

(No Model.)

A. B. MORSE.
THREAD PACKAGE.

No. 592,592.

Patented Oct. 26, 1897.

Fig. 1

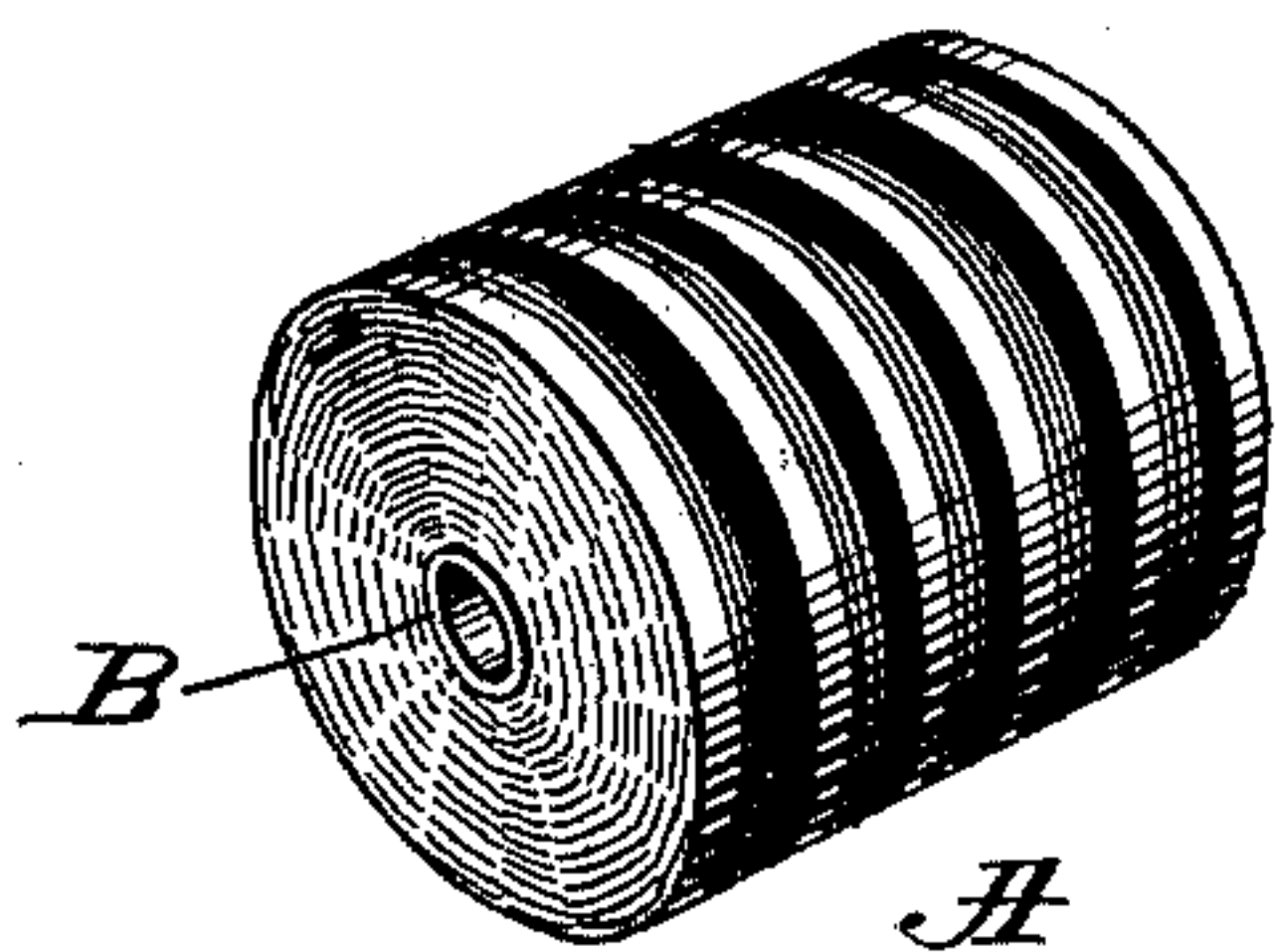


Fig. 2.

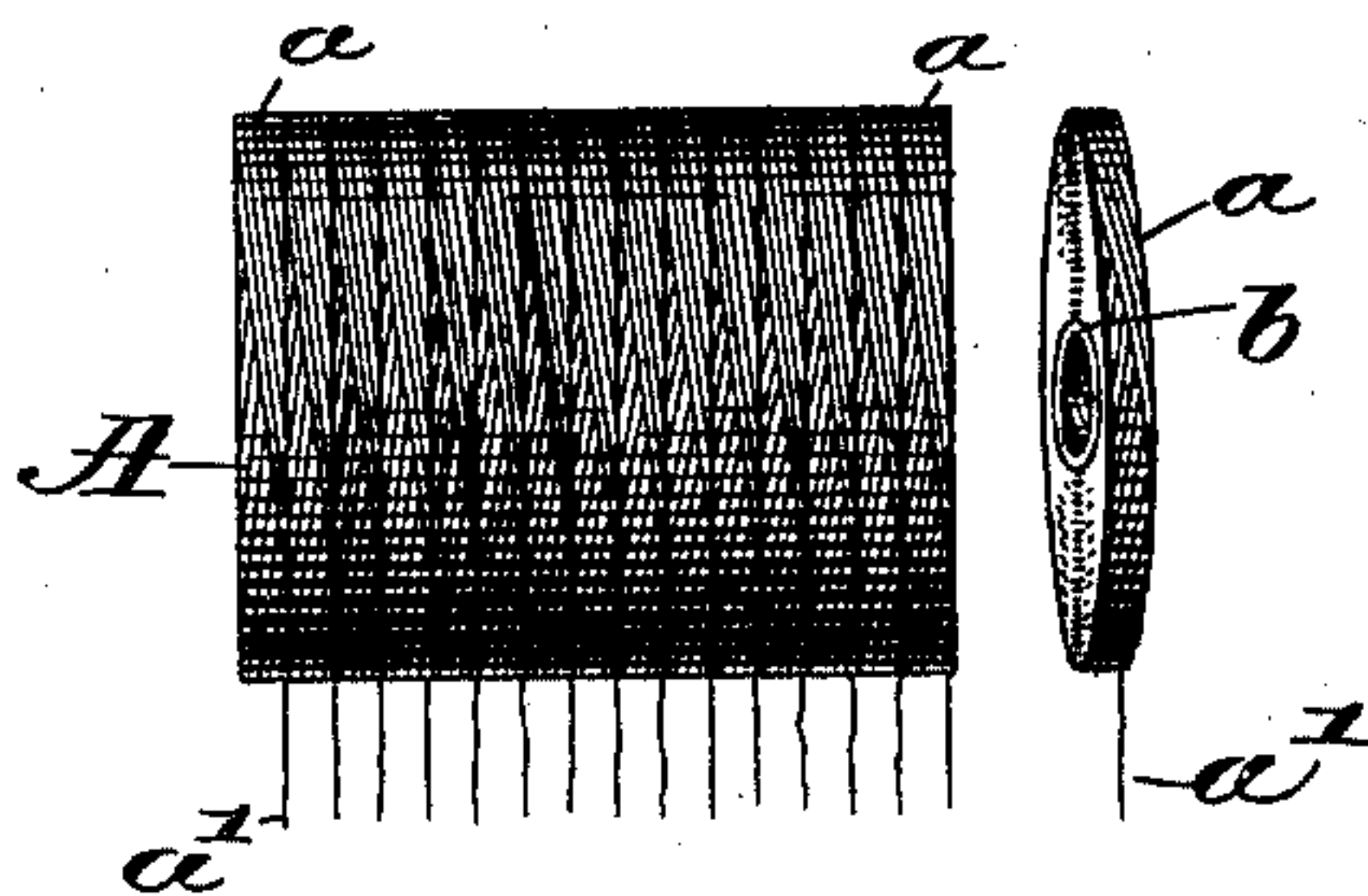
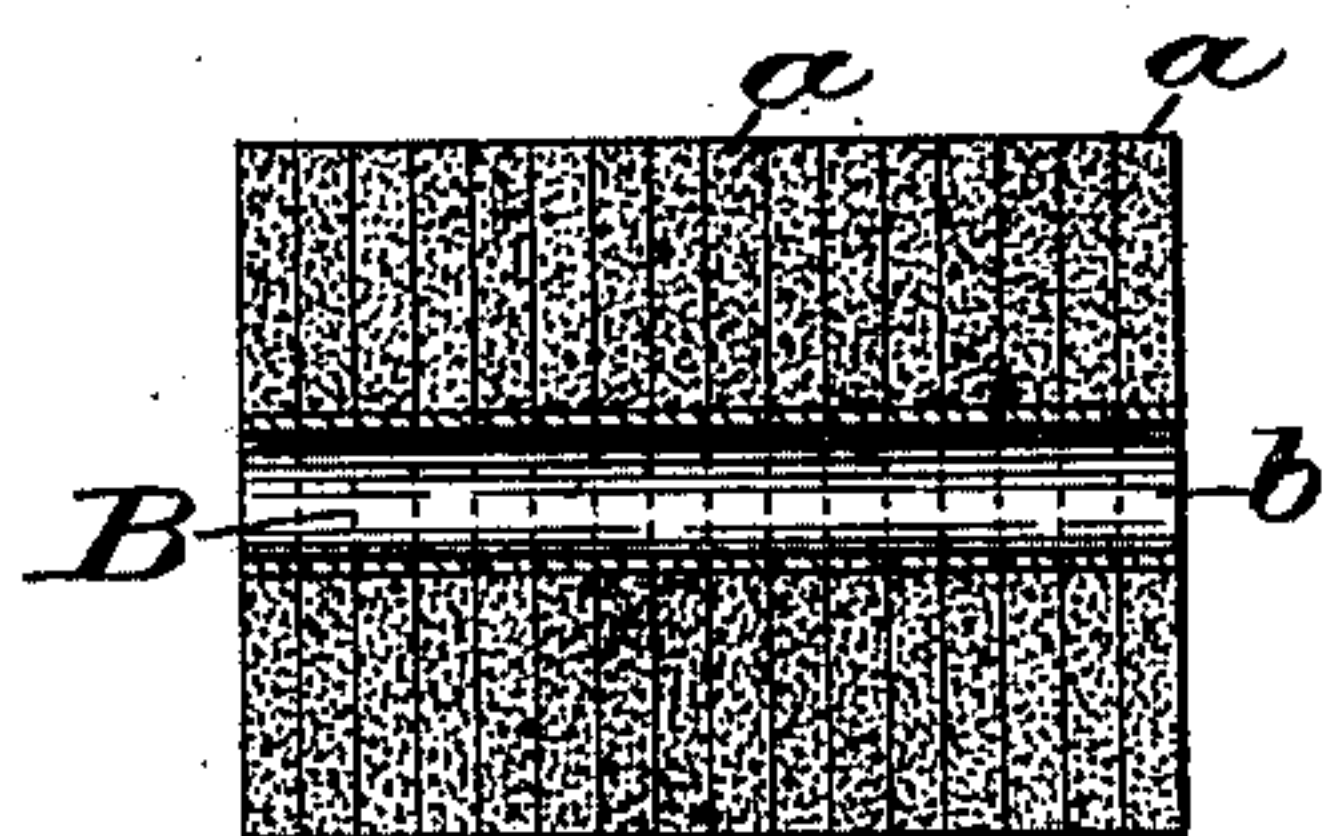


Fig. 3.



Witnesses:

Al. Harmon
Thomas J. Drummond

Inventor.

Alfred B. Morse.
by Crosby & Gregory
attys.

UNITED STATES PATENT OFFICE.

ALFRED B. MORSE, OF EASTON, MASSACHUSETTS.

THREAD-PACKAGE.

SPECIFICATION forming part of Letters Patent No. 592,592, dated October 26, 1897.

Application filed April 19, 1897. Serial No. 632,736. (No model.)

To all whom it may concern:

Be it known that I, ALFRED B. MORSE, of South Easton, county of Bristol, State of Massachusetts, have invented an Improvement in Thread-Packages, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is an improved bobbin or series of bobbins so made that a perfectly-wound bobbin is insured and that also a bobbin of any degree of thinness relatively to its depth may be produced.

Heretofore "bobbins" (and by that term I mean a wound body of thread whether the same be called by the name of "cop," "bobbin," or any other name) have been wound singly, usually one machine having six spindles, so that at one winding six individual and entirely distinct bobbins might be wound; but this individual winding has many disadvantages, particularly so in the case of thread wound for the shuttles of sewing-machines.

It is desirable to use machine-wound bobbins for sewing-machines, the bobbin being placed between the separable sides of the shuttle, because much more thread can be carried by the shuttle in this way than if the thread were wound directly on the shuttle, and also it saves a great amount of time, labor, and expense.

In order to produce perfect bobbins, it has usually been the custom to wind the thread between disks or heads placed on the spindle of the machine to hold the thread from irregular winding at the ends of the bobbin and in order to produce smooth regular end surfaces.

By winding the bobbins according to my novel method hereinafter set forth any number of bobbins may be wound with absolutely perfect and unvarying winding from the beginning to the finish, and it enables me to do this winding with a great saving of time, expense, labor, and waste. It also enables me to introduce a range of novel effects and combinations of grades and colors of threads which have not been heretofore possible, and it thereby enables me to produce the novel and useful product constituting the subject of this patent.

The details of my invention will be fully

described in the following specification, and more particularly defined in the appended claims, forming a part of the specification, reference being had to the accompanying drawings, illustrative of my invention.

In the drawings, Figure 1, in perspective, shows a plurality of bobbins wound according to my improved method, illustrating the manner of winding. Fig. 2 is a front elevation thereof, one of the bobbins being removed from the rest in order to more clearly indicate the results of my method. Fig. 3 is a central vertical longitudinal section.

In the usual winding of bobbins it is customary to start one thread for a single bobbin on each spindle of the machine, this thread being built up in varying ways according to the different machines in use, the bobbin, however, in every case being single and distinct by itself, this one bobbin having its ends liable to frequent flaws in the winding, and, moreover, while this single winding is practical and reasonably accurate for winding large bobbins or bobbins of considerable relative width it is not practical for extremely thin or narrow bobbins, such as those herein shown. (See particularly Fig. 2.)

In producing the bobbins of my present invention I proceed, in general terms, by winding on one spindle simultaneously and immediately contiguous one to another the desired plurality of bobbins, whereby there is built up a plurality of homogeneous disks, each of which constitutes a bobbin, the whole, however, being built up in one solid thread mass, as shown in Fig. 1, so that as a result each disk or bobbin acts as a guide for the one next to it and the several bobbins act as supports for each other, enabling the winding to progress evenly and rapidly and permitting the bobbins or disks to be as thin or narrow as may be without the slightest danger of any uncertainty or irregularity in the winding, it being thus possible to make thin bobbins as readily as thick ones, inasmuch as the throw of the thread-guide makes no difference whatever with the permanency or integrity of the bobbin, for the reason that all the bobbins support one another with the same effect as if they were actually one bobbin and not several.

In the drawings I have shown a thread mass

2
A, comprising sixteen bobbins *a*, which have been wound together on one spindle, the thread ends *a'* being shown in Fig. 2 for clearness of understanding. Preferably each bobbin will have its own spool or annular foundation *b*, the several spools or foundations together constituting one extended cylinder, thimble, or spool B, as clearly shown in Fig. 3, extending from end to end of the thread mass, and this cylinder may be made up of a plurality of rings of paper placed on the spindle of the machine before the winding and clamped snugly against each other, so as to form one uninterrupted tubular foundation to receive the several threads, (sixteen in the instance supposed and illustrated,) or it may be a single integral tube of the required length scored circumferentially at the points of breakage or cleavage where the individual bobbins leave off—i. e., it may be circumferentially grooved or cut nearly through, so that it may readily separate whenever the several bobbins are pried off from the thread mass. Preferably this foundation or spool B will be made of paper, although I do not limit myself in respect to material.

In winding the bobbins the threads *a'* are accurately spaced apart distances corresponding to the desired thickness of the bobbins to be wound, the thread-guide being given a corresponding throw, and the threads having been started on their respective rings or annular foundations *b* of the tube B the several bobbins simultaneously build up contiguous to each other and with a resulting firmness and solidity that renders the entire mass perfectly homogeneous and coherent. In fact, the threads mat and weld together, as it were, at the sides or ends of the bobbins as the latter build up, so that the mass formed by the plurality of bobbins has a resulting firmness and solidity which offers considerable resistance to the separation of the completed bobbins one from another.

The bobbins may be packed and sold in masses as wound—that is, in coherent packages of sixteen or of whatever number is preferred—and when it is desired to use a bobbin a paper-knife or other thin wedge is forced down between the inner edge of the bobbin and the adjacent thread mass, thereby prying off the complete bobbin and disrupting or separating its foundation-ring *b* from the rest of the tube B. The result is that a dense and unusually perfect and accurate bobbin is produced, as shown at the right hand in Fig. 2. Moreover, the several bobbins being compacted, as described, into

one solid mass, which is not easily separated into its constituent bobbins, materially aids in packing and shipping the bobbins, also enabling the latter to be kept compactly and without liability of becoming soiled or injured.

A further novel and exceedingly advantageous feature thereof resides in the capability thereby afforded of winding the successive bobbins in varying colors or shades of thread, as indicated in Fig. 1, by the different circumferential stripes. This feature produces surprisingly beautiful effects in the composite product, and, if desired, two or more threads and colors may be wound in each bobbin. This is of practical advantage in enabling several threads to be fed from one bobbin in sewing—for instance, in different colors—and enabling stitching to be done, if desired, with a plurality of needles fed from one bobbin, or enables the several colors all to be fed under equal resistance or tension from the one bobbin or thread mass to one needle or point of delivery, (it may be for twisting, braiding, or weaving.)

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The herein-described composite mass, comprising a plurality of complete and distinct bobbins wound coaxially side by side and compacted together in one coherent thread mass, substantially as described.

2. A composite thread-package, comprising a central, tubular foundation divided into a plurality of ring-like portions throughout its length, and a corresponding plurality of threads wound on said foundation and constituting a plurality of distinct bobbins one for each of said ring-like portions, said plurality of bobbins being compacted together concentrically with said tubular foundation to form one homogeneous thread mass, substantially as described.

3. A composite thread-package, comprising a plurality of bobbins wound side by side and integrally compacted together thereby, whereby they cling to each other as one mass, said bobbins being wound with different colors or kinds of threads, substantially as described.

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

ALFRED B. MORSE.

Witnesses:

GEO. W. GREGORY,
GEO. H. MAXWELL.