(No Model.)

G. SCELLES.

MACHINERY FOR WINDING SEWING THREAD ON FLAT BOBBINS.

No. 395,178. Patented Dec. 25, 1888.

Fig. 1

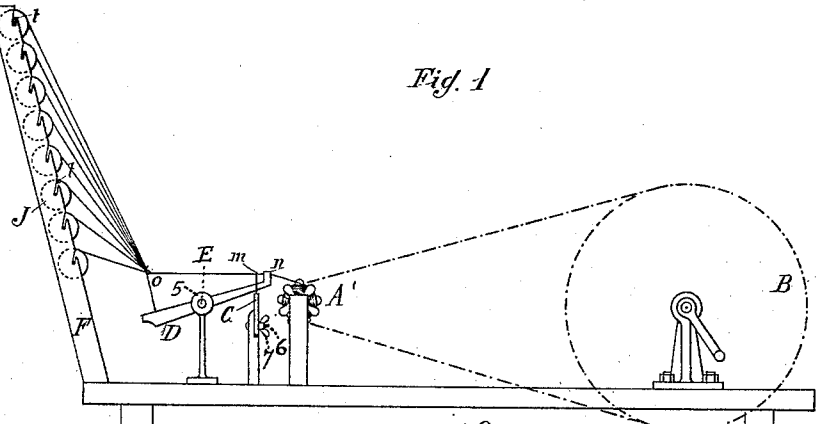

Fig. 2

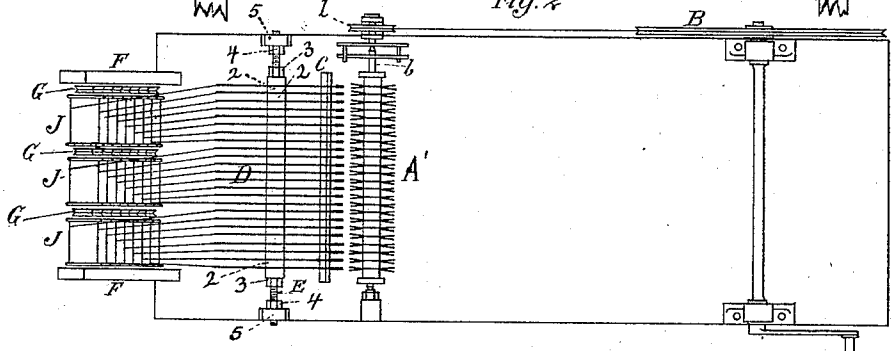

Fig. 3

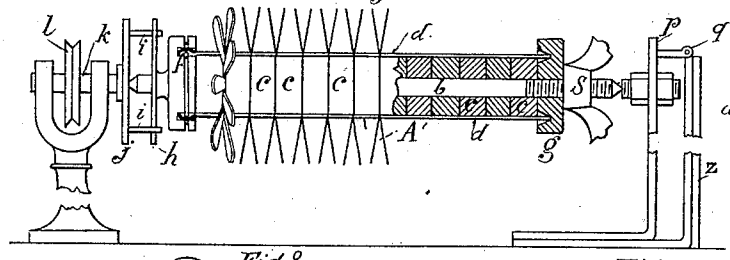

Fig. 4

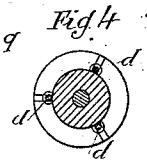

Fig. 5

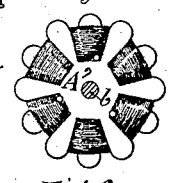

Fig. 6

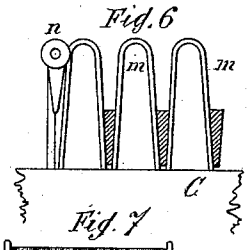

Fig. 7

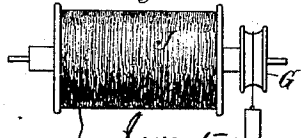

Fig. 8

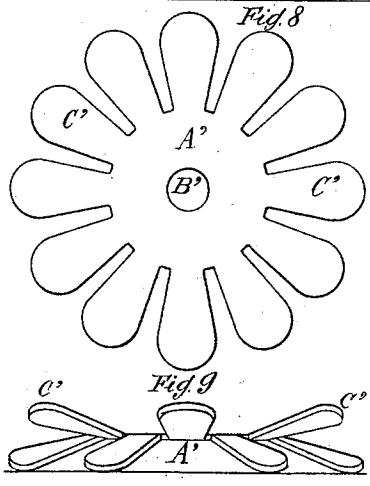

Fig. 10

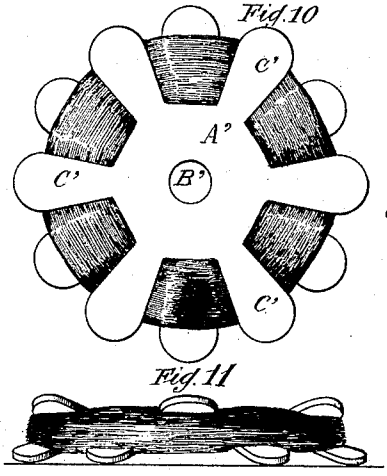

Fig. 9

Fig. 11

Inventor,
Gustave Scelles
by A. Pollok
his attorney
C. J. Hedrick
H. Dorsey
Witnesses

UNITED STATES PATENT OFFICE.

GUSTAVE SCELLES, OF PARIS, FRANCE.

MACHINERY FOR WINDING SEWING-THREAD ON FLAT BOBBINS.

SPECIFICATION forming part of Letters Patent No. 395,178, dated December 25, 1888.

Application filed August 24, 1888. Serial No. 283,629. (No model.) Patented in France February 6, 1888, No. 188,587, and in Belgium February 6, 1888, No. 80,542.

To all whom it may concern:

Be it known that I, GUSTAVE SCELLES, of Paris, in the Republic of France, have invented new and useful Improvements in Machinery for Winding Sewing-Thread on Flat Bobbins, (for which I have obtained patents in France, No. 188,587, dated February 6, 1888, and in Belgium, No. 80,542, dated February 6, 1888,) and which is fully set forth in the following specification.

This invention relates to means for winding flat bobbins for receiving and distributing the different kinds of sewing-threads, said threads being wound on and unwound from said bobbins in a regular manner, and when wound being protected from objects likely to soil them.

In the accompanying drawings, Figures 1 and 2 are an elevation and a plan, respectively, of my means for winding the bobbins. Figs. 3, 4, 5, 6, and 7 are detail views of the same. Figs. 8 and 9 are an elevation and an edge view, respectively, of one of the empty bobbins; and Figs. 10 and 11 are similar views of a full bobbin. The full bobbins, as shown in Figs. 10 and 11, are ready to be utilized in sewing-machines or otherwise.

The large spools or reels J, on which the threads to be distributed to the bobbins are wound, as they are received from the spinning or finishing machine are placed on spindles, which are supported by the ends resting in notches *t* of the inclined rack F. These spools are each provided with a light brake, G, which gives to the thread a tension which increases the regularity of the winding. They can be provided indifferently with threads of various colors, sizes, and lengths, and can be more or less in number according to the number of flat bobbins to be formed.

From the spools J the threads pass to guide-pieces D, which have holes in the middle, and are supported on the bar E, which is inserted through said holes, washers 2 being interposed between each two of the guide-pieces D, and the whole clamped together by nuts 3, (washers being placed behind the nuts,) or a nut and a fixed collar or similar means.

The washers 3 between the guide-pieces are of such size and the bar E is so adjusted by suitable means—such as the nuts 4—in the uprights 5, by which it is supported, that the guides *o* and *n* on each guide-piece are in the plane of the corresponding bobbin, which is supported just in front of it by means to be presently explained. Each thread is led through an eye, *o*, (formed by curling the end of a wire,) at the rear end of a guide-piece D, and then through a hole in the projection *n* at the front end of said guide-piece, from which projection it passes to the corresponding flat bobbin A′. Each of these bobbins A′ is composed of a thin disk, Figs. 8 and 9, pierced in the center with a hole, B′, and provided at the edge with an even number of rounded ears, C′, which are bent alternately right and left of the central plane of the disk after the manner of teeth in saws. The holes B′ in the disks allow them to be placed on a shaft, bar, or pin for winding and unwinding. The space between the ears C′ is a V-shaped throat, which receives the thread to be wound thereon, and which may be more or less open, according to the quantity of thread.

The wound thread is protected on all sides by the ends of the ears C′, and cannot become soiled by contact with tables on which the bobbins may be placed or over which they may slide.

To fill these flat bobbins with thread a number of them are strung on a shaft, *b*, with separating-washers *c* between, and are clamped together between the collar *f* on said shaft near one end and the wing-nut S near the other end thereof. On the collar *f* are jointed three bars, *d*, which are placed in the notches between ears C′ of the bobbins, and whose outer ends are held in a circular groove in the washer *g* on which the nut S bears. These bars, of which a less number may be used, and whose number can be increased if the diameter of the bobbins demands it, have for their object to carry the flat bobbins A′ around positively with the shaft *b* when this latter is put into motion. The shaft *b* is mounted on centers so as to reduce friction, and on the side of the collar *f* it carries arms *h*, through which the shaft is driven from the pulley *l* through the shaft *k*, plate *j*, and pins *i*, projecting from said plate, across the arms *h*. The pulley *l* is driven by a chain or belt from the large wheel B, which can be turned

by a crank or otherwise. This shaft *b* with its accessories forms the rotary holder for the flat bobbins A′. It will be understood that these bobbins are so arranged that each thread after leaving its guide *n* is wound in the annular V-shaped throat produced by the alternating ears C′ of the corresponding bobbin. The guide-pieces D rest upon a strip of wood, C, which is adjustably secured to its support by means of screws 6 and nuts 7, or other means, so that it may be set higher or lower, in order to regulate the position of guides *n* at the height best suited to the diameter of the bobbins. This strip carries a series of bent wire fingers, *m*, with the spaces between any two fingers slightly less than the thickness of each guide-piece D, so as to fix the position of the latter during the operation of the machine and avoid all deviation of the thread.

The apparatus thus prepared and the wheel B put in motion, the clutch *j i h* carries around the rotary bobbin-holder and the bobbins A′ therein and winds the thread on all of them simultaneously.

To supply the rotary holder with bobbins is very simple, for it suffices to string the bobbins on the shaft *b*, alternating them with separating-washers *c* until the desired number of bobbins have been placed thereon or the shaft is full, the bars *d* during the operation being opened out like the ribs of an umbrella. When the holder is filled, the bars *d* are closed by being inserted between the ears C′ of the bobbins A′, and the shaft *b* is then placed on its centers or bearings, of which one is in the center of the plate *j* in the axis of the shaft *k*, and the other is the spring-plate *p*, which can be sprung back to permit the insertion of the shaft. To prevent this plate from springing back while the machine is running, a stop, *q*, hinged to the support Z, is turned down behind said plate, as shown in Fig. 3.

When the flat bobbins have been filled, the stop *q* is thrown back, the spring-plate *p* is moved away so as to disengage the points from the shaft *b*, which is then removed with the full bobbins thereon, the threads cut and secured, and a holder with empty bobbins inserted, the stop *q* returned, and the threads applied to the empty bobbins.

The removal of the full bobbins from the holder is easily effected by screwing the nut S off the shaft *b*, and then dropping or sliding off the washers *c* and bobbins A′. The ears of each bobbin are then flattened slightly by a light pressure, so as to clamp a little the wound thread. The bobbin then occupies less space, at the same time the threads are slightly indented.

The bobbin herein specified as an article of manufacture is of my own invention, but is not claimed herein, because it has been decided by the Patent Office to be subject-matter for separate Letters Patent.

I claim as my invention or discovery—

1. The series of guide-pieces provided each with thread-guides and the bar and washers by which said pieces are supported and spaced, in combination with a rotary bobbin-holder for containing the series of the specified bobbins, said holder having a series of spacing-washers for the bobbins, whereby the bobbin-throats are brought each in the same plane as its corresponding guide-piece, substantially as described.

2. The bobbin-holder removably supported on centers and comprising the shaft, washers, and nuts for supporting, spacing, and clamping the bobbins, in combination with a clutch for the revolving holder and bobbins, rods which fit between the ears in the bobbins, and retaining-pieces—such as the collar and grooved washer—which hold the said rod in place, substantially as described.

3. The guide-pieces pivotally mounted on a supporting-bar and the vertically-adjustable strip forming an adjusting-rest for one end of said pieces and provided with fingers between the guide-pieces, in combination with a rotary bobbin-holder and a spool-rack, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GUSTAVE SCELLES.

Witnesses:
J. DUPONT,
V. BIDAULT.