C. E. FRANCIS.

ATTACHMENT FOR SEWING MACHINES.

APPLICATION FILED APR. 14, 1920.

1,355,462. **Patented Oct. 12, 1920.**

Fig. 2.

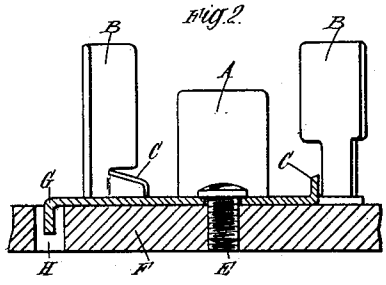


Fig. 1.

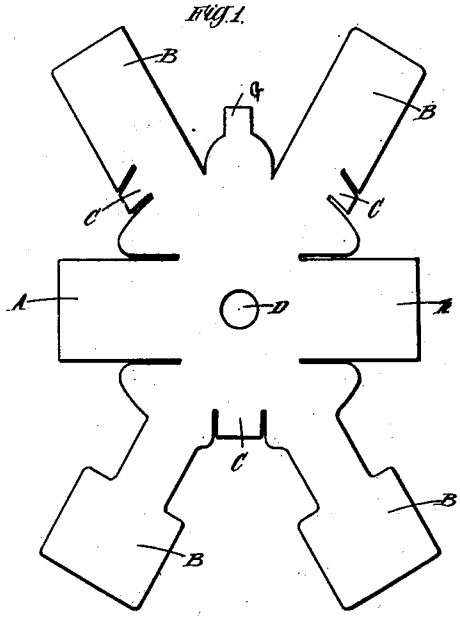


Fig. 3.

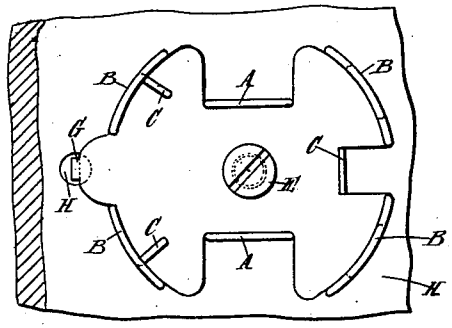


Fig. 6.

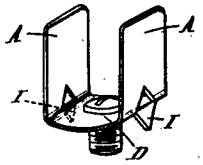


Fig. 4.

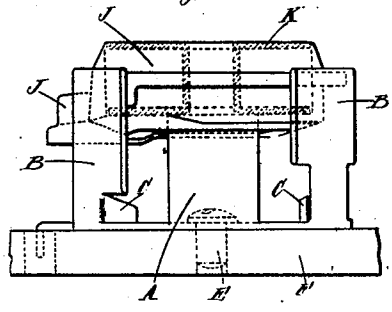
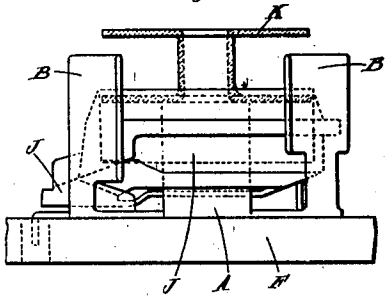


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR SEWING-MACHINES.

1,355,462. Specification of Letters Patent. **Patented Oct. 12, 1920.**

Application filed April 14, 1920. Serial No. 373,721.

To all whom it may concern:

Be it known that I, CHARLES EDWARD FRANCIS, a subject of the King of Great Britain, residing at Vickers House, Broadway, Westminster, in the county of London, England, have invented certain new and useful Improvements in or Relating to Attachments for Sewing-Machines, of which the following is a specification.

This invention relates to sewing machines of the kind in which the lower thread is carried by a bobbin which is placed and retained within a bobbin case in a detachable manner, the bobbin being usually retained by means such as a tubular piece of tempered steel located within the hollow center of a central pin or stud in the bobbin case and having a slightly flared or enlarged part provided with saw cuts to render it compressible, which part projects from the end of the said tubular piece and over which the bobbin is forced when inserting or removing it from its position within the bobbin case. In bobbin cases of this type a central web is usually provided which carries the aforesaid pin or stud and the bobbin is ordinarily ejected when it is desired to replenish the supply of thread by pressure applied by the thumbs or fingers of the operator to the bobbin through the openings on either side of the aforesaid web. As the available space on either side of the central web is small the ejection of the bobbin is usually one of considerable difficulty while the operation being of a clumsy character the bobbin case is liable to be accidentally dropped and thereby damaged; when the empty bobbin case is laid aside during the rewinding of the bobbin it is also liable to be mislaid or injured by being swept from the table of the machine to the ground, and it is the object of the present invention to remove the disadvantages associated with the use of bobbin cases of this description in a simple and efficient manner.

According to the present invention a device is provided which serves as a cradle or support for the empty bobbin case when it is not in use, said device being provided with means for ejecting the bobbin from the bobbin case during the act of locating the latter in position within the device.

To this end the device may comprise a pair of upstanding prongs or projections which are suitably spaced apart so that they will contact with the bobbin on either side of the aforesaid web, while also being so positioned that they do not come into contact with any part of the bobbin case. Guides may also be provided which are adapted to engage a projecting part of the bobbin case and insure that the bobbin case may be properly positioned to bring the prongs or projections directly under the bobbin, together with a number of upstanding lugs or projections which are preferably of greater length than the thickness of the bobbin case and which encircle the bobbin case closely when it is located in position within the device. When the device is to be employed with bobbin cases of the kind which are provided with a projecting lug at the top end thereof, the said guides may be constituted by two of the aforesaid upstanding lugs, in the gap between which the lug on the bobbin case is adapted to be located. In bobbin cases of other types the upstanding lugs may be suitably shaped to engage or to be accommodated within any similar or convenient projecting part or recess on the bobbin case.

In order that the said invention may be clearly understood and readily carried into effect the same will now be described more fully with reference to the accompanying drawing which shows by way of example two embodiments of the invention and in which:—

Figure 1 is a plan view of the metal blank from which the device is adapted to be pressed up.

Fig. 2 is a sectional elevation and Fig. 3 is a plan showing the device in position on the bed plate or table of a sewing machine.

Fig. 4 is an elevation showing the bobbin case in the act of being located within the device and before ejection of the bobbin.

Fig. 5 shows the bobbin case after it has been pressed into position therein, the bobbin being shown in its ejected position.

Fig. 6 is a perspective view of a modified and simpler form of the invention.

Referring to Figs. 1 to 5, A, A are the aforesaid prongs or projections and B, B are the lugs which encircle the bobbin case when it is located in position within the device. C, C are small additional lugs which are also provided and which have faces which conform to the contour of the face of the bobbin case which is opposite the open

end through which the bobbin is inserted or ejected. When the bobbin case is pressed into position within the device it is adapted to rest upon these lugs, thus preventing contact between the bottom of the device and the tension device or other part of the bobbin case liable to be injured. D is a central opening in the device through which a screw E is passed for the purpose of securing the device in position on the bed plate or table F, and G is a bent down lug which is located within an opening H in the bed plate F so as to prevent displacement of the device.

In Fig. 6, A, A are the upstanding prongs or projections. D is the opening through which the fixing screw E is passed and I, I are a pair of bent down prongs which are adapted to be pressed into the bed plate or table to prevent movement of the device.

In operation, and as shown at Figs. 4 and 5, the bobbin case J with the bobbin K in place therein is located with the lug *j* disposed between the two forward lugs B which thus act as guides. As the bobbin case is pressed downward the prongs A, A engage and eject the bobbin from its position within the bobbin case while the empty bobbin case is securely positioned within the device until such time as it may again be required. The operation of the device shown at Fig. 6 is similar to that described with reference to Figs. 4 and 5 but in this embodiment of the invention the bobbin case after ejection of the bobbin is located loosely around the upstanding prongs or projections A, A.

Although in the two embodiments described the device is shown as being made up from a single piece of stamped and bent up sheet metal it may be produced in any other suitable manner, for example by casting or drop forging.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A device for use with bobbin cases of the kind in which the bobbin is supported in a detachable manner on a central stud or pin carried by a web comprising a cradle or support for holding the empty bobbin case when it is not in use and means for ejecting the bobbin from the bobbin case during the act of locating the latter in position within the device.

2. A device for use with bobbin cases of the kind in which the bobbin is supported in a detachable manner on a central stud or pin carried by a web comprising a pair of upstanding prongs or projections which are suitably spaced apart so that they will contact with the bobbin on either side of the said web on the bobbin case, while also being so positioned that they do not come into contact with any part of the bobbin case.

3. A device for use with bobbin cases of the kind in which the bobbin is supported in a detachable manner on a central stud or pin carried by a web comprising a pair of upstanding prongs or projections which are adapted to eject the bobbin from the bobbin case, upstanding lugs or projections which encircle the bobbin case closely when it is located in position within the device and guides which are adapted to engage the bobbin case to insure that the bobbin case may be properly positioned to bring the prongs or projections directly under the bobbin.

In testimony whereof I affix my signature.

CHARLES EDWARD FRANCIS.