

No. 683,103.

Patented Sept. 24, 1901.

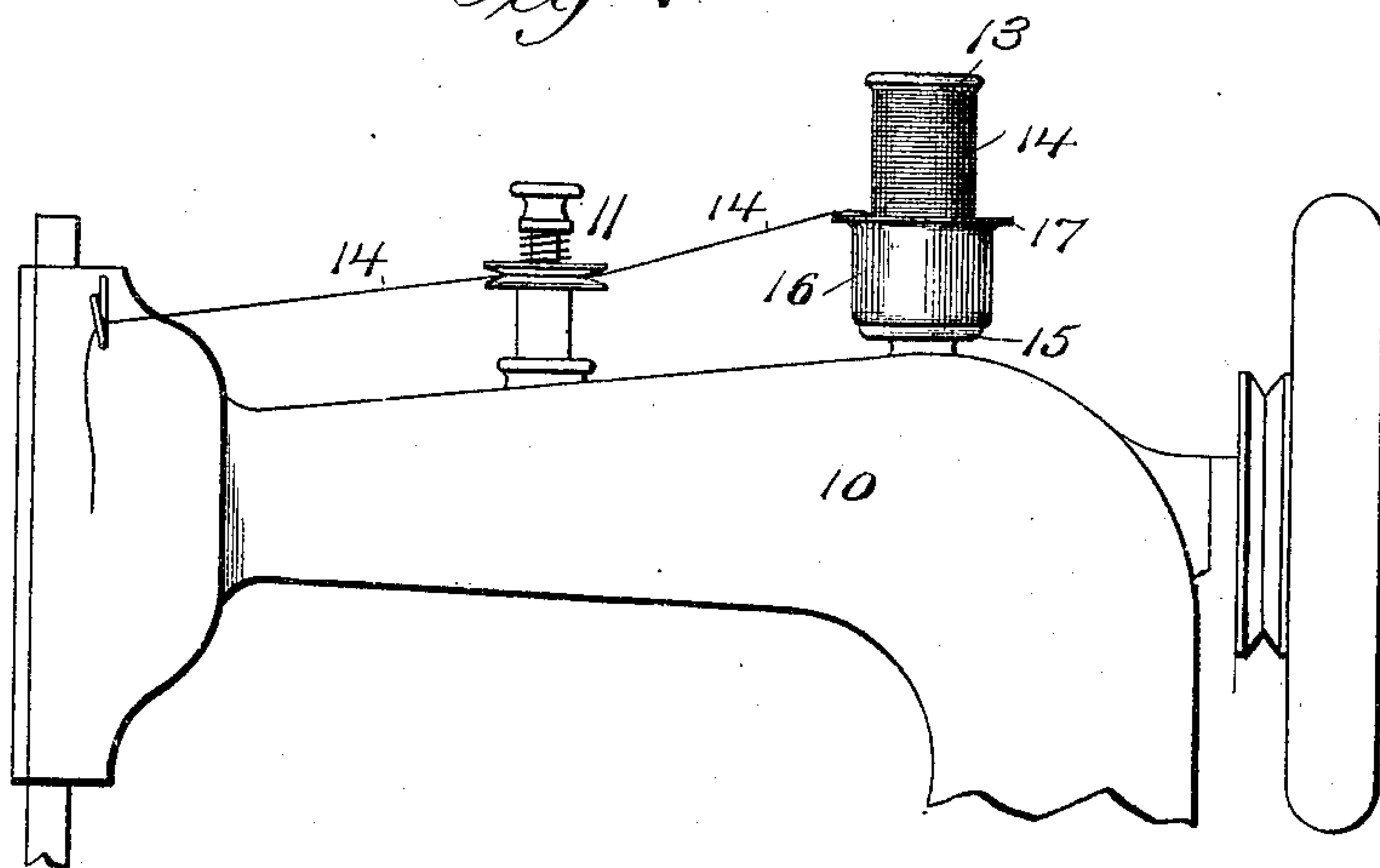
C. A. CRIST.

TENSION DEVICE FOR SEWING MACHINES.

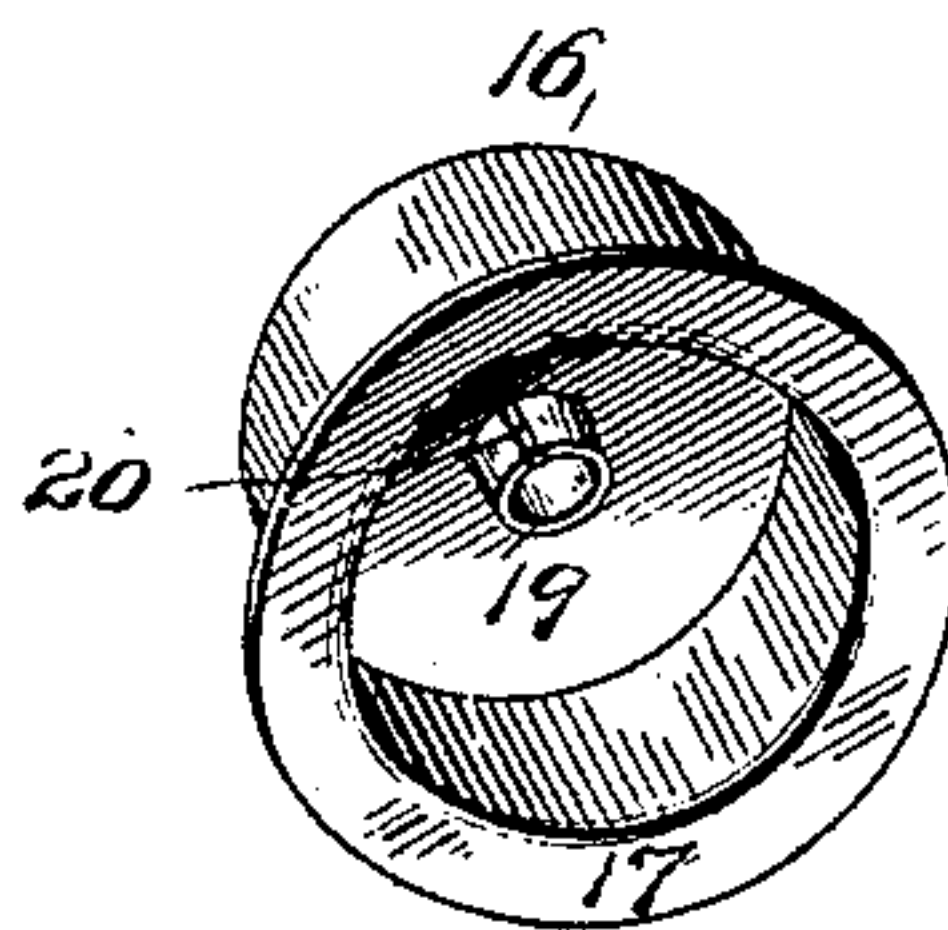
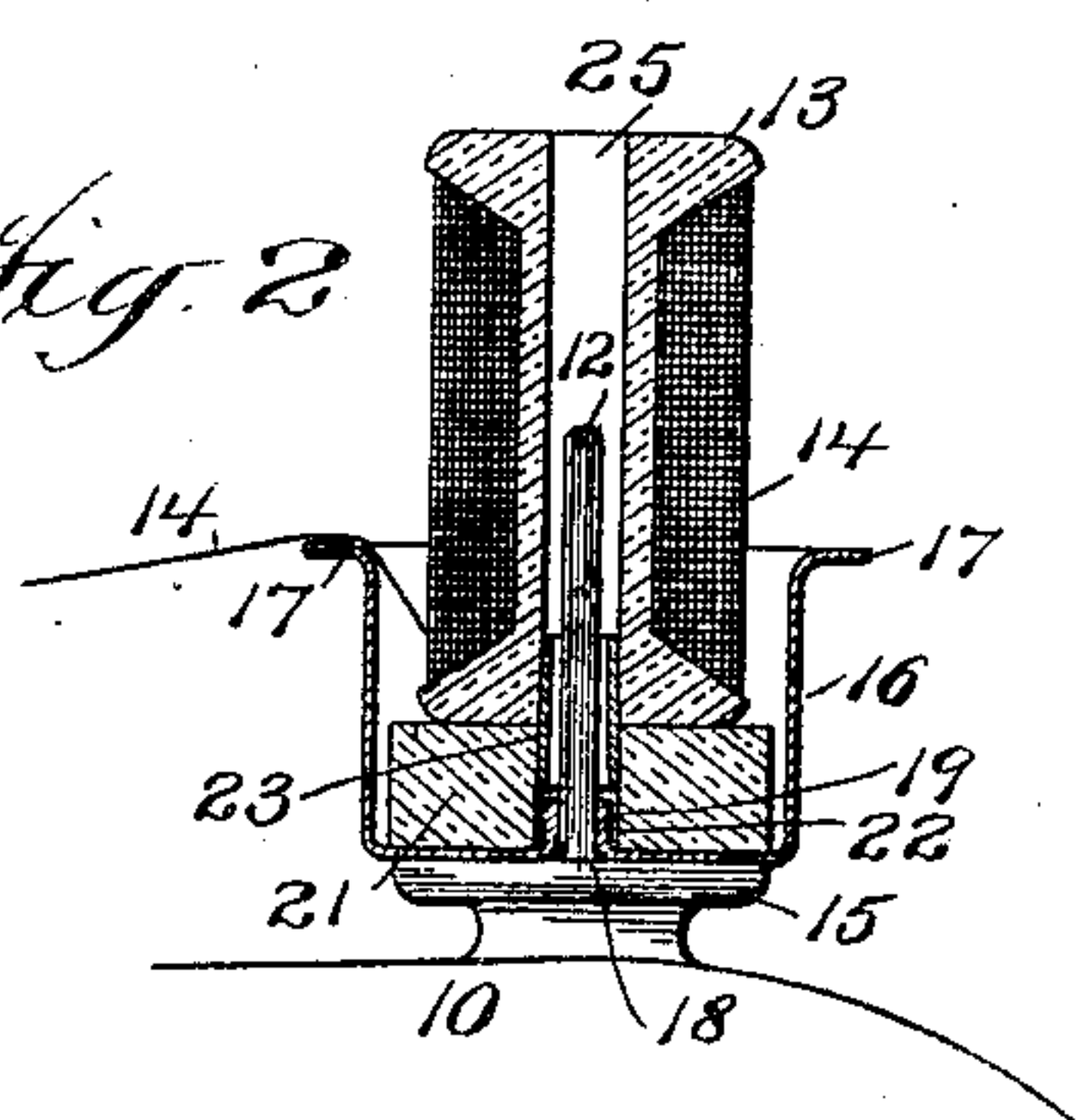
(Application filed July 10, 1900.)

(No Model.)

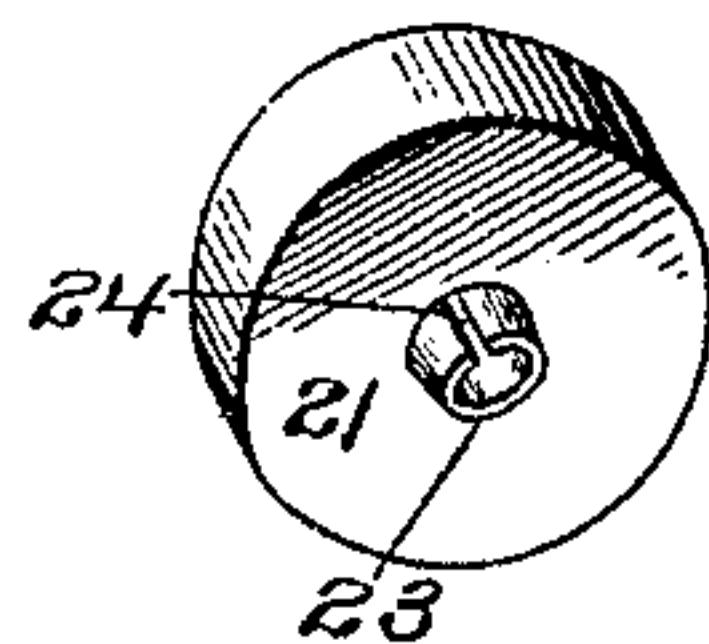
*Fig 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

*Attest.*  
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*Charles A. Crist*

# UNITED STATES PATENT OFFICE.

CHARLES A. CRIST, OF NEW YORK, N. Y.

## TENSION DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 683,103, dated September 24, 1901.

Application filed July 10, 1900. Serial No. 23,123. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. CRIST, a citizen of the United States, and a resident of New York, borough of Manhattan, county  
5 and State of New York, have invented certain new and useful Thread-Protectors for Sewing-Machines, of which the following is a specification.

My invention refers to devices for regulating the unwinding of thread, string, or the like from spools mounted upon upright spindles, whereby a uniform unwinding of the thread and proper guidance after its being so unwound may be secured and the thread, &c.,  
15 may thereby be protected against breaking or becoming tangled. As thread-protectors of this class are particularly applicable to the unwinding of thread applied to sewing-machines from such spools, I will illustrate and  
20 describe the same in combination with the parts of a sewing-machine with which they may be combined.

It frequently happens that the thread in unwinding is drawn underneath the lower  
25 flange of its spool and wound tightly around the vertical spindle, upon which the spool is revolvably mounted, or that the thread in being unwound from the upper part of the spool be in like manner wound around the  
30 upper portion of the spindle in case said spindle extend above the spool, and that thereby either breakage of the thread is caused to occur or at least delay on account of the necessity of readjusting the thread on the  
35 spool.

It is the object of my invention to guard against these difficulties and to make my appliances so adjustable in their positions with reference to the spindle that no matter  
40 whether the height of the spool be comparatively great or small the top of the spindle will not extend above the same. I accomplish these objects by the means hereinafter described, and set forth more particularly in  
45 the claim.

In the accompanying drawings, forming part of this specification, and wherein corresponding reference-figures throughout the different views refer to corresponding parts,  
50 Figure 1 is a side view of the main arm of a sewing-machine to which my improvements are attached. Fig. 2 is a vertical central section

through the spool of thread with which my improvements are so combined, while Figs. 3 and 4 are perspective views of the leading  
55 parts of my improvement. Fig. 1 is drawn to a smaller scale than the remaining figures.

10 is the arm of a sewing-machine, 11 the tensioning device for the thread mounted upon it in usual manner, and 12 a vertical  
60 spindle for receiving the spool 13, upon which is wound the sewing-thread 14. 15 is a base fixedly attached to said arm, from which spindle 12 extends upward and with which it is  
65 integral.

My improvements in their preferred form comprise parts assembled and cooperating substantially as follows:

16 is a metallic cup having an outward-extending flange 17 along its upper edge and a  
70 central perforation 18 in its bottom of such size as to closely fit spindle 12, and for the purpose of securing such a fit a flange 19, preferably split, as at 20, extends upward from and around said perforations.  
75

21 is an annular block or disk, preferably made of wood, and having a thickness less than the depth of said cup. Its perforation 22 in its upper part contains a metallic ring 23, fixedly inserted into it and split at 24, so as  
80 to slightly feather, and to thusso accommodate itself to the interior surface of the perforation 25 in spool 13 that when said split ring has been forced into the end of said perforation 25 a sufficiently rigid connection will  
85 thereby be established between spool and disk that they will substantially form one body without any space between the same into which the thread might enter. Ring 23 so fits  
90 around spindle 12, and the part of perforation 22 underneath said ring so fits around flange 19 that spool and disk jointly may freely, but without undue play, revolve around said spindle.

It is the function of cap 16, and particularly  
95 of the flange 17, to guide the thread as it is being unwound from the spool and when the thread is being drawn from the lower part of the spool, which is inside of said cap, to draw it upward, so as to guard against the possi-  
100 bility of its passing underneath the spool and disk 21. In case the spool employed be of very small height it will by the use of my improvements still be possible to keep its top



above the top of the spindle and the flange of cup 16 above the bottom of the spool, even if the spindle should be of greater height than the spool and block 21 combined, simply by  
5 sliding cup 16, together with said block, up along said spindle to a sufficient elevation, depending upon split ring 19 to maintain the same there, while block 21, together with the spool, revolves within the cup, as described.  
10 It will also be seen that even if block 21 should be omitted the adjusting of cup 16 and of the spool in positions which would bring the top of the spool above the top of the spindle would secure some of the leading advantages  
15 above set forth. The employment of block 21, however, will add materially to the efficiency of the apparatus, as mentioned above, particularly also as the weight so added to said spool will secure a more uniform revolving  
20 movement of the spool, thus further guarding against irregularities in the unwinding of the thread.

I do not wish to confine myself to the details as herein described, as it will readily be  
25 seen that the same might be varied materially

without departing from the spirit of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a device for regulating the unwinding of thread or the like, the combination with a spindle and a spool, of a perforated block adapted to closely fit against one of the ends of said spool and to revolve therewith, means  
30 for detachably securing said block to the spool, a stationary guide for maintaining the thread, after it leaves the spool, above the elevation of the under side of said block, and  
35 a split ring, adapted to fixedly engage with said spindle, attached to said guide and extending into the lower portion of the perforation in said block and adapted to constitute the axis around which said block revolves.

Signed at New York, N. Y., this 6th day of  
45 July, 1900.

CHARLES A. CRIST.

Witnesses:

J. E. M. BOWEN,  
ALEXIS C. SMITH.