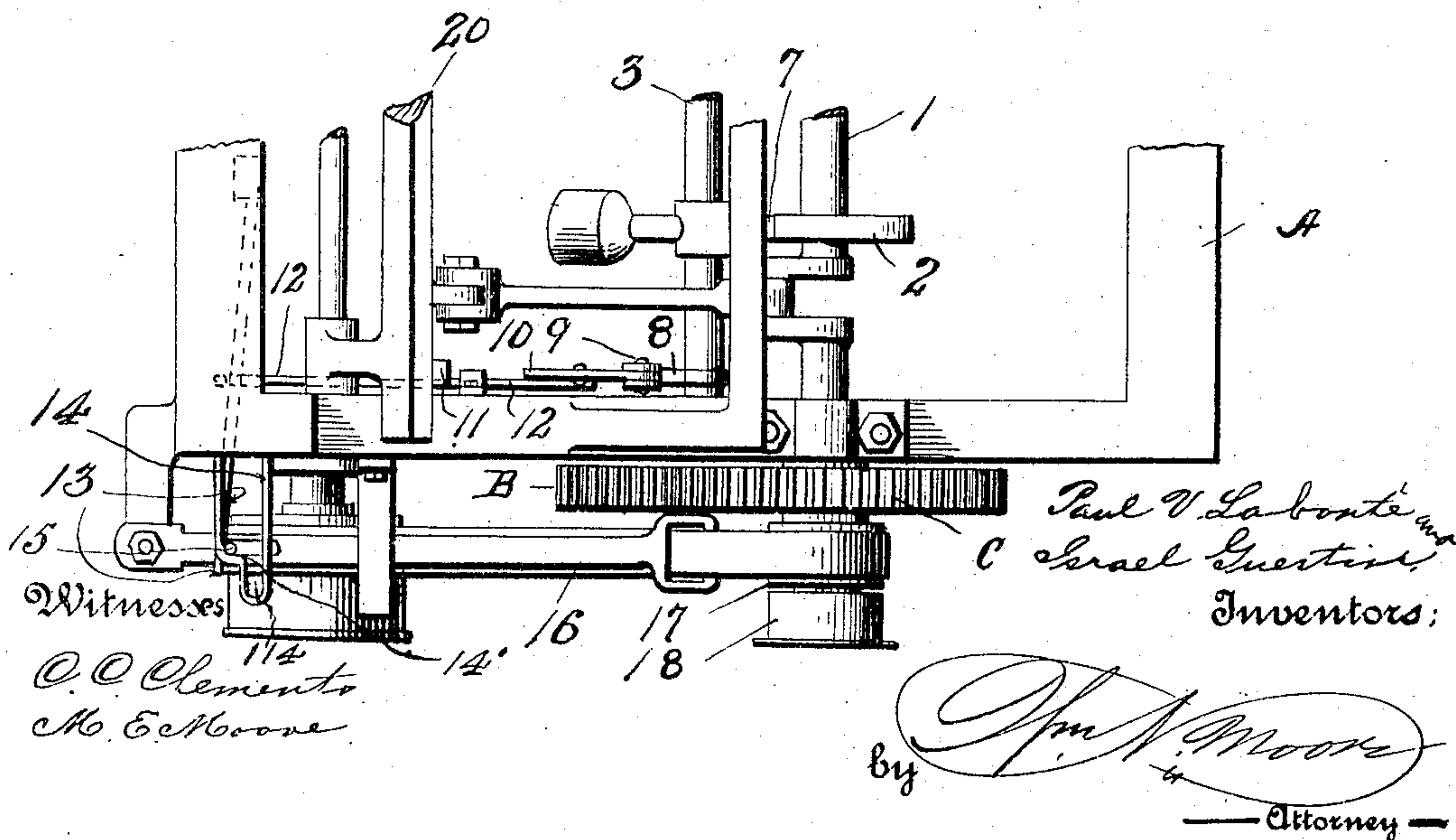


FIG. 4.



UNITED STATES PATENT OFFICE.

PAUL V. LABONTÉ AND ISRAËL GUERTIN, OF MANCHESTER, NEW HAMPSHIRE.

WARP STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 765,495, dated July 19, 1904.

Application filed August 21, 1903. Serial No. 170,323. (No model.)

To all whom it may concern:

Be it known that we, PAUL V. LABONTÉ and ISRAËL GUERTIN, citizens of the United States, residing at Manchester, in the county of Hills-
 5 boro and State of New Hampshire, have invented certain new and useful Improvements in Stop-Motions for Looms, of which the following is a specification.

Our invention relates to improvements in
 10 warp stop-motions for looms.

The object of our invention is to provide a mechanism for stopping the motion of looms when the thread or warp breaks.

By the application of our improved mechanism to a loom we dispense with a number
 15 of heavy elements of the machinery in the structure of the loom and simplify the construction of the loom machinery to a great extent, thus enabling a greater speed of the
 20 machinery, insuring a saving of power necessary to drive the loom, and producing a loom which will be durable, efficient in operation, comparatively cheap in first cost, and one that may be run at a less expense than those
 25 now in common use.

Our invention consists in means for stopping the motion of looms when the threads or warp breaks and in the novel constructions, arrangements, and combinations of parts for
 30 attaining this object, as hereinafter set forth and claimed.

In the drawings, Figure 1 is a vertical section of a loom constructed according to our invention. Fig. 2 is a broken section, similar
 35 to Fig. 1, with some of the parts in different position. Fig. 3 is an end elevation of a loom, showing part of the mechanism of our improvements attached. Fig. 4 is a top plan view of enough of the loom to illustrate
 40 the application of some parts of our device.

Referring to the drawings, the letter A designates the frame of the loom; A', the driving-shaft, which may be driven by any suitable power, (not shown in the drawings;) B, the
 45 driving-gear on driving-shaft A'; C, the smaller gear-wheel on crank-shaft 1, meshing with gear-wheel B and driven by said wheel;

D, the warp-beam for holding the thread; E, the cloth-beam; F, the warp-threads.

The numeral 1 indicates the crank-shaft, 50 which is rotated by the gear-wheel C driven from the driving-shaft A' by gear-wheel B; 2, the cam attached to the crank-shaft; 3, the rock-shaft; 4, the feeler-bar connected to the feeler-bar shaft or rock-shaft and operated by
 55 said shaft; 5, the drop-wire frame which constitutes guide-bars for the detector-heddles 6; 7, the lever attached to the feeler-bar shaft and adapted to be operated by the cam 2, attached to shaft 1. Said lever 7 is provided with a
 60 weight 7' of sufficient capacity to normally keep the lever bearing against cam 2.

8 is a lever-arm connected to the end of the feeler-bar shaft 3 and operated by said shaft 3; 9, a connecting-link attached to the end of
 65 the lever 8 at one end and pivotally connected to the notched rocking finger 10, said finger 10 being pivoted, as at 10', and adapted by its notch 110 to receive the bunter 11, secured to the lay. By the motion of the lay and con-
 70 nections finger 10 operates to stop the motion of the loom, as will be described.

12 is a sliding or reciprocating link-bar, having one end turned up and at the other end pivoted at 10' to the finger 10. Said reciprocating bar 12 has brackets 12^a and 12^b in which
 75 to reciprocate and at one end has a slot 12' and a pin 112 therein located on the frame to limit the movement of said reciprocating bar 12.
 80

13 designates a spring-bar or knock-off lever fastened under the breast-beam 21 of the loom; 14, a guide projecting from the end of the breast-beam and provided with a shoulder 14' and a slot 114, adapted to receive and hold
 85 the shipper-handle 15 in the required position on shoulder 14' when the loom is in operation, and when the shipper-handle 15 is pushed off the shoulder 14' by the knock-off lever 13 the handle rests in slot 114 and by this movement
 90 actuates the mechanism to stop the motion of the loom.

16 designates the shipper or shifter lever for shifting the belt 116, said shipper-lever

being of usual construction and pivoted on the frame at any suitable location. By the movement of the shipper-lever the belt 116 is thrown from the tight pulley 17 to the idler-pulley 18.

19 is the driving-pulley, 20 the lay or lathe, and 21 the breast-beam.

The operation of the mechanism is as follows: The feeler 4 moves back and forth under the detector-heddles. When a warp-thread breaks while the loom is in motion and the shipper-handle 15 is in position shown in Fig. 2, the detector-heddles which control the warp-thread will drop into the path of movement of the feeler-bar 4, thus preventing the weight 7' from rocking the rock-shaft to its normal position and stopping the motion of the feeler-bar, and by such stoppage of motion the notched rocking finger 10 will remain in its upper position, so that the bunter 11 on the lay will strike in the notch 110 and move back said finger 10 and with it the reciprocating bar 12 from the position of said bar in Fig. 1 to that shown in Fig. 2, by this movement throwing off the shipper-handle 15 from the shoulder 14'. As the shipper-handle 15 is elastic, on leaving the shoulder 14' said shipper-handle springs into the slot 114 in guide 14 and throws the belt-shifter out, carrying with it the belt 116, thus shifting the belt from the position on driving-pulley 17 to the idler-pulley 18 and stopping the driving mechanism of the loom.

It will be observed that we have provided a novel means for stopping the motion of drop-wire or harness-drop-wire looms by the use of the cam attached to the upper crank-shaft and the lever-arm attached to the feeler-bar shaft or rock-shaft.

Our mechanism it will be understood is applicable to looms having either a double or single feeler-bar.

From the foregoing it will be seen that we have produced a warp-stop motion for drop-wire or harness-drop-wire looms which simplifies to a great extent the mechanism employed to stop a drop-wire or harness-drop-wire loom when the warp-thread breaks by the use of the cam attached to the upper crank-shaft, the prime movers of the mechanism being the shaft which causes the lathe to move back and forth and a lever attached to the feeler-bar shaft, which is operated by the cam attached to the upper crank-shaft 1.

Although we have shown and illustrated only one example of the physical embodiment of our invention, we do not intend to confine ourselves to the specific construction shown, nor do we intend to limit the scope of our claims thereto, inasmuch as changes and alterations may be made in the machinery within the scope of the claims without constituting a substantial departure.

Having thus fully described our invention,

what we claim, and desire to secure by Letters Patent, is—

1. In a loom, the combination of the lay, a crank-shaft a cam on said shaft, and a link connecting said lay and shaft, a rock-shaft and a feeler mounted thereon, and a lever on said rock-shaft having a counterbalancing-weight, shipper mechanism, and means controlled by the feeler and adapted to cooperate with the shipper mechanism and the lay to stop the motion of the loom when a detector-heddle falls into the path of the feeler.

2. In a warp stop-motion for looms, the combination with the rock-shaft, a lever thereon, a slide-bar on the frame of the loom, a notched finger-piece pivotally connected to said slide-bar and also connected to said lever, a lay provided with a bunter adapted to engage said notched finger-piece, a driving-shaft having connections for operating said lay and rock-shaft, a feeler and detector-heddles, combined, whereby, when a detector-heddle falls into the path of the feeler the motion of the loom is stopped.

3. In a warp stop-motion for looms, a rock-shaft a lever thereon, a shipper-handle a slide-bar adapted to throw the shipper-handle, a notched finger-piece pivotally connected to said slide-bar and also connected to said lever, a lay provided with a bunter adapted to engage said notched finger-piece, a second lever on said rock-shaft having a counterbalancing-weight at one end, a crank-shaft having cam thereon adapted to bear upon the other end of said weighted lever, operative connection from the crank-shaft to the lay, a feeler on the rock-shaft, and heddles, all combined, whereby, when a detector falls into the path of the feeler, the motion of the loom is stopped.

4. In a device as described, a rock-shaft, a crank-shaft, said shafts loosely connected, a weight and feeler on the rock-shaft, the detector-heddles, a lever-arm on the rock-shaft, a slide-bar operatively connected to said lever-arm, the lay and means operated by the feeler for temporarily connecting the lay and the slide-bar when a detector-heddle falls into the path of the feeler, whereby the motion of the loom is stopped, all combined substantially as described.

5. In a warp stop-motion for looms, a rock-shaft and a crank-shaft loosely connected together, a weight and feeler on said rock-shaft, detector-heddles, a lever-arm on said rock-shaft, a slide-bar on the frame provided with a rocking finger pivoted thereon, a link connecting the rocking finger and lever-arm, the lay, and a bunter on the lay adapted to engage said rocking finger when a detector-heddle falls into the path of the feeler, all combined.

6. The combination of the rock-shaft and crank-shaft loosely connected together, the

lay connected to the crank-shaft, the bunter,
a slide-bar on the frame of the loom and a
rocking finger connected thereto, the feeler
and means operated by the feeler for tempo-
5 rarily connecting the lay to said slide-bar,
the detector-heddles, a lever-arm on the rock-
shaft, and shipper mechanism consisting of a
spring-rod as 13, a shipper-handle, guide, and
shifting lever, whereby when a detector-hed-
10 dle falls into the path of the feeler, the bunter

engages said rocking finger and operates the
shipper mechanism to stop the motion of the
loom.

In testimony whereof we affix our signatures
in presence of two witnesses.

PAUL V. LABONTÉ.

ISRAËL GUERTIN.

Witnesses:

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GEO. W. BARTER.