April 3, 1928. 1,664,794

A. SEELEY

SLUB CATCHER

Filed Aug. 23. 1927 3 Sheets-Sheet 1

Fig. 1.

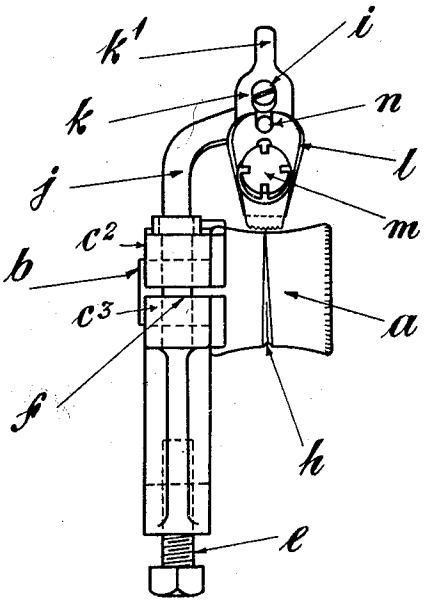


Fig. 2.

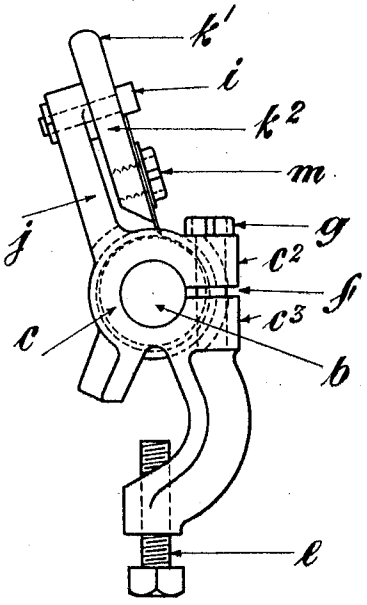


Fig. 5.

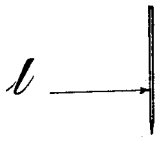


Fig. 4.

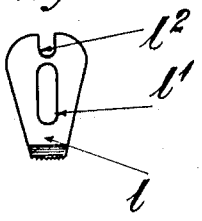
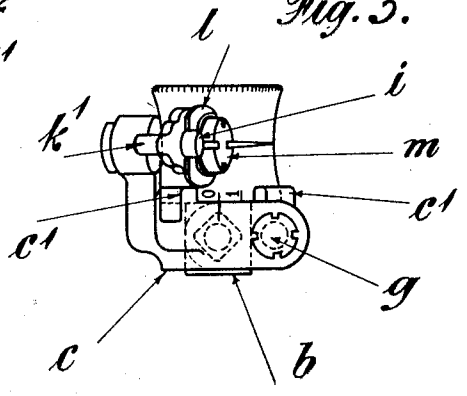


Fig. 3.



Inventor:

Alfred Seeley

By his Attorneys:- Brown & Ward

April 3, 1928. 1,664,794

A. SEELEY

SLUB CATCHER

Filed Aug. 23. 1927 3 Sheets-Sheet 2

Fig. 6.

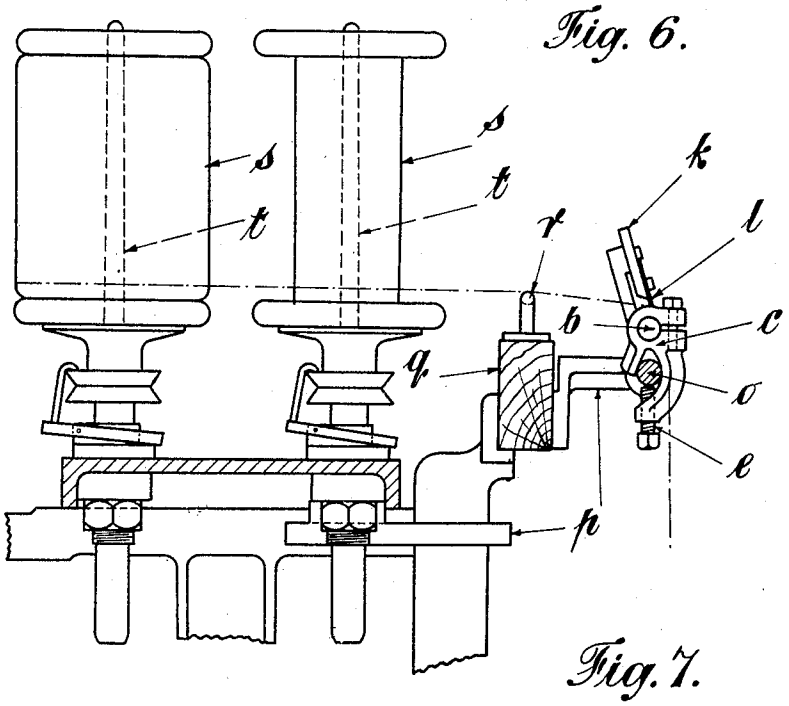
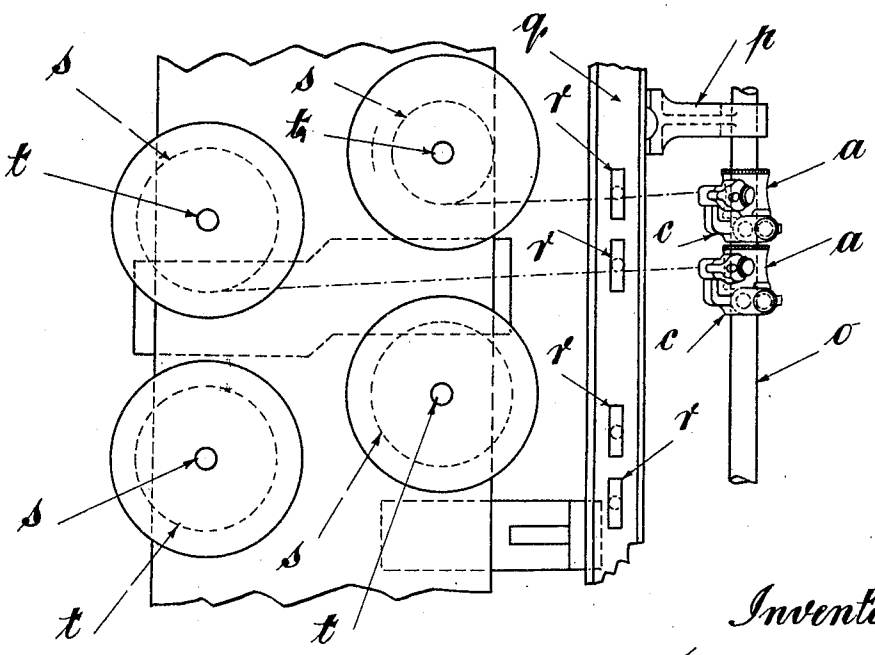


Fig. 7.



Inventor:

Alfred Seeley

By his Attorneys:- Brownt Seward

April 3, 1928. 1,664,794

A. SEELEY.

SLUB CATCHER

Filed Aug. 23, 1927 3 Sheets-Sheet 3

Fig. 8.

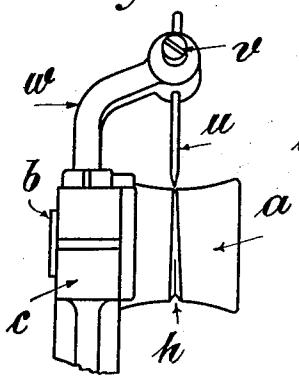


Fig. 9.

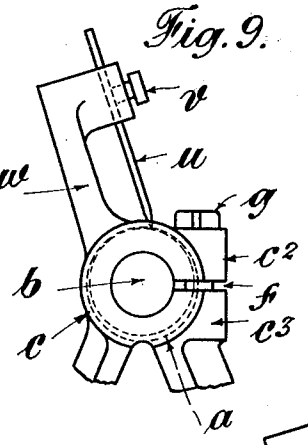


Fig. 15.

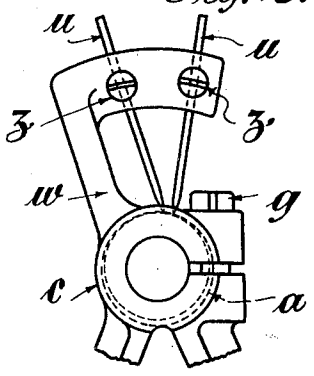


Fig. 10.

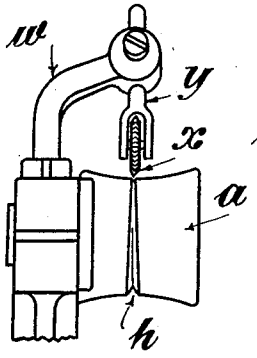


Fig. 11.

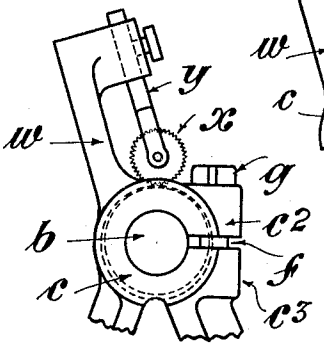


Fig. 12.

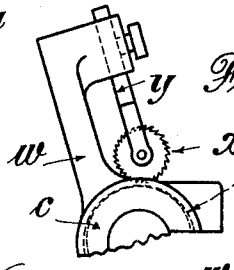


Fig. 13.

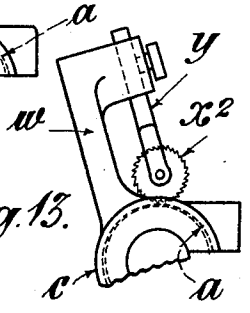


Fig. 16.

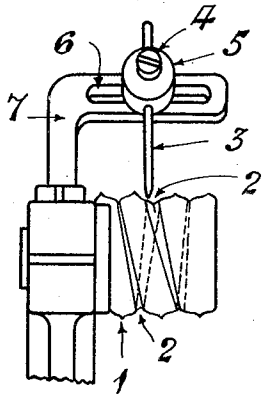


Fig. 17.

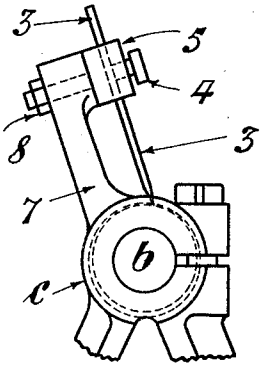
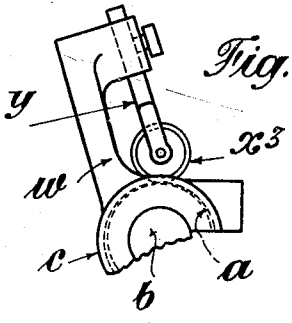


Fig. 14.



Inventor.

Alfred Seeley

By his Attorneys:- Brownhill & Seward

Patented Apr. 3, 1928. 1,664,794

UNITED STATES PATENT OFFICE.

ALFRED SEELEY, OF ROCHDALE, ENGLAND.

SLUB CATCHER.

Application filed August 23, 1927, Serial No. 214,923, and in Great Britain August 14, 1926.

This invention relates to devices or appliances for use in effecting the removal of thick or thick and soft places or portions from yarns or threads being wound or unwound in winding machines, doubling machines, twisting machines, reels, warping machines, beaming machines or other machines or apparatus, to, in or from which yarns or threads are to be wound or drawn from cops, bobbins, hanks or beams or other bodies formed of or holding yarns or threads.

Devices or appliances for use for the purpose of removing thick or thick and soft places or portions from yarns or threads are known and in use in which a spike or spikes or a detent plate with a toothed or other edge or a wheel, circular or toothed with ratchet or saw-like or other teeth is made to enter more or less deeply into a groove of V shape into and along which yarn or thread is made to pass so that thick and especially thick and soft places or portions in or on the yarn or thread shall be brought against and caught by the spike or spikes or detent plate or wheel either so as to cause the yarn or thread to be broken or so as being caught to actuate stopping mechanism for stopping the winding or drawing of yarn or thread and then released so as to obviate breakage of the yarn or thread unless it be necessary.

This invention consists in improvements in devices or appliances for the purpose aforesaid and presenting grooves for the passage of yarns or threads which in order to be easily adjustable for the passage of yarns or threads of greater or less thickness are made to comprise bodies presenting V grooves increasing in depth from one part to another as for example from each end to the middle of their length and having their bottoms curvilinear either in a plane or more or less spirally for yarns or threads to be made to pass either along shallower or along deeper parts as may be requisite from time to time and are employed together with catching means in the form of combs extending across the grooves or with spikes or wheels, circular or with ratchet or saw-like or other teeth, made to enter or to be near the grooves in order to catch thick or thick and soft places or portions.

The invention further consists in a device for the said purpose comprising a grooved body with a V groove increasing in depth from one part to another and a comb for catching thick or thick and soft places in yarn or thread and capable of being swivelled, turned or moved into and out of its ordinary position across the groove of the device in order that yarn or thread may be passed easily into the groove and accumulations of fluff or other matter may be easily removed from the comb.

This invention is illustrated in the accompanying drawings in which some embodiments are shown by way of example. Figs. 1, 2 and 3 are respectively a front elevation, side elevation and plan of one form of device comprising a comb for catching thick or thick and soft places in yarn or thread. Figs. 4 and 5 are respectively a front elevation and side elevation of a comb used in the device shown in Figs. 1, 2 and 3. Figs. 6 and 7 are respectively a partial transverse section and plan showing part of a machine in which are applied devices corresponding to that shown in Figs. 1, 2 and 3. Figs. 8 and 9 are respectively a partial front view and partial side elevation of a device comprising a spike for catching thick or thick and soft places in yarn or thread. Figs. 10 and 11 are respectively a partial front view and partial side elevation of a device comprising a spiked wheel. Figs. 12 and 13 are partial side elevations illustrating the use of wheels with ratchet teeth. Fig. 14 is a partial side elevation illustrating the use of a circular wheel. Fig. 15 is a partial side elevation of a device comprising two spikes. Fig. 16 is a partial front elevation and Fig. 17 a partial side elevation of a device presenting a spiral groove and a spike co-operating therewith for catching thick or thick and soft places.

The same letters and numerals of reference indicate the corresponding parts in the different figures.

In the device illustrated by Figs. 1 to 5, a is a circular body adapted to be set in any requisite position about its centre line in a suitable support. The circular body a is formed at one end with a circular stem b to fit in the hole of the support c and to be secured therein by means of the set screw g drawing together the sides of the slit f communicating with the hole receiving the stem, the set screw g being passed through a hole in the part c^2 of the support at one side of the slit f and screwed into the part c^3 at

the other side of such slit *f*. The body *a* is formed with a slightly concave general circumference and in the central part of the channel formed thereby is formed with a groove *h* of V shaped transverse section extending all round the body *a* and gradually deepening from a shallow part shown at the top in Figs. 1, 2 and 3 to a deepest part shown at the bottom in Figs. 1 and 2.

The support *c* shown, is formed with a notch *d* formed in part as a channel with inclined sides and opposite to that channel is provided with a screw-threaded hole to receive a set screw *e* so that the inclined sides of the channel being applied to a round or other rod, the set screw *e* being made to bear against that rod will secure the support *c* in position.

A stud *i* in the form of a set screw with a shank partly cylindrical and partly screw threaded is secured in position by a lock nut in an arm *j* formed on and extending from the support *c* with its central line in the plane of the smallest diameter of the concave general circumference of the body *a*. The stud *i* forms a pivot for a swing arm *k* presenting a finger piece k^1 at one end shaped so that under the influence of its weight it shall tend to present towards the body *a* a limb k^2 on which is secured a comb *l* made to present the points of its teeth in a curve approximating to the transverse curvature of the portion of the hollow circumference of the body *a* to which it is presented.

The comb *l* shown separately in Figs. 4 and 5 is formed as a plate, with teeth at one end and with a slot l^1 so that it may fit upon the cylindrical part of a shank of a set screw *m* for securing it to the limb k^2 and with a notch l^2 so that embracing a stud *n* secured in the arm *k* it can be set nearer to or further from the body *a* but will be held against being turned about the centre line of the set screw *m*. The transverse curvature of the hollow general circumference of the body and the position of the stud *i* are made to correspond so that when the swing arm *k* is turned about the stud *i* the points of the comb *l* in being moved will remain at approximately uniform distance from the parts of the body *a* opposite to them at any moment.

At the side of the hollow circumference to be next the support *c* the circumference of the body *a* is marked with graduations reading from the zero or initial mark at the diametral longitudinal plane passing through the shallowest part of the groove *h* to any convenient number at the diametral longitudinal plane passing through the deepest part of the groove *h*.

The support *c* is formed on one of the faces surrounding the hole with a wall c^1 surrounding part of the graduated edge of the body *a* and presenting a gap in the part shown uppermost in Figs. 1, 2 and 3 to expose one or more of the graduations of the body *a* and with an index line with reference to which the graduations are intended to be read.

By one or other graduation being set or seen to be in a suitable position relatively to the index line on the support *c*, the body *a* may be set or ascertained to be in any required position about its centre line. In use the body *a* is so set in the support *c* and the comb *l* is so disposed relatively to the body *a* that yarn or thread of the proper or less than the proper thickness being made to pass in the groove *h* will not touch the comb *l* but a thick place will catch on the comb *l* and a thick and soft place being pressed together laterally by contact with the sides of the groove *h* will be expanded in a direction radially to the body *a* and so be compelled to catch upon the comb *l*. The comb *l* being adjustable and being made by the points of its teeth being in a curve to increase from a minimum to a maximum depth it is easy to adjust the device for use in the winding of yarn or thread of any thickness to be wound at any time and to vary the adjustment as may be needed from time to time.

In Figs. 6 and 7 which illustrate the application of the device illustrated by Figs. 1 to 5, Fig. 6 shows that device in side elevation and Fig. 7 shows two such devices mounted on a round rod *o* carried by brackets *p* of which only one is shown secured on the traverse rail *q* carrying T shaped thread guides *r* for guiding yarn or thread to bobbins *s* mounted on spindles *t* made to revolve.

The yarn or thread to be wound on the bobbins *s* is led from the cops, bobbins or other bodies from which it is to be unwound in order to be wound on to the bobbins over the body *a* of the device and between it and the comb *l* co-operating therewith and thence over the guides *r* to the bobbins *s*. The swing arm *k* and comb *l* can be turned aside from the groove *h* in the introduction of yarn to the groove *h* either by means of the fingerpiece k^1 or by the contact of yarn or thread with the side of the comb *l* the introduction of yarn into the groove *h* being thus made easy.

When the body *a* and comb *l* of a device have been set at a distance apart corresponding to the maximum thickness of yarn or thread intended to pass to the bobbin *s* on the spindle *t* with which that device is employed and the winding of yarn or thread on the bobbin *s* has been commenced yarn or thread of a thickness not exceeding the maximum intended will pass in the groove *h* without touching the teeth of the comb *l* but a thicker portion will become caught

on one or more teeth of the comb l and become held thereby so that the yarn or thread will be broken.

A thick and soft portion of yarn or thread in passing along the portion of the groove h traversed by the yarn or thread will be pressed together laterally and compelled to pass into contact with one or more teeth of the comb l and to be held thereby so that the yarn or thread will be broken despite the tendency of any such thick and soft place to be flattened in being drawn over any surface.

If fluff or other matter should accumulate on the comb l in the passage of yarn between the body a and the comb l the comb l is easily turned aside from its ordinary position by means of the finger piece k^1 so that the fluff or other matter may be removed from it and then the swing arm k being released will move back into its ordinary position under the influence of the weight of the heavier limb k^2. The concave general circumference of the body a serves to guide yarn or thread laid upon it into the groove h.

The body a is made of any material sufficiently hard and smooth as for example steel, glass or porcelain.

In the device shown in Figs. 8 and 9, the body a is similar to that shown in Figs. 1, 2 and 3 and is used along with a spike u lengthwise adjustable and fixed by a set screw v in a hole in an arm w extending from the support c to project near to or into the groove h and in the central plane thereof so as to catch thick or thick and soft places in yarn or thread made to pass along the portion of the groove h opposite at any time to the spike u after the body a and spike u have been duly adjusted to allow the passage of yarn or thread not exceeding the intended maximum in thickness.

The device shown in Figs. 10 and 11 is similar to that shown in Figs. 8 and 9 except in that, instead of the spike u, a spiked wheel x is provided to revolve in a stem y adjustable and fixed in the arm w of the support c. The spiked wheel x and body a are set in relation to one another in such position that yarn or thread not exceeding the intended maximum thickness may pass either freely beneath the spikes of the wheel x or may revolve the wheel x, but thick or thick and soft portions in such yarn shall become jammed and held between the wheel x and the walls of the groove h in the body a so as to ensure breakage of yarn. Instead of the wheel x with radial spikes, a wheel with ratchet or saw like teeth may be used as illustrated in Figs. 12 and 13 which show respectively a wheel x^1 with ratchet teeth directed clockwise and a wheel x^2 with ratchet teeth directed counterclockwise or a circular wheel x^3 may be used as illustrated in Fig. 14 so that thick or thick and soft places in yarn or thread shall become jammed between it and the walls of the groove h.

The device shown in Fig. 15 is similar to that shown in Figs. 8 and 9 except in that the arm w is formed to extend partly around the body a and to carry two spikes u adjustable lengthwise and secured by set screws z in it to project near or into the groove h in the body a at different inclinations.

In the device illustrated by Figs. 16 and 17 the body 1 is formed with a spiral groove 2 varying in depth similarly to the groove h and formed along the bottom of a spiral hollow in the circumference of the body 1. Figs. 16 and 17 show a spike 3 lengthwise adjustable and secured by a set screw 4 in a block 5 furnished with a projection fitting and adjustable along a slot 6 formed parallel to the centre line of the body 1 in an arm 7 of the support c. A screwed stem is also formed on the block 5 and provided with a nut 8 for securing the block 5 in position on the arm 7 when adjusted lengthwise of the slot 6 to present the spike 3 opposite to or projecting into the portion of the spiral groove 2 to be used at any time. In the use of the device shown in Figs. 16 and 17 the body 1 is mounted in the machine or apparatus in which it is to be used in position to present the portion of the groove 2 to be traversed by yarn or thread at any time in the direction of the movement of the yarn or thread and consequently the centre line of the body 1 must be correspondingly oblique to the direction of the movement of the yarn or thread in the groove 2 of such body 1.

Devices provided according to this invention besides ensuring that thick or thick and soft places in yarn or thread being wound or unwound in machines or apparatus shall be caught and the yarns or threads shall be broken at or near the portions presenting such thick or thick and soft places, are very easily and conveniently adjusted for use in the winding or unwinding of yarns or threads of different thicknesses at different times and so make it easy and convenient to use machines in or on or with which they are provided or employed to be used for winding or unwinding yarns or threads of different thicknesses at different times.

What I do claim as my invention and desire to secure by Letters Patent is:—

1. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, catching means to extend within range of thick places or portions of greater than intended thickness presented in yarn passing in said V groove and adjust-

able in the direction to and from the bottom of said groove, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and bearing for said catching means allowing said catching means to be adjusted towards or from the groove of said grooved body, means for fixing said grooved body in position about said axial line and means for fixing said catching means in adjustment in the direction to and from the bottom of the groove of said grooved body.

2. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body presenting a circular stem at one end and adapted to be adjusted in position about an axial line and presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, catching means to extend within range of thick places or portions of greater than intended thickness presented in yarn passing in said V groove and adjustable in the direction to and from the bottom of said groove, a support providing bearing for the circular stem of said grooved body allowing it to be adjusted about said axial line and bearing for said catching means allowing said catching means to be adjusted towards or from the groove of said grooved body, means for fixing said grooved body in position about said axial line and means for fixing said catching means in adjustment in the direction to and from the bottom of the groove of said grooved body.

3. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body presenting a circular stem at one end and adapted to be adjusted in position about an axial line and presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, catching means to extend within range of thick places or portions of greater than intended thickness presented in yarn passing in said V groove and adjustable in the direction to and from the bottom of said groove, a support providing a circular hole forming bearing for the circular stem of said grooved body allowing it to be adjusted about said axial line, a slit communicating with said circular hole and bearing for said catching means allowing said catching means to be adjusted towards or from the groove of said grooved body, a screw passed through a hole in part of said support at one side of said slit and screwed therein at the other side of said slit for fixing said grooved body in position about said axial line and means for fixing said catching means in adjustment in the direction to and from the bottom of the groove of said grooved body.

4. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb, a comb pivotally mounted on said support to be oscillatable across said groove and presenting the points of its teeth in a line across said groove and means for securing said grooved body in position about said axial line in said support.

5. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb, a comb pivotally mounted on said support to be oscillatable across said groove and presenting the points of its teeth in a curved line across said groove and means for securing said grooved body in position about said axial line in said support.

6. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove, means on said comb holder for positioning and permitting adjustment radially of a comb thereon, a comb adjustable radially of said holder and presenting the points of its teeth in a line across said groove, means for securing said comb in radial adjustment on said holder towards or from said groove and means for securing said grooved body in position about said axial line in said support.

7. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a slightly concave general circumference and therein a V groove increasing in depth from one part to another with its bottom curvilinear

about said axial line, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across the said groove, means on said comb holder for positioning and permitting adjustment radially of a comb thereon, a comb adjustable radially of said holder and presenting the points of its teeth in a curved line across said groove, means for securing said comb in radial adjustment on said holder towards or from said groove and means for securing said grooved body in position about said axial line in said support.

8. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line and presenting graduations on its circumference, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing an index to read with the graduations on said grooved body and support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove, means on said comb holder for positioning and permitting adjustment radially of a comb thereon, a comb adjustable radially of said holder and presenting the points of its teeth in a line across said groove, means for securing said comb in radial adjustment on said holder towards or from said groove and means for securing said grooved body in position about said axial line in said support.

9. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a slightly concave general circumference and therein a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line and presenting graduations on its circumference, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing an index to read with the graduations on said grooved body and support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove, means on said comb holder for positioning and permitting adjustment radially of a comb thereon, a comb adjustable radially of said holder and presenting the points of its teeth in a curved line across said groove, means for securing said comb in radial adjustment on said holder towards or from said groove and means for securing said grooved body in position about said axial line in said support.

10. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and with a projecting finger piece, means on said comb holder for positioning and permitting adjustment radially of a comb thereon a comb adjustable radially of said holder and presenting the points of its teeth in a line across said groove means for securing said comb in radial adjustment on said holder towards or from said groove and means for securing said grooved body in position about said axial line in said support.

11. A device for effecting the removal of thick or thick and soft places or portions from yarns or theads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a slightly concave general circumference therein a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and with a projecting finger piece, means on said comb holder for positioning and permitting adjustment radially of a comb thereon, a comb adjustable radially of said holder and presenting the points of its teeth in a curved line across said groove, means for securing said comb in radial adjustment on said holder towards or from said groove and means for securing said grooved body in position about said axial line in said support.

12. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line and presenting graduations on its circumference, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing an index to read with the graduations on said grooved body and support for a piv-

otally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and with a projecting finger piece, means on said comb holder for positioning and permitting adjustment radially of a comb thereon a comb adjustable radially of said holder and presenting the points of its teeth in a line across said groove means for securing said comb in radial adjustment on said holder towards or from said groove and means for securing said grooved body in position about said axial line in said support.

13. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a slightly concave general circumference and therein a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line and presenting graduations on its circumference, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing an index to read with the graduations on said grooved body and support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and with a projecting finger piece means on said comb holder for positioning and permitting adjustment radially of a comb thereon, a comb adjustable radially of said holder and presenting the points of its teeth in a curved line across said groove, means for securing said comb in radial adjustment on said holder towards or from said groove and means for securing said grooved body in position about said axial line in said support.

14. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and presenting a projection for engagement with a notch in a comb, a comb adjustable radially of said holder presenting a notch to engage said projection and a longitudinal slit for the passage of a set screw and presenting the points of its teeth in a line across said groove a set screw passed through the slit in the comb and screwed in said holder for positioning in part and securing said comb in radial adjustment on said holder towards and from said groove and means for securing said grooved body in position about said axial line in said support.

15. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a slightly concave general circumference and therein a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and presenting a projection for engagement with a notch in a comb, a comb adjustable radially of said holder presenting a notch to engage said projection and a longitudinal slit for the passage of a set screw and presenting the points of its teeth in a curved line across said groove, a set screw passed through the slit in the comb and screw in said holder for positioning in part and securing said comb in radial adjustment on said holder towards and from said groove and means for securing said grooved body in position about said axial line in said support.

16. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line and presenting graduations on its circumference, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing an index to read the graduations on said grooved body and support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and presenting a projection for engagement with a notch in a comb, a comb adjustable radially of said holder presenting a notch to engage said projection and a longitudinal slit for the passage of a set screw and presenting the points of its teeth in a line across said groove, a set screw passed through the slit in the comb and screwed in said holder for positioning in part and securing said comb in radial adjustment on said holder towards and from said groove and means for securing said grooved body in position about said axial line in said support.

17. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line, presenting a

slightly concave general circumference and therein a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line and presenting graduations on its circumference, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing an index to read with the graduations on said grooved body and support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and presenting a projection for engagement with a notch in a comb, a comb adjustable radially of said holder presenting a notch to engage said projecton and a longitudinal slit for the passage of a set screw and presenting the points of its teeth in a curved line across said groove, a set screw passed through the slit in the comb and screwed in said holder for positioning in part and securing said comb in radial adjustment on said holder towards and from said groove and means for securing said grooved body in position about said axial line in said support.

18. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and with a projecting finger piece and presenting a projection for engagement with a notch in a comb, a comb adjustable radially of said holder presenting a notch to engage said projection and a longitudinal slit for the passage of a set screw and presenting the points of its teeth in a line across said groove, a set screw passed through the slit in the comb and screwed in said holder for positioning in part and securing said comb in radial adjustment on said holder towards and from said groove and means for securing said grooved body in position about said axial line in said support.

19. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line presenting a slightly concave general circumference and therein a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line, a support providing bearing for said grooved body, allowing it to be adjusted about said axial line and providing support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and with a projecting finger piece and presenting a projection for engagement with a notch in a comb, a comb adjustable radially of said holder presenting a notch to engage said projection and a longitudinal slit for the passage of a set screw and presenting the points of its teeth in a curved line across said groove, a set screw passed through the slit in the comb and screwed in said holder for positioning in part and securing said comb in radial adjustment on said holder towards and from said groove and means for securing said grooved body in position about said axial line in said support.

20. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line presenting a V groove increasing in depth from one part to another with its bottom curvilinear about said axial line and presenting graduations on its circumference, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing an index to read with the graduations on said grooved body and support for the pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and with a projecting finger piece and presenting a projection for engagement with a notch in a comb, a comb adjustable radially of said holder presenting a notch to engage said projection and a longitudinal slit for the passage of a set screw and presenting the points of its teeth in a line across said groove, a set screw passed through the slit in the comb and screwed in said holder for positioning in part and securing said comb in radial adjustment on said holder towards and from said groove and means for securing said grooved body in position about said axial line in said support.

21. A device for effecting the removal of thick or thick and soft places or portions from yarns or threads which comprises a grooved body adapted to be adjusted in position about an axial line presenting a slightly concave general circumference therein a V grove increasing in depth from one part to another with its bottom curvilinear about said axial line and presenting graduations on its circumference, a support providing bearing for said grooved body allowing it to be adjusted about said axial line and providing an index to read with the graduations on said grooved body and support for a pivotally mounted comb holder, a comb holder pivotally mounted on said support to be oscillatable across said groove and with a projecting finger piece

and presenting a projection for engagement with a notch in a comb, a comb adjustable radially of said holder presenting a notch to engage said projection and a longitudinal slit for the passage of a set screw and presenting the points of its teeth in a curved line across said groove a set screw passed through the slit in the comb and screwed in said holder for positioning in part and securing said comb in radial adjustment on said holder towards and from said groove and means for securing said grooved body in position about said axial line in said support.

In testimony, that I claim the foregoing as my invention, I have signed my name this eleventh day of August, 1924.

ALFRED SEELEY.