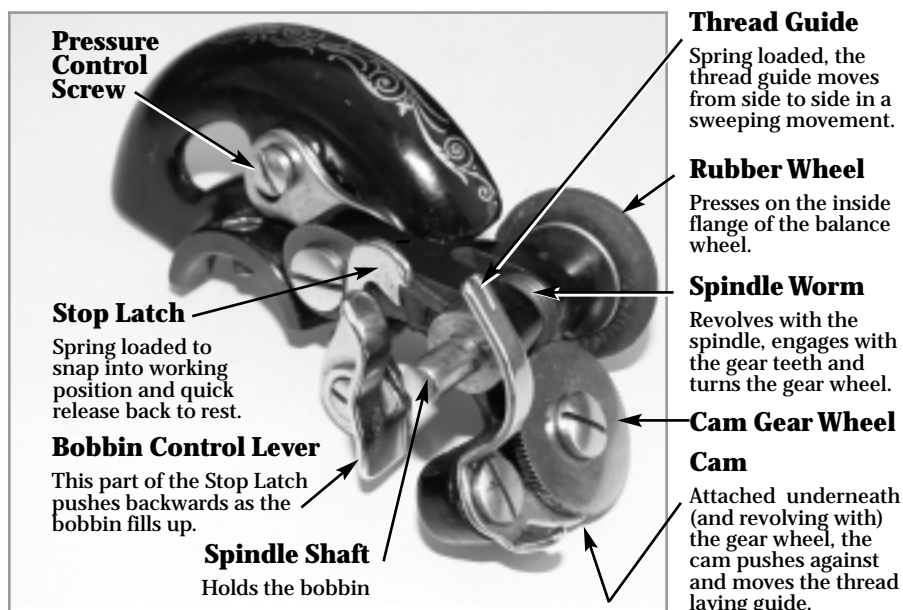


The bobbin winder is a separate unit screwed on to the machine, adjacent to the balance wheel.

Its function is to wind a reserve of cotton evenly onto an empty bobbin and (in most cases) spring release when the bobbin is full.

The most frequently seen type actually performs three tasks: (1) winding (2) evenly distributing (or guiding) the thread and (3) stopping when full.

In order to achieve this multi-tasking, the bobbin winder has three sets of components, springs and levers doing different jobs but all working in unison.



There are three main types of bobbin winder. Before you start to dismantle one and work on it, you firstly need to identify which type it is.

And then familiarise yourself with how it works.

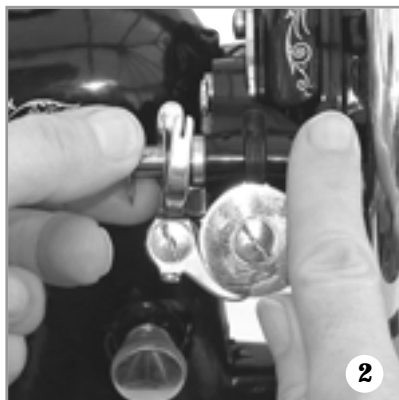
#### TYPE A



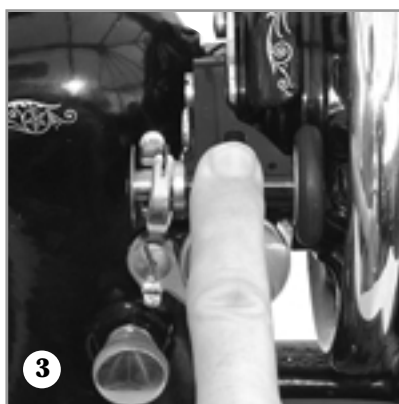
(1) With small variations, TYPE A was installed on 66, 99 and 15K models over a long period.

It has a winder, thread guide and a release mechanism. It is the one most frequently seen and is the most complicated.

For this reason, it is really useful to have an assembled spare example to hand, so you can refer to it as you work.

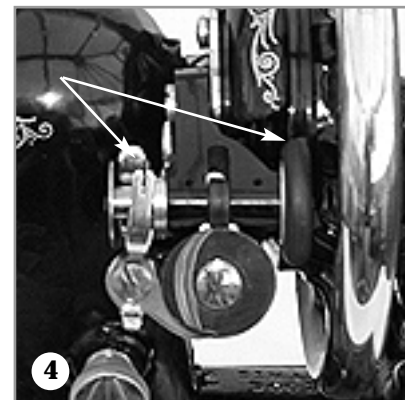


(2) An empty bobbin is inserted on to the bobbin spindle until the small pin in the spindle shoulder locates in the hole in the bobbin side plate.



(3) When the spindle housing is pressed down, the stop latch snaps forward.

(4) With this action, two things happen:



(a) The rubber wheel is pressed against the balance wheel and...

(b) The stop latch comes to rest between the side plates of the bobbin and holds it in place.



(5) As the handle is turned the bobbin fills with cotton, the stop latch is forced upwards until it eventually spring releases back into its original

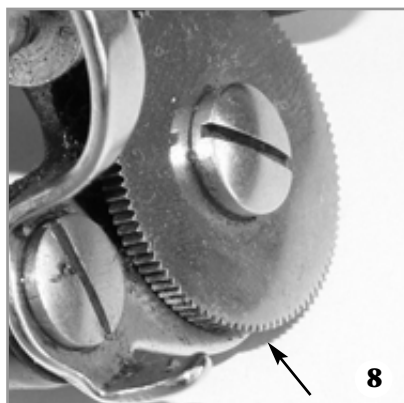
When the handle is turned the worm on the spindle turns the thread guide gear wheel. This is fixed to a cam which pushes the thread laying guide to one side.



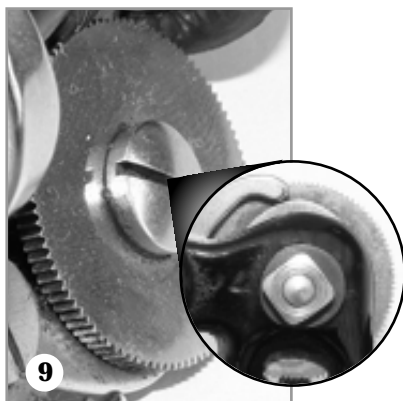
(6) When the cam is at its maximum diameter the thread guide lever is pushed to the right



(7) The guide is held against the elliptical cam by a spring, so when the cam rotates the guide returns with a sweeping action, distributing the cotton evenly along the drum of the bobbin.



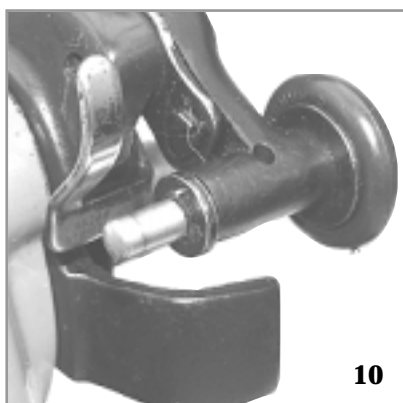
(8) On some bobbin winders the cam is fixed behind the gear wheel (as shown here) but the principal is the same.



(9) The gear wheel is retained by a central (eccentric) screw with a small square lock nut at the back.

It is a common mistake to remove the eccentric screw and gear wheel for cleaning not realising the *adjustment* between the worm and gear teeth must be set correctly on reassembly.

#### TYPE B

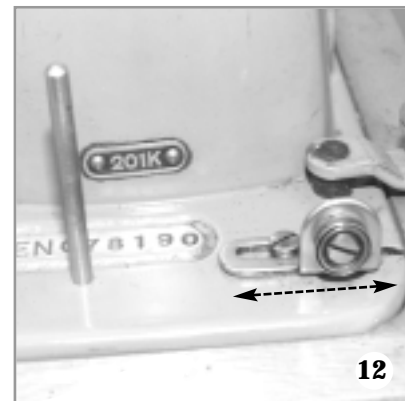


(10) Type B has a winder and release mechanism but no thread guide. It was fitted to 201s and later models of the 66, 99 & 15K.

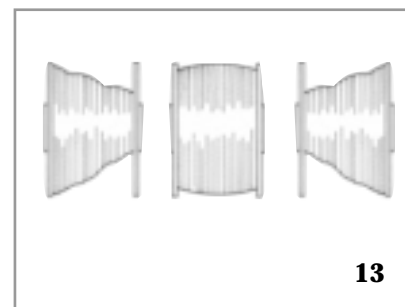


(11) This modification dispensed with the complicated thread laying device and introduced a base plate bracket.

In its simplest form the bracket has two slots that the thread is taken through.



(12) Another variation of the base plate thread guide has two small - sprung loaded - tension wheels.



(13) These base plate thread guides can be moved to the right - if the the bobbin winds too heavily on the left side - and vice versa, then locked in position.

There is also often a second cotton reel holder on the base plate for bobbin winding.

It is important to clean this area but be careful about oiling. Over oiling could negate the tension by allowing the cotton to slip.

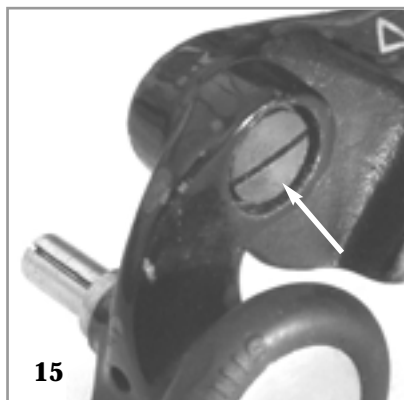
#### TYPE C



**TYPE C**

(14) This simple winder - without thread guide or release - relies on the operator to stop when the bobbin is full.

It uses the same brackets on the base plate to deliver the thread to the bobbin. When in use, the operator pushes the arm down on to the balance wheel.

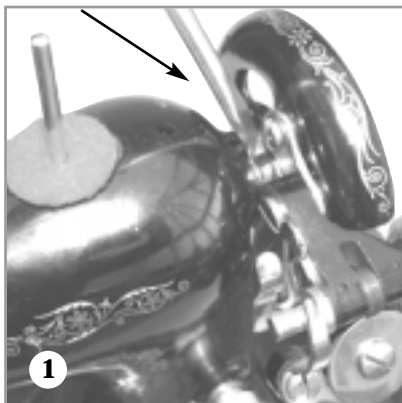


(15) Make sure the screw holding the arm is tight enough to keep the arm on the balance wheel.

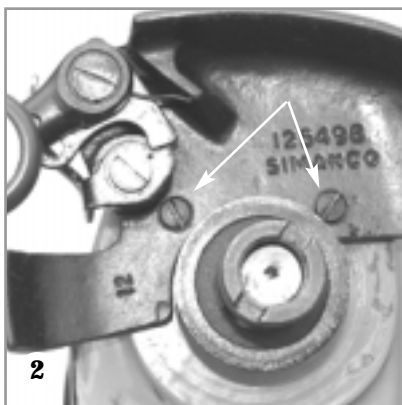
Apart from oiling, cleaning and checking the rubber ring, there should be no other problems.

Type C has a spring fitted in the bobbin shaft which provides enough resistance to keep the bobbin in place while winding.

It was fitted to electric machines and recent models of the manual ones.



- (1) Undo the single attachment screw and remove the bobbin winder assembly from the machine.**



- (2) Sometimes the bobbin winder is held on by two screws which are only visible when the balance wheel is removed.**

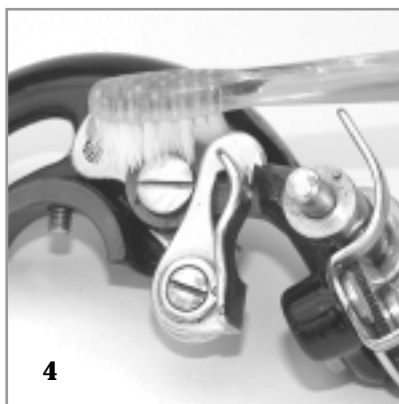
If the bobbin winder appears to be in good working order, *it is better to avoid taking it apart.*



- (3) Remove the rubber wheel.**

This small rubber wheel on the end of the bobbin winder spindle is pressed against the balance wheel to pick up the momentum when the handle is turned.

The rubber wheel has to be in perfect condition and *must* be replaced if it is hard and cracked, or spongy and loose on its rim.



- (4) Clean all the components and lightly oil all the moving parts.**

This may be all that is necessary. Remove all traces of oil from the drive wheel before replacing (or renewing) the rubber wheel. *Oil rots rubber* - therefore do not over-oil the mechanism.

Also, to avoid the wheels slipping, take a clean dry cloth and wipe the inside flange of the balance wheel where it comes into contact with the rubber wheel.

If there are no problems you can re-attach the unit to the machine and move on to the next section.

If the bobbin winder unit is really dirty in places you can't get to, or if the components do not move smoothly or do not perform the functions properly then you will have to dismantle it.

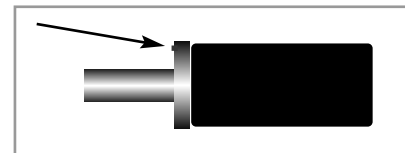
### FAULTS & SOLUTIONS

Some problems with the bobbin winder may not become apparent until you have reassembled the handle and balance wheel and begun the sewing test procedure.

Luckily, the most frequently found and complicated bobbin winder unit Type A, can be removed independently.

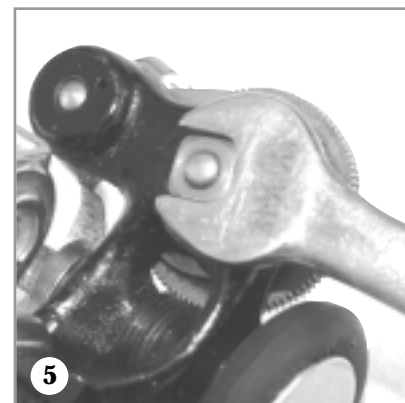
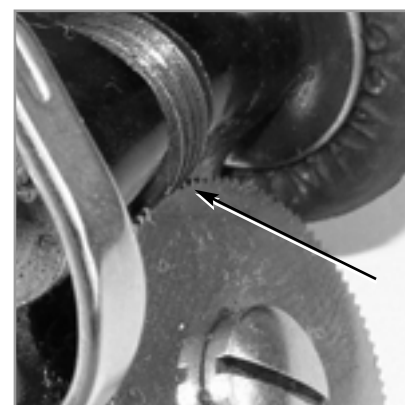
What follows is a breakdown of the most commonly found faults, of Type A and Type B, together with suggestions of how to remedy them:

- ☹ **Pin Badly Worn**



- ☺ Change the bobbin winder if you have an available spare, otherwise make a note on the Netley refurbishment form.

- ☹ **Worm Gear does not engage with cam gear, or won't turn.**

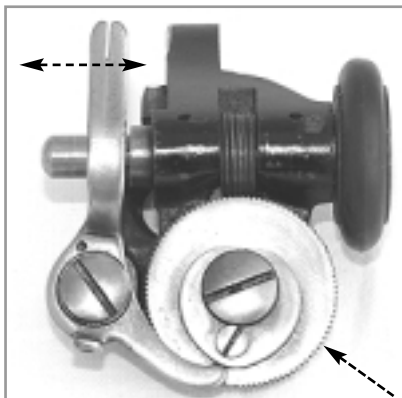


- (5) Loosen the nut at the back of the eccentric screw.**

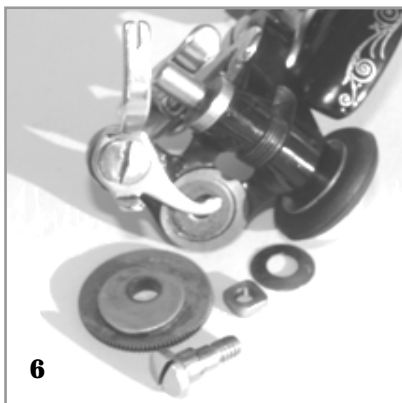
- ☺ Turn the screw until the worm gear engages with the cam gear without binding.

Re-tighten the nut, *making sure the screw doesn't move*, and re-check.

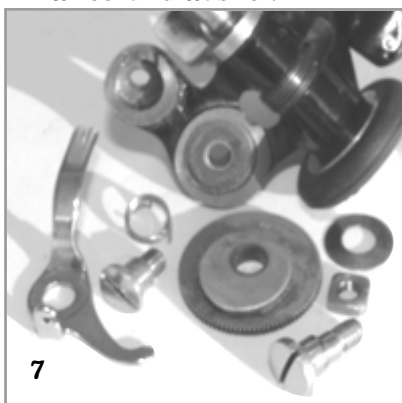
☹ Thread guide does not follow the cam.



☺ The answer may be a missing or damaged spring under the screw in the base of the guide.



(6) First undo the cam screw and remove the screw, nut, wheel and washer.



(7) Now undo the thread guide screw and remove the guide lever and the spring.

☺ When replacing the spring you will see that one small bent end locates in a pin hole in the lever housing the other end of the spring has a short tail.

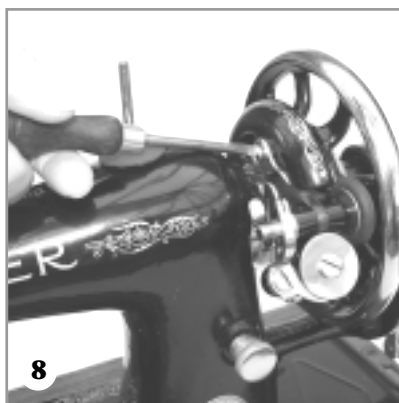
Put the thread guide back on top and locate the other end of the spring in the hole in the thread guide.

The thread guide must be turned anticlockwise, pointing well over to the left - as it was (see 6) when you dismantled it.

When you have replaced and tightened the screw, make sure the thread guide lever moves freely with the tension from the spring.

Replace and adjust the cam as already explained (see 5).

☹ The rubber wheel does not turn when pressing on the balance wheel.



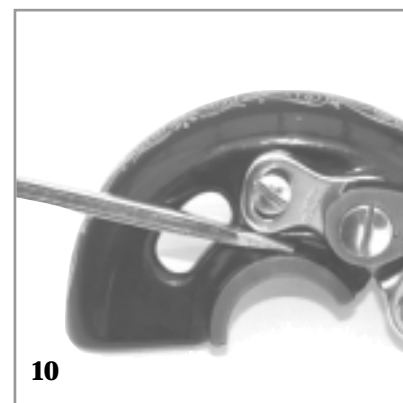
(8) Loosen the pressure control screw.



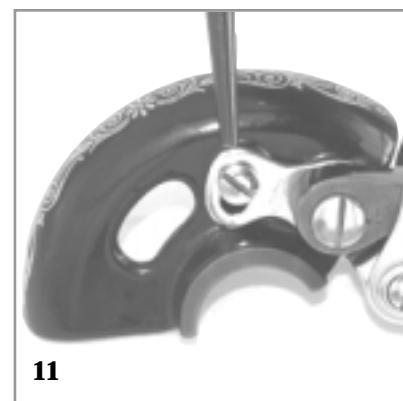
(9) Re-tighten the screw whilst pressing the rubber wheel firmly against the balance wheel.

☺ You may need to repeat this until you get the tension between the two wheels just right for easy turning action.

☹ The rubber wheel is still not pressing firmly enough against the balance wheel.



(10) Try loosening the pressure screw and the pivot screw very slightly and levering the pressure arm upwards using a screwdriver



☹ The rubber wheel stops turning before the bobbin is full.

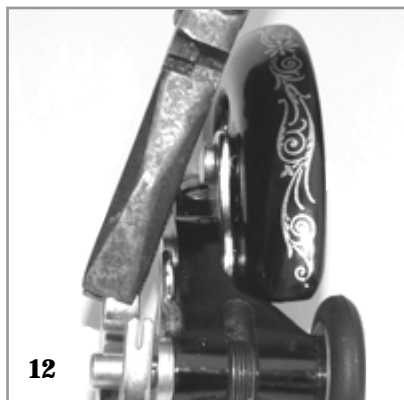
☺ This should also be cured by getting the correct pressure between the rubber wheel and the balance wheel

(11) With the pressure screw and the pivot screw very slightly loosened tap gently downwards on the pressure arm with a punch or screwdriver.

☹ The bobbin does not turn with the shaft.

☺ If the pin on the spindle shoulder is okay (see previous page) the bobbin may not be engaging with it.

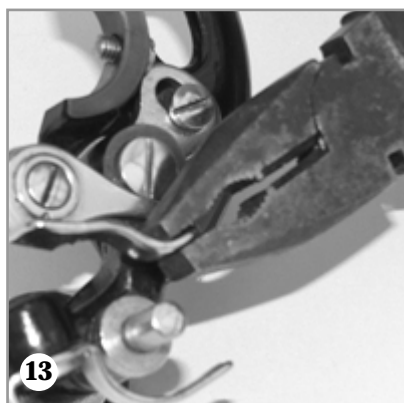
This probably means the stop latch is not holding the bobbin close enough to the right end of the shaft.



**(12) Using a pair of pliers, bend the stop latch slightly to the right.**

☹ **The winder does not lift off when the bobbin is full.**

This could be for one of two reasons:



☺ Hopefully, it may simply be - that with years of use - the stop latch has been bent backwards slightly and, if this is so, it is easily corrected.

**(13) Bend the stop latch slightly forward.**

☺ When an empty bobbin is slid on the shaft and the winder pushed down in the engaged position, there should only be a very small gap between the stop latch and the bobbin core.

This is to make sure the bobbin winder will snap off before the bobbin is over-wound.

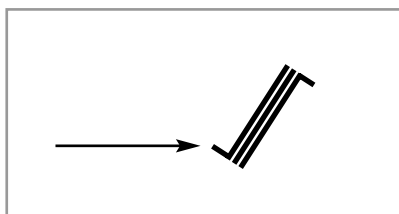
☹ **The winder still does not lift off when the bobbin is full.**

It may be that lifting spring is missing or not correctly fitted and you will need to dismantle the Bracket Assembly.



**14 Remove the pressure screw, then release the pivot screw and detach the assembly from the bracket.**

The whole assembly is actually pivoted and sprung at two points. The main one is the lifting spring, located in a housing at the end of the lifting arm.



As with the thread guide assembly, this spring also has the two ends bent at right angles to locate in retaining holes.



**15 Detach latch and pressure arm from the lifting arm.**



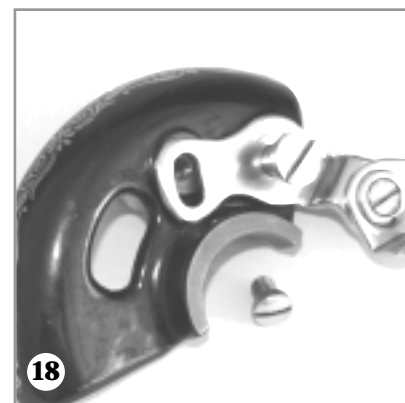
**16 Detach the latch from the pressure arm.**

☺ Now replace any missing, worn or broken springs or parts and reassemble.



**17 Re-connect the latch and the pressure arm with no tension in the spring.**

*The next part is tricky - but this tip will make it a little easier:*



**18 Place this sub assembly on the bracket and - just for now - put the pivotal screw through the arm and tighten.**



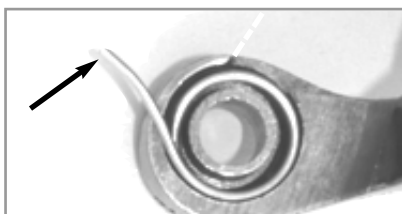
**(19) Put the pressure screw through the slot in the arm and screw tightly home into the bracket.**



**(20) Now, with the assembly held firmly in place, remove the pivotal screw.**



**(21) Pick up frame assembly and place spring into the deep recess - again locating the end of the spring in the hole.**



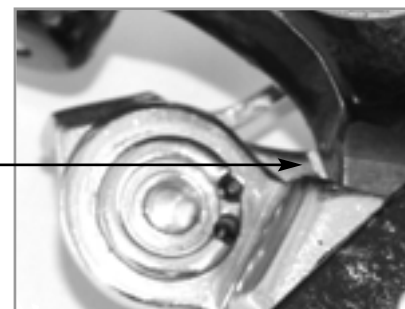
As the complete unit is reassembled the long tail of the spring is pushed round to create the pressure to release the winder when the bobbin is fully wound.

The spring can (if you're lucky) be persuaded to fit inside the recess completely, making the rest of the assembly easier.



Here's a reminder of the assembled unit (back view) to see the ultimate position of the spring tail resting against the bend in the pressure arm.

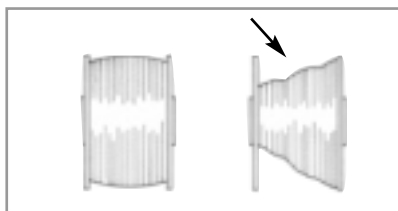
At this stage the spring tail comes to rest against the shoulder of the cutaway in the side of the deep recess.



Sometimes the spring does not stay in the recess and prevents the screw tightening properly, but with patience and practice the whole assembly will rotate round the pivotal screw again.

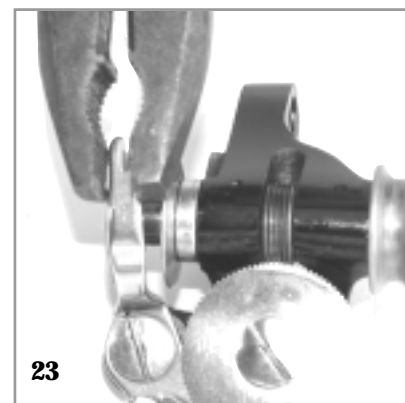
**(22) Hold the two halves of the frame assembly together (against the pressure) and push the pivotal screw back through the frame and screw into the bracket again.**

☹ **The thread does not lay evenly on the bobbin.**



First check that the bobbin shaft is turning the cam and that the thread guide is following the cam smoothly.

☺ If these are working properly, it could be that the thread guide has been bent so that it does not traverse the full width.



**(23) Using a pair of pliers, carefully bend the thread guide so that it is centred between the cheeks of the bobbin.**