

No. 619,856.

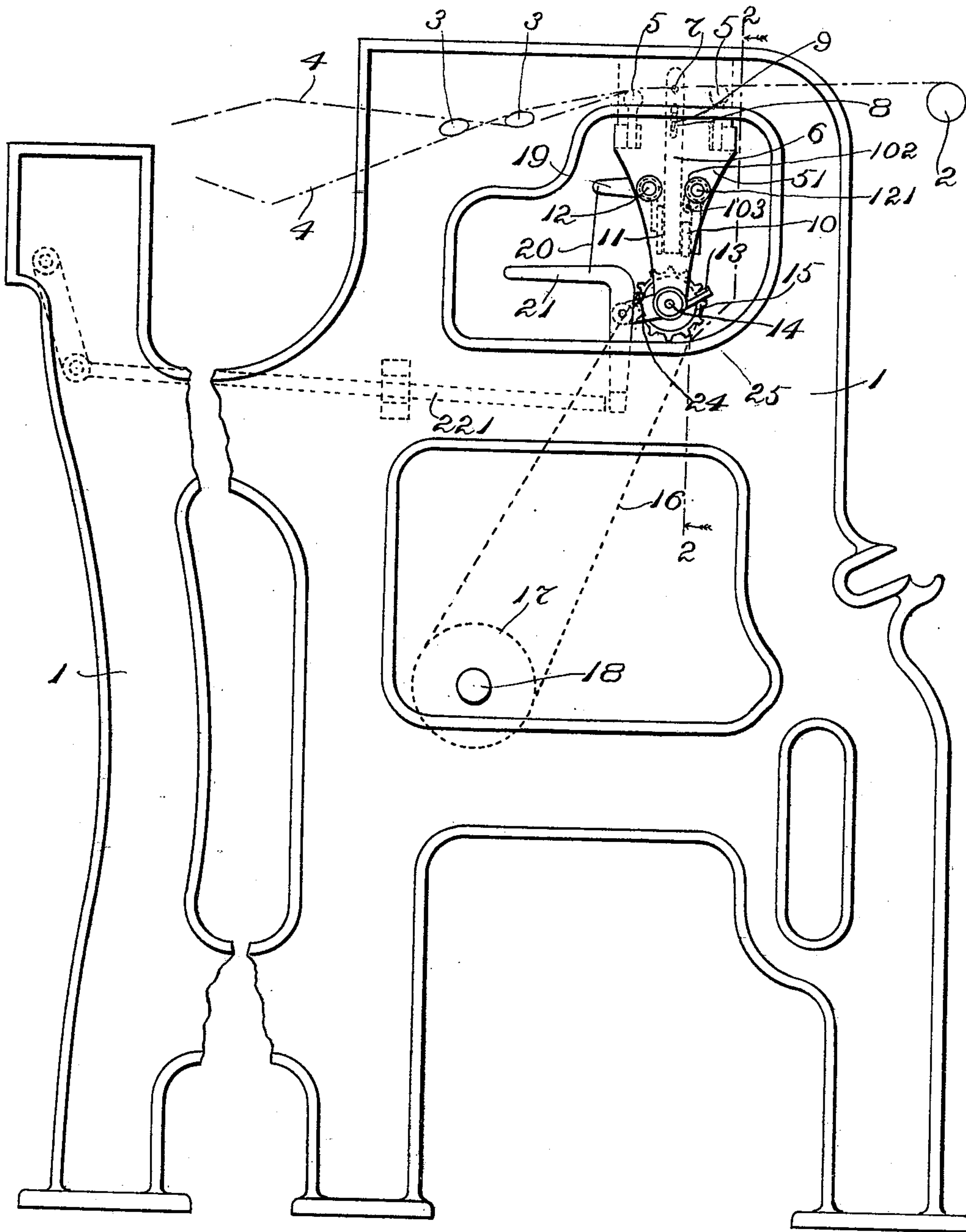
Patented Feb. 21, 1899.

H. BARDSLEY.  
WARP STOP MOTION FOR LOOMS.

(Application filed Aug. 16, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
Oscar F. Gill  
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Fig. 1.

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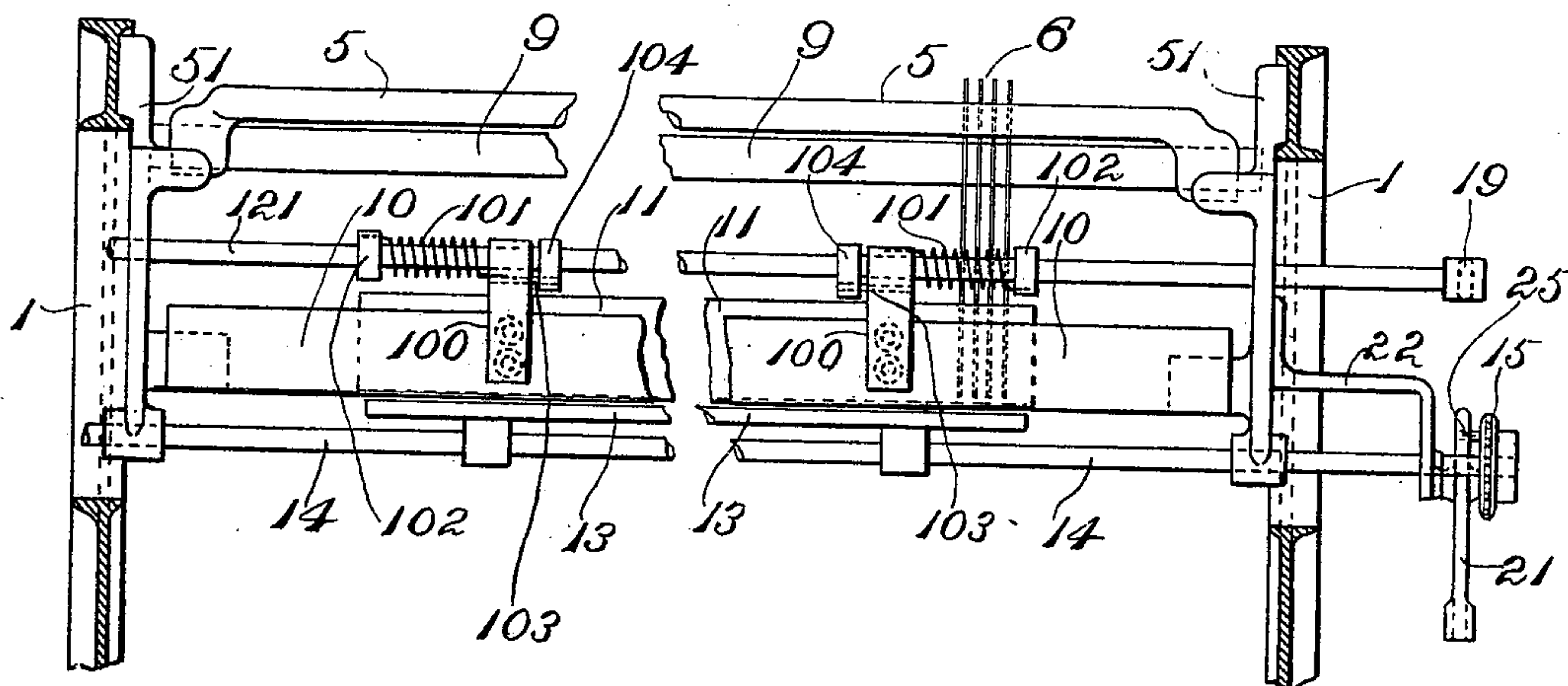
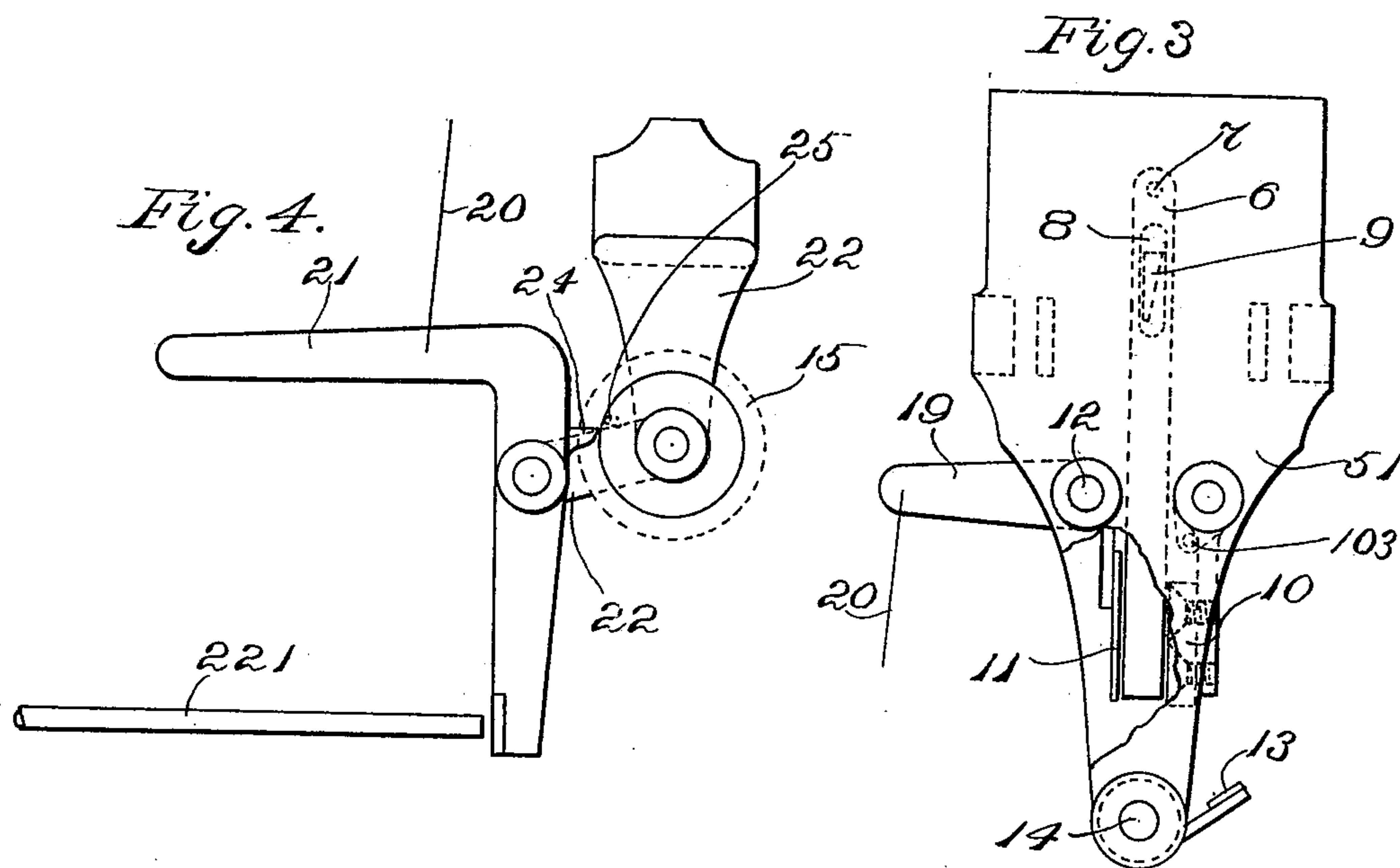


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## WARP STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 619,856, dated February 21, 1899.

Application filed August 16, 1898. Serial No. 688,673. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY BARDSLEY, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Warp Stop-Motions for Looms, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 of the drawings shows in side elevation the framework of a loom with the preferred embodiment of my invention applied thereto, only such features being represented in the said figure as are required in order to render clear the nature and relations of the invention. Fig. 2 is a view in vertical section on the dotted line 2 2 of Fig. 1, looking in the direction indicated by the arrows at the ends of such line and showing only a few drop-wires. Figs. 3 and 4 are views in side or end elevation, on an enlarged scale, showing certain of the parts, part of bracket 51, Fig. 3, being represented as broken away in order to show more clearly certain parts which otherwise would be concealed.

1 designates the loom-frame. The position of the whip-roll is indicated at 2. The lease-rods are intended to be indicated at 3 3, and the warps are intended to be indicated at 4 4.

Preferably the improved warp-stop-motion devices about to be described are introduced between the whip-roll and the lease-rods, although I do not limit myself to the use of the said devices in this particular position.

5 5 designate warp supports or rests in the form of rods or rails extending transversely across the loom parallel to each other at a short distance apart and carried by brackets or supports 51 at a suitable place between the whip-roll and the lease-rods. Between the said warp-rests 5 5 is arranged a series of drop-wires or warp-detectors 6, which may be of any suitable and approved construction. Herein the drop-wire or warp-detector is shown as composed of a flat metallic strip which is formed with an eye, as at 7, for the passage of a warp-thread and with a vertically-elongated slot, as 8, to enable the drop-wires or warp-detectors to be threaded side by side upon a sustaining-rod 9, which latter extends

transversely across the loom between the warp-rests 5 5 and like the latter has its opposite ends applied or secured to suitable supports, as 51, which are provided upon or in connection with the side frames of the loom.

10 designates a guiding-strip which may be employed, if desired, at the rear of the series of drop-wires or warp-detectors for the purpose of holding the lower ends of the drop-wires or warp-detectors in proper alinement. At the front of the said series of drop-wires or warp-detectors is located a plate (herein designated 11) which is fast with the transversely-extending rod or shaft 12, the said rod or shaft 12 being mounted to turn in the brackets or supports 51. For coaction with the lower ends of the drop-wires or warp-detectors 7 I provide a feeler 13, herein consisting of a strip or wing, which is fixedly connected with a shaft 14, extending transversely across the loom and mounted to turn in its supports. To the said shaft 14 I communicate movement in a suitable manner to cause the said feeler 13 to feel for the lower end of any drop-wire or warp-detector which may have been permitted by the breakage or slackening of the corresponding warp-thread to descend into the path of movement of the said feeler. Herein I have shown the said feeler-shaft 14 as arranged to be rotated by means of sprocket-wheel 15, fast thereon and receiving a chain, as 16, actuated by means of a sprocket-wheel 17 on the cam-shaft 18 of the loom. When the feeler 13 in its movement encounters the lower end of the fallen drop-wire or warp-detector, it presses the said end forward, carrying with it the movable plate 11. In order to permit of the drop-wires or warp-detectors being pressed forward at their lower ends in the manner just referred to, the rear side of the supporting-strip 9 is beveled off from the upper edge thereof downwardly, as indicated in Fig. 3.

The movement which is communicated to the movable plate 11 in the manner which has been described is utilized for effecting the stoppage of the loom in manner as I am about to explain. An arm 19 is connected operatively with the said movable plate 11, the said arm being shown herein as made fast upon



the rod or shaft 12, which carries the said plate 11. The arm 19 is connected by a suitable link or coupling, as 20, with a lever, as 21, hung to an arm 22, that is applied to the support 51 for one end of the shaft 14. The lower end of the said lever 21 is disposed in line with one end of a horizontally-movable rod 221, the said rod 221 being herein termed for convenience the "knocking-off" rod, its forward end being connected in any usual or suitable manner with devices by means of which to effect the knocking off or unshipping of the loom. The movement which is given to the lever 21 when the plate 11 is actuated as aforesaid is intended to bring the said lever within the range of action of a moving device, which herein for convenience may be termed a "striker," in order that the said lever 21 may be actuated positively by the said striker in such manner as to occasion an endwise movement of the knocking-off rod 221, whereby to provide for knocking off or unshipping the loom. Herein the said lever 21 is shown formed or provided with a projection or toe, as 24, to be engaged by the striker, and the latter is shown as constituted by a pin, as 25, projecting from the side of the sprocket-wheel 15 upon the feeler-shaft 14. When, therefore, the lever 21 is turned upon its pivot in consequence of a drop-wire or warp-detector in its fallen position being pressed laterally by the feeler 13 against the plate 11, the said projection or toe 24 on the lever 21 is brought into the range of movement of the striker 25 and is thereupon encountered by the said striker, with the result that the lever 21 is turned positively about its pivot, so as to push the knocking-off rod 221 endwise and effect the knocking off or unshipping of the loom.

The back blade or strip 10 at the rear of the drop-wires or warp-detectors preferably is mounted in a manner which enables the same to yield in case the loom is turned backward by hand at a time when a drop-wire or warp-detector is occupying its lowest position. Thus when the feeler 13 is carried back-

wardly against said depressed drop-wire or warp-detector, so that it bears the latter rearwardly against the back blade or strip 10, the latter yields, and thereby avoids breakage of parts and other trouble. Herein the back blade or strip 10 is hung loosely on the rod or shaft 121 by means of plates 100 100, which are made fast to the said back blade or strip and formed with holes therethrough to enable them to be fitted loosely on said rod or shaft 121. (See Fig. 2.) A spring 101, surrounding rod or shaft 121 and having one end thereof engaged with a collar 102, fixed on the rod or shaft, and the other end thereof engaged with one of the plates 100, operates to press the back blade or strip 10 forward into its normal working position; the latter being determined by means of a stop constituted by a pin 103, projecting from a collar 104, fast on rod or shaft 121.

I claim as my invention—

1. The improved warp-stop-motion devices comprising the drop-wire, the feeler, the plate, the lever operatively connected with the said plate, the knocking-off rod, and the striker engaging with the said lever to move the same and the knocking-off rod when the lever is brought into reach of the striker through movement communicated to the plate through pressure of the feeler against a drop-wire, substantially as described.

2. The combination with the drop-wire, the feeler, means of rotating the said feeler, the plate at one side of said drop-wire, and stop-motion devices operated from the said plate, of the yielding back blade or strip at the other side of the said drop-wire for guiding the latter arranged to yield in case the drop-wire is pressed against the same in the backward running of the loom to which the parts are applied, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY BARDSLEY.

Witnesses:

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GEO. W. STAFFORD.