

F. E. WHITESIDE.

Improvement in Friction Bands and Stops for Sewing-Machines.

No. 114,071.

Patented April 25, 1871.

Fig. 1.

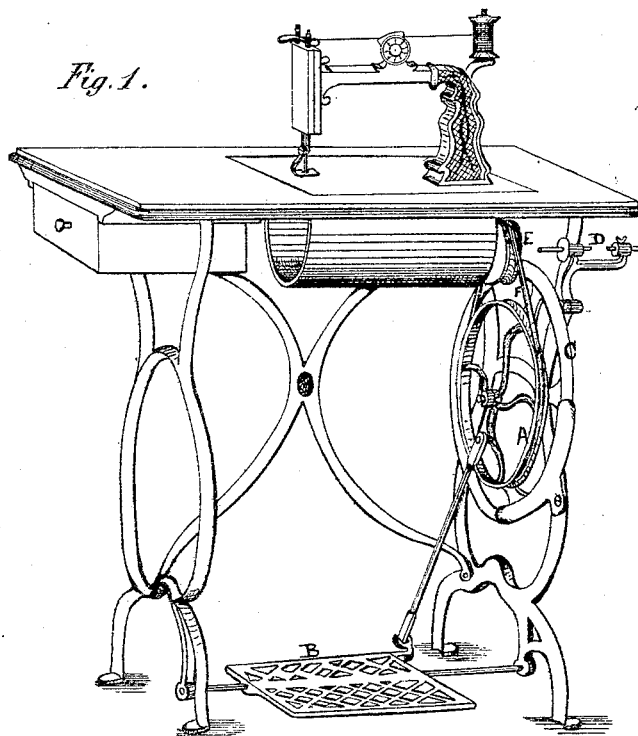


Fig. 2.

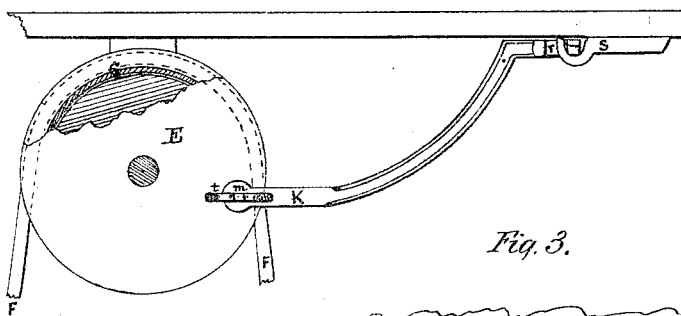


Fig. 4.

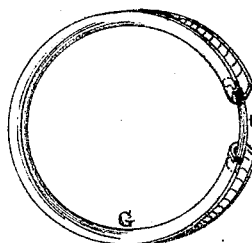
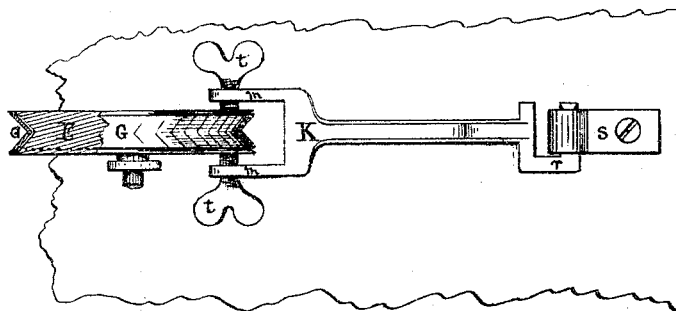


Fig. 3.



Witnesses.
Ewell G. Dick.
J. M. Burr.

Frances E. Whiteside
Inventor
By David A. Burr
Atty.

UNITED STATES PATENT OFFICE.

FRANCIS E. WHITESIDE, OF OXFORD, PENNSYLVANIA.

IMPROVEMENT IN FRICTION BANDS AND STOPS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 114,071, dated April 25, 1871.

To all whom it may concern:

Be it known that I, FRANCIS E. WHITESIDE, of Oxford, in the county of Chester and State of Pennsylvania, have invented certain improved devices for disconnecting the sewing mechanism of certain classes of sewing-machines from the motive power thereof when it is desired to employ said power for driving the bobbin-winder alone; and the following is a specification thereof.

My invention relates, first, to the combination of an elastic friction-band, by preference of thin metal, with the grooved periphery of one of the band-pulleys upon any one of that class of sewing-machines in which the bobbin-winder is operated by a suitable connection, either with the lower driving-pulley, or with the driving cord or belt of the machine—as, for instance, the “Howe,” “Weed,” “American Button-Hole,” “Empire,” and the old style of “Grover & Baker” sewing-machines; and, second, to the combination of a clamp or stop with the upper band-pulley to lock the same when desired; the object of my invention being to permit the sewing mechanism to be locked, so as to prevent any movement thereof, during the operation of winding a bobbin by means of the motive power of the machine, and to provide for an easy revolution of the main driving-wheel, and of its driving cord or belt, under the influence of the motive power, for the purpose of driving therewith the devices employed for winding bobbins after the remainder of the machinery is locked.

Figure 1 is a view, in perspective, of a Howe sewing-machine having my attachments applied thereto. Fig. 2 is a side elevation of the upper pulley or band-wheel partly broken away and in section, and of my lock-bar applied thereto. Fig. 3 is a bottom or underneath view of the table, upper pulley, and lock-bar, illustrating more fully the combination of the friction-band and lock-bar with said pulley. Fig. 4 is an elevation, in perspective, of my friction-band detached, illustrating one method of connecting its ends.

A represents the large main band-wheel or pulley of a Howe sewing-machine, operated, in the customary manner, by the treadle B. C is the fly-wheel, secured to the band-wheel A to revolve with it. D is the bobbin-winder, operated by dropping and bearing against the

periphery of the fly-wheel C. E is the upper small band wheel or pulley upon the spindle, carrying and operating the sewing mechanism of the machine. F is the cord or belt connecting the pulleys A and E. G, Figs. 2, 3, and 4, is an elastic band of thin metal, or of stiff leather, rawhide, or papier maché, as an equivalent for the metal, made to fit closely and accurately in the groove formed in the periphery of the pulley E to receive the cord F. It is secured around the pulley by means of a link, H, confining its free ends, (see Fig. 4,) or by causing said ends to interlock, or by any other of the customary connecting devices.

The link H is provided with hooked ends, which engage in recesses or apertures formed in the ends of the band G. This elastic band G is made to conform with nicety to the configuration of the groove in the periphery of the pulley E, and it is so secured about the same as that, although it fits closely, it may nevertheless revolve thereon freely independently thereof when required. The elasticity of this loose band G is such as that the pressure of the cord F thereon will produce sufficient friction between it and the pulley E to drive the latter and operate the sewing mechanism of the machine when the pulley is left free and unchecked; but if the pulley be locked so as that it cannot turn, the loose band will then revolve thereon with sufficient ease and freedom as to require but little additional power to continue the movement of the main pulley, and of the driving cord or belt F, for the purpose of operating the bobbin-winder brought in contact with the latter, as in the Grover & Baker lock-stitch machines, or with the former, as in the Howe machines.

K is a lock-bar, forked at its front end, so that its two prongs or arms *m m* may embrace the sides of the pulley E, and its rear end is provided with a hook, *r*, to engage a metallic loop or eye, *s*, secured to the table of the machine on that side thereof upon which the pulley to be locked is situated. The lock-bar is thus readily detached from the machine when not in use. Its hook end may be fashioned to serve as a wrench to move the nuts and bolts of the machine, as illustrated in Fig. 3, and may be also formed to constitute a screw-driver, so as to become a useful tool as well as a simple locking device.

The prongs or arms *m m* of its forked end are provided with set-screws *t t*, to screw against the faces of the pulley when it is embraced thereby, as illustrated in the drawings. Hence, to lock the pulley *E*, and thus prevent any movement thereof, and of the sewing mechanism of the machine driven thereby, it is only necessary to slip the hook end of the lock-bar *K* into its loop, and to bring its forked end forward, so as to embrace the wheel *E*, and then, by a turn of either screw *t*, the wheel is fastened. If, now, the movement of the treadle is continued, causing the wheel *A* to revolve, the cord *F* will, by its friction upon the band *G*, cause the same to turn upon the pulley *E* independently thereof, said band being left loose enough, as described, and properly lubricated, as to revolve very freely, and with but a slight additional expenditure of power; hence, when it is desired to operate the bobbin-winder *D* by the revolution of the wheel *C*, said wheel may be placed in rapid movement independently of the sewing mechanism of the machine, which is thus saved from the unnecessary wear and tear to which it is ordinarily subjected in using the bobbin-winder.

The shape of the lock-bar *K* will be necessarily varied to adapt it to the particular position in the machine of the wheel or pulley to be locked thereby. It may be applied to any pulley by which the sewing mechanism is operated.

Although I prefer to use a lock-bar, *K*, formed and operating substantially as described, for arresting the movement of the sewing mechanism of the machine, I contemplate the use of any form of stop or lock adapted to this purpose, in combination with a friction-band, *G*.

This friction-band *G* may be applied to the larger wheel *A*, instead of to the smaller pulley *E* of the Howe machine, illustrated in the drawings, and I contemplate its combination with either one of the band-wheels or pulleys of the sewing-machine, as the construction and operation of the particular machine to which it is applied may require.

I claim as my invention—

1. An elastic friction-band, *G*, combined with the periphery of the upper or lower band-wheel or pulley of a sewing-machine, and with the cord or band passing over said wheel, substantially in the manner and for the purpose herein set forth.

2. The forked lock-bar *K*, provided with one or more clamping-screws, *t t*, to embrace and lock the pulley operating the sewing mechanism of a sewing-machine, and combined with said pulley, and with the table or bed-plate of the machine, substantially in the manner and for the purpose herein set forth.

FRANCIS E. WHITESIDE.

Witnesses:

DAVID A. BURR,
N. M. ROSS.