

APPLICATION FILED SEPT. 16, 1908.

2 SHEETS—SHEET 1.



INVENTORS.

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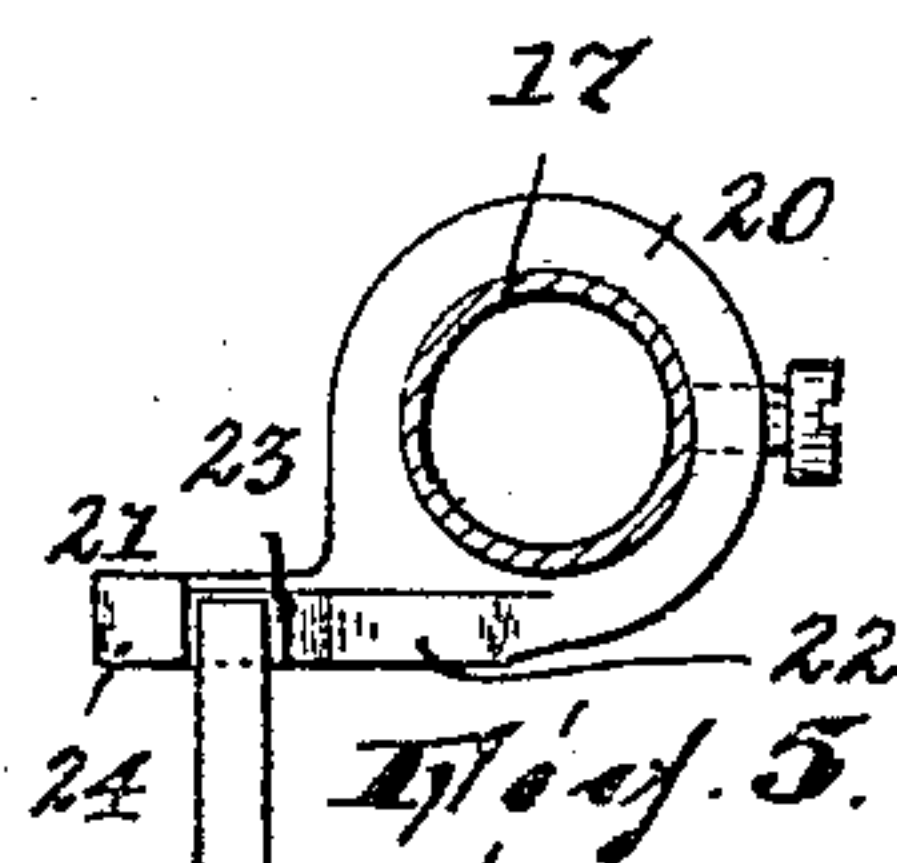
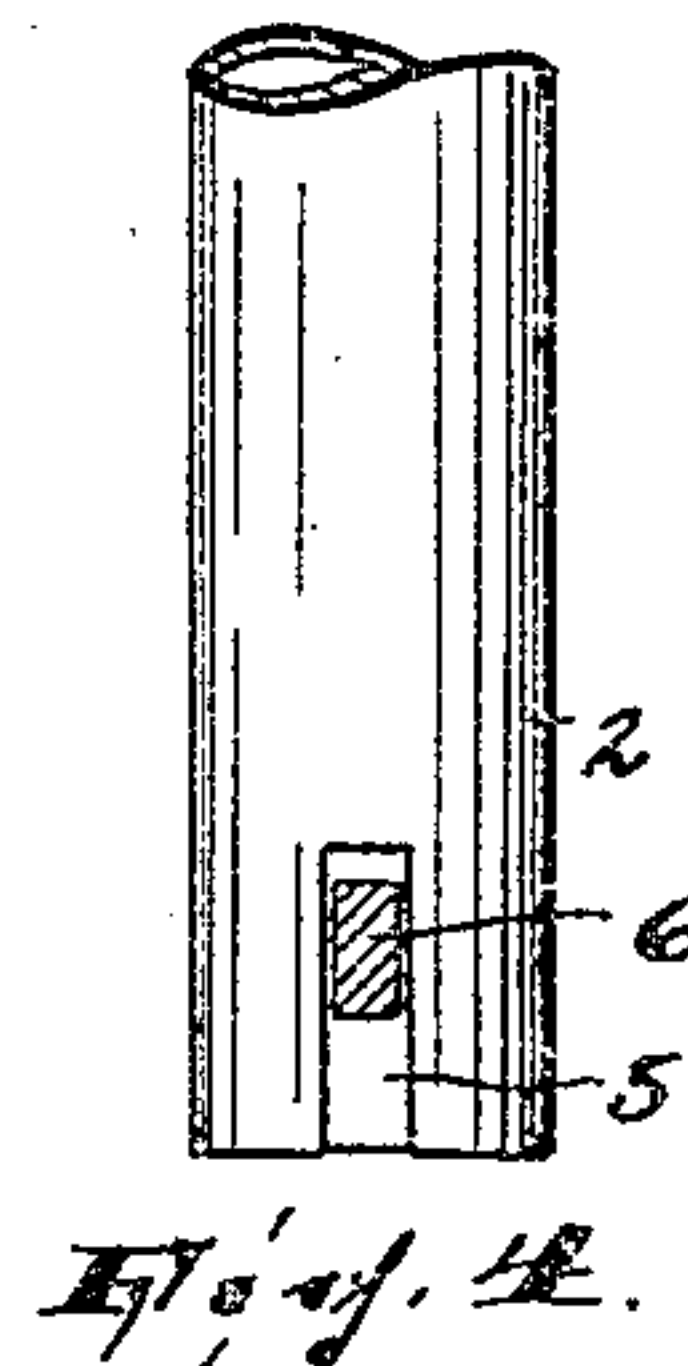
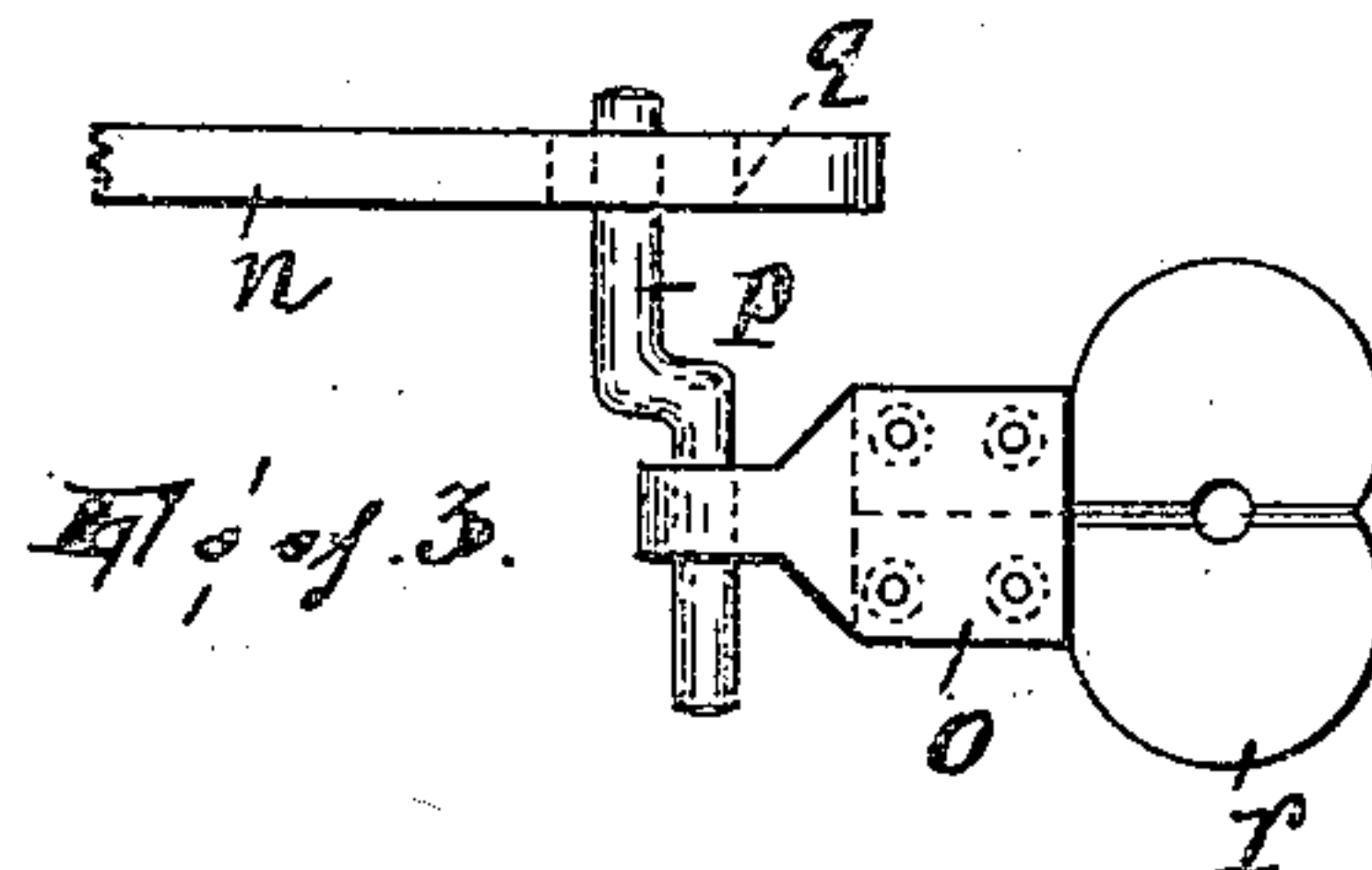
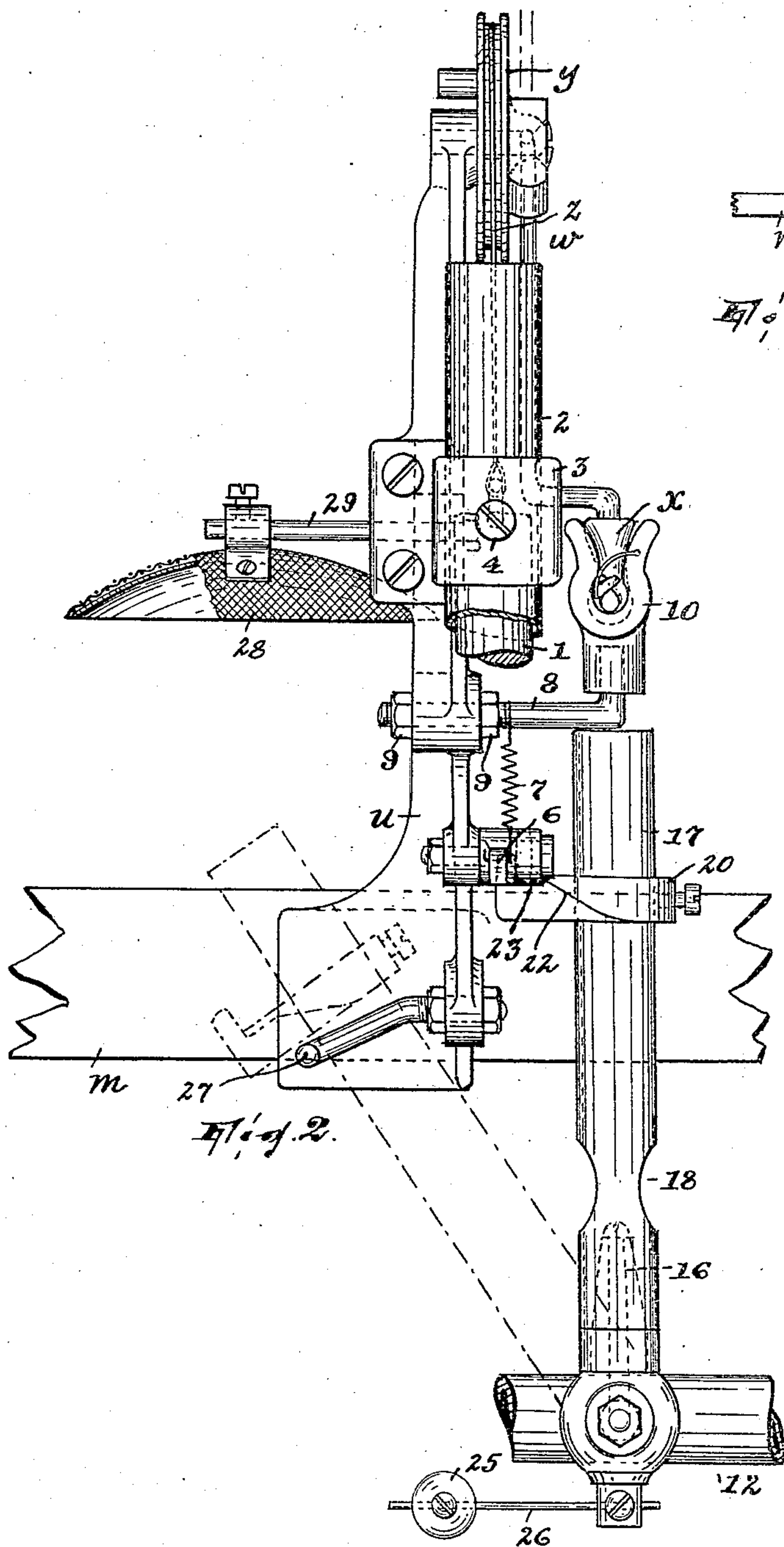
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SINGING MACHINE.
APPLICATION FILED SEPT. 16, 1908.

943,657.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 2,



WITNESSES

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UNITED STATES PATENT OFFICE.

DAVID DAVIS AND ARTHUR O. BERRY, OF PATERSON, NEW JERSEY, ASSIGNORS TO
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SINGEING-MACHINE.

943,657.

Specification of Letters Patent.

Patented Dec. 21, 1909.

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To all whom it may concern:

Be it known that we, DAVID DAVIS and ARTHUR O. BERRY, a citizen of the United States and a subject of the King of England, respectively, residing in Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Singeing-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

This invention relates to thread singeing mechanisms and it consists in certain improvements having for their principal object so to construct a mechanism of this nature that the same may be employed as a part of a machine winding thread direct from the swifts or reels onto the bobbins.

At present, so far as we are aware, the singeing of thread is usually performed entirely separately from the winding operation; that is, the thread is wound from the swifts onto the bobbins in a winding machine and then it is wound from said bobbins onto other bobbins in a singeing machine, the reason for the resort to two operations being that, prior to this invention, the singeing mechanism has been either so complicated or cumbersome that, if utilized in connection with the winding from swifts to bobbins, it would interfere with the attendant and prevent in other ways the saving in labor and time contemplated.

The invention consists in the improved singeing mechanism and also in the combination thereof with a winding machine, generally, as well as in the combination of said singeing mechanism with a winding machine and means for stopping the pull on the thread by the receiving bobbin.

Referring to the accompanying drawings in which the invention is fully illustrated, Figure 1 shows in vertical section the superstructure of a winding machine having means for stopping the rotation of its receiving bobbin and our singeing mechanism attached thereto; Fig. 2 is a front view of the singeing mechanism, partly in section and partly broken away; and, Figs. 3, 4 and 5 illustrate details.

a designates the mid-rail of the superstructure of a winding machine; *b* one of a series of brackets to support the swifts *c* (only fragments of said bracket and one swift being shown); *d* is a rotary shaft carrying the driving wheels *e*, only one of which is shown; *f* is a reciprocating thread-guide rail moving in the brackets *g*; *h* is one of a series of brackets affording bearings for a bobbin *i* or the like having a whirl *j* adapted to bear upon the wheel *e* and be driven thereby and also having a toothed member *k*; *l* one of two or more brackets supporting a rail *m*; *n* a lever fulcrumed on rail *m* and adapted to stop the rotation of the bobbin by engaging its toothed member when an undue enlargement occurs in the thread, the actuation of the lever for this purpose being accomplished by a detector *o* pivoted on the rail *m* and having a crank *p* entering a slot *q* in the lever, said detector being provided with a split blade *r* which receives the thread and whose opening is of such size as not to permit undue enlargements to pass through it, and said detector normally resting against a bar *s*, carried by brackets *t* (only one of which is shown) and being movable under the pull of the thread when engaged by an enlargement therein to the dotted line position in Fig. 1. We make no claim to this mechanism, *per se*; nor do we claim *per se*, the mechanism shown for stopping the rotation of a bobbin when full, consisting of an eccentrically journaled roller *a'* arranged in an adjustable bracket *b'* in such manner that the filled bobbin will engage the periphery of the roller and in consequence of turning it be raised thereby out of contact with the driving wheel *e* until the bobbin rests in a recess *c'* in the high part of the roller.

A bracket *u* projects from rail *m* and on a screw *v* in this bracket is fulcrumed a lever structure comprising the arm *w*, carrying a thread eyelet *x* at its free end, and a grooved pulley *y*. Around this pulley extends the upper portion of a wire *z* whose upper end is suitably attached to the wheel and to whose other end is connected a weight 1. The weight 1 moves in a tubular guide 2 arranged in a strap 3, secured to the brackets and held therein for vertical adjustment by the set screw 4. The lower end of the guide 2 is formed with a slot 5 adjoining the bracket and in this plays one end of a

lever 6 which is drawn upwardly by a spring 7 connected with an arm 8 penetrating the bracket and held therein by the clamping nuts 9, said arm having its outer end up-
 5 turned and carrying a thread guide 10.

In the brackets 7 is secured by a strap 11 a gas pipe 12 from which at suitable points (one for each winding unit) in the machine extend branch pipes 13 each having a key
 10 14; a Bunsen burner 15 comprising the gas nozzle 16 and air tubes 17 having the ports 18 is pivoted on the conical plug 19 forming the end of pipe 13. The tube 17 has adjustably secured thereto a strap 20 provided
 15 with a projection 21 having its top surface inclined at 22, then formed with a slight recess 23 and finally terminating in a stop 24; when the Bunsen burner is raised into the full line position shown in the drawing,
 20 the inner end of lever 6 wipes over the surfaces 22 into recess 23 and is finally impinged by the stop 24. The locking action between the lever and the recess 23 prohibits the Bunsen burner against assuming the
 25 dotted line position in Fig. 2, under the action of a weight 25 adjustably secured on an arm 26 projecting from the Bunsen burner laterally. 27 is a stop to limit the movement of the Bunsen burner at this time.
 30 28 is a shield adjustably carried on an arm 29 projecting laterally from bracket *u* and covering the upper end of the burner when in its dotted line position.

Operation: The thread A extends from
 35 the swift through thread-guide 10, the thread-guide of arm *w*, under a porcelain guide 25' then over bar *s*, then over the thread-guide rail to bobbin *i*. Should the thread for any reason slacken, for instance,
 40 because the swift overruns or either of the stop motions above described operates, arm *w* will be allowed to rise under the pull of weight 1; the falling weight will then engage lever 6 and raise its inner end out of
 45 contact with strap 20, whereupon gravity acting on weight 25 will throw the burner to the dotted line position, thus preventing the flame from burning the thread. The flame will then be covered by the shield 28,
 50 protecting the attendant as he readjusts the parts. 30 is a stop limiting the rotation of the pulley *y* under the pull of the weight in falling. In order to reset the parts, the attendant has but to move the burner to the
 55 vertical position, where it will be caught and held by the lever 6; if necessary, the bobbin may be partly unwound by hand and such portion of the thread which may not have been singed after the burner was ren-
 60 dered idle may be rewound. If the singeing mechanism is thrown out of action because the thread breaks, it will be understood that the winding mechanism is started and the thread made to hold weight 1 elevated be-
 65 fore the burner is reset.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. The combination of a suitable support, thread-guide and singeing members arranged
 70 in said support in position to cooperate with each other for singeing, one of said members being normally movable out of said position, a part normally holding the movable member in said position and being itself
 75 movable to release the same, and means normally operative to move said part, said means being adapted to be withheld against movement from the thread being singed, substantially as described. 80

2. The combination of a suitable support, a thread-guide member arranged in said support, a singeing member also arranged in said support in position to cooperate with the thread-guide member for singeing, said
 85 singeing member being gravity-actuated and normally movable out of said position, and means, controlled from the thread being singed, for holding said singeing member in said position, substantially as described. 90

3. The combination of a suitable support, a thread-guide member arranged therein, a singeing member also arranged in said support in position to cooperate with the thread-guide member for singeing, said singeing
 95 member being normally drawn out of said position, and means, controlled from the thread being singed, for normally holding said singeing member in said position, substantially as described. 100

4. The combination of a suitable support, a thread-guide member arranged therein, a singeing member movable in said support and standing in position to cooperate with the thread-guide member for singeing, said
 105 singeing member being normally drawn out of said position, a holding member normally retaining said singeing member in said position, and mechanism, controlled by the thread being singed, for causing said hold-
 110 ing member to release the singeing member, substantially as described.

5. The combination of a suitable support, a thread-guide member arranged therein, a singeing member movable in said support
 115 and standing in position to cooperate with the thread-guide member for singeing, said singeing member being normally drawn out of said position, a holding member normally retaining said singeing member in said posi-
 120 tion, and gravity-actuated mechanism, normally restrained by the thread being singed, for causing said holding member to release the singeing member, substantially as described. 125

6. The combination of a suitable support, a thread-guide member arranged therein, a singeing member movable in said support and standing in position to cooperate with the thread-guide member for singeing, said
 130

singeing member being normally drawn out of said position, a holding member normally retaining said singeing member in said position, a vertical guide, a weight movable therein and engageable with said holding member to cause the same to release the singeing member, and means, connected to said weight and adapted to be engaged with the thread being singed, for normally holding said weight elevated, substantially as described.

7. The combination, in a winding machine, of a suitable support, a rotary driving part adapted to rotate the thread-receiving device to be wound, mechanism for effecting the discontinuance of the influence of the driving part on said device, thread-guide and singeing members arranged in said sup-

port in position to coöperate with each other for singeing, one of said members being normally movable out of said position, a part normally holding the movable member in said position and being itself movable to release the same, and means normally operative to move said second named part, said means being adapted to be withheld against movement from the thread being singed, substantially as described.

In testimony, that we claim the foregoing, we have hereunto set our hands this 10th day of September, 1908.

DAVID DAVIS.

ARTHUR O. BERRY.

Witnesses:

JOHN W. STEWARD,

WM. D. BELL.