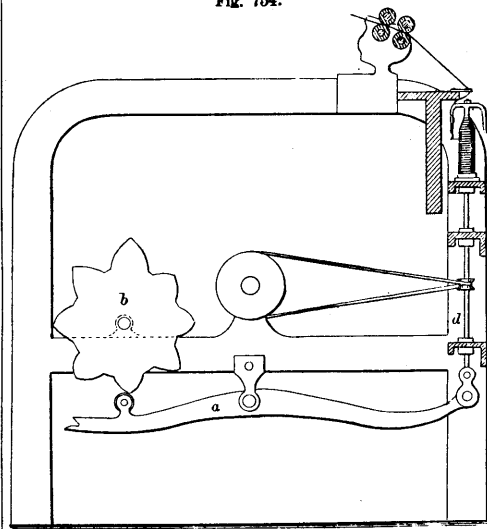


Fig. 754.



Bobbin-Winder (for Looms).

bobbin by a lever *a* bearing against a cam *b*, so shaped that as the layers of thread are built up, the length of throw increases; the bobbin *c* is supported on a fixed shaft *d* rotated continuously.

2. (*Sewing-Machine*.) A device adapted to receive a shuttle-bobbin and rotate it so that it may be wound with thread. The winders are usually operated by being turned in contact with the driving-wheel; balance-wheel, or band. Some winders are supplied with an automatic thread-distributor, to lay the thread evenly.

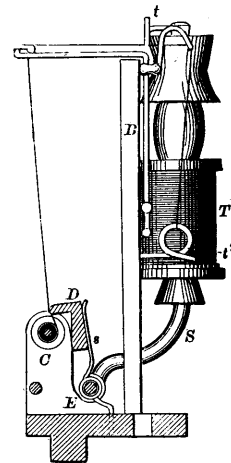
Winders for the shuttle-bobbins of sewing-machines have arrangements for laying the thread regularly. A traverse guide is automatically reciprocated to lay the thread evenly and compactly, or the bobbin is reciprocated to receive it. When filled, the winding ceases by a stop-motion or through an alarm.

In the illustration, the arbor on which the bobbin is placed is rotated by the temporary contact of a friction-wheel against the fly-wheel of the machine.

The vibrating presser *D* is T-shaped, and is pivoted by its lower end to a horizontal bar *E*, and acted on by a spring *s*.

The upper portion or T-head of this presser is somewhat longer than the bobbin *C*, but that portion which impinges against the thread on the bobbin is of such width as to be received between the heads of the bobbin. *S* represents the vertical rod on which the spool *T* is applied. *B* represents a rod which is provided with fixed thread-guides *t*<sup>1</sup> *t*<sup>2</sup> and a horizontal vibrating thread-guide *l*.

Fig. 755.



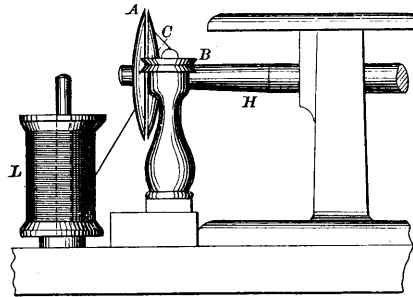
Bobbin-Winder (for Shuttle-Bobbins of Sewing-Machines).

**Bobbin-winder.** 1. (*Weaving*.) The thread or yarn is directed to the eye of the guide, which is at the end of a shaft automatically raised and lowered, to lay the thread spirally and conically on the

The winder for lenticular spools of sewing-machines has a spindle on which the bobbin is held while being rotated by the power of the sewing-machine.

The thread from the spool *L*, instead of being held by the fingers as the bobbin revolves, is passed around the tension *B*, and thence to the bobbin *A*. On operating the sewing-machine the thread will be wound up on the bobbin *A*, by the rotation of the

Fig. 756.



*Bobbin-Winder.*

shaft *H*, compactly and uniformly by the action of the tension *B*. This will continue until the bobbin *A* is filled, when the thread will override and slip over the edge of the bobbin, down upon the knife *C*, and be instantly cut off.