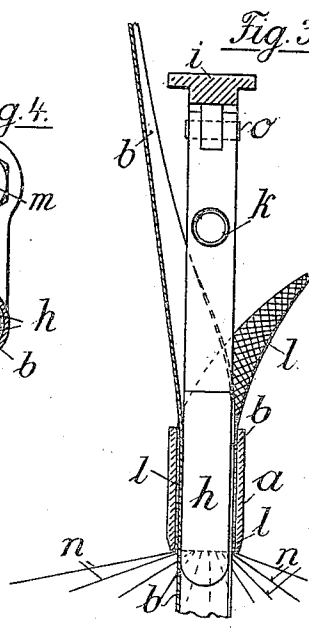
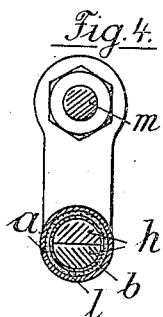
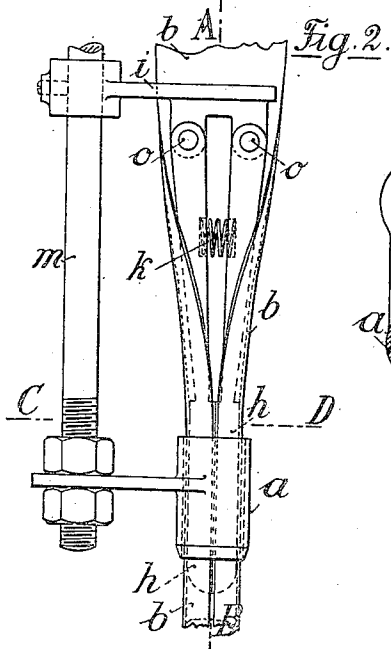
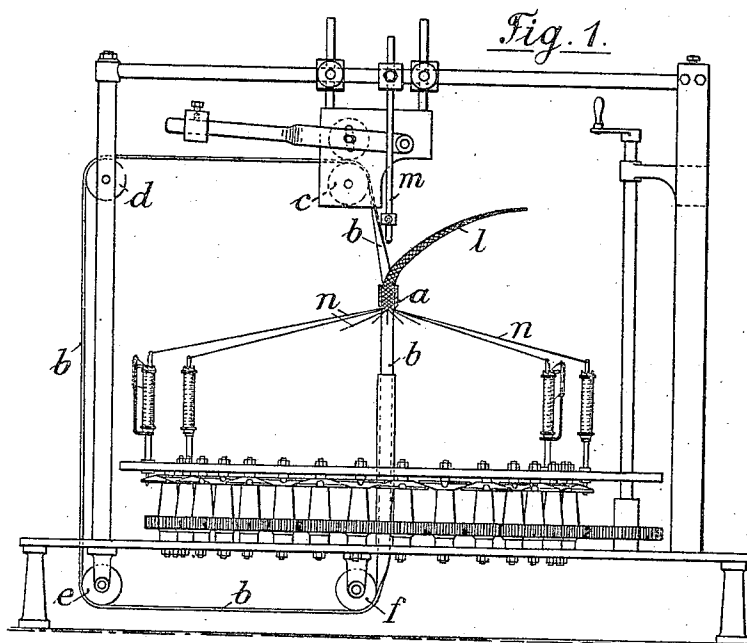


No. 838,899.

PATENTED DEC. 18, 1906.

H. J. QUAMBUSCH.
BRAIDING AND LACE MAKING MACHINE.
APPLICATION FILED DEC. 28, 1905.



Witnesses:
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UNITED STATES PATENT OFFICE.

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GERMANY.

BRAIDING AND LACE-MAKING MACHINE.

No. 838,899.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed December 28, 1905. Serial No. 293,697.

To all whom it may concern:

Be it known that I, HERMANN JULIUS QUAMBUSCH, a subject of the German Emperor, residing at Beckacker, near Langerfeld, in the Kingdom of Prussia and German Empire, have invented new and useful Improvements in Braiding and Lace-Making Machines, of which the following is a specification.

For receiving and feeding forward the work plaited in the thread-collector of braiding and lace-making machines a plaitwork-carrier has already been employed, (see German Patent No. 141,302,) consisting of one or more bands traveling through the aperture of the thread-collector at a suitable speed.

My invention relates to the combination of a presser device with such a traveling plaitwork-carrier, whereby the work can be plaited around the carrier and fed forward without fear of distortion and without the edges of the work having to be united together by means of a special thread—that is to say, without a closed hose having to be made.

The essential features of the invention are the employment of a thread-collector having a tubular form, so as to enable it to embrace the work-carrier, and the provision of a resilient core or spindle within the said carrier, which is rolled into a tubular shape inside the thread-collector. Owing to the tendency of the resilient spindle to spread outward the plaited work on the carrier is pressed against the inner wall of the collector and is fed forward along this smooth wall without the pattern being liable to become distorted.

One form of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a portion of a braiding or lace-making machine fitted with the new device. Fig. 2 is a detail view showing the presser-spindle and cooperating parts drawn to a larger scale. Fig. 3 is a vertical section on the line A B of Fig. 2. Fig. 4 is a cross-section on the line C D of Fig. 2.

The thread-collector *a*, located at the place of plaiting, consists of a short tube, through which there passes the traveling band *b*, which constitutes the work-carrier, and is shown in the drawings as an endless strap. The work-carrier, the portion of which within the thread-collector presents the form of a hose, is advanced by one of the guide-rollers

c d e f—for instance, the roller *c*—being rotated at a suitable speed. In the hollow space inside the rolled portion of the work-carrier within the thread-collector there is provided a spindle or core *h*, Figs. 2, 3, and 4, which in the particular construction illustrated is shown as consisting of two parts pivoted at *o o* to a bracket *i* and having between them a spring *k*, which has the tendency to force the two portions of the spindle apart. The bracket *i* may be suitably secured to the rod *m*, which carries the thread-collector *a*, and the distance of the bracket *i* from the collector is so selected that the work-carrier has time to pass from the hose form, which it presents within the collector, into the flat or band form, so that it may travel unobstructed past the bracket *i*.

Owing to the action of the spring *k* the two parts of the spindle *h* are forced apart, whereby the hose-shaped portion of the work-carrier is pressed against the inside wall of the collector *a*, in which manner the plaitwork *l*, formed by the plaiting-threads *n* at the collector, is held with uniform pressure at all parts between the inner wall of the collector and the hose-shaped portion of the braid-carrier. At the places where the threads twist or join they press somewhat into the material of the work-carrier and are thus firmly held in position, so that on advance the plaitwork while sliding readily along the smooth inner wall of the collector cannot slip and occasion distortion of the pattern. Special threads for uniting together the edges of the plaitwork, therefore, are rendered superfluous, and instead of a single broad piece of work which surrounds the entire circumference of the work-carrier, a number of narrow pieces of work may be plaited independently of each other—that is to say, without being united together by means of threads—and allowed at the top of the collector to pass into flat form as they are fed forward.

For producing scallop-like or other protrusions and recesses at the edges of the plaited work the well-known so-called "middle end threads" are employed, taken from bobbins located below the machine and passing through the hollow axes of the driving-wheels for the main bobbins.

Instead of a two-part spindle, as shown in the drawings, a spindle consisting of a larger

number of parts may be used, and for the purpose of separating the spindle parts the shanks which carry them may themselves be resilient, or the parts may be pressed apart
5 by means of a resiliently-acting wedge applied between them.

By means of such a presser-spindle the pattern of the plaited work will be perfectly formed, and the machine is furthermore rendered essentially simpler, since, owing to
10 special threads for holding together the edges of the work being dispensed with, special bobbins, otherwise necessary for supplying such threads, are not required.

15 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a braiding and lace-making machine, in combination a tubular thread-collector, a
20 work-carrier traveling through the same in

tubular form, and a resilient presser located within the said carrier and collector, whereby the work is pressed between the carrier and the collector-wall and accurately fed forward, substantially as described. 25

2. In a braiding and lace-making machine, in combination a tubular thread-collector, a work-carrier traveling through the same in tubular form, and an expanding spindle located within the said carrier and collector, 30 all operating substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HERMANN JULIUS QUAMBUSCH.

Witnesses:

OTTO KÖNIG,

J. A. RITTERSHAUS.