May 24, 1955 W. A. AYRES 2,708,892

SEWING MACHINE

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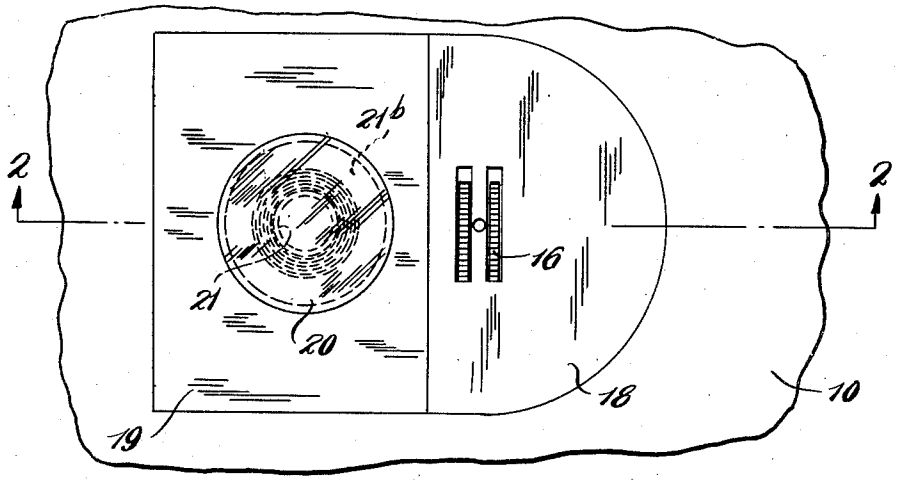


FIG. 1

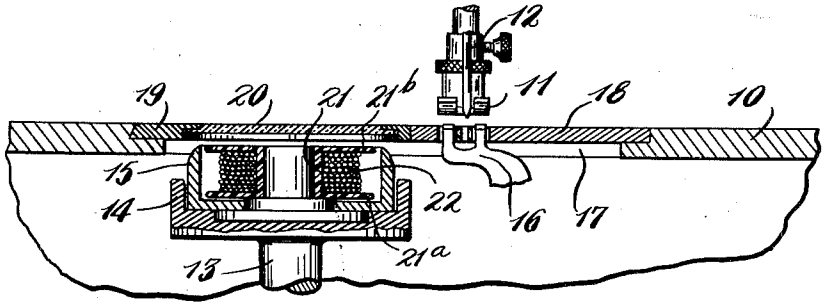


FIG. 2

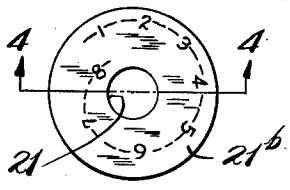


FIG. 3

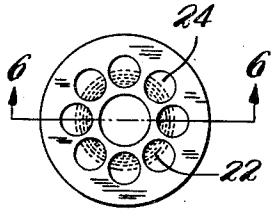


FIG. 5

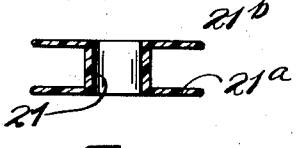


FIG. 4

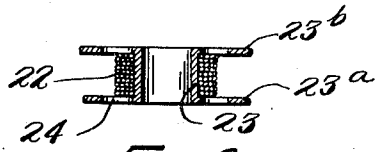


FIG. 6

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SEWING MACHINE

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3 Claims. (Cl. 112—184)

This invention relates to a sewing machine and particularly to a sewing machine of the horizontal bobbin type.

An object of the invention is to provide a sewing machine wherein the operator can visually determine at all times the quantity of thread on the bobbin carried by the rotary hook of the sewing machine and located beneath the bed plate thereof.

Another object is to provide a sewing machine such as referred to in the last named object and wherein the efficiency of the machine is improved and its use by the operator is facilitiated in that the latter may visually determine throughout the operation of the machine and without removing part of the bed plate the quantity of thread on the bobbin of the rotary hook and thus will be aware in ample time of the necessity of replacing the bobbin with another fully wound bobbin.

Further and additional objects and advantages not hereinbefore referred to will become apparent hereinafter during the detailed description of several forms of the invention and which are illustrated in the accompanying drawings wherein:

Fig. 1 is a fragmentary plan view of the bed plate of a sewing machine, and particularly that portion of the bed plate lying beneath the presser foot and needle bar of the machine and containing the feed dogs and overlying the rotary hook of the machine.

Fig. 2 is a sectional view taken substantially on line 2—2 of Fig. 1 looking in the direction of the arrows.

Fig. 3 is a plan view of one form of bobbin which may be employed in conjunction with the invention.

Fig. 4 is a sectional view through the bobbin shown in Fig. 3 and is taken substantially on line 4—4 of Fig. 3 looking in the direction of the arrows.

Fig. 5 is a plan view of another form of bobbin which may be utilized in connection with the invention and shows a quantity of thread wound on the bobbin, and

Fig. 6 is a sectional view through the bobbin of Fig. 5 and is taken substantially on line 6—6 of Fig. 5 looking in the direction of the arrows.

The bed plate of the sewing machine is indicated at **10** and the presser foot and needle bar at **11** and **12** respectively. The rotary vertical shaft **13** which mounts the rotary hook **14** and the bobbin casing **15** are shown located beneath the bed **10** and adjacent to the feed dog **16**. It will be understood that the parts so far referred to are conventional in sewing machine construction and need not be explained in further detail herein since they are well understood in the art.

The bed **10** is provided with the usual opening **17** which is closed in part by a plate **18** having slots therein through which the feed dog **16** extends. The closing of the opening **17** is completed by a plate **19** and it will be understood that the plates **18** and **19** are suitably supported on shoulders formed in the bed **10** and extending around the periphery of the opening **17**.

The present invention contemplates providing the plate **19** with an opening which overlies the bobbin carrier **15**

and is closed by means of a transparent disk **20** suitably secured in the opening in the plate **19** and formed of any suitable transparent material such as glass, transparent plastic and the like. The transparent disk **20** provides for the operator visually observing the bobbin which may be mounted in the bobbin carrier **15**.

The bobbin **21** shown in Figs. 2, 3 and 4 is a transparent bobbin being formed of suitable transparent material such as transparent plastic. Of course the bobbin **21** might have its hub portion formed of opaque material with the flanges **21***a* and **21***b* of the bobbin secured to the hub portion and with one or both of the flanges **21***a* and **21***b* formed of transparent material. However, for purposes of illustration, the bobbin **21** is shown as formed completely of transparent material although, as stated, it need not be so formed provided that the uppermost flange of the bobbin when the latter is mounted in the carrier **15** is of transparent material.

In Fig. 2 a quantity of thread indicated at **22** is shown wound on the bobbin and this thread can be visually observed through the disk **20** of the plate **19** and the uppermost flange of the bobbin, wherefore the operator at all times during the use of the machine can visually observe and determine the quantity of thread on the bobbin without the necessity of removing the plate **19**. If desired, one or both flanges of the bobbin may be provided with a series of numbers, marks or indications calibrated with respect to the thread supply on the bobbin as indicated in Fig. 3.

In place of the bobbin shown in Figs. 2, 3 and 4 a bobbin of the type shown in Figs. 5 and 6 might be employed. The bobbin **23** of Figs. 5 and 6 is formed of opaque material as, for instance, metal, while one or both of the flanges **23***a* and **23***b* of the bobbin may be provided with a circular series of openings **24**, wherefore when the bobbin **23** is mounted in the carrier **15** the operator can visually observe the amount of thread **22** which is on the bobbin since the same will be visible through the openings **24** of the uppermost bobbin flange.

From the foregoing description it will be seen that a sewing machine provided with an embodiment of the invention has its efficiency materially improved, inasmuch as the operator can visually determine and thus be always aware of the amount of thread on the bobbin. Heretofore until the thread is completely exhausted from the bobbin the operator of the sewing machine has been required to remove the plate covering the opening in the bed in order to determine if the bobbin has sufficient thread thereon for a sewing operation which the operator wishes to perform. The present invention eliminates the necessity for removing the plate to determine the quantity of thread on the bobbin and thus facilitates and expedites the use of the machine and the performance of the sewing operations thereon, as well as lessening effort on the part of the operator.

Although preferred embodiments of the invention have been illustrated and described herein it will be understood that the invention is susceptible of various modifications and adaptations within the scope of the appended claims.

Having thus described my invention I claim:

1. In a sewing machine having a bed provided with an opening adjacent to the sewing mechanism, a hook beneath said opening and rotating horizontally on a vertical axis, a removable plate supported by said bed and closing said opening and having a transparent window therein vertically aligned with said hook, a bobbin casing carried by said hook and a bobbin mounted in said bobbin casing and having a hub coaxial with said hook and a circular flange extending from said hub beneath said window and in closely adjacent parallel relationship therewith and provided with transparent portions wherefore the oper-

ator of the sewing machine can visually observe through the closure and said transparent portions of the bobbin flange the amount of thread on the bobbin.

2. In a sewing machine as defined in claim 1 and wherein said bobbin flange is formed of transparent material.

3. In a sewing machine as defined in claim 1 and wherein the bobbin flange is provided with indicia calibrated in terms of the quantity of thread on the bobbin.

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