Oct. 8, 1957 C. A. WORTHAM 2,808,795

AUTOMATIC THREAD CUTTER FOR SEWING MACHINES

Filed Dec. 12. 1955 2 Sheets-Sheet 1

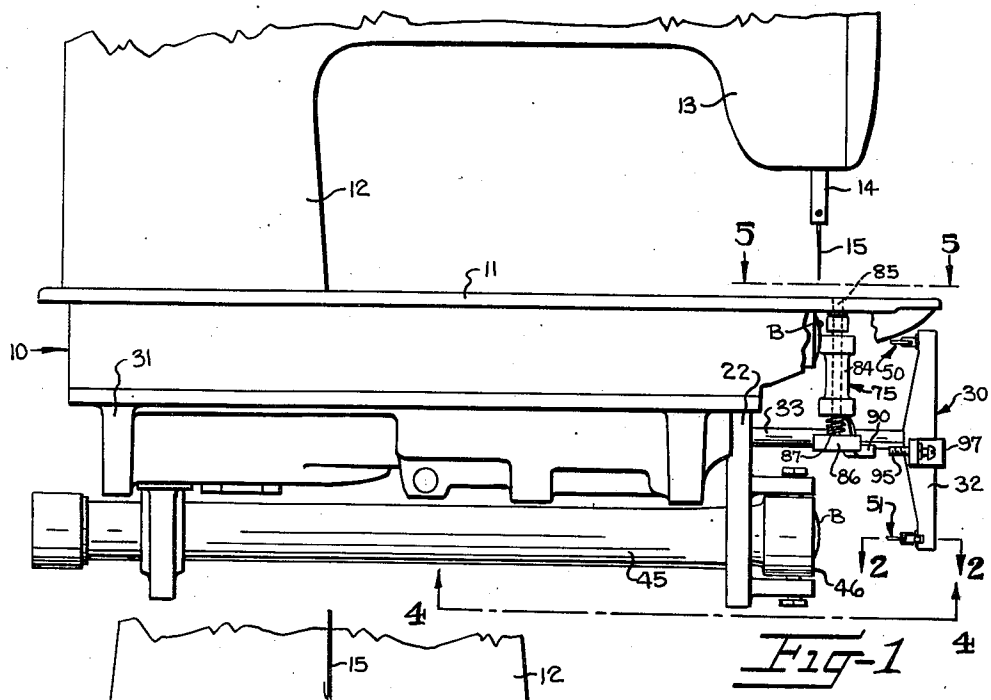


FIG-1

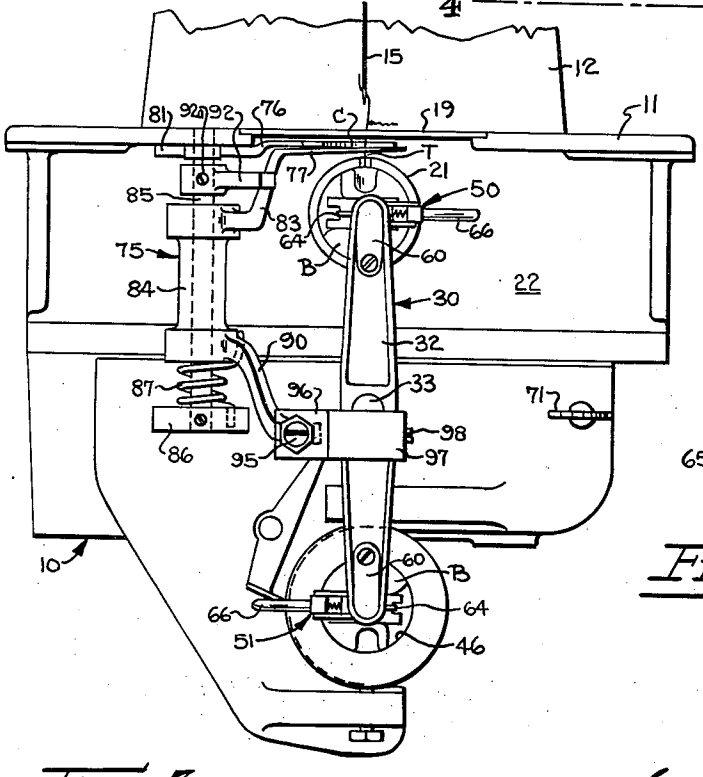


FIG-3

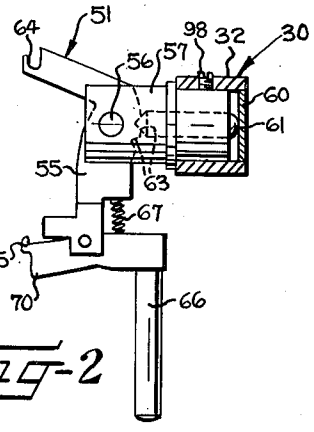


FIG-2

CARL A. WORTHAM,
INVENTOR

BY Eaton & Bell

ATTORNEYS

Oct. 8, 1957 C. A. WORTHAM 2,808,795

AUTOMATIC THREAD CUTTER FOR SEWING MACHINES

Filed Dec. 12, 1955 2 Sheets-Sheet 2

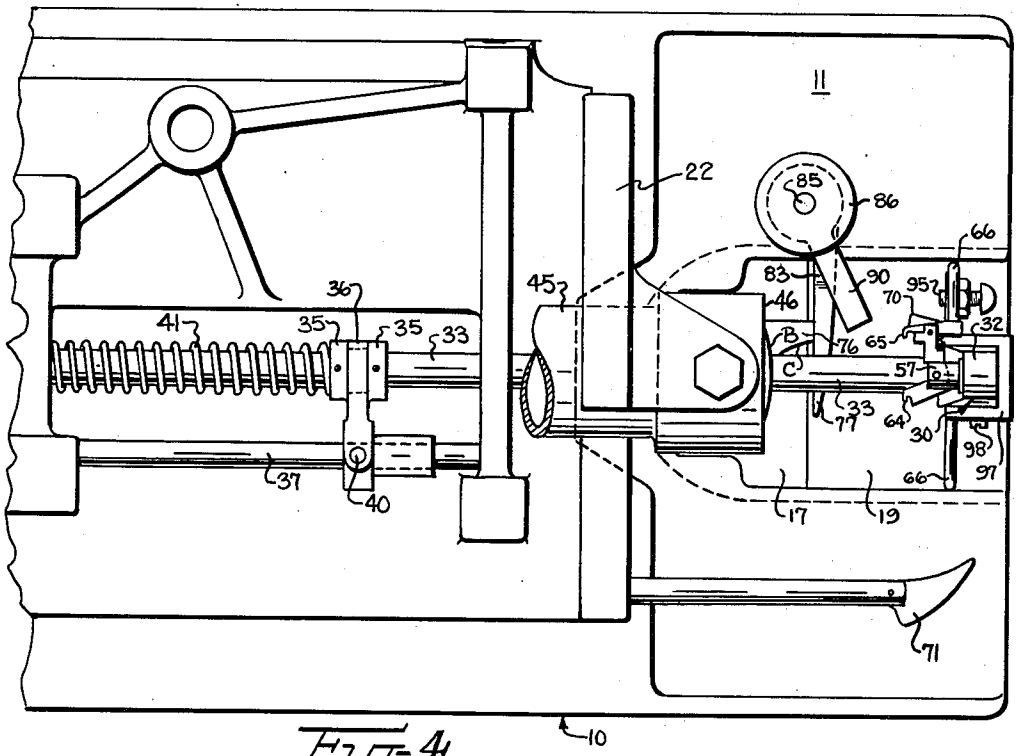


Fig-4

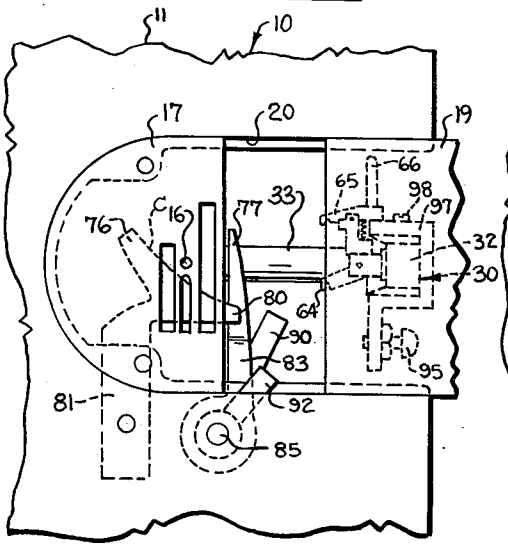


Fig-5

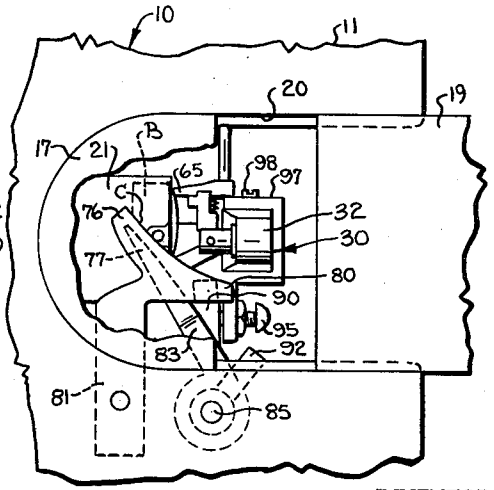


Fig-6

INVENTOR:
CARL A. WORTHAM

BY Eaton & Bell

ATTORNEYS

United States Patent Office 2,808,795
Patented Oct. 8, 1957

2,808,795

AUTOMATIC THREAD CUTTER FOR SEWING MACHINES

Carl A. Wortham, Spray, N. C., assignor, by mesne assignments, to The New York Trust Company, a corporation of New York, and John H. Baile, Saddle River, N. J., as trustees

Application December 12, 1955, Serial No. 552,412

7 Claims. (Cl. 112—252)

This invention relates to sewing machines of the type equipped with a device for automatically exchanging the bobbins in the looper of such machines and it is an object of this invention to provide means for automatically severing the thread extending from an exhausted bobbin through the bed plate or throat plate during the course of each bobbin exchanging operation.

The present invention is particularly concerned with improvements in bobbin case exchanging devices of the character disclosed in a patent to Schumann et al., No. 2,690,725, dated October 5, 1954. However, it is to be distinctly understood that the improved thread cutting device may be used in conjunction with automatic bobbin exchanging devices with which other types of sewing machines may be equipped and such as are disclosed in U. S. Patents Nos. 2,298,871 and 2,507,470, for example. A bobbin exchanging device of this character is also disclosed in the copending application of Schumann et al., Serial Number 302,895, now Patent No. 2,733,676.

The bobbin exchanging device disclosed in said Schumann et al. patent comprises a grip claw carrier disposed axially parallel to the loop carrier and which seizes a bobbin case with an empty bobbin therein and executes a combination of axial and pivotal movements which lifts the bobbin case containing the empty bobbin from the seat in the loop carrier and subsequently drops the same during the pivotal movement of the grip claw carrier. At the same time, a bobbin case with a full bobbin is picked up from the magazine and deposited in the seat in the loop carrier.

While such prior bobbin exchanging devices operate satisfactorily to remove bobbin cases containing empty bobbins from the seat in the loop carrier and to subsequently deposit a bobbin case with a full bobbin in the seat in the loop carrier, no means have been provided heretofore which would permit operation of the bobbin exchanging device when the bobbin in the bobbin case positioned in the seat of the loop carrier is not entirely empty, unless the thread, extending from the partially emptied bobbin, through its case disposed in the seat of the loop carrier and through the bed plate of the sewing machine, was first parted. If the thread were not severed prior to operation of the bobbin exchanging device, the thread would become entangled in adjacent parts of the sewing machine or the bobbin exchanging device and, at times, would result in a faulty bobbin exchanging operation.

The manual operation of cutting the thread not only increases the amount of time required to complete a bobbin exchanging operation, but it may sometimes happen that the operator forgets to cut the thread prior to actuating the bobbin exchanging device.

It is also contemplated that the bobbin exchanging device may be operated when using the corresponding sewing machine on machines for making bed sheets, handkerchiefs and the like, such as disclosed in U. S. Patent No. 2,053,257 to Anderson. In this instance, it is contemplated that the bobbin exchanging operation would be effected following the movement of the trailing edges of

certain bed sheets, handkerchiefs or similar articles past the sewing machine and prior to the approach of the leading edge of a subsequent article to the sewing machine. Thus, in such an event, it is necessary that the thread, extending from a partially filled bobbin in a case resting in the seat of the loop carrier through the bed plate of the sewing machine, be severed and it is also necessary that the bobbin exchanging operation be effected while the corresponding sewing machine is not operating upon an article, i. e., after the trailing edge of an article has passed the same and before the leading edge of a subsequent article reaches the same, in order that the thread will not become completely exhausted from a bobbin during actual operation upon an article by the sewing machine.

It is therefore another more specific object of this invention to provide, in combination with a bobbin exchanging device of the character above set forth, a cutting device disposed immediately beneath the bed plate of the sewing machine and above the loop carrier with means for automatically actuating the cutting device to sever the thread extending from the loop carrier through the bed plate as the grip claw carrier moves inwardly and seizes the bobbin case positioned in the seat in the loop carrier.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which—

Figure 1 is an elevation of a sewing machine, with its upper portion broken away, and having its lower portion equipped with an automatic bobbin exchanging device and showing parts of the improved thread cutter;

Figure 2 is a detail view of one of the grip claws, taken along line 2—2 in Figure 1;

Figure 3 is an enlarged elevation looking at the right-hand side of Figure 1 and showing the automatic bobbin exchanging device and the improved thread cutter more in detail;

Figure 4 is an enlarged fragmentary inverted plan view taken substantially along line 4—4 in Figure 1;

Figure 5 is an enlarged fragmentary plan view taken substantially along line 5—5 in Figure 1 showing the cover plate adjacent the throat plate in partially opened position, and showing the bobbin exchanging device and the improved cutting device in inoperative position;

Figure 6 is a view similar to Figure 5 with the throat plate partially broken away and showing the bobbin exchanging device in operative position and showing how the bobbin exchanging device actuates the thread cutting device.

Referring more specifically to the drawings, the numeral 10 broadly designates the frame of a sewing machine including a bed plate 11 which supports a conventional housing 12 provided with an overhanging portion 13 or sewing head 13 having conventional means therein, not shown, for supporting and imparting substantially vertical reciprocatory movement to a needle bar 14 which projects downwardly from the overhanging portion 13 and carries a sewing needle 15. The needle 15 is reciprocated in the usual manner through an aperture 16 in a throat plate 17 which may be considered as a portion of the bed plate 11. The throat plate 17 is fixed to the bed plate 11 and partially closes a throat opening 20 formed in the bed plate 11, which opening is also closed by a slide plate 19 shown in partially opened position in Figures 4 and 5.

Disposed immediately beneath the throat plate 17 is a conventional loop-taker or loop carrier 21 which projects outwardly from an end plate 22 which is a part of the frame 10 and depends from the bed plate 11 in spaced relation to the front end of the bed plate 11. The loop carrier 21 is provided with the usual seat in its outer end for receiving, one at a time, bobbin cases B, each

containing a filled bobbin, not shown. The bobbin cases B may be of substantially the type disclosed in said Schumann patent and the patent to Cumfer, No. 2,298,871, and may each contain a conventional spool or bobbin of the type disclosed in said patent to Cumfer and, therefore, a detailed description of a bobbin and bobbin case is deemed unnecessary.

Bobbin exchange device

The bobbin exchanging device, broadly designated at **30**, is of a type substantially as disclosed in said Schumann et al. Patent No. 2,690,725, and, therefore, many details of the bobbin exchanging device **30** have been omitted and only so much of the bobbin exchanging device will be described as is necessary to a clear understanding of the present invention.

The front end plate **22** serves as a bearing body which, with a rear bearing body **31**, support the conventional loop carrier **21** and its shaft, not shown. The bobbin exchanging device also comprises a grip claw carrier **32** fixed on the outer or front end of a shifting shaft **33** mounted for axial and rotary motion in the bearing bodies **22**, **31**. It will be observed in Figure 4 that a medial portion of the shifting shaft **33** has a pair of collars or washers **35** fixed thereon which are spaced from each other for receiving therebetween a yoke **36**. The yoke **36** extends outwardly and is guided on a guide rod **37** fixed to the frame **10** of the sewing machine and the yoke **36** is provided with a pin **40** which forms the connecting element to the means for operating the device for exchanging the bobbins. A compression spring **41** surrounds the shifting shaft **33** and engages one of the collars **35** for returning the shifting shaft forwardly to the inoperative position, or the position of rest, in the course of which conventional means, not shown in the present drawings, but being clearly disclosed in said Schumann et al. patent, imparts a half revolution to the shifting shaft **33** and its grip claw carrier **32**.

Mounted in the frame **10** below, and extending in substantially parallel relation to, the shifting shaft **33** is a magazine **45** having an open front end **46** which is spaced rearwardly of the grip carrier **32** when the latter is in forward inoperative position. The grip carrier is provided with a pair of sets of grip claws **50**, **51** projecting rearwardly adjacent opposite ends thereof and which serve as a discarding claw and an inserting claw, respectively. The discarding and inserting claws **50**, **51** may be substantially the same as illustrated in respective Figures 6 and 7 of said Schumann et al. Patent No. 2,690,725. As best shown in Figure 2, each set of grip claws **50**, **51** comprises a bridge or grip claw body **55** which is pivotally mounted, as at **56**, in the rear bifurcated portion of a cylindrical member **57** whose front end is fixed in the corresponding end portion of the grip claw carrier **32**.

A leaf spring member **60** secured on the corresponding end of the grip carrier bears against a conical pin **61** to cause the pin **61** to seat in either of a pair of grooves or notches **63** provided in the front of the grip claw body **55**. One end of the bridge or grip claw body **55** has a rearwardly projecting fork **64** integral therewith and the other end of the bridge or grip claw body **55** has a hook member **65** pivotally mounted in the bifurcated end thereof and having a set pin **66** projecting laterally therefrom. The hook member **65** and set pin **66**, in each instance, are under action of a compression spring **67** seated in a recess of the bridge or grip claw body **55**.

The two grip claws **50** and **51** differ from each other in that the hook member **65** of the discarding claw **50** is smooth while the hook member **65** of the inserting claw **51** is provided with a nose **70** which serves to release the bobbin case B automatically from the grip claw when inserting a bobbin case B with full bobbin therein into the looper of the machine, by the nose **70** striking against the bobbin case B or the front end of the loop carrier. A scraper **71** is positioned adjacent the path in the path of travel of the set pin **66** of the discarding claw **50**. The scraper functions, in a manner fully disclosed in said Schumann et al. Patent No. 2,690,725, to release the forked member **64** and the hook member **65** of the discarding claw **50** from a bobbin case containing a substantially exhausted bobbin, which has been previously seized by the discarding claw **50**, in a manner also fully disclosed in said Schumann et al. patent, during rotary movement of the grip carrier **32**.

Generally, the operation of the conventional bobbin casing exchanging device as thus far described is as follows:

Assuming there is a bobbin case containing a substantially exhausted bobbin disposed in the seat of the loop carrier **21** and that the magazine **45** contains a supply of bobbin cases containing filled bobbins with a bobbin case positioned at the discharge opening **46** on the front end of the magazine **45**, the yoke **36** is moved rearwardly, to move the discarding claw **50** and the inserting claw **51** (which are then alined substantially with the loop carrier and the magazine **45**, respectively) rearwardly to engage and seize the bobbin cases in the loop carrier **21** and the magazine or cartridge **45**, respectively.

As the yoke **36** is released, the shifting shaft **33** moves forwardly under action of the spring **41** (Figure 4) whereby the shifting shaft **33** makes a half a revolution. As heretofore stated, in the course of this half revolution, the bobbin case previously seized by the discarding claw **50** is released and the inserting claw **51** with the full bobbin case is moved into its position for cooperation with the looper.

A second rearward stroke is then imparted to the shifting shaft **33**, whereupon the inserting claw **51** inserts the full bobbin case into the seat of the loop carrier **21** while the discarding claw **50** executes an idle stroke. As the inserting claw **51** inserts the full bobbin case into the seat of the loop carrier, the corresponding full bobbin case is automatically released from the inserting claw **51** in the usual manner and the shifting shaft **33** is then released and moves forwardly by spring **41**. Then follows a second revolving motion of one hundred eighty degrees of the grip carrier **32**. This returns the parts to substantially the position shown in Figures 1, 3, 4 and 5 to complete a cycle in the operation of the bobbin case exchanging device.

It is important to note that, with alternate inward movements of the grip carrier **32** and its claws **50**, **51**, the claws **50**, **51** seize respective empty and filled bobbin cases after which the grip carrier **32** is rotated one half revolution and, during intervening rearward or inward movements of the grip carrier and its claws **50**, **51**, the inserting claw **51** deposits a bobbin case B containing a filled bobbin in the seat of the loop carrier **21** while the discarding claw **50**, which is then in the lowered position, makes an idle stroke, but releases a filled bobbin case B to position the same at the mouth or opening **46** at the front end of the magazine **45** so that it may be readily seized by the inserting claw **51** in the course of the immediately subsequent inward or rearward movement of the grip carrier **32** and its claws **50**, **51**.

As heretofore stated, it is necessary that the thread T extending from the looper and upwardly through the aperture **16** in the throat plate **17** be severed during or immediately prior to effecting each cycle in operation of the bobbin case exchanging device **30**, or it is necessary that the thread on the bobbin in the case in the seat of the loop carrier will have become completely exhausted prior to the bobbin case exchanging operation being effected. Accordingly, in order to facilitate the exchanging of bobbins and case in the looper or loop carrier **21** prior to the thread on the bobbin having become completely exhausted, there is provided means for automatically severing the thread end T extending upwardly from the looper or loop carrier **21** and through the aperture **16** in the throat plate **17** with each of said alternate rearward or inward strokes of the grip claw carrier **32** and its grip claws **50**,

51 or, in other words, each time the discarding claw occupies the uppermost position as shown in Figure 2 as a rearward stroke is imparted to the grip claw carrier 32. The improved thread cutting or severing device will now be described in detail.

Details of thread cutting device

The thread cutting device is broadly designated at 75 and comprises a pair of relatively movable cutter blades, namely, a stationary or fixed cutter blade 76 and a movable cutter blade 77, which are positioned closely beneath the throat plate 17 and between the throat plate 17 and the loop carrier 21. The fixed cutter blades 76 is provided with a slightly curved cutting edge C which extends adjacent the vertical plane of the aperture 16 through which the needle 15 reciprocates. The fixed cutter blade 76 is also provided with a toe portion 80 which is engaged by the upper surface of a medial portion of the movable cutter blade 77 when the latter occupies the open or inoperative position.

The fixed cutter blade 76 is preferably made from a rigid material and has a stem 81 projecting laterally outwardly therefrom which is suitably secured to the lower surface of the adjacent portion of the bed plate 11 of the sewing machine. The movable cutter blade 77 also has a stem 84 integral therewith which extends downwardly and inwardly therefrom at an angle and is suitably secured to or formed integral with the upper portion of a bracket 84 oscillatably mounted on a post or column 85 suitably secured to and depending from the bed plate 11 of the frame 10 at a point forwardly of the stem 81 of the fixed blade 76.

The post 85 extends below the bracket 84 and has an enlarged portion thereon in the form of a collar 86 to which one end of a torsion spring 87 is attached. The torsion spring 87 surrounds the lower portion of the post 85 and its upper end is connected to the lower end of the bracket 84. In this instance, the upper end of the torsion spring 87 engages an actuating arm 90 formed integral with or suitably secured to the lower portion of the bracket 84 and which curves downwardly and inwardly and terminates adjacent the shifting shaft 33. The actuating arm 90 preferably extends at an angle relative to the movable blade 77.

The torsion spring 87 serves to urge the bracket 84 and the movable blade 77 upwardly to cause the movable blade 77 to resiliently bear against the lower surface of the fixed blade 76 to thereby insure that the cutting edges of the fixed and movable blades 76, 77 are in contact for cutting the thread T when the movable blade 77 is actuated. The torsion spring 87 also serves to normally urge the movable blade 77 to the inoperative position shown in Figure 5, the forward movement of the blade 77 being limited by a stop or abutment 92 fixed to the upper portion of the post 85 above the bracket 84 and beneath the bed plate 11 and extending inwardly therefrom to be engaged by the stem 83 of the movable cutter blade 77. It will be observed in Figure 3 that the lower portion of the arm 90 extending from bracket 84 is disposed in the horizontal plane of an adjustable abutment shown in the form of a set screw 95. The abutment or set screw 95 is threaded through a lateral control arm 96 which may be formed integral with the grip claw carrier 32 adjacent the shifting shaft 33, but which, in this instance, is shown as being provided with a substantially U-shaped portion 97 whose arms straddle the grip claw carrier 32 and which U-shaped portion 96 is clampingly secured on a medial portion of the grip claw carrier 32, as by means of a set screw 98.

It will be noted that, when the discarding claw 50 occupies the elevated position relative to the inserting claw, that is, occupies a position in alinement with the loop carrier 21, the abutment 95 is alined with the lower portion of arm 90 projecting from the bracket 84 of the cutting device 75. Thus, as the grip claw carrier 32 of the bobbin case exchanging device 30 is actuated or moved rearwardly to cause the discarding claw 50 to engage and seize a bobbin case containing a partially filled bobbin, the abutment 95 engages and imparts movement to the arm 90 at about the time the discarding claw 50 is engaging the corresponding bobbin case B.

It is apparent that the movable cutter blade 77 is then actuated or moved in a counterclockwise direction from the position of Figure 5 to substantially the position shown in Figure 6 to thereby sever the thread T immediately above the loop carrier 21 so the end of thread T remaining will not interfere with the withdrawal of the bobbin case containing the partially emptied bobbin from the seat of the loop carrier 21 as the shifting rod 33 is returned to its forward position substantially as shown in Figure 4. Of course, as the grip claw carrier 32 is returned to forward position, the torsion spring 87 returns the movable blade 77 to the open or inoperative position substantially as shown in Figure 5. It is preferable that the stop 92 is adjustably secured on the upper portion of the post 85, as by a set screw 92*a* (Figure 3), in order that the exact position occupied by the movable blade 77 while it is inactive may be predetermined.

As heretofore stated, as the discarding claw moves outwardly with the bobbin casing B containing a partially filled bobbin therein, a half a revolution is imparted to the shifting shaft 33 and grip claw carrier 32, during the course of which the bobbin case is released from the discarding claw 50. Also, the inserting claw, with a bobbin case containing a filled bobbin therein is then alined with the loop carrier 21. Since the grip claw carrier 32 will have rotated one-half a revolution from the position shown in Figure 3, it is apparent that the arm 96 would then extend to the right rather than to the left in Figure 3 so that in the course of a subsequent rearward stroke of the grip claw carrier 32, the cutting device 75 would not be actuated.

Of course, whether or not the thread cutting device 75 is actuated during the insertion of a new bobbin case in the seat of the loop carrier 21 is normally unimportant although this may be desirable since it extends the useful life of the cutting blades 76, 77.

It is preferable that the upper surface of the movable cutter blade 77 extends at a relatively slight angle relative to the lower surface of the stationary or fixed cutter blade 76 as shown in Figure 3 so the cutting edge of the movable cutter blade 77 contacts the cutting edge of the fixed cutter blade 76 throughout relative movement therebetween, since the torsion spring 87 maintains the movable blade 77 against the lower surface of the fixed blade 76 throughout its movement.

It is thus seen that I have provided a simple and effective means for automatically cutting the thread extending from the loop carrier of a sewing machine through the bed plate or throat plate thereof immediately preceding the withdrawal of a case containing a partially filled bobbin from the seat of the loop carrier by an automatic bobbin case exchanging device.

In the drawings and specification there have been set forth preferred embodiments of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. In a sewing machine having a bed plate, an open-ended loop carrier spaced closely beneath the bed plate for receiving a bobbin case containing a bobbin therein, said sewing machine being equipped with a device for mechanically exchanging the bobbin cases in the loop carrier and including a grip claw carrier having a discarding claw thereon normally alined with the loop carrier, said grip claw carrier being movable inwardly and outwardly to move the discarding claw inwardly and outwardly for seizing and withdrawing the corresponding

bobbin case therein; the combination of a thread cutting device comprising a fixed blade positioned immediately beneath the bed plate and overlying the loop carrier, a movable blade cooperating with the fixed blade, a stem connected to said movable blade, resilient means normally urging the movable blade to open position relative to the fixed blade, a bracket supporting said stem, a substantially vertical post fixed to and depending from the bed plate and on which said bracket is oscillatably mounted, an arm projecting substantially radially from a lower portion of said bracket, and means for closing the movable blade relative to the fixed blade to sever thread extending upwardly through the bed plate from a bobbin case disposed in the loop carrier comprising an arm projecting laterally from said grip claw carrier and having an abutment thereon for engaging the arm projecting from the lower portion of said bracket in the course of inward movement of the grip claw carrier.

2. In a sewing machine provided with a device for mechanically exchanging the bobbins in the looper of the sewing machine, the latter device including means movable inwardly and outwardly relative to said looper for grasping and withdrawing a bobbin case from the looper and said sewing machine including a bed plate spaced above the looper; the combination therewith of a thread cutting device including a fixed blade positioned between the looper and said plate, a movable blade mounted for substantially horizontal movement against the fixed blade and normally occupying open position relative to the fixed blade, a stem connected to said movable blade, a bracket supporting said stem, a post fixed to and depending from the bed plate and on which said bracket is oscillatably mounted for movement about a substantially vertical axis, an actuating arm projecting substantially radially from said bracket, and a control arm movable with said first-named movable means and having an abutment thereon for engaging the actuating arm projecting from said bracket in the course of each inward movement of said first-named movable means.

3. A structure according to claim 2 having resilient means urging the movable blade against the fixed blade and also urging the movable blade toward open position.

4. A structure according to claim 3 having stop means for limiting movement of the movable blade to open position.

5. In a sewing machine having a bed plate, an open-ended loop carrier spaced closely beneath the bed plate for receiving a bobbin case containing a bobbin therein, said sewing machine being equipped with a device for mechanically exchanging the bobbin cases in the loop carrier and including a shifting shaft spaced below the loop carrier, a grip claw carrier on the shifting shaft having a discarding claw on one end thereof and an inserting claw on the other end thereof, said discarding claw normally being alined with the loop carrier, a magazine, said inserting claw normally being alined with the magazine, said grip claw carrier being movable inwardly and outwardly to move the respective discarding and inserting claws inwardly and outwardly for seizing corresponding bobbin cases therein; the combination of a thread cutting device comprising a fixed blade positioned immediately beneath the bed plate and overlying the loop carrier, a movable blade cooperating with the fixed blade, resilient means normally urging the movable blade to open position relative to the fixed blade, a stem connected to said movable blade, a bracket supporting said stem, a post fixed to and depending from the bed plate and on which said bracket is oscillatably mounted, an actuating arm projecting substantially radially from a lower portion of said bracket, and means for actuating the movable blade

comprising a control arm projecting laterally from said grip claw carrier and having an abutment thereon for engaging the arm projecting from the lower portion of said bracket in the course of inward movement of the grip claw carrier.

6. In a sewing machine provided with a device for mechanically exchanging the bobbins in the looper of the sewing machine, the latter device including mechanism for grasping and withdrawing a bobbin case from the looper, means to move said mechanism inwardly and outwardly relative to said looper, means to rotate said mechanism one-half a revolution in the interim between successive inward movements thereof and said sewing machine including a bed plate spaced above the looper; the combination therewith of a thread cutting device including a fixed blade positioned between the looper and said plate, a movable blade mounted for substantially horizontal movement against the fixed blade and normally occupying open position relative to the fixed blade, a stem connected to said movable blade, a bracket supporting said stem, a post fixed to and depending from the bed plate and on which said bracket is oscillatably mounted for movement about a substantially vertical axis, an actuating arm projecting substantially radially from said bracket, and means for momentarily closing the movable blade comprising a control arm movable with said mechanism and having an abutment thereon so positioned as to engage the actuating arm projecting from said bracket in the course of alternate inward movements of said mechanism.

7. In a sewing machine having a bed plate, an open-ended loop carrier spaced closely beneath the bed plate for receiving a bobbin case containing a bobbin therein, said sewing machine being equipped with a device for mechanically exchanging the bobbin cases in the loop carrier and including a shifting shaft spaced below the loop carrier, a grip claw carrier on the shifting shaft having a discarding claw on one end thereof and an inserting claw on the other end thereof, said discarding claw normally being alined with the loop carrier, a magazine, said inserting claw normally being alined with the magazine, said grip claw carrier being movable inwardly and outwardly to move the respective discarding and inserting claws inwardly and outwardly for seizing corresponding bobbin cases therein and means to rotate said carrier one-half a revolution about its axis in the interim between successive inward movements thereof; the combination of a thread cutting device comprising a fixed blade positioned immediately beneath the bed plate and overlying the loop carrier, a movable blade cooperating with the fixed blade, resilient means normally urging the movable blade to open position relative to the fixed blade, a stem connected to said movable blade, a bracket supporting said stem, a post fixed to and depending from the bed plate and on which said bracket is oscillatably mounted, an actuating arm projecting substantially radially from said bracket, and means for actuating the movable blade comprising a control arm projecting laterally from one side of said grip claw carrier and having an abutment thereon for engaging the arm projecting from said bracket in the course of alternate inward movements of the grip claw carrier.

References Cited in the file of this patent

UNITED STATES PATENTS

906,987	Angus	Dec. 15, 1908
2,690,725	Schumann et al.	Oct. 4, 1954
2,707,927	Artzt et al.	May 10, 1955
2,733,676	Schumann et al.	Feb. 7, 1956