

March 17, 1964

F. FLOYD

3,125,218

PACKING NON-RESILIENT COMPRESSIBLE MATERIAL

Filed Nov. 30, 1959

FIG. 1.

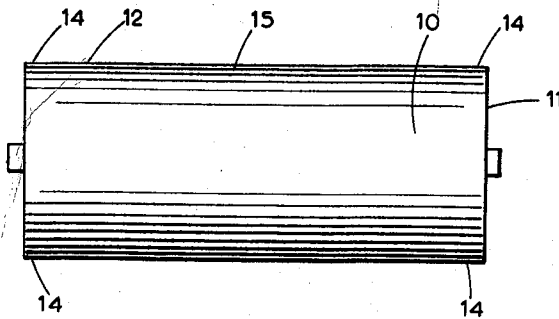
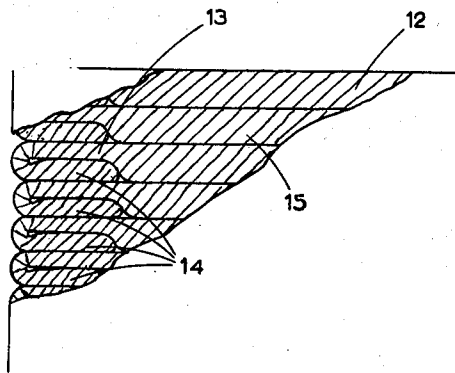


FIG. 2.



INVENTOR

FREDERICK FLOYD

BY

Ann Reece

ATTORNEY

1

3,125,218
PACKING NON-RESILIENT COMPRESSIBLE MATERIAL
Frederick Floyd, Strood, England, assignor to Ozonair Engineering Company Limited, Rochester, England
Filed Nov. 30, 1959, Ser. No. 856,260
3 Claims. (Cl. 206—59)

This invention relates to the packing of non-resilient compressible material, and relates especially, but not exclusively, to the packing of non-resilient compressible filter material in roll form for use in air filters.

It is often desirable to use certain kinds of non-resilient, compressible filter material in air filters employing a supply roll and a take-up roll for the material. It has, however, been found that the filter material, when packed in roll form, is compressed as a result of its winding tension, and this compression in the material when unwound remains permanent because of its non-resilient nature, causing undesirable increased air flow resistance in the filter. It is an object of the invention to overcome this drawback.

According to the present invention a method of packing a strip of non-resilient compressible material in a substantially uncompressed state in the form of a roll comprises providing substantially incompressible lateral margins to absorb compressive forces resulting from the winding tension so as to provide a protected space between said margins whereby the portion of material lying between said margins is not subjected to said compressive forces.

Preferably the margins of the material are lapped over so that a plurality of thicknesses of material is provided at the longitudinal sides of the strip.

An embodiment of the invention as applied to the packing of non-resilient compressible filter material in roll form for use in air filters will now be particularly described with reference to the accompanying drawings, in which:

FIGURE 1 is a diagrammatic side elevation of a supply roll for an air filter, and

FIGURE 2 is a fragmentary diagrammatic view, on an enlarged scale and partly in section, of the top left hand corner of FIGURE 1.

Referring to the drawings, a supply roll 10 for use in an air filter using non-resilient compressible filter material, comprises a spool 11 on which the material 12 is wound. The material 12 has its side edges 13 lapped over, or beaded to provide lateral margins 14 formed by a double thickness of material 12. In this way the filter material 12 between the margins 14 is not under compression when in roll form, because the margins 14, when

2

compressed under the winding tension, absorb the compressive forces and provide a protected space generally indicated by 15, between them.

I claim:

1. A method of protecting a strip of non-resilient compressible porous filter material against stretching or compressing of the central filter portion thereof which comprises a coiled package of non-resilient compressible, normally expanded filter strip material in roll form for use in air filters having a central width of relatively uncompressed filter strip material and intumed compressed edges of double thickness providing incompressible lateral margins absorbing compressive forces resulting from the winding tension of the roll, which comprises providing an elongated length of the filter strip material, lapping over the marginal edges thereof to form a double thickness of material adjacent the edges leaving the major portion of the width of the strip material in unlapped and uncompressed condition and rolling up the filter strip material and compressing the overlapped portions at the edges so that they will have the same thickness as the uncompressed central width of the relatively uncompressed material.

2. A method of packing a strip of non-resilient compressible porous strip filter for air filters to prevent compression and stretching of the central portions thereof, comprising steps of folding in and lapping over narrow longitudinal marginal portions of strip to give a double thickness of material only at the edges of the strip and leaving the major portion of the width of the strip free, then winding strip into a roll and controlling the winding tension so that longitudinal marginal portions are compressed, such that their compressed thickness equals original thickness of strip before folding and winding, whereby the major central width of strip is relatively uncompressed and fills substantially the whole of space enclosed by the marginal portions

3. A coiled package of non-resilient compressible, normally expanded filter strip material in roll form for use in air filters having a central width of relatively uncompressed filter strip material and lapped over intumed compressed marginal edges of double thickness providing incompressible lateral margins absorbing compressive forces resulting from the winding tension of the roll produced according to the method of claim 1.

References Cited in the file of this patent

UNITED STATES PATENTS

1,053,544	Stack	Feb. 18, 1913
2,049,030	Strauss	July 28, 1936
2,180,431	Robinson	Nov. 21, 1939
2,322,548	Sigmund	June 22, 1943