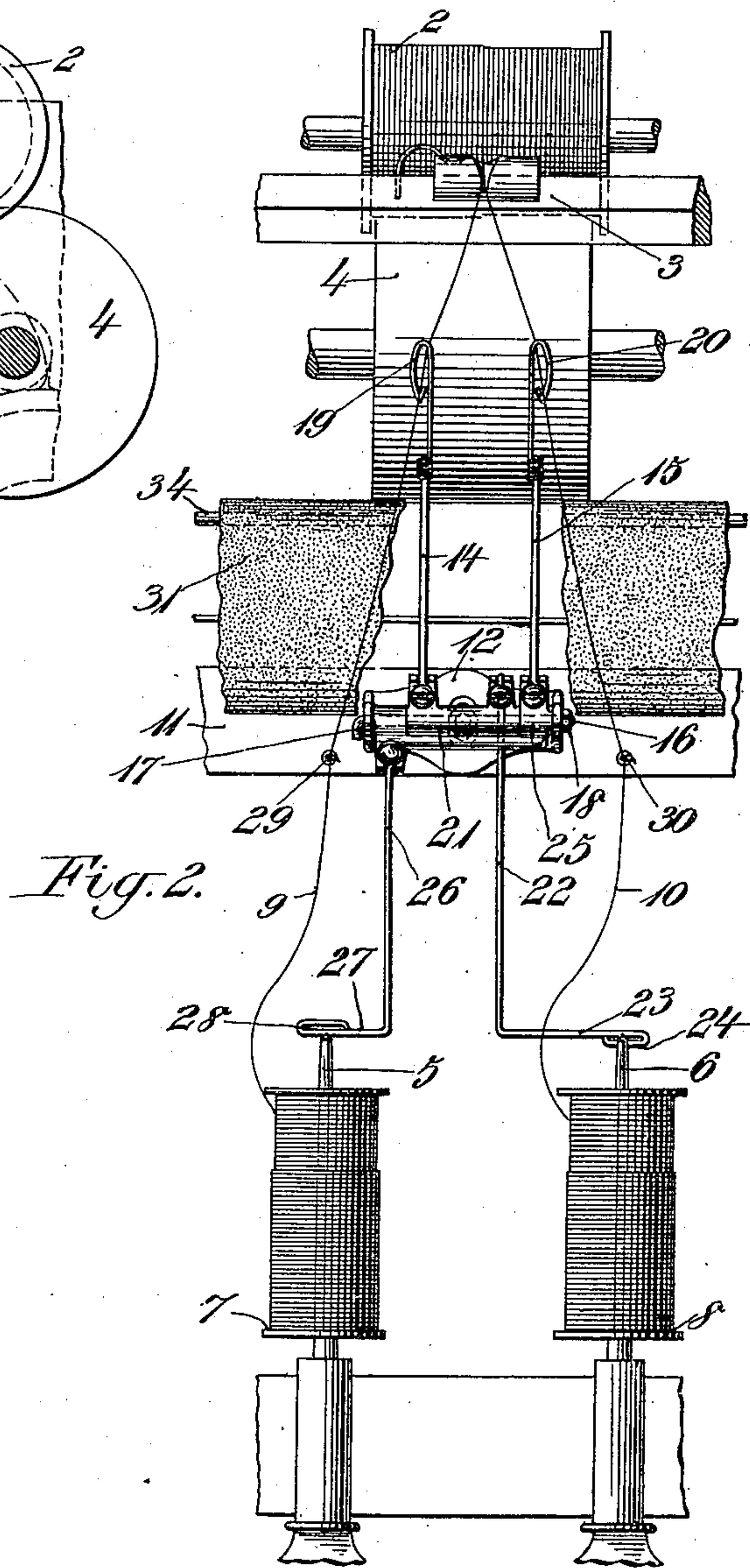
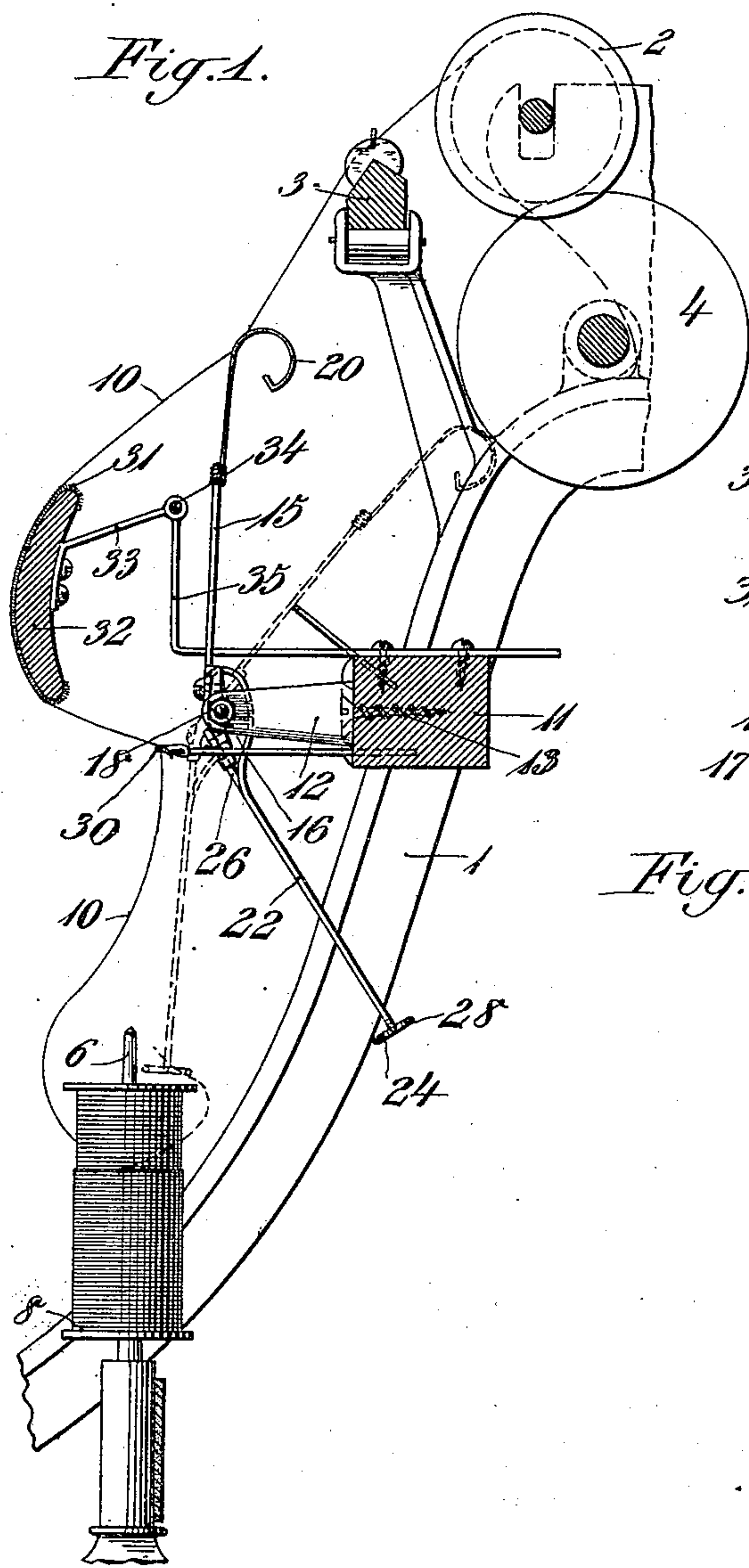


F. Q. HARTMAN.
 THREAD BREAKING DEVICE FOR SPINNING MACHINES.
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990,438.

Patented Apr. 25, 1911.



Witnesses:
W. G. Gentry
J. George Barry

Inventor:
Ferdinand Q. Hartman
By Brown & Howard
his attorneys

UNITED STATES PATENT OFFICE.

FERDINAND Q. HARTMAN, OF DANVILLE, PENNSYLVANIA.

THREAD-BREAKING DEVICE FOR SPINNING-MACHINES.

990,438.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed June 17, 1909. Serial No. 502,727.

To all whom it may concern:

Be it known that I, FERDINAND Q. HARTMAN, 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 on to 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 carry-

ing 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 at one end and at the opposite end is conveniently 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 9 and 10 pass before they reach the traverse guide 3. The thread guide lever 14 has an elongated hub 21, from one end of which the thread guide lever 14 projects and from the opposite end of which a depending arm 22 extends, the said arm 22 being provided with a laterally extended thread breaking device 23. The arm 22 and thread breaking device 23 may be formed conveniently of a continuous piece of wire, the outer end of the thread breaking device 23 being provided with an open hook 24 for catching a thread.

The thread guide lever 15 extends upwardly from one end of a hub 25 which conveniently embraces the opposite ends of the hub 21 to which the thread guide lever 14 is secured and from the opposite end of the hub 25, an arm 26 extends downwardly and is provided with a laterally extended thread breaking device 27 having an open hook end 28 quite similar to the thread breaking device 23 with its open hook end 24.

The arms 22 and 26 extend in such a direction that when the thread guide levers are held upwardly and outwardly as shown in full lines in Fig. 1 by an unbroken thread, the arms 22 and 26 will occupy a downwardly and inwardly slanting position such

as that shown in full lines, carrying the thread breaking devices out of the way of the thread whirling about the spindles 5 and 6.

5 It will be observed that the thread guide lever 15 has a thread breaking device connected to rock with it, which thread breaking device extends into position to operate on the thread of the companion spindle 5 instead of upon
10 its own spindle 6, while the thread guide lever 14 in turn has a thread breaking device 23 attached to it which is arranged to be swung into proximity to the spindle 6 instead of to its own spindle 5 or spindle from
15 which the thread passes to it. The structure is such that when a thread breaks, for instance, the thread 10, its guide lever 15 will drop inwardly into the position shown in dotted lines Fig. 1, and this will rock the
20 depending arm 26 which is connected to rock with the lever 15, into proximity to the end of the bobbin 5 where the whirl of the spindle 5 will catch the thread 9 in the hook 28 and cause the thread 9 to break, so that the
25 operator may then join the ends of both threads 9 and 10 and prevent a less number than the whole number of threads from being wound on the take-up spool or bobbin. On the other hand, if the thread 9 should
30 from any cause break, its guide lever 14 would be allowed to drop inwardly and thereby rock the depending arm 22 outwardly in position to bring the hook 24 on the thread breaking device 23, into proxim-

ity to the end of the bobbin 8, where the thread 10 would catch in the hook and be broken, thereby enabling the operator, as before, to join the ends of both threads before one is wound alone upon the take-up bobbin.

The threads as they pass upwardly from the spindles, pass through pig-tail guides 29, 30, and thence extend upwardly into engagement with the plush surface 31 on a tension bar 32 supported by means of arms 33 from a rod 34 held in brackets 35, one only being shown, attached to the rail 11.

What I claim is:

In a spinning machine in which several threads are being independently spun and wound upon a single take-up spool or bobbin, drop thread guide levers, one for each thread, overlapping hubs for said levers mounted on a common pintle, and depending arms, one for each drop lever, arranged to rock with the lever, the said depending arms being each provided with a thread breaking device in position to engage and break a companion thread when the thread which holds the said drop lever for any cause is broken.

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. HARTMAN.

Witnesses:

F. GEORGE BARRY,
HENRY THIEME.