

F. H. McDEVITT.
COLLAPSIBLE CLEARER STICK.
APPLICATION FILED OCT. 26, 1911.

1,036,671.

Patented Aug. 27, 1912.

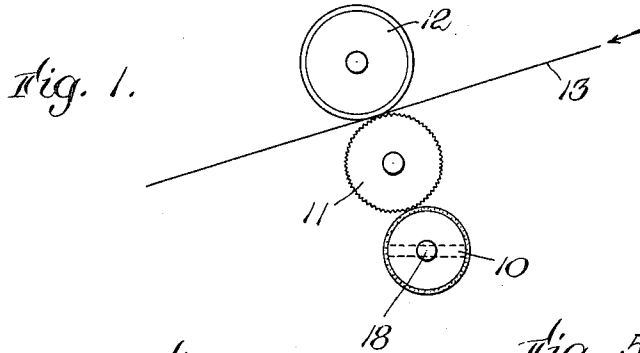


Fig. 2.

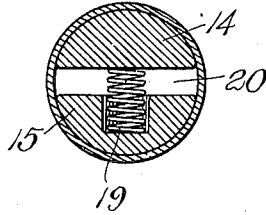


Fig. 5.

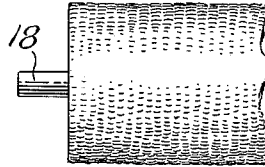


Fig. 3.

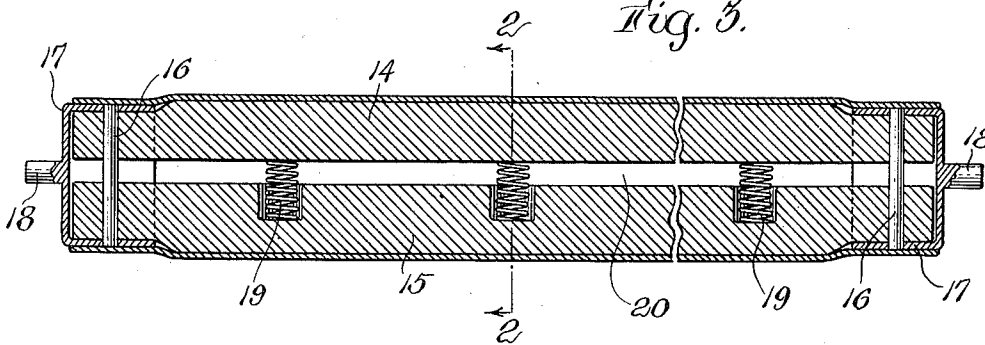
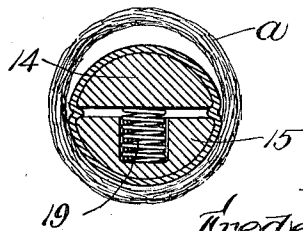


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERICK H. McDEVITT, OF WINTHROP, MASSACHUSETTS.

COLLAPSIBLE CLEARER-STICK.

1,036,671.

Specification of Letters Patent.

Patented Aug. 27, 1912.

Application filed October 26, 1911. Serial No. 656,893.

To all whom it may concern:

Be it known that I, FREDERICK H. McDEVITT, a citizen of the United States, and resident of Winthrop, county of Suffolk, State of Massachusetts, have invented an Improvement in Collapsible Clearer-Sticks, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The clearer sticks, also known as lap sticks or scavenger rolls, as heretofore constructed for use in fly frames, speeders, jack frames, spinning frames, mules, etc., in the manufacture of the various textiles as cotton, woolen, worsted and silk, for catching and winding thereon broken threads, lint and other waste, have had various drawbacks and objections in use. One serious objection is that being in one piece and solid, the waste material winds around the same so tightly that it can be removed only with great difficulty or cut off with a knife. These clearer sticks, which usually have a peripheral covering of flannel or other waste catching textile, glued or otherwise fixed thereto, are very frequently cut and damaged by the use of a knife for removing the waste, and are also often mutilated by the treatment required in detaching the waste material therefrom when a knife is not allowed to be used.

My invention provides a scavenger roll or clearer stick with collapsible sides normally held pressed out to operative position by yielding means, but capable of being readily forced together so that the mass of waste material wound therearound can be removed and slid off with the greatest ease and facility.

The invention will be better understood from the following detailed description, taken in connection with the accompanying drawings and will be thereafter pointed out in the appended claims.

Referring to the drawings, Figure 1 is a diagrammatic view showing an illustrative application of my invention. Fig. 2 is a transverse section through a lap stick formed in accordance with my invention, being a section on line 2—2 of Fig. 3. Fig. 3 is a central longitudinal section through an illustrative form of the invention. Fig. 4 is a view similar to Fig. 2 showing a winding of waste material and the manner in

which it is removed as the parts of the stick are collapsed, and Fig. 5 is a partial side elevation of my improved stick.

In the illustrative application of the invention shown in Fig. 1, which is to be understood as typifying only one of the numerous uses to which the invention may be applied and which is to be taken in no way in a restrictive sense, the clearer stick 10 is mounted to rotate in coöperative relation with a fluted steel roll 11 which coöperates with a friction roll 12 pressed thereagainst to draw the yarn strands 13 therethrough to stretch and even the same. The clearer stick in this case catches the broken threads and waste material from the fluted roll 11, thus keeping this roll in a clean and effective condition. My improved stick or roll consists in a core or body formed of two pieces 14, 15 usually of wood of circular cross-section and slidably guided at their ends on pins 16 fixed to flanged caps 17. These flanged caps, which may be formed as metal stampings, have projecting pivots 18 to provide a rotatable mounting for the roll. The core portions 14, 15 are normally pressed outward to expanded positions as seen in Figs. 2 and 3 against the periphery of the cap flanges by a series of springs 19 fitted therebetween at intervals along the length of the roll. When so pressed outward, the portions 14, 15 constitute a cylindrical body with a radial slot 20 extending the length thereof, this slot being of a width to permit the requisite collapsing movement for removing the waste. The body or core thus formed has a roughened periphery which, in the broader aspect of the invention, may be provided in any suitable way. In the preferred embodiment shown, however, this roughened or fiber catching periphery is provided by a suitable rough textile covering over the core or body. This covering may be of flannel or the like and glued or similarly fixed to the body in a manner similar to that of previous clearer sticks, but I have found that a form which is at the same time effective and especially adapted for convenient manipulation is to provide a tube 21 of textile material knitted, woven, or braided so as to fit closely over and hug the body when in expanded position. The elastic character of this material adapts it to hug down over the metal flanges at the ends and it is substantially self-adjusting

to the collapsed dimension of the body so that there is little or no wrinkling or folding thereof as the body is collapsed, thus further facilitating the easy sliding off of the waste material. As seen in Fig. 3, the cross-section of the body as formed by the portions 14, 15 in expanded position is somewhat greater than that of the end flanges 17 so that the diameter of the ring of waste material as wound on the expanded body permits it to pass freely over these end flanges. A winding of waste material is indicated at *a* in Fig. 4, and it is apparent that with the body portions collapsed, as shown, this winding can be removed from the roll with the greatest ease.

I have found that in practice a clearer constructed as described will last many times as long as the solid rolls heretofore in use since there need be no handling thereof such as would tend to mutilate or injure the same. Further, the improved lap stick built up as described with a two piece body will stand more abuse than the previous solid bodies and the flanged metal caps carrying the pivots at each end also promote durability and efficiency in use. The arrangement of the stick with the flanged caps is especially important for the reason that with the solid sticks as heretofore constructed the ends of the stick are the parts which wear out quickest and the reinforcing of the ends with these metal caps of itself greatly promotes effective longevity of the stick.

My improved collapsing stick in addition to the advantages heretofore pointed out is beneficial in use in that by reason of the quick, effortless removal of the accumulated waste wound around the same, the physical effort of the operative often resulting heretofore in blistered fingers is rendered unnecessary and the labor required is minimized both in degree and time.

It is to be understood that the invention is in no way limited to the details of construction set forth, the particular form shown being merely an illustrative embodiment of the invention and in no way restrictive. I am well aware that variations of the details of construction may be considerably varied without departing from the spirit of the invention, and I therefore do not desire to be limited in any way as to these, except as set forth in the appended claims.

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

1. A clearer stick for the purpose stated, comprising a roller, having a collapsing body with a periphery adapted for catching and winding thereon broken threads of waste material.

2. A clearer stick for the purpose stated,

comprising a roller, having a body yieldingly held in expanded position and capable of being collapsed to permit removal of waste material, said body having a peripheral surface adapted to catch and wind thereon broken threads and other textile waste.

3. A clearer stick for the purpose stated, comprising a roller, having a body yieldingly held in expanded position but capable of being collapsed, said body being substantially circular in cross-section when in expanded position and having a reduced perimeter when collapsed, and a covering fitted over said body adapted for catching and winding thereon waste textile material.

4. A clearer stick for the purpose stated, comprising flanged end pieces carrying pivots and having transverse guide pins fixed thereto and body members slidable on said guide pins to expanded and collapsed positions, springs for normally holding said members in expanded position, and a covering for said body members adapted to catch waste textile material.

5. A clearer stick for the purpose stated, comprising body members mounted for expanding and collapsing movement with spring means for normally holding the same expanded, and a tube of flexible textile material closely fitted over said members to tightly hug the same when in expanded position, said tube presenting a peripheral surface adapted to catch and wind thereon waste textile material.

6. A clearer stick for the purpose stated, comprising body members mounted for expanding and collapsing movement with spring means for normally holding the same expanded, caps with flanges thereon fitted over the ends of said body members, the flanges being of a less diameter than said members when expanded, and a tube of elastic textile material fitted over said members and over said flanges and adapted to tightly hug the periphery of said members when in expanded position.

7. A clearer stick for the purpose stated, comprising body members mounted for expanding and collapsing movement with means for normally holding the same expanded and permitting collapsing thereof at will, and a one-piece tube of flexible material closely fitted over said members to tightly hug the same when in expanded position, said tube presenting a rough peripheral surface adapted to catch and wind thereon waste textile material.

8. A clearer stick for the purpose stated, comprising a body composed of parts mounted for relative expanding and collapsing movement, with means for normally holding the same expanded and permitting collapsing thereof at will, and a one-piece tube of textile material closely fitted over said

body, said tube presenting a rough peripheral surface adapted to catch and wind thereon waste textile material.

5 9. The combination with an operative roll in a textile machine, of a clearer stick mounted to engage therewith, having a body capable of being collapsed to permit removal of waste material, said stick having an outer surface adapted for catching

and winding thereon broken threads and 10 other textile waste.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FREDERICK H. McDEVITT.

Witnesses:

EDWARD MAXWELL,
C. L. ROGERS.