F. Q. HARTMANN.

THREAD BREAKING DEVICE FOR SPINNING MACHINES.

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995,672.

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Fig. 1.

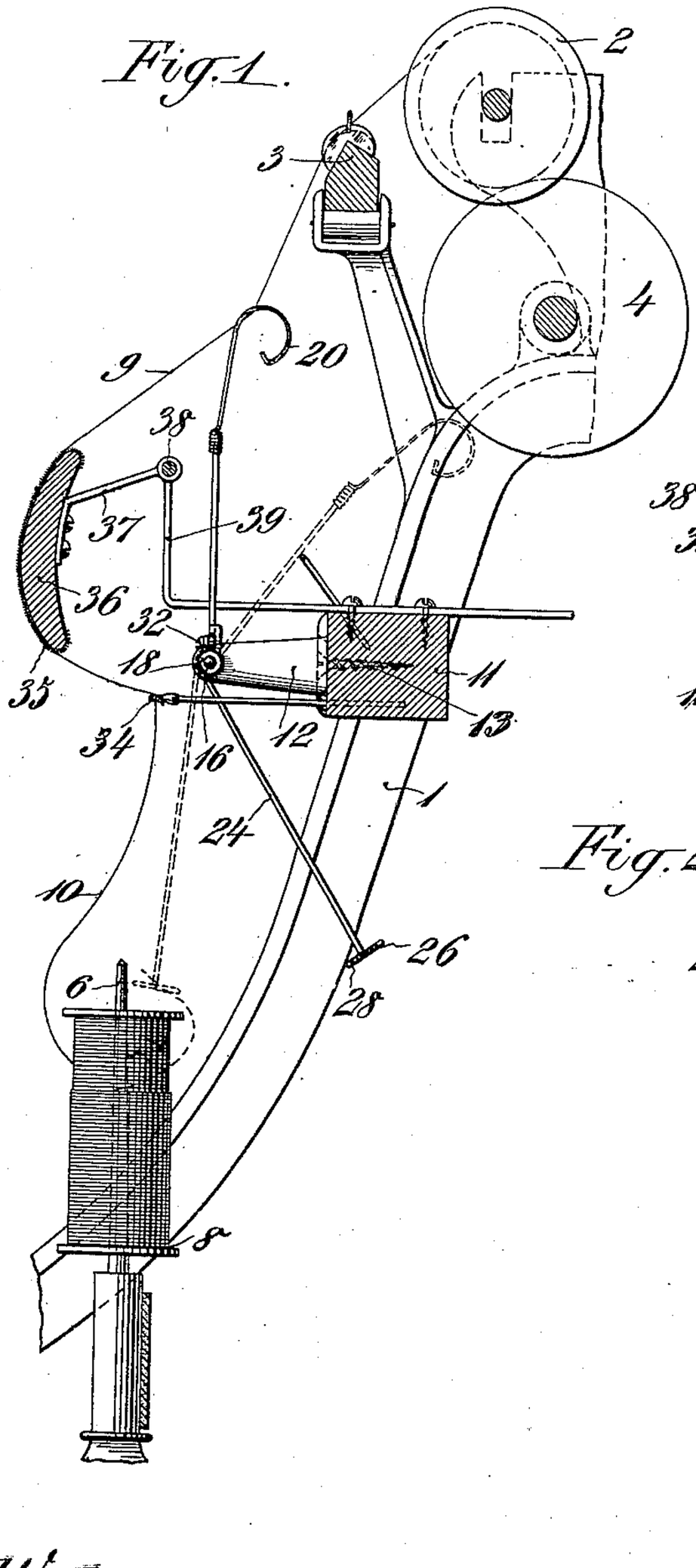
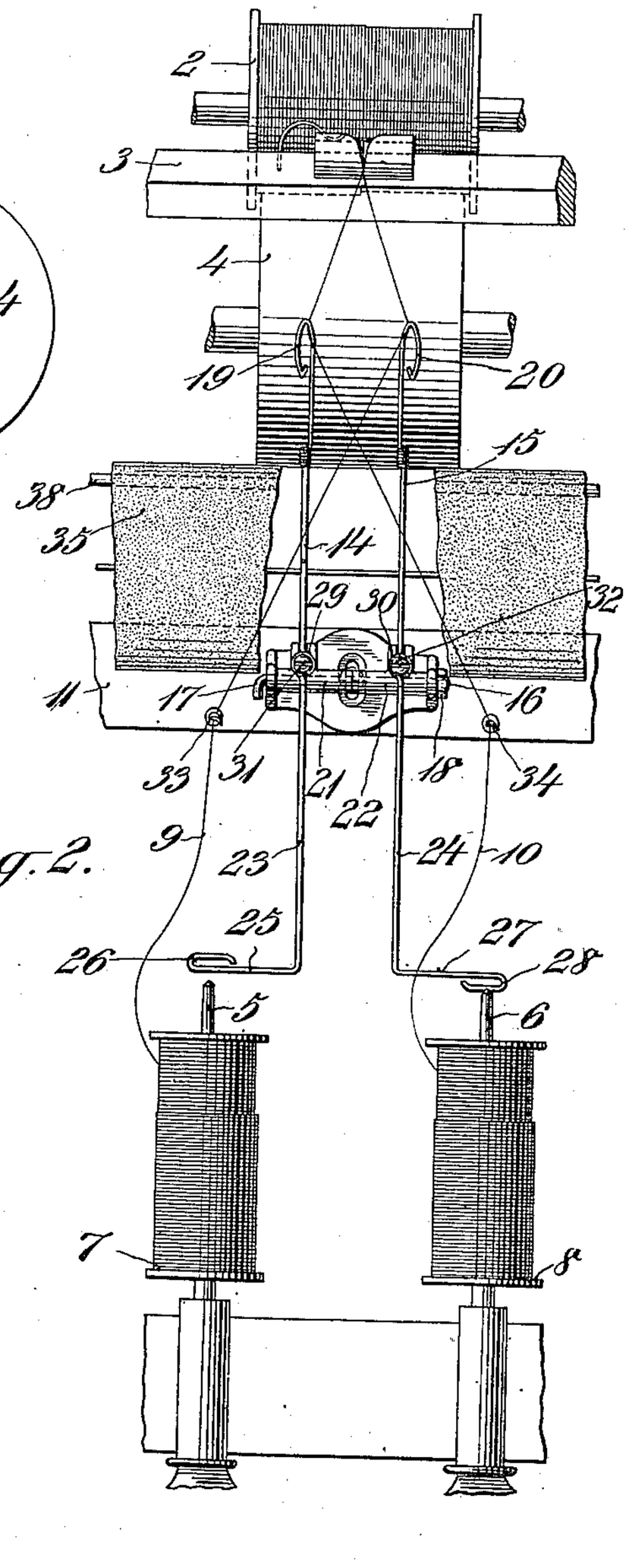


Fig. 2.



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UNITED STATES PATENT OFFICE.

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THREAD-BREAKING DEVICE FOR SPINNING-MACHINES.

995,672. Specification of Letters Patent. Patented June 20, 1911.

Application filed June 17, 1909. Serial No. 502,728.

To all whom it may concern:

Be it known that I, FERDINAND Q. HARTMANN, a citizen of the United States, and resident of Danville, in the county of Montour and State of Pennsylvania, have invented a new and useful Thread-Breaking Device for Spinning-Machines, of which the following is a specification.

My invention relates to a thread breaking device for spinning machines and more particularly to a thread breaking device which may be applied to spinners for independently spinning a plurality of threads and winding the threads so spun on a single bobbin from which the threads are subsequently to be twisted into one strand on a twisting machine. It is very essential in spinning a plurality of threads at the same time and winding them together on a bobbin, that a single thread or a less number than the whole number of threads being wound, be not allowed to run onto the bobbin as this would produce a serious defect when the threads so spun are finally twisted into a strand.

My present invention is directed to a thread breaking device which may be interposed between the spindles and the take-up bobbin on which the spun threads are wound and which shall be under the control of each of the thread guide levers to perform its function of breaking a companion thread when a thread is unintentionally broken, so that the several threads may be united before any one or more of the threads has been allowed to be wound without its or their companion.

A practical embodiment of my invention is represented in the accompanying drawings in which,

Figure 1 is a vertical transverse section through a spinning machine, showing in end elevation so much of the machine as will suffice to disclose a practical application of my invention, and Fig. 2 is a view of the same in front elevation, partly broken away to show the mounting of the thread guide levers.

The main frame of the machine at one end is denoted by 1, the take-up spool or bobbin by 2, the traverse guide for assembling the threads and laying them on the take-up spool or bobbin 2, by 3, the wheel for driving the take-up spool or bobbin 2, by 4, and a pair of spindles for spinning two independent threads, by 5 and 6. The bobbins carrying the threads on the spindles 5 and 6, are denoted by 7 and 8. The threads which lead from the respective bobbins 7 and 8 to the take-up spool or bobbin 2, are denoted respectively by 9 and 10.

For supporting the thread breaking mechanisms in position on the spinner, one for each group of threads to be combined on a single take-up spool or bobbin, I attach a horizontal rail 11 to the end frames 1 of the spinning machine and to the front of this rail 11, the brackets 12 for supporting the thread breaking devices are secured. These brackets 12 are preferably of U-shape and secured to the rail 11 by means of a screw 13 passing through the base of the bracket into the rail 11. Between the forwardly projecting arms of the bracket 12, thread guide levers 14, 15, are pivoted, one for each spindle, by means of a pintle 16, which conveniently is formed of wire bent into shape to form a head 17, and at its opposite end screw-threaded to receive a nut 18 for holding the pintle in position. The thread guide levers 14, 15, are drop levers and carry hook eyes 19, 20, through which the threads 10 and 9 pass before they reach the traverse guide 3.

The thread guide levers 14, 15, extend upwardly from hubs 21, 22, mounted side by side on the spindle 16 and from these hubs, arms 23, 24, extend downwardly in a slanting direction, the arm 23 being provided with a laterally extended thread breaking device 25 provided with an open hook 26 at its end and the arm 24 being provided with a laterally extended thread breaking device 27 provided with an open hook 28 at its end. The depending arms 23, 24, with their thread breaking devices and hooks may be formed each of a continuous piece of wire and may be conveniently secured to the hubs of the drop levers by providing them with eyes 29, 30, at their upper ends to receive fastening screws 31, 32. The thread guide levers 14, 15, are held in upright position by the threads from the spindles and when a thread breaks, they are permitted to drop into the position shown in dotted lines in Fig. 1, carrying the thread breaking device in proximity to the ends of the bobbins on the spindles where the unbroken thread will be caught by the hook and broken.

In the present instance, the thread 10 from the bobbin 8 crosses the thread 9 from the bobbin 7 before they reach the eyes 19, 20 of the drop levers, so that when for any cause the thread 9 breaks, it will allow the drop lever 15 to rock and thereby bring the thread breaking device 27 into position in proximity to the end of the bobbin 8 so that the companion thread 10 will catch in the hook 28 and be broken thereby permitting the operator to join both threads before any one of them is allowed to wind alone on the take-up bobbin. On the other hand, if the thread 10 shall break for any cause, it will allow the drop lever 14 to fall, bringing the thread breaking device with its hook 26 into proximity to the bobbin 7 where the companion thread 9 will be caught by the hook and broken, thereby, as before, enabling the operator to join both threads before allowing either one to wind along on the take-up spool or bobbin.

In passing from the bobbins 7, 8, the threads 9 and 10 pass through pig-tail guides 33, 34, and thence over curved plush surfaces 35 on a tension bar 36 carried by arms 37 on a rod 38 supported by brackets 39 (only one of which is shown) made fast to the rail 11.

What I claim is:

In a spinning machine in which several threads are being independently spun and wound on a single take up spool or bobbin, drop thread guide levers, one for each thread, mounted on a common pintle and each provided with a depending arm in position to rock into proximity to the end of the bobbin on its spindle, the threads from the spindles being crossed before engaging the drop thread guide levers, whereby the breaking of a thread will permit the drop lever held by that thread to rock the thread breaking device controlled by that lever into position to break a companion thread.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this seventh day of May 1909.

FERDINAND Q. HARTMANN.

Witnesses:
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