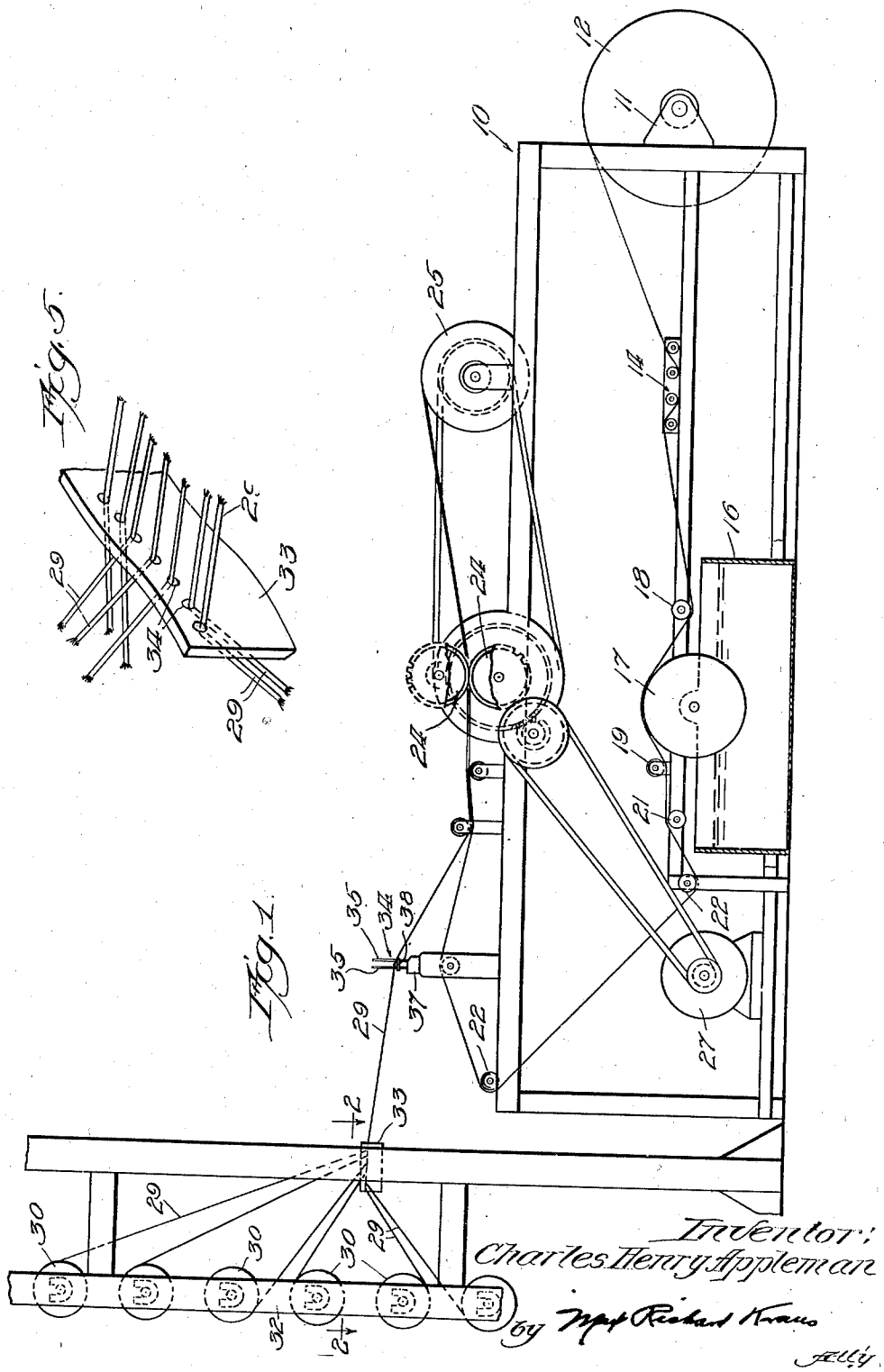
June 24, 1941. C. H. APPLEMAN 2,246,776

APPARATUS FOR THE MANUFACTURE OF DECORATIVE MATERIAL

Filed June 30, 1939 2 Sheets-Sheet 1



June 24, 1941. C. H. APPLEMAN 2,246,776

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Filed June 30, 1939 2 Sheets-Sheet 2

Fig. 2.

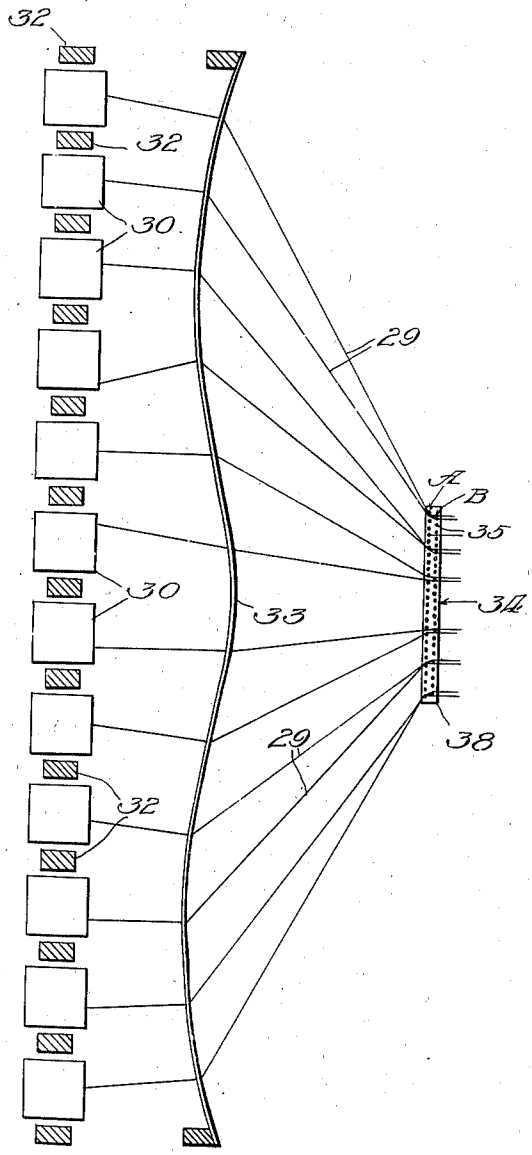
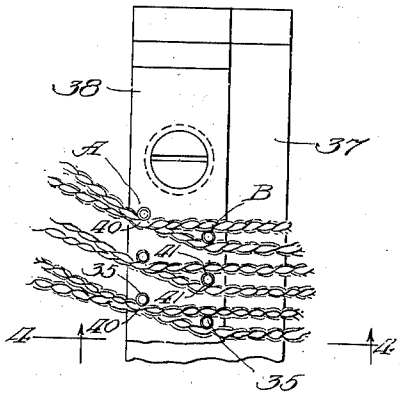



Fig. 3.



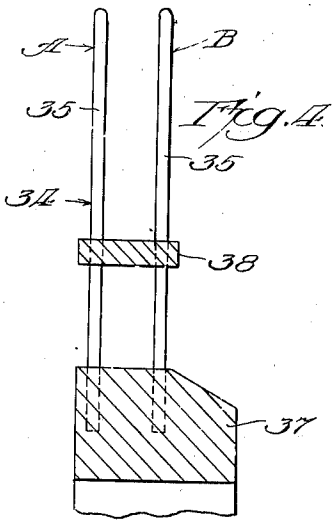




Fig. 4.

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# UNITED STATES PATENT OFFICE

2,246,776

## APPARATUS FOR THE MANUFACTURE OF DECORATIVE MATERIAL

Charles Henry Appleman, Brooklyn, N. Y.

Application June 30, 1939, Serial No. 282,095

2 Claims. (Cl. 28—22)

This invention relates to an apparatus and process for the manufacture of a material that may be used for decorative and other similar purposes.

I have found it advantageous in certain of the arts, particularly in the manufacture of lamp shades, to use as a shade cover, a material which simulates a fabric in appearance and which has substantially rigid structural qualities which permit it to be pleated and easily mounted on a wire frame. The material above mentioned consists of a weftless web of spun fibers applied to a suitable backing and secured thereto by a suitable adhesive, said fibers running parallel to the edges of the backing and lying substantially parallel and contiguous to each other so as to cover substantially the entire surface area of said backing.

The invention resides essentially in the improved apparatus and method for the production of this article, whereby a finished product having qualities superior to similar articles, known in the art, is produced in a cheaper and more efficient manner. The present invention contemplates the treatment of one surface of the backing with a coating of adhesive material and applying thereto a web of spun fibers which comprise the warp of the fabric, said fibers being applied so that they run substantially parallel and contiguous to each other.

An embodiment of the invention is illustrated in the accompanying drawings, in which

Fig. 1 is an elevational view of apparatus suitable for practicing my invention.

Fig. 2 is a plan view, partly in cross section, taken on line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary plan view of a detail.

Fig. 4 is a cross sectional view taken on line 4—4 of Fig. 3.

Fig. 5 is an enlarged fragmentary view in perspective of a thread guide.

In the preferred embodiment of my invention, the numeral 10 designates, generally, a frame which is adapted to support, in suitable journals 11, a roll of paper 12 or other suitable material. Positioned forwardly of said journals are a series of parallel rollers 14 between which the paper web is conducted and which serve to eliminate the tendency of the paper web to curl. A fountain 16 is suitably supported on the frame 10 and is provided with a roller 17 which is journaled in the end walls of the fountain 16 and which is arranged to revolve partly immersed in the adhesive material contained in the fountain, thus a continuous coating of adhesive material is supplied to the surface of the roller. Guide rollers 18 and 19 serve to direct the paper web over the roller 17. A doctor bar 21, mounted on the frame 10, serves to remove excess adhesive material from the surface of the web. Suitable guide rollers, 22, are provided for conducting the paper web to the pressure rollers, 24, presently to be described and to the wind up reel 25, which is mounted on the frame.

The pressure rollers 24, are mounted in contiguous relationship and are preferably provided with rubber surfaces or other similar resilient material. The pressure rollers which draw the web through the apparatus are connected by a suitable gearing and a belt drive to an electric motor 27 which serves as the motive power for the operation of the apparatus. Adjustable means, not shown, are provided for regulating the compressive force of the rollers 24. By a suitable belt drive, the wind-up reel 25 is continuously rotated to remove the web as it passes through the pressure rollers 24 in finished condition.

The fibers 29, or other desirable materials, are preferably wound on spools 30 which are suitably arranged in a creel 32 and the individual fibers are conducted through a guide 33 which extends throughout the width of the creel. The guide is provided with a plurality of spaced apertures 34, each of which receive a single fiber, as shown in Figure 5, and is shaped in plan, substantially as shown in Figure 2. This particular shape is desirable for the purpose of separating the individual fibers from each other and obviating friction or rubbing contact between them.

The individual fibers 29 are conducted through a comb-like structure 34 which comprises two parallel rows A and B of upright pins 35 supported in a suitable base 37 and reinforced with a horizontally disposed member 38, over which the fibers are conducted. It will be seen that the pins in Row A are in staggered relationship with respect to the pins of row B, such that when viewed in elevation, either from the front or rear, the pins of the row A appear to be disposed intermediate the pins of the row B.

Referring to Figure 3, it will be seen that two individual fibers are conducted through each space defined by the pins 35 in the row A and are caused to converge and engage only one portion of the pin, as at 40. The fibers, upon being conducted between the pins in row B are caused to be diverged and to engage opposite portions of the pins as at 41. By this means equi-distant

parallel spacing of the fibers is effected and lateral shifting of the fibers is obviated immediately preceding the application of the fibers to the paper web which serves as a backing. The parallel arrangement of the fibers subsequent to being conducted through the comb-like structure **34**, is in effect a weftless web of fabric. It will be understood that fibers of various colors and designs may be arranged in the comb structure so as to produce novel effects and designs on the finished product. By appropriate spacing of the pins, in the comb structure, it is possible to substitute a web of decorative tape for the individual fibers.

The web of fibers is then conducted between suitable rollers **43** so as to be brought into contact with the adhesive treated paper web. Both webs are then conducted through the pressure rollers **24** which insure the adherence of the fiber web to the paper web backing. The finished product is then rolled up by the wind up reel in a continuous operation.

It will be seen from the foregoing, that the manufacture of a decorative material of the character described comprises applying a coating of adhesive material to one surface of a continuous backing, arranging a plurality of continuous fibers in parallel contiguous relation so as to form a web, conducting said fiber in longitudinal alinement with said backing and causing said fibers to adhere to said backing.

It is to be understood that the foregoing detailed description is merely given by way of illustration and that variations may be made therein without departing from the spirit of my invention or the scope of the appended claims.

I claim:

1. In an apparatus for the manufacture of a decorative material comprising a creel for supporting a plurality of spools of strands of fibers, a guide member having a plurality of apertures through which the strands of fibers are arranged to be conducted, the said guide member serving to arrange the strands in substantially co-planer relation, and means including a supporting member provided with a plurality of spaced pins in two parallel rows, the pins of one row being staggered relative to the pins of the other row, the said supporting member being of relatively lesser length than said guide member and being spaced therefrom whereby the said fibers are caused to converge in their travel to said pins, the rows of pins being so constructed and arranged that a pair of strands of fibers will converge and pass through the space defined by a pair of adjacent pins in the front row of pins, said pair of strands thereafter being caused to diverge into substantially parallel lines by the pins of the rear row.

2. In an apparatus for the manufacture of a decorative material comprising a creel for supporting a plurality of spools of strands of fibers, a guide member having a plurality of apertures through which the strands of fibers are arranged to be conducted, the said guide member serving to arrange the strands in substantially co-planer relation, means including a supporting member provided with a plurality of spaced pins in two parallel rows, said pins being supported at their lower ends and defining open spaces at their upper ends, the pins of one row being staggered relative to the pins of the other row, the said supporting member being of relatively lesser length than said guide member and being spaced therefrom whereby the said fibers are caused to converge in their travel to said pins, the rows of pins being so constructed and arranged that a pair of strands of fibers will converge and pass through the space defined by a pair of adjacent pins in the front row of pins, said pair of strands thereafter being caused to diverge into substantially parallel lines by the pins in the rear row.

CHARLES HENRY APPLEMAN.