Jan. 30, 1951 F. V. HOFFECKER 2,539,953

THREAD OILING APPARATUS

Filed Sept. 14, 1949 2 Sheets-Sheet 1

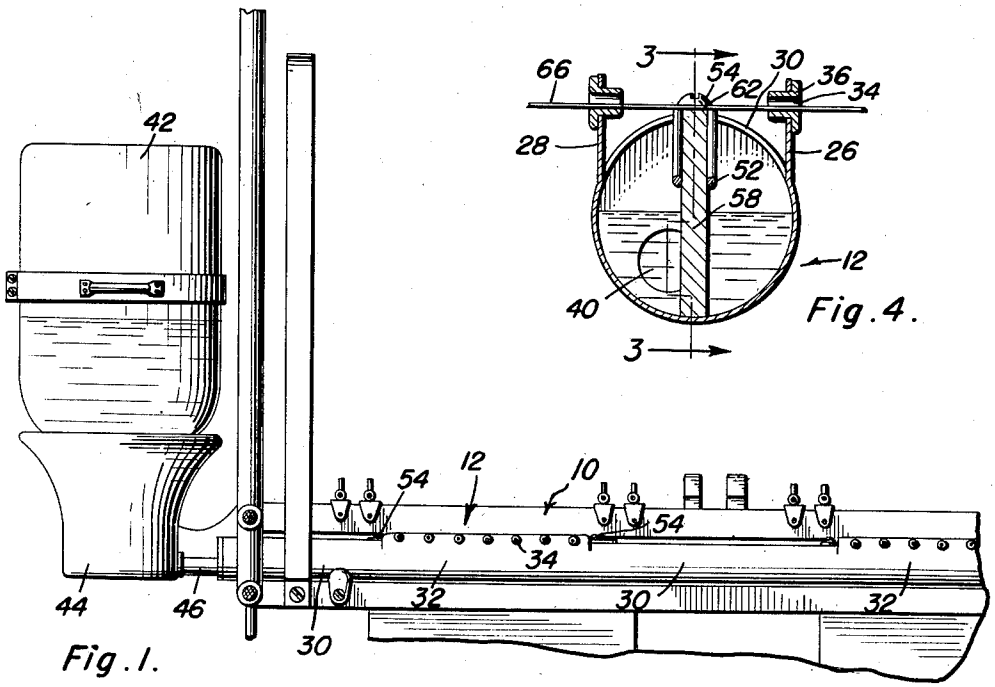


Fig. 1.

Fig. 4.

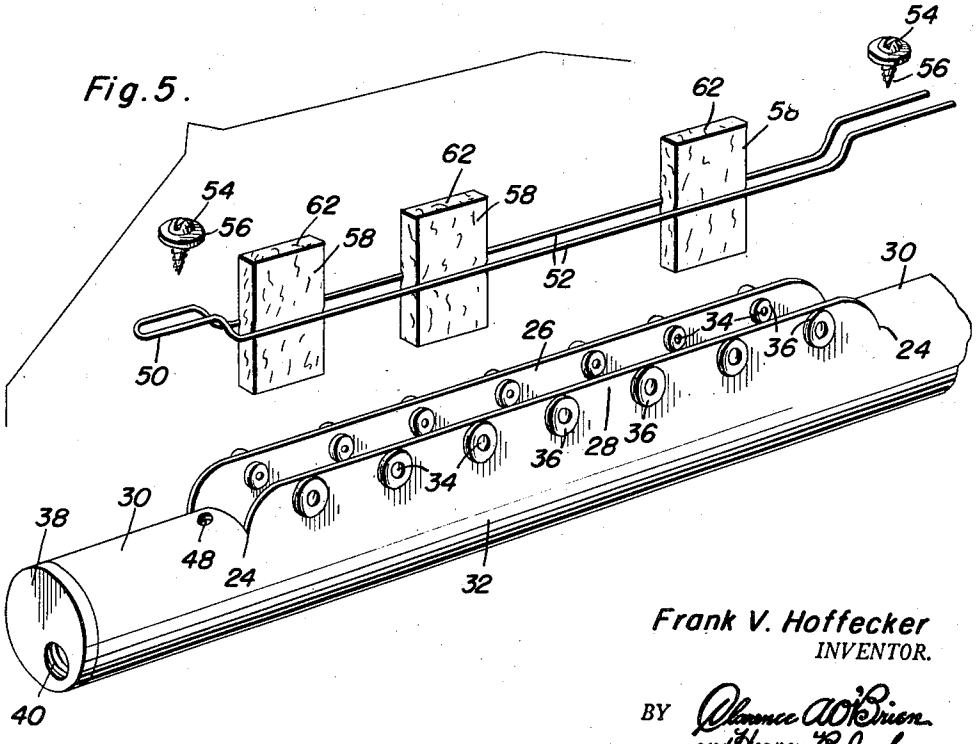


Fig. 5.

Frank V. Hoffecker
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Jan. 30, 1951 F. V. HOFFECKER 2,539,953

THREAD OILING APPARATUS

Filed Sept. 14, 1949 2 Sheets-Sheet 2

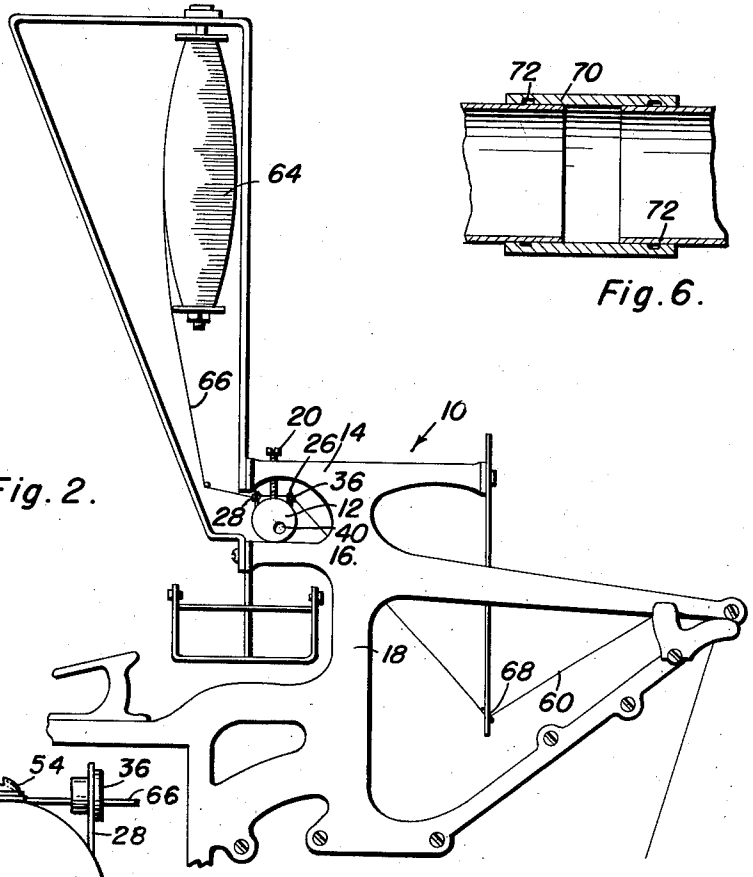


Fig. 2.

Fig. 6.

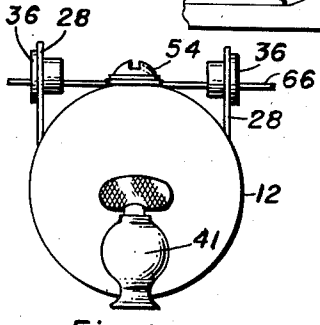


Fig. 8.

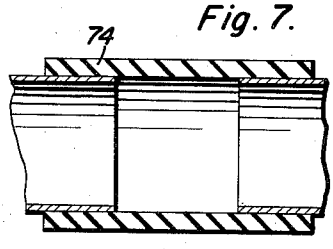


Fig. 7.

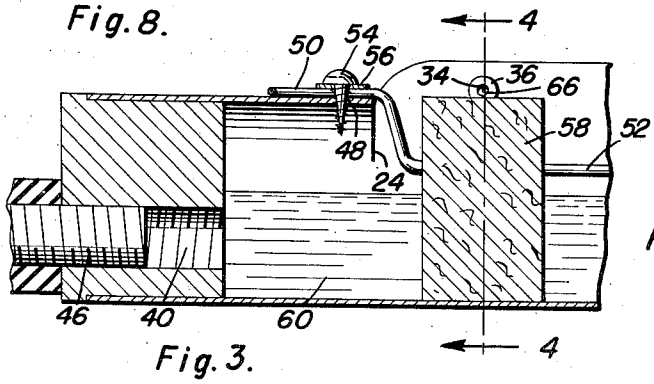


Fig. 3.

Frank V. Hoffecker
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Patented Jan. 30, 1951

2,539,953

UNITED STATES PATENT OFFICE

2,539,953

THREAD OILING APPARATUS

Frank V. Hoffecker, Burlington, N. C.

Application September 14, 1949, Serial No. 115,707

7 Claims. (Cl. 91—38)

1

This invention relates to knitting machines and more particularly to a novel oil tube for use in lubricating threads prior to utilization by the machine.

An object of the invention is to provide a novel oil tube arranged to moisten, oil, dye, or similarly treat silk, worsted, cotton, or other yarns as they pass from the bobbin to the needles of a knitting machine.

Another object of the device is to assure a constant, uniform supply of oil to the threads.

A further object is to provide means of changing tension on the threads as they are oiled and as they pass from the oil tube into the knitting machine.

A yet further object of the present invention is an oil tube in which a novel arrangement of felt wicks may be emplaced so as to absorb the oil or other liquid or solvent employed in softening threads.

Yet another object of the device is to provide novel means for guiding threads into contact with felt wicks adapted to impart a liquid to the threads

These, together with the various ancillary objects of the present invention as will become apparent as the following description proceeds, are attained by this oil tube, a preferred embodiment of which has been illustrated in the accompanying drawings, wherein;

Figure 1 is a front elevational view of the oil tube in position on a full-fashioned knitting machine;

Figure 2 is a side elevational view showing the relationship of the oil tube to the other component parts of the knitting machine;

Figure 3 is a vertical sectional view as taken along line 3—3 in Figure 4;

Figure 4 is a vertical sectional view as taken along line 4—4 in Figure 3;

Figure 5 is an exploded perspective view of the various elements of the invention;

Figure 6 is a sectional view of one manner of connecting sections of the oil tube together;

Figure 7 is a sectional view illustrating another way of securing the sections of the oil tube together; and

Figure 8 is an end elevational view showing the valve used in draining the oil tube.

With continued reference to the accompanying drawings wherein like characters designate similar parts throughout the various views, reference numeral 10 generally designates a full-fashioned knitting machine upon which the oil tube 12 comprising the present invention is used. The oil

2

tube is held in place between pairs of parallel arms 14 and 16 extending from the gallows 18 of a knitting machine. By means of set screws 20 the oil tube is firmly seated and held in position.

At each knitting section, the top of the tube 12 is cut longitudinally and at the end of each of these cuts, a cross cut 24 is made. The two pieces of metal 26 and 28 thus freed are bent into an upright position forming vertical surfaces and thus dividing the tube into integral alternate tubular sections 30 and channel sections 32.

Any number of holes 34 as desired in the channel legs 26 and 28 of the channel sections 32 may be drilled, and eyelets 36 are inserted therein to form guide surfaces. The tube is capped at one end as at 38 by a suitable side wall which has a female threaded aperture 40 therein. There is a valve 41 attached to a side wall capping the tube for use in draining and cleaning the tube. An inverted jar 42 and tank 44 is coupled to the tube by means of a flexible hose 46 in threaded engagement within the aperture 40. The jar is filled with a suitable lubricant, dye, or other fluid and maintains a constant level of fluid in the tube in order to provide uniform lubrication to the threads.

A pair of holes 48 are drilled in the upper surface of each tubular section 30 adjacent the channel sections 32. A substantially elongated U-shaped retainer 50 is provided with offset portions 52 in each of the parallel legs adapted to fit between the walls 26 and 28 in the channel section 32. The retainers are preferably made of spring steel or other suitable material and are secured to the tube by sheet metal screws 54 engaged within the apertures 48 and causing washers 56 to press the ends of the retainer 50 against the tube 12.

Between the opposed legs of the retainer are inserted suitable wicks 58 of felt or other desired material. The wick will absorb the fluid 60 in the tube and by capillary action transfer a part of the fluid to its upper contacting surface 62. Thread from the bobbin 64 and designated by reference numeral 66 is passed through eyelet 36 in wall 28, then over contacting surface 62 of a wick 58 and out of eyelet 36 in wall 26, thence to the ring and to other portions of the full-fashioned knitting machine 10. Thus one oil tube may provide lubrication for as many threads as are needed. It is a particularly important feature of the invention that the thread is securely guided over the wick by being passed through the aligned eyelets 36.

The tube is made in lengths that can be easily handled and these lengths are coupled together when positioned at the machine by a metal coupling **70** as is shown in Figure 6 which may have internal annular grooves in which projections **72** on each of the lengths may be seated. As shown in Figure 7 an alternate means of coupling the lengths together may include a flexible tube **74**. By raising or lowering the wicks **58**, the tension on the threads as they are oiled may be readily controlled.

Since from the foregoing, the construction and advantages of this oil tube for lubricating knitting threads is readily apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the exact construction shown and described, but all suitable modifications and equivalents of the oil tube may be resorted to which fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. An oil tube for lubricating knitting thread comprising spaced integral alternate tubular and channel portions, the channel portions having parallel upwardly extending legs, a plurality of apertures in one leg in alignment with a plurality of apertures in the other leg, insert eyelets in said apertures, an elongated U-shaped retainer, a plurality of wicks carried by said retainer, and means securing said retainer to said tubular sections.

2. The structure of claim 1 wherein said retainer has an offset portion adapted to fit within said channel portion.

3. The structure of claim 2 wherein said wicks are made of felt and are of rectangular shape.

4. The structure of claim 3 including end walls attached to each end of said tube, a valve in one of said end walls, the other end wall having a female threaded aperture therethrough.

5. The structure of claim 4 including fluid supply means connected to said female threaded aperture.

6. An oil tube for lubricating knitting thread comprising spaced alternate tubular and channel portions, the channel portions having parallel extending legs, a plurality of apertures in one leg in alignment with a plurality of apertures in the other leg, insert eyelets in said apertures, an elongated retainer secured to said tubular sections, said retainer having an offset portion adapted to fit within said channel portion, and wicks carried by said retainer positioned between the aligned apertures.

7. An oil tube for lubricating knitting thread comprising spaced alternate tubular and channel portions, the channel portions having upwardly extending legs, an elongated U-shaped retainer, a plurality of wicks carried by said retainer, means securing said retainer to said tubular sections, and guide means for said knitting thread in said legs, said guide means being in alignment with said wicks.

FRANK V. HOFFECKER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
918,776	Scholler	Apr. 20, 1909
1,240,625	Taylor	Sept. 18, 1917
1,651,167	Van Alstyne, et al.	Nov. 29, 1927
1,724,230	Struve	Aug. 13, 1929
2,019,201	Strazalkowski, et al.	Oct. 29, 1935
2,221,293	Amon	Nov. 12, 1940
2,432,404	Galatioto	Dec. 9, 1947