

**663. Polishing the coils of a flat balance-spring.—**

After a spring has been made and hardened as explained at page 772 of the *Treatise on Modern Horology*, Glasgow recommends the following method of polishing their coils in a valuable practical paper on this subject :—\*

Take a piece of wood or large pith coned at one end and having a pin projecting about half an inch from the apex of



FIG. 25.

this cone, as seen in fig. 25 ; putting the spring over this pin, draw its outer coil down by the thumb of the left hand, and with a well-worn brush charged with red-stuff polish the outer coils, turning the spring when one side is done to repeat the process on the other. The inner sides are more difficult to polish. If the spring be placed on a piece of flat cork and a finely-cut peg be inserted as shown

\* *Horological Journal*. Vol. XVII. (1874—5), p. 151.

in fig. 26, and pressed firmly on the cork, the spring will take a conical form, and by moving the peg (supplied with red-stuff) backwards and forwards and also in a lateral direction, the inside will soon be polished; but great care must be taken not to bend the spring during this process, as it would thereby be spoilt. The flat edges are polished on writing-paper rubbed over with red-stuff in the manner explained above for reducing the strength of a spring. Wash it in benzine and the spring is ready for blueing.

**664.** Rozé balance-spring.—Fig. 7, plate XIV., was added in the French edition of this work as explanatory of

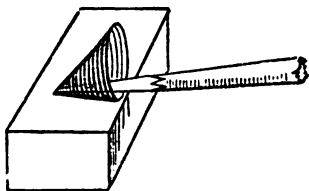


FIG. 26.

paragraph 1377 in the *Treatise on Modern Horology*. It is therefore unnecessary to again consider this special form of spring.

**665.** Various small tools relating to the balance-spring are described in articles **350, 360—1.**

**666.** To harden gold springs.—Gold detent, thermometer, suspension and balance springs can be obtained of a high degree of elasticity (see p. 773 of the *Treatise* and art. **113**). Rolling hardens them, but renders them very brittle. They can be made supple and elastic, not by hardening, as in the case of steel, but by annealing, care being taken not to exceed a certain degree of heat. The spring may be coiled on a block and placed in a tube that has a smooth steel lid, then heat the tube in the flame of a spirit lamp, and, as soon as the steel is of a blue temper, remove the flame and allow the whole to cool.