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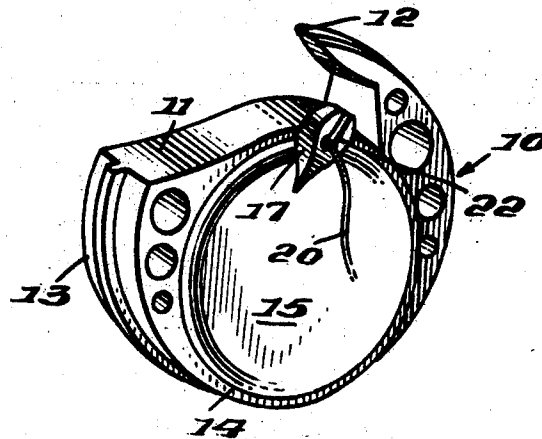
[54] **SEWING MACHINE SHUTTLE AND BOBBIN**  
**5 Claims, 6 Drawing Figs.**

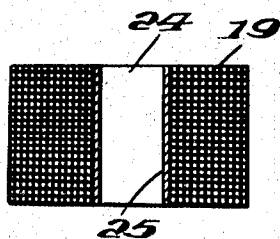
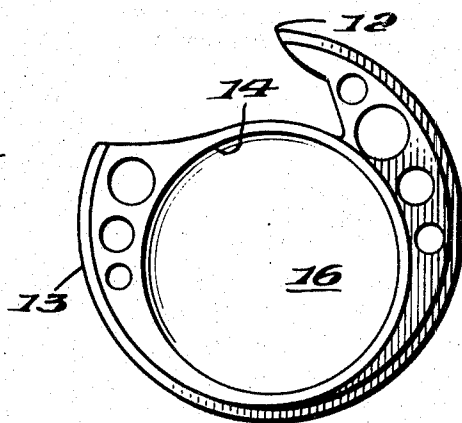
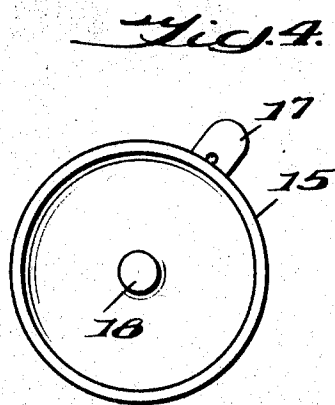
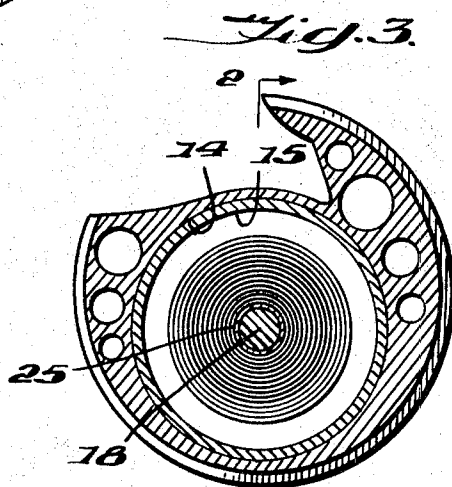
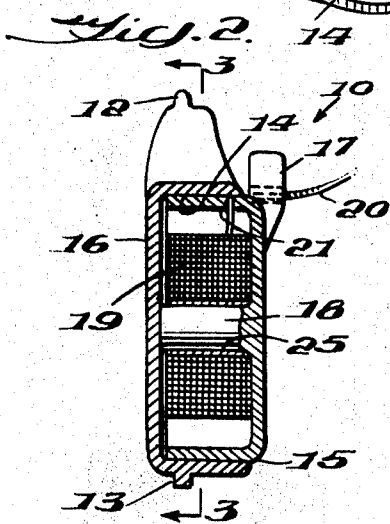
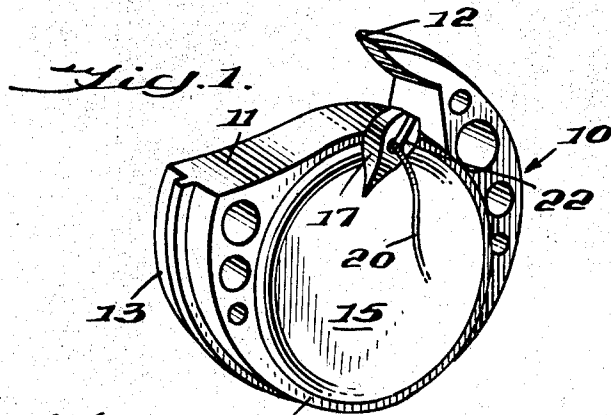
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[52] U.S. Cl. .... 112/231  
 [51] Int. Cl. .... D05b 57/14  
 [50] Field of Search ..... 112/231  
 (Scan); 242/168, 169 (Gebu), 172

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**ABSTRACT:** A shuttle and bobbin for lockstitch shoe sewing machines is illustrated wherein the shuttle is formed with a solid back and the bobbin refill consists of a thread package formed with no spool or metal bobbin thus materially decreasing the cost and increasing the thread capacity of the refill to provide a longer time span between refill changes.





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## SEWING MACHINE SHUTTLE AND BOBBIN

## BACKGROUND OF THE INVENTION

## 1. Field of the Invention

The present invention relates to shuttles and bobbins for lockstitch shoe sewing machines of the type using cold waxed thread for sewing soles and half soles to the shoe.

## 2. Description of the Prior Art

Prior art shuttles and bobbins utilize an open back shuttle and metal bobbin mounted on a spindle in the bobbin holder. The bobbin thread is wound on the metal bobbin which is then placed on the bobbin spindle in the bobbin holder. This structure provides bobbin thread for approximately six pairs of half soles to be sewed and the bobbin must be replenished quite often.

## SUMMARY OF THE INVENTION

In the instant invention the conventional shuttle is formed with a solid back to prevent the escape of the bobbin thread and the bobbin holder is formed with a relatively large diameter spindle to receive a thread package which is complete without a spool support. In machines using cold waxed thread the thread package consists of prewaxed thread wound into a coil held in a coil form by the wax, with the core of the thread coil coated with oilproof liquid, such as liquid celluloid.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the invention with the bobbin holder in place in the shuttle;

FIG. 2 is a transverse cross section taken along the line 2-2 of FIG. 3 looking in the direction of the arrows;

FIG. 3 is a vertical cross section taken along the line 3-3 of FIG. 2 looking in the direction of the arrows;

FIG. 4 is a plan view of the bobbin holder removed from the shuttle from the inner face thereof;

FIG. 5 is the shuttle with the bobbin holder removed; and

FIG. 6 is a transverse sectional view through the thread package.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several FIGS., the reference numeral 10 indicates generally a shuttle, bobbin holder and bobbin combination constructed in accordance with the invention.

The combined shuttle, bobbin holder and bobbin 10 includes a shuttle 11 having a beak 12 and a guide rib 13 extending partially therearound. The shuttle 11 has a cylindrical opening 14 formed in one side thereof to receive a generally cylindrical bobbin holder 15 in a manner to be described. The cylindrical opening 14 in the shuttle 11 has a solid inner wall 16 as can be seen in FIG. 2.

The cylindrical bobbin holder 15 has an upstanding thread guide 17 formed thereon for conventional operation. A spindle 18 is integrally formed centrally of the bobbin holder 15 and is arranged to extend through and contact the inner wall 16 of the shuttle 11. A generally cylindrical thread coil 19 is

formed of waxed thread with the wax creating a thread package which will not come apart under normal handling. The thread 20 uncoils from the outer surface of the thread package 19 and extends through an opening 21 in the bobbin holder 15 and then out through an opening 22 in the thread guide 17.

The operation of the form of the invention illustrated in FIGS. 1 through 5 is intended for a cold wax thread, shoe sole sewing repair, lockstitch, sewing machine and its operation is identical to that of the conventional shuttle used therewith. The thread package 19 contains approximately 60 percent more thread than the conventional thread package mounted on a spool and as a consequence, approximately 10 pairs of half soles may be sewed with the machine prior to replenishing the thread whereas with conventional constructions only six pairs of shoes can be half-soled prior to replenishing the thread.

In FIG. 6 the thread package 19 is illustrated in detail and consists of a coil of thread having a central bore 24 with the central bore 24 coated with a celluloid or other oil resistant plastic material 25 to hold the thread package 19 in a form which will not readily unwind from the core after its positioning in the bobbin holder. The thread package 19 is intended for use with cold wax shoe sewing machines.

Having thus described the preferred embodiments of the invention it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the spirit of the invention.

I claim:

1. A combined shuttle, bobbin holder and bobbin comprising:

a shuttle having a circular guide rib and a thread-engaging beak formed on the periphery thereof, said shuttle having a substantially hollow cylindrical chamber formed therein with a completely closed inner end;

a cylindrical bobbin holder positioned in said cylindrical chamber, said bobbin holder having an opening formed therein and an adjacent thread guide means secured on said bobbin holder, said thread guide means having a slotted opening formed therein;

a spindle integrally formed on said bobbin holder centrally thereof and extending axially therewith, said spindle extending completely through said bobbin holder and slightly beyond to contact the closed inner end of the cylindrical chamber in said shuttle; and

a generally cylindrical thread coil having a central bore for receiving said spindle to rotatably mount said thread coil thereon, said thread coil having an end thereof adapted for threading through said opening formed in said bobbin holder and said slot formed in said guide means.

2. A device as claimed in claim 1 wherein said thread coil has a binder coating the core of said thread coil.

3. A device as claimed in claim 2 wherein the thread in said thread coil is coated with wax.

4. A device as claimed in claim 3 wherein the binder is a plastic material.

5. A device as claimed in claim 3 wherein the binder is oil-proof liquid celluloid.

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