

No. 686,826.

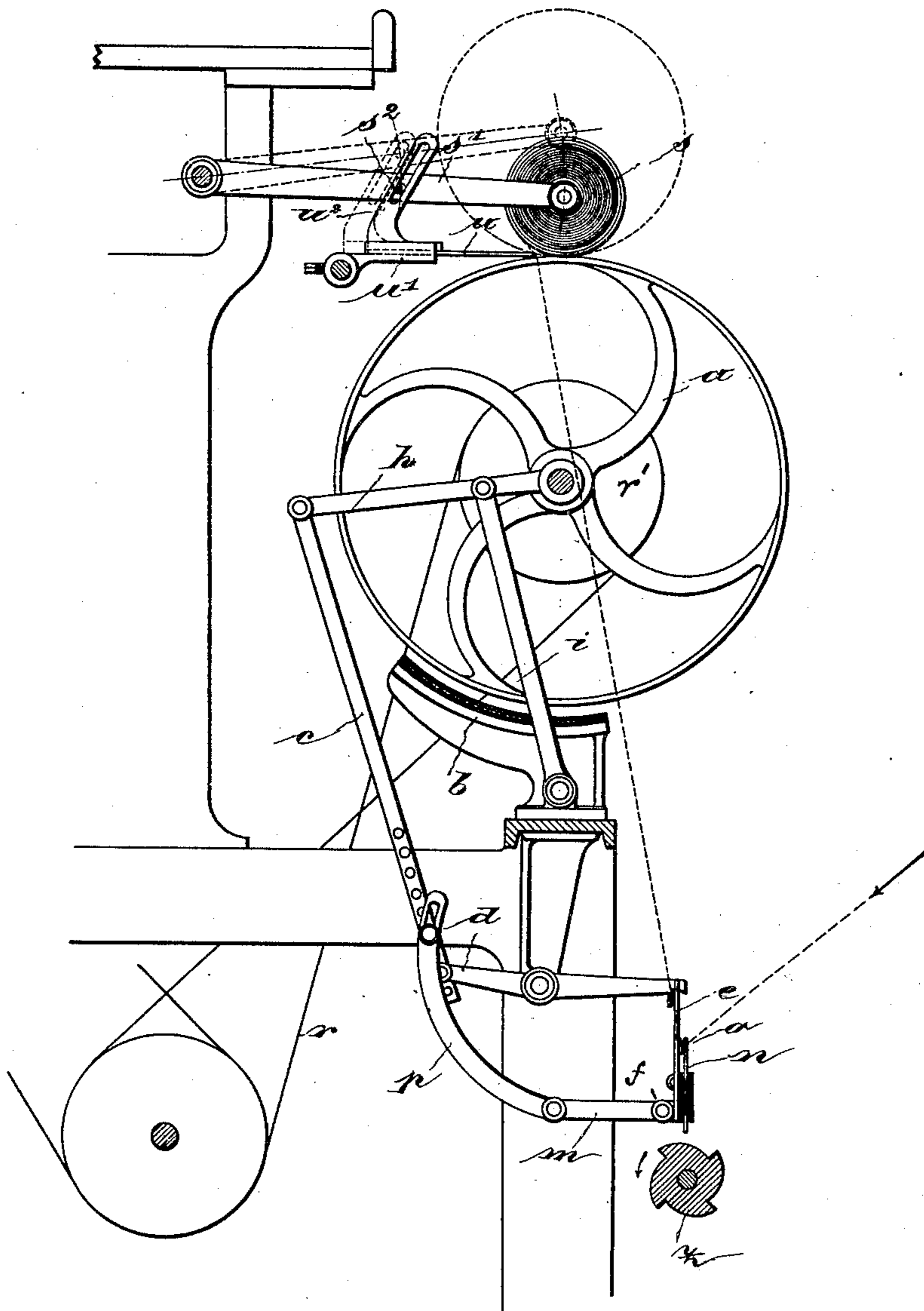
Patented Nov. 19, 1901.

C. MÜLLERS.
SPOOLING MACHINE.
(Application filed Apr. 24, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig: 1



Witnesses:
William Schuly
Edu. Ray

Inventor:
Conrad Müller
by his attorneys
Roeder & Briesen

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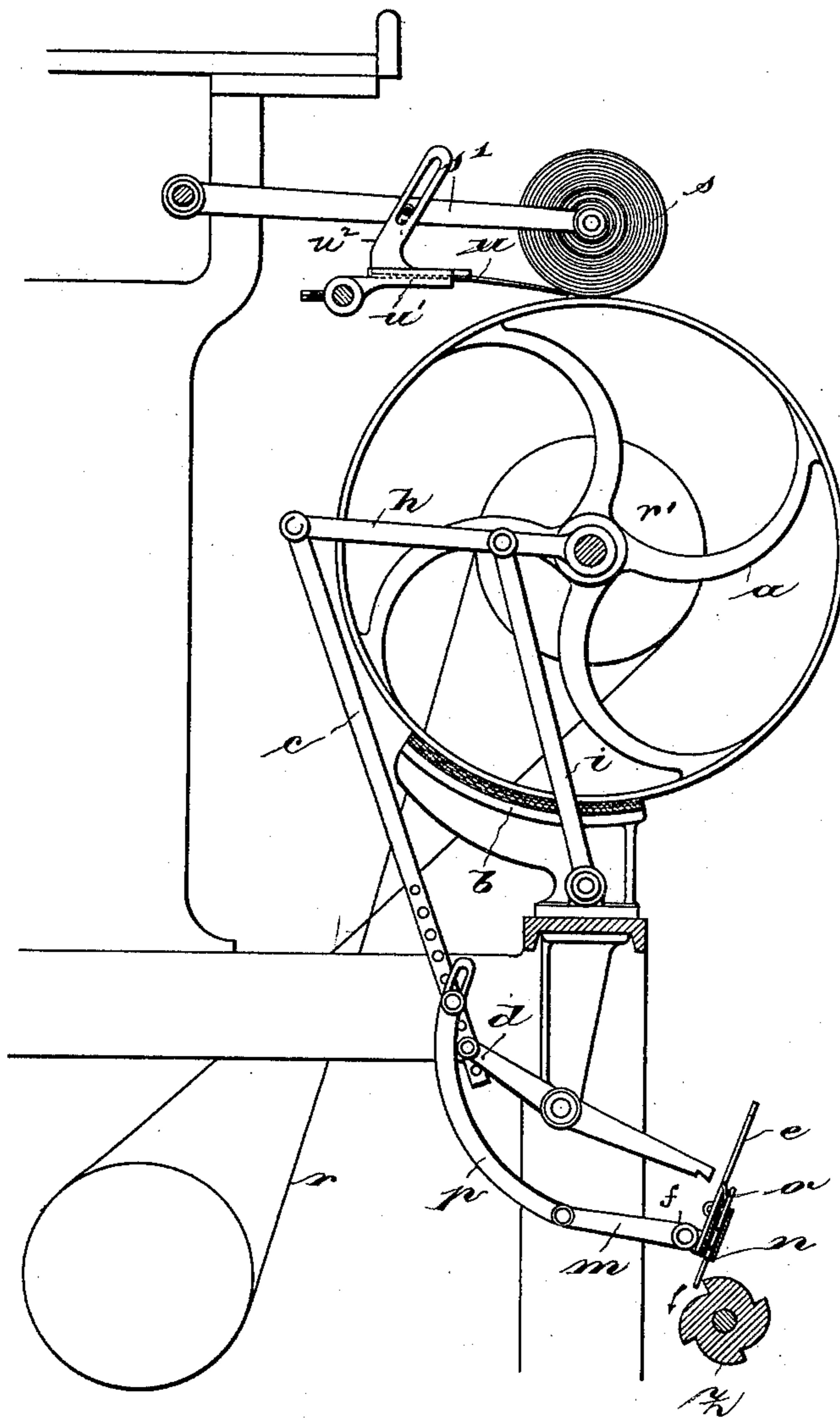
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(No Model.)

2 Sheets—Sheet 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

CONRAD MÜLLERS, OF MÜNCHEN-GLADBACH, GERMANY.

SPOOLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 686,826, dated November 19, 1901.

Application filed April 24, 1901. Serial No. 57,185. (No model.)

To all whom it may concern:

Be it known that I, CONRAD MÜLLERS, a citizen of the German Empire, residing at München-Gladbach, Germany, have invented certain new and useful Improvements in Spooling-Machines, of which the following is a specification.

The subject of my invention is a device which secures an immediate stopping of the spool of a spooling-machine when the thread breaks, and thereby prevents the end of the broken thread from spooling.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of my improved spooling-machine, showing the winding-pulley raised. Fig. 2 is a similar view with the pulley lowered.

As will be seen from the drawings accompanying this application, the pulley *a* for the spool is attached to a lever *h*, which has its turning-point at the support *i*. Below the wheel there is provided a stable brake-block *b*. The lever *h*, with the pulley *a*, is during the work of the machine held by a bar *c* in such way that the spool *s* rests on the circumference of the pulley *a*. When, however, the lever *h* is loosened, the pulley will drop upon the brake-block and is kept fast by the latter, the driving-belt *r* being simultaneously slackened. The spool *s* will descend together with the pulley, and as it receives its rotatory motion from the latter it will cease to rotate as soon as the pulley is arrested. When the thread breaks, the device for the holding of the lever *h* and of the pulley *a* is dislodged by a contrivance of any kind. On the example illustrated by the drawings herewith the bar *c* holds the pulley in operative position by a lever *d*, which rests with one arm upon the support *e*. The latter is pivoted to turn on lever *m* at *f*. The lever *m* is pivoted to a bar *p*, attached to bar *c*. On the support there are attached, as usually, the needles *n*, with eyes *o* for the thread. These needles are kept raised by the threads as long as the latter are not broken, but drop when the threads break. They are then hit by a toothed disk *z*, the support *e*, below the lever *d*, being thereby removed, as is shown in Fig. 2, and the bar *c* made free. The pulley *a* may then drop upon the brake-block to arrest the spools *s*. As the pulley *a* will drop

perpendicular, or nearly so, the spool will get free almost instantaneously and the pulley arrested at once. At the same time the driving-belt *r*, engaging pulley *r'*, fast on shaft of pulley *a*, will slacken, so that the movement of the pulley will be interrupted. When the thread has been tied again, all that is necessary is to raise the pulley. The support *e* is thereby brought again below the lever *d* by means of the lever *h* and bar *c*. In order to produce a uniform straining of the thread during the work of spooling and to obtain smooth edges at the spools, the guide of the thread is not, as is ordinarily the case, rigid, but will be moved to a position corresponding to the increasing diameter of the spool being wound. As a result the direction of the thread to the circumference of the spool will always remain the same. If the guide for the thread would, as is usually done, remain stable, the winding would at first be too loose and the edges would not become smooth, while later when the way of the thread would describe a sharp angle there would be a too hard friction on the guide of the thread and the latter would probably burn. The automatic movement of the guide *u* as it is illustrated in the drawings is attained by making the same movable within a guide-frame *u'*. The guide *u* is provided with an oblique arm *u²*, having a slot into which catches a pin *s²* of the arm *s'*, connected to the spool *s*. If the arm *s'* is raised owing to the increase in diameter of the spool, the arm *u²* and the guide will be pulled back, as indicated on the drawings by dotted lines.

What I claim as my invention, and desire to have protected by Letters Patent, is—

1. In a spooling-machine, the combination of a vertically-movable pulley adapted to support and rotate the spool, with means for rotating the pulley, a pulley-sustaining lever, a lever-tripping mechanism engaged by the thread, means for releasing said mechanism upon the breaking of the thread, and a brake-shoe adapted to engage the pulley in its lowermost position, substantially as specified.

2. In a spooling-machine, the combination of a vertically-movable pulley adapted to support and rotate the spool, with lever *h*, to which the pulley is pivoted, arm *c*, pivoted

to lever *h*, lever *d*, pivoted to arm *c*, and a needle-support *e*, adapted to engage the lever *d*, substantially as specified.

3. In a spooling-machine, the combination
5 of a vertically-movable pulley adapted to support and rotate the spool, with lever *h*, to which the spool is pivoted, arm *c*, pivoted to lever *h*, lever *d*, pivoted to arm *c*, needle-support *e*, adapted to engage lever *d*, arms
10 *p*, *m*, for carrying the needle-support, and with toothed wheel *z*, adapted to tilt the needle-support upon the breaking of the thread, substantially as specified.

4. In a spooling-machine, the combination
15 of a pivoted spool-carrying arm, with a movable thread-guide, and means for converting

the oscillation of the arm into a sliding motion of the thread-guide, substantially as specified.

5. In a spooling-machine, the combination 20 of a spool-supporting lever having a pin, with a movable thread-guide having an oblique slotted arm adapted to engage said pin, substantially as specified.

In testimony that I claim the foregoing as 25 my invention I have signed my name in presence of two subscribing witnesses.

CONRAD MÜLLERS.

Witnesses:

WILLIAM ESSENWEIN,
PETER LIEBER.