

Plaited Soutache

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The simplest and oldest method of creating a useful or ornamental textile product was the manipulating of three or more strands to a braided, plaited pattern, technically known as the Soutache effect.

The prehistoric culture of the Central American Incas had developed the art of braiding to a high degree, but there are no indications pointing towards the use of any mechanical devices to create the effects; all operations were strictly manual. It was not until the close of the 18th century that the first crude braiding devices came into existence in Europe. In spite of considerable inventive genius applied to this branch of the textile industry, there are many braids still made by hand, since no satisfactory mechanical solution has been found to replace manual effort.

The vogue for Colonial Rugs and the ever-growing demand for light Summer furniture of Reed or Wicker construction caused the development of two interesting Soutache machines lately built in the United States. In

some sections of the Eastern States the gregarious custom of "Rag Rug Parties" has survived from the Colonial period. The demand for the quaint "Colonial Rug" (See Illustration 1) has taken on such dimensions that the occasional frolicking parties of farm communities in winter time could not supply the market. The demand for "antiques" has so far outgrown the capacity of the individual rag rug maker that a new impetus has been given to this type of Soutache braider.

The appearance of "paper cord" or "fiber" in the textile field also broadened the possibilities of using Soutache Braid. The coarseness and thickness of the paper material required a very heavy construction of carrier as well as machine.

The Soutache machine is the simplest form of a braiding machine, built with two horn-gears,* which control the carriers or bobbins during their serpentine braiding movement along the race-way or run in form of a "figure 8." Soutache braiders always have an

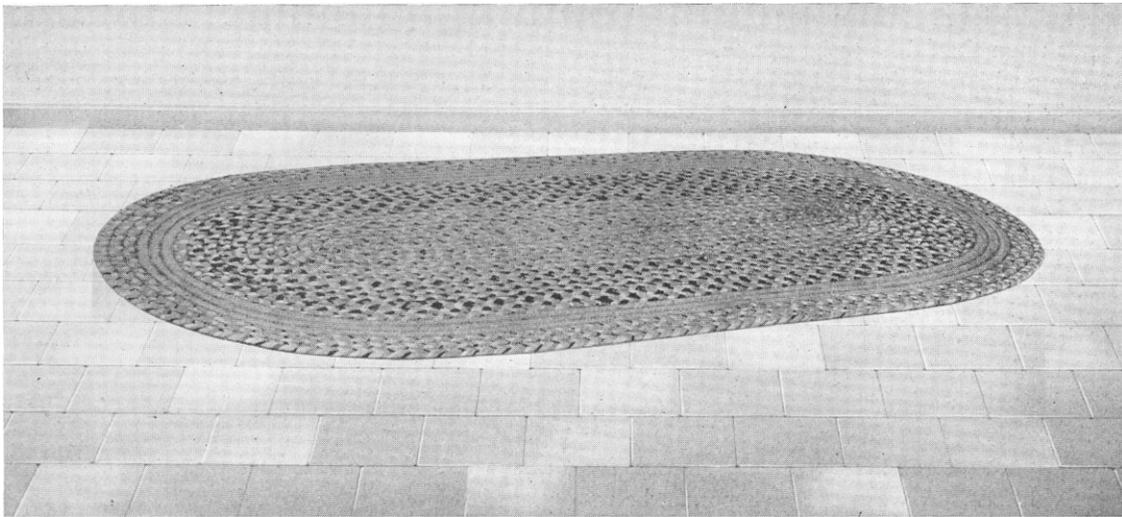


Illustration 1. Colonial Rug.

uneven amount of carriers, starting with 3 and going as high as 13 carriers per assembly.

Figure A shows a schematic diagram of a 3-Carrier Soutache Braider and Figure B shows

on a 7-Carrier Soutache Braider. These two drawings will explain the principle involved.

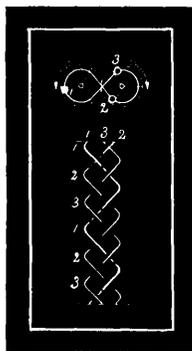


Figure "A"
3-Carrier
Soutache Braider.

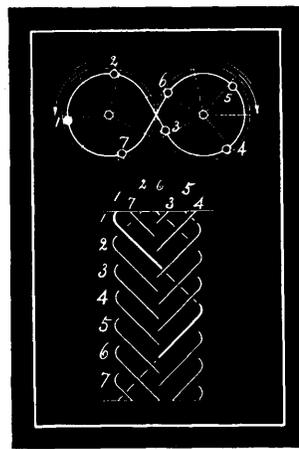


Figure "B"
7-Carrier Soutache Braider.

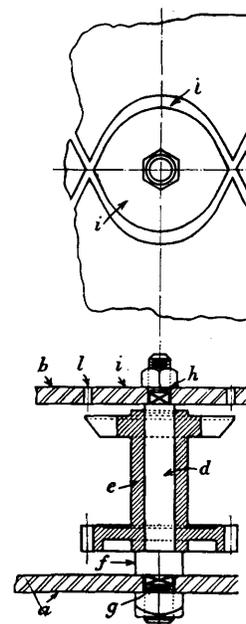


Figure "C"

a machine race-way in a bird's-eye view as well as the braid effect that would be produced

The design of the special soutache braider illustrated (Illustrations 2, 3, 5, 6) differs from the ordinary soutache braider due to the so-called "battleship carrier" design. Each end of the several different strands of paper cord being braided is kept separate by mounting each bobbin on individual carriers. The indi-

*NOTE: *Horn-gear*—a technical term used in the Braiding Industry meaning a braiding machine gear of cast-iron material, which has in its lower part the usual intermeshing toothed wheel, a long necked bearing, and as top part a plate with several notches or *horns*. These Horns, or milled slots, engage the carrier by holding the so-called driving pin of the Braider Bobbin or Carrier.—See Figure C.

vidual carriers are fitted on a shuttle which carries the group of carriers. These shuttles

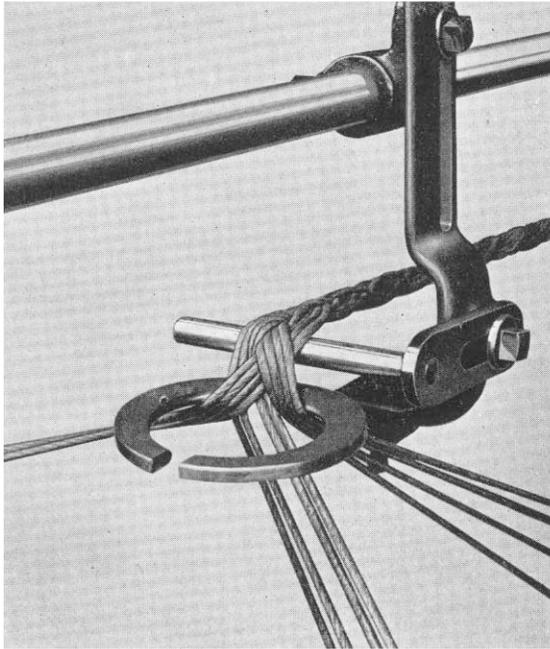


Illustration 2

go around in the run or race-way of the braiding machine which forms a figure "8" shape.

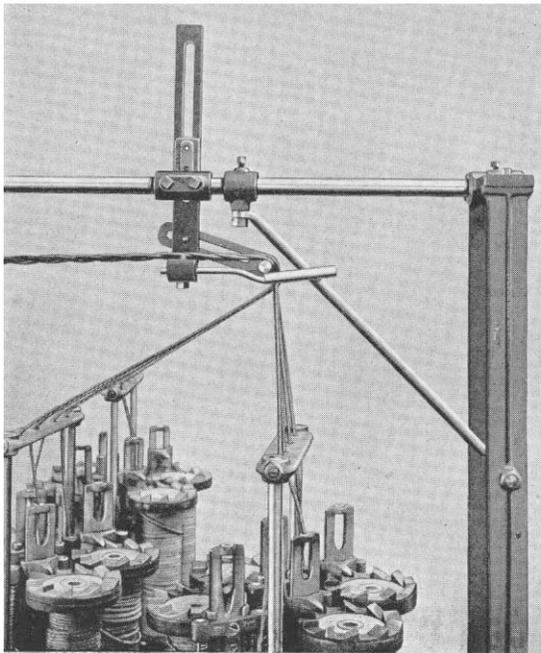
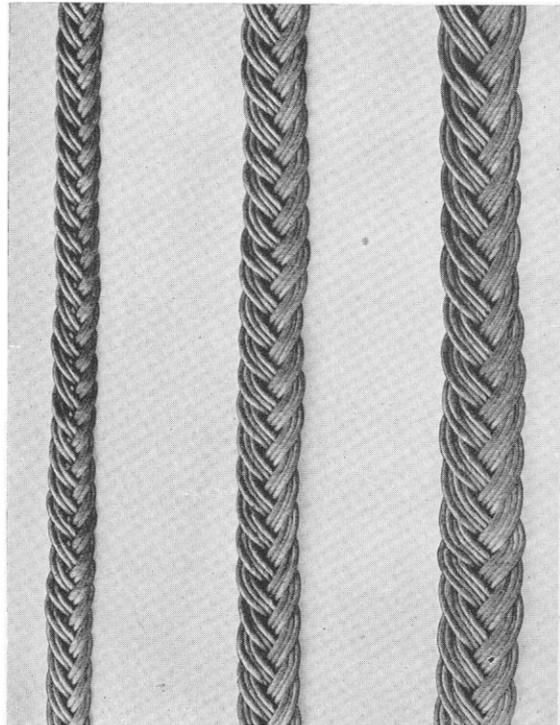


Illustration 3

Two horn-gears are the driving elements and an eccentric arrangement in combination with the horn-gears prevents the turret-like carrier mounting from turning and thus warping the fabric. The well known twisting action is the natural result of the ordinary movement of the carriers in their race-circle course, each carrier making a complete turn upon its own axis in rounding the terminal. Plaiting effects are created by eliminating this axial turning movement of the individual carriers. The



a b c

Illustration 4

above-mentioned eccentric arrangement consists of two connecting rings, each of which is linked to the series of pivotally mounted carrier guides of the drive gears, so as to permit control of the axial carrier turning movement, independently of the shuttle piece. This feature is covered by U. S. A. Patent. The resulting plaited effect of the parallel strands shows clearly on samples shown in Illustration 4. This type of braider is built with three and five shuttles of 4 carriers each. The fabric is used principally for trimming and construct-

ing reed or fiber furniture, baby carriages, etc.

As long as a plain paper carrier is used, the upright model of carriers is practical (See

lem, to assure a smooth running performance under extreme tension without damaging the desired product, is found by using horizontal

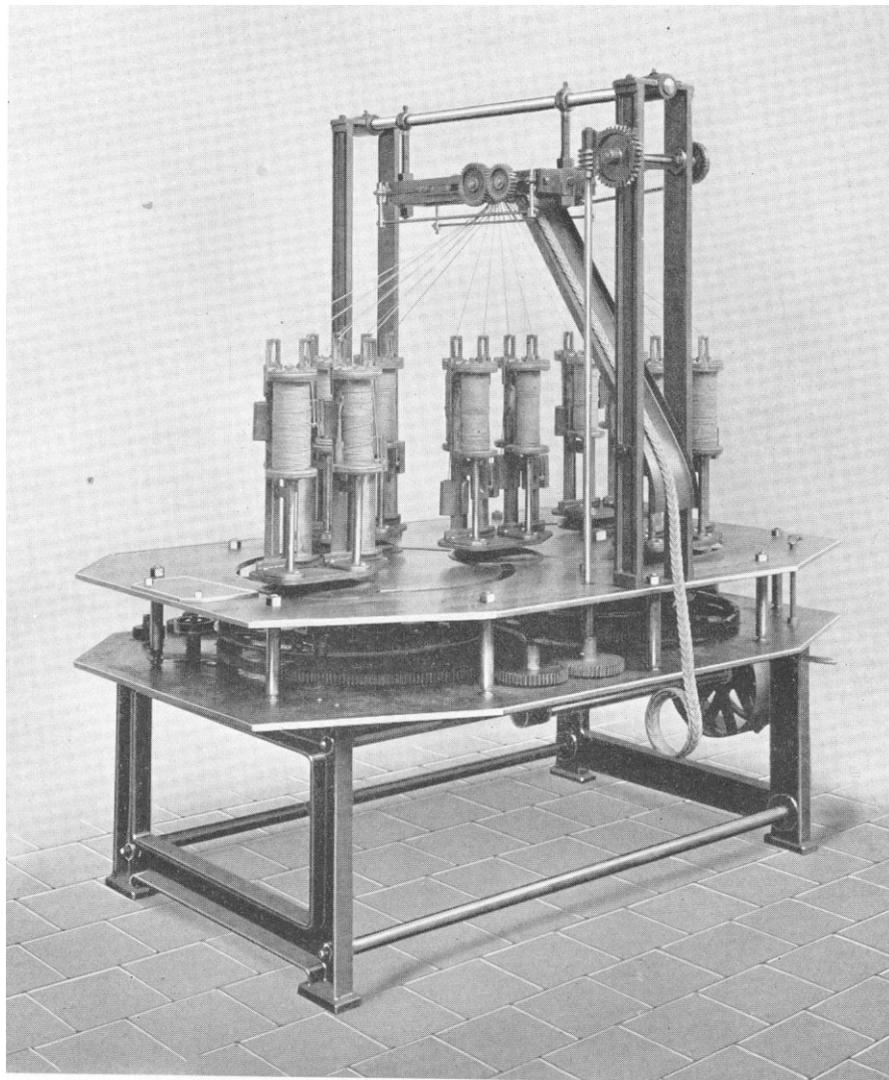


Illustration 5

Illustration 5). The proper tension of the paper cord is kept by sliding iron weights up to 8 pounds. For hard usage, however, a plain paper cord is too soft, too pliable. Here a core of iron or steel wire, covered with paper, is used. The combination metal core and paper covering requires considerably heavier tension weights (around 25 pounds for each individual carrier). The solution of the prob-

lem, to assure a smooth running performance under extreme tension without damaging the desired product, is found by using horizontal carrier bobbins (See Illustration 6). The carriers are arranged in pairs, side by side and on top of each other, thus effecting economy of space and easy handling. The diameter of the horn-gear of the machine with horizontal bobbin arrangement is 40", the vertical arrangement requires a horn-gear diameter of 30". The polished steel top plates weigh about one ton, the power consumed by the machines varies

from one-half to two HP. The average production of these machines is 3,000 feet of Braider, covering a floor space of 55" x 42" for the three-carrier type and of 79" x 49"

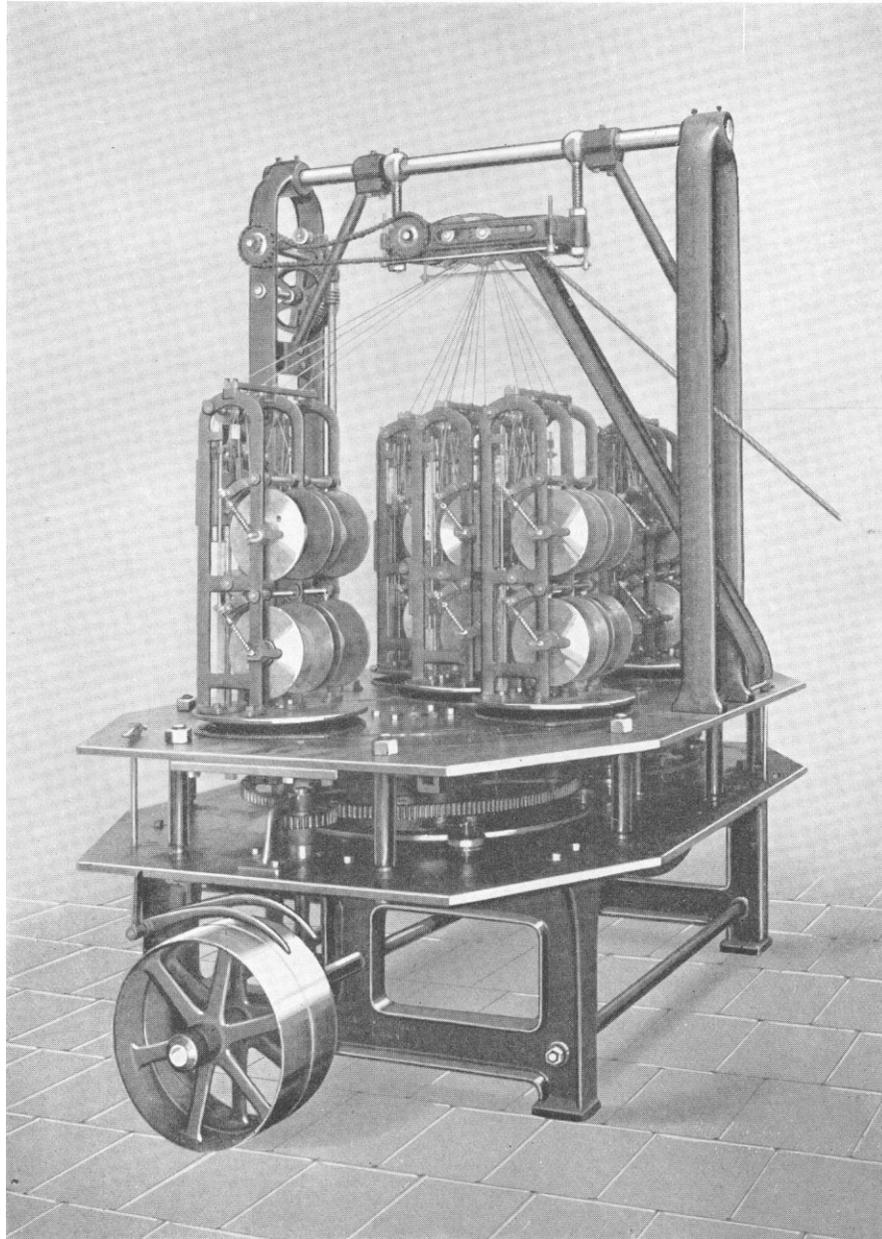


Illustration 6

braid in twenty-four hours. The quantity as well as the appearance of the product may be regulated by the use of change gears of the take-up mechanism.

The performance of the Shuttle Paper Cord

for the five-carrier type, is far more satisfactory and far more reliable than the painstaking efforts of a small army of workers attempting to produce this same amount of product by hand.