Jan. 15, 1946. H. P. FARIS ET AL 2,392,812

SIFTING DEVICE

Filed April 24, 1943

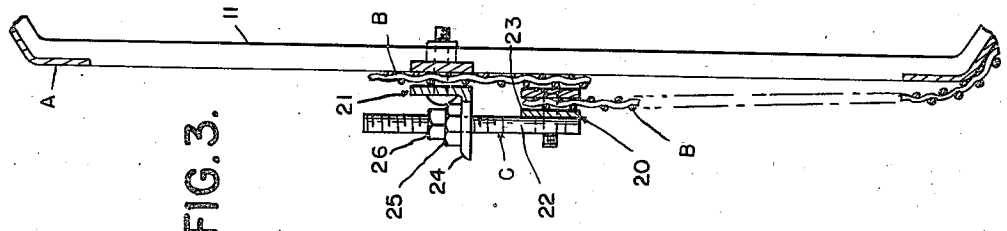



FIG. 3.

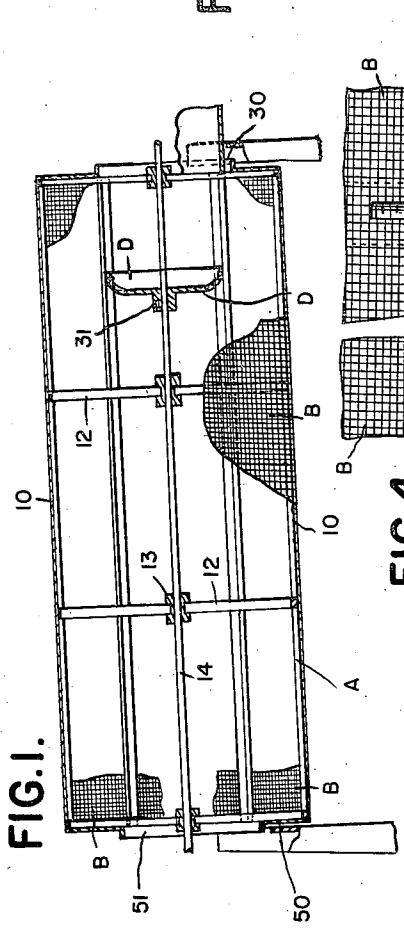



FIG. 1.

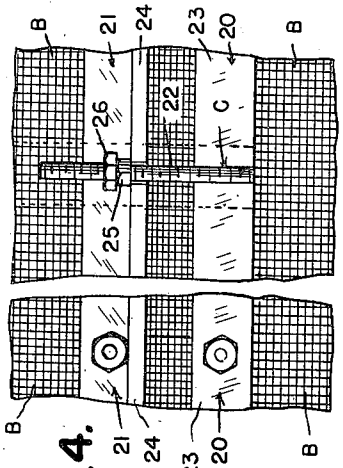



FIG. 4.

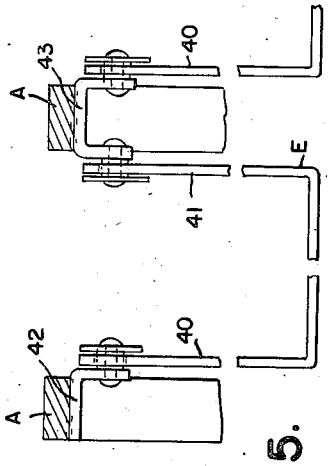



FIG. 5.

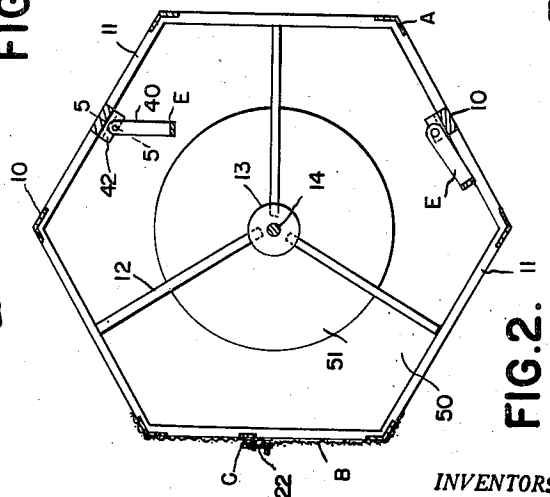



FIG. 2.

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Patented Jan. 15, 1946 2,392,812

# UNITED STATES PATENT OFFICE

2,392,812

## SIFTING DEVICE

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Original application October 28, 1940, Serial No. 363,196. Divided and this application April 24, 1943, Serial No. 484,435

2 Claims. (Cl. 209—284)

This invention relates generally to carpet making machines for manufacturing carpet of the type disclosed in United States Patent No. 2,187,140 dated January 16, 1940, and constitutes a division of our application filed October 28, 1940, bearing Serial No. 363,196, which became Patent No. 2,347,816.

One of the essential objects of the invention is to provide an improved sifting device for feeding cut fibers such as cut hair or the like onto a cement coated surface of suitable carpet material such as a burlap covered base of rubber while the carpet material is being vibrated so that the vibration imparted to the carpet material will cause the fibers distributed by the sifting device to be imbedded endwise into the cement to simulate the pile of a conventional woven carpet.

Another object is to provide a rotary sifting device having a polygonal framework covered by screening through which the fibers are sifted and distributed as the device rotates.

Another object is to provide a sifting device to which the cut fibers may be introduced by an air stream and in which a baffle or deflector is provided to break up the air stream and thereby prevent the fibers being carried longitudinally through the device.

Another object is to provide a sifting device having means preferably in the form of knockers engageable with the screening of the device for vibrating the same during rotation thereof so that the maximum percentage of cut fibers introduced to the device will pass through and be sifted by the screening thereof.

Another object is to provide a rotary sifting device having its axis inclined to the horizontal to facilitate the passage through the screening of the device throughout its length of the cut fibers introduced thereto.

Another object is to provide a sifting device wherein the free edges of the screening upon the polygonal framework are held together by clamping and tensioning means which is located in substantially uniformly spaced relation to the knockers aforesaid to provide a substantially balanced structure.

Another object is to provide a sifting device that is simple in construction, economical to manufacture, easy to install and efficient in operation.

Other objects, advantages and novel details of construction of this invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawing, wherein:

Figure 1 is a fragmentary longitudinal sectional view through a sifting device embodying our invention;

Figure 2 is a transverse sectional view through the device on a somewhat enlarged scale;

Figure 3 is an enlarged fragmentary sectional view through the device, and showing the screen clamping and tensioning means;

Figure 4 is a fragmentary elevational view of the clamping and tensioning means and associated parts illustrated in Figure 3;

Figure 5 is a sectional view on an enlarged scale through the framework at substantially the line 5—5 in Figure 2, showing the knocker assembly.

Referring now to the drawing, A is the framework, B is the screening, C is the clamping and tensioning means for the screening, D is the air deflector, and E are the knockers of a sifting device embodying our invention.

As shown, the reel or framework A is hexagonal in configuration and preferably has longitudinally and circumferentially extending strips 10 and 11 respectively of metal or other suitable material supported by spokes 12 extending radially from hub members 13 on a driven shaft 14.

The screening B may be any suitable material and covers the framework A. Preferably the free edges of this screening are connected together by the clamping and tensioning means C which preferably consists of clamps 20 and 21 respectively that grip the screening at the free edges thereof, a bolt 22 rigid with one section 23 of the clamp 20 and engaging an aperture in a section 24 of the other clamp, and adjusting nuts 25 and 26 respectively on the bolt 22 above the clamp section 24. Thus, the screening B may be held and tensioned on the framework A by adjusting the nuts 25 and 26 on the bolt 22.

The deflector D is adjustably mounted on the shaft 14 preferably near the inlet end 30 of the sifting device and is in the path of the stream of air that is employed to introduce the cut fibers into the sifting device. Any suitable means such as a set screw 31 may be employed to hold the deflector D in adjusted position on the shaft 14. As shown, the deflector D is dished or substantially cup-shape in configuration and opens toward and is substantially in alignment with the inlet end 30 of the device. Thus, the deflector D is adapted to break up the air stream and prevent the cut fibers from being carried longitudinally

through the sifting device. In addition the deflector D will cause the fibers to be scattered so that they will more readily engage the screening B to be sifted thereby during rotation of the device.

The knockers E are within and carried by the framework A. Preferably two knockers E are employed and are located in spaced relation to each other and to the clamping and tensioning means C so that a substantially balanced structure is provided. As shown, each knocker E is made of metal and is substantially U-shape in configuration. In order that such knockers may strike the screening B to vibrate the same during rotation of the sifting device, the arms 40 and 41 of the knockers are pivoted to brackets 42 and 43 respectively rigid with the framework A. Thus, upon rotation of the sifting device, the knockers E will swing about their pivots to and from striking engagement with the screening B. The resultant vibration of the screening B will be sufficient to facilitate radial passage of the cut fibers through the screening of the device and thereby cause a larger percentage of the cut fibers to be sifted or distributed by the device onto the adhesively coated carpet material mentioned. Moreover, these knockers tend to prevent the fibers from balling up and forming pills which otherwise may obstruct or impede the desired action. In use the cut fibers are introduced into the right hand inlet end of the sifting device toward and against the deflector D which will break up the air stream and prevent the fibers from being carried out the other end of the device. Such deflector D will also cause the fibers introduced to be scattered within the device to more readily engage the screening B thereof and be sifted thereby. In this connection it will be noted that the device is inclined to the horizontal from the inlet end 30 to the other end thereof so as to facilitate the passage through the screening B of the device throughout its length of the cut fibers introduced thereto. If desired the lower end 50 of the device may have an outlet opening 51 therein, and suitable means such as a conduit (not shown) may be employed to receive from said outlet opening 51 any fibers which pass longitudinally of the device without being sifted radially through the screening B thereof. As the device rotates the knockers E will vibrate the screening B and expedite the passage of the cut fibers radially through said screening. Thus, the maximum percentage of fibers introduced to the device will be sifted through the screening B thereof onto the adhesive coated carpet material aforesaid.

What we claim as our invention is:

1. A rotary sifting device for cut fibers, comprising an elongated reel of hexagonal cross section, screening extending circumferentially about said reel to cover the same, opposite longitudinal edge portions of said screening being disposed in overlapping relation upon one of the six sides of said reel, separate clamps for said edge portions on said one side of the reel, an adjustable connection between said clamps for tensioning the screening on said reel, brackets fixed to two other of the six sides of said reel, and knockers for said screening freely pivoted to said brackets, the two sides of said reel to which said brackets and knockers are connected being alternate sides of said reel spaced equidistantly from said one side upon which said clamps and adjustable connection are mounted, whereby said reel is substantially balanced.

2. A rotary sifting device for cut fibers, comprising an elongated reel of polygonal cross section covered with screening and covered at one end with an axially disposed inlet through which cut fibers may be introduced by an air stream, and means within the reel for breaking up the air stream and fibers introduced into the reel through said inlet so that such fibers will not be carried by said air stream axially through said reel, including an axially mounted deflector near said inlet in the path of said air stream, said deflector being dished and opening toward said inlet so that the fibers introduced by the air stream will be scattered radially within said reel toward said screening to be sifted thereby during rotation of said device.

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