Aug. 20, 1935. K. R. SHAW 2,012,058

RUBBER BAND PACKAGE

Filed May 5, 1930 2 Sheets-Sheet 1

Fig. 1

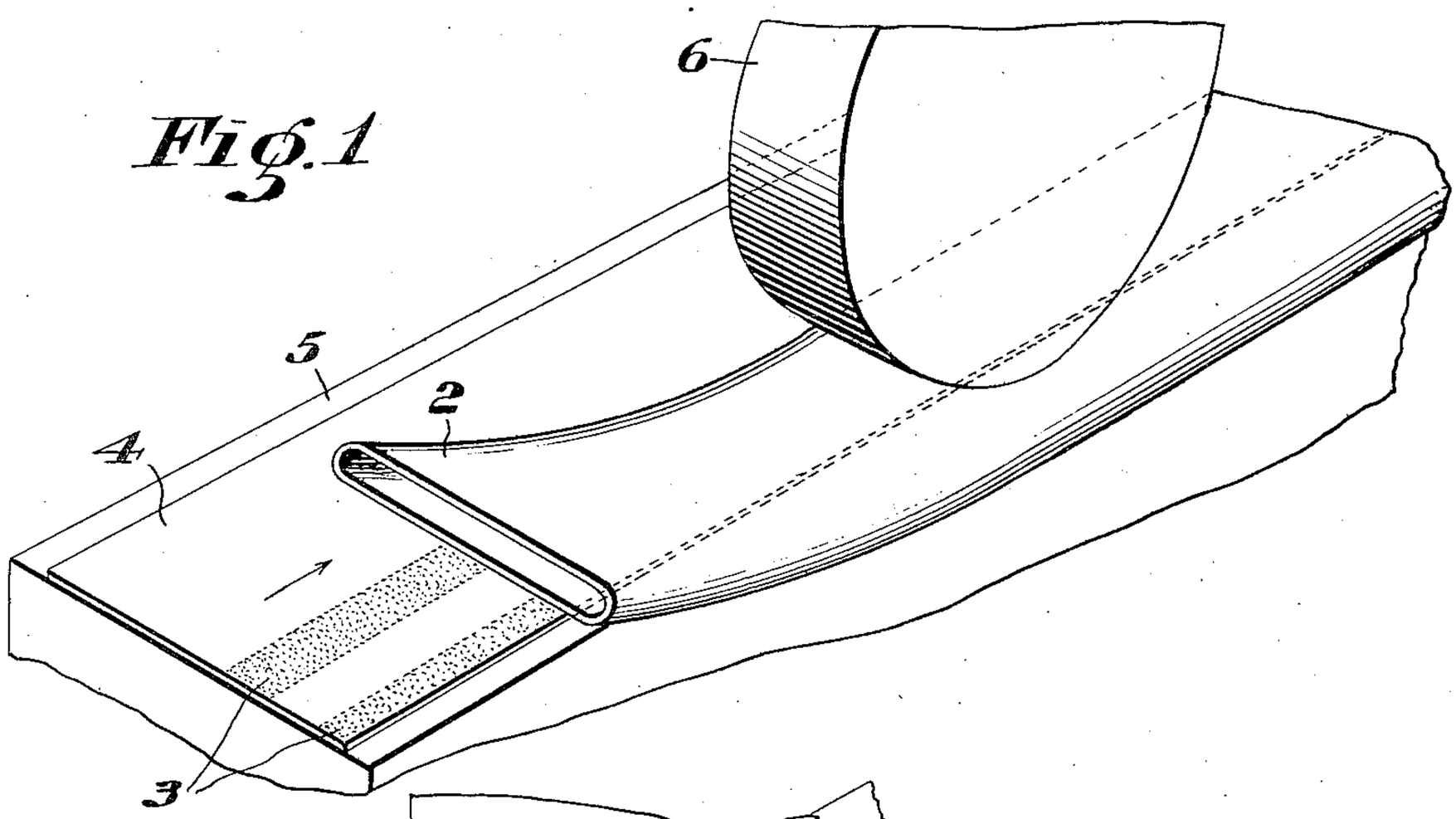


Fig. 2

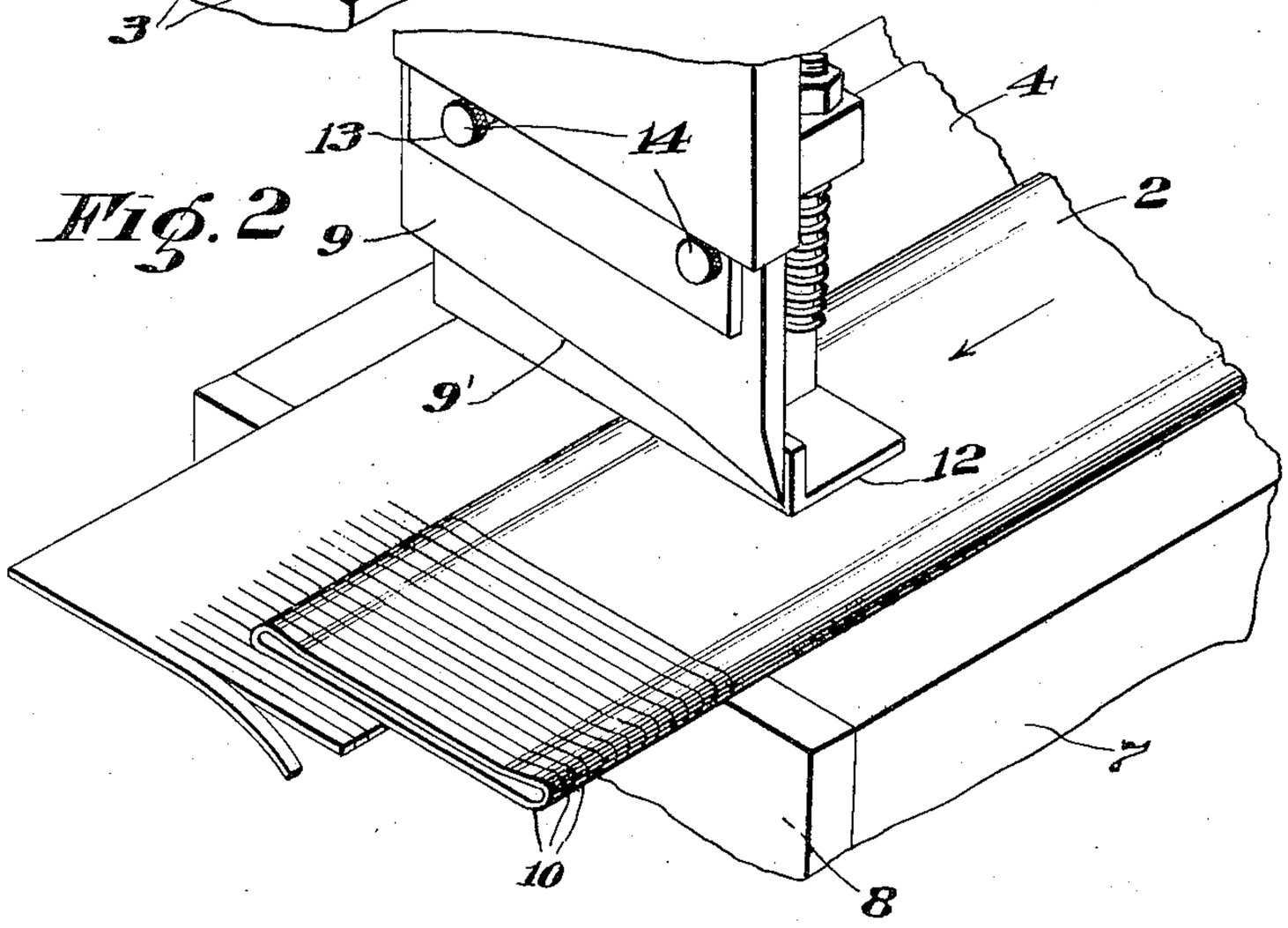
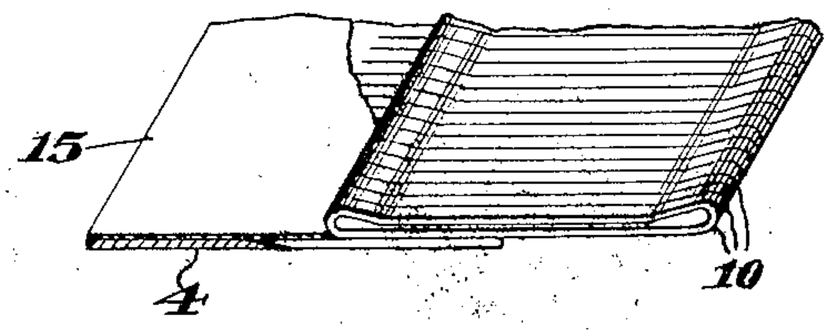


Fig. 3



INVENTOR
Kenneth R. Shaw,
BY
J. F. McCready,
his ATTORNEY.

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Fig. 4

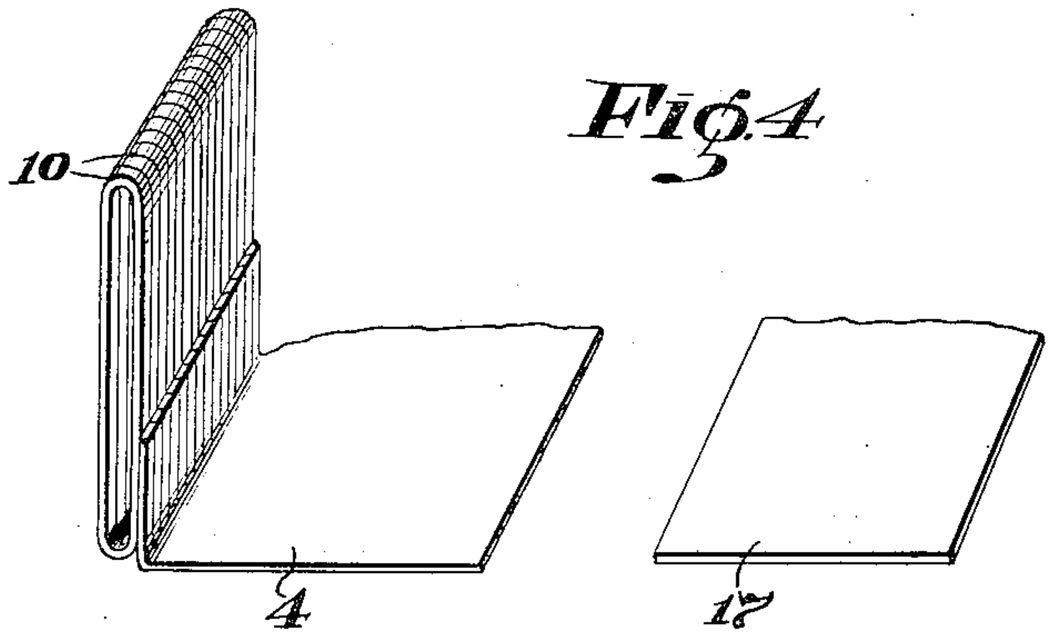


Fig. 5

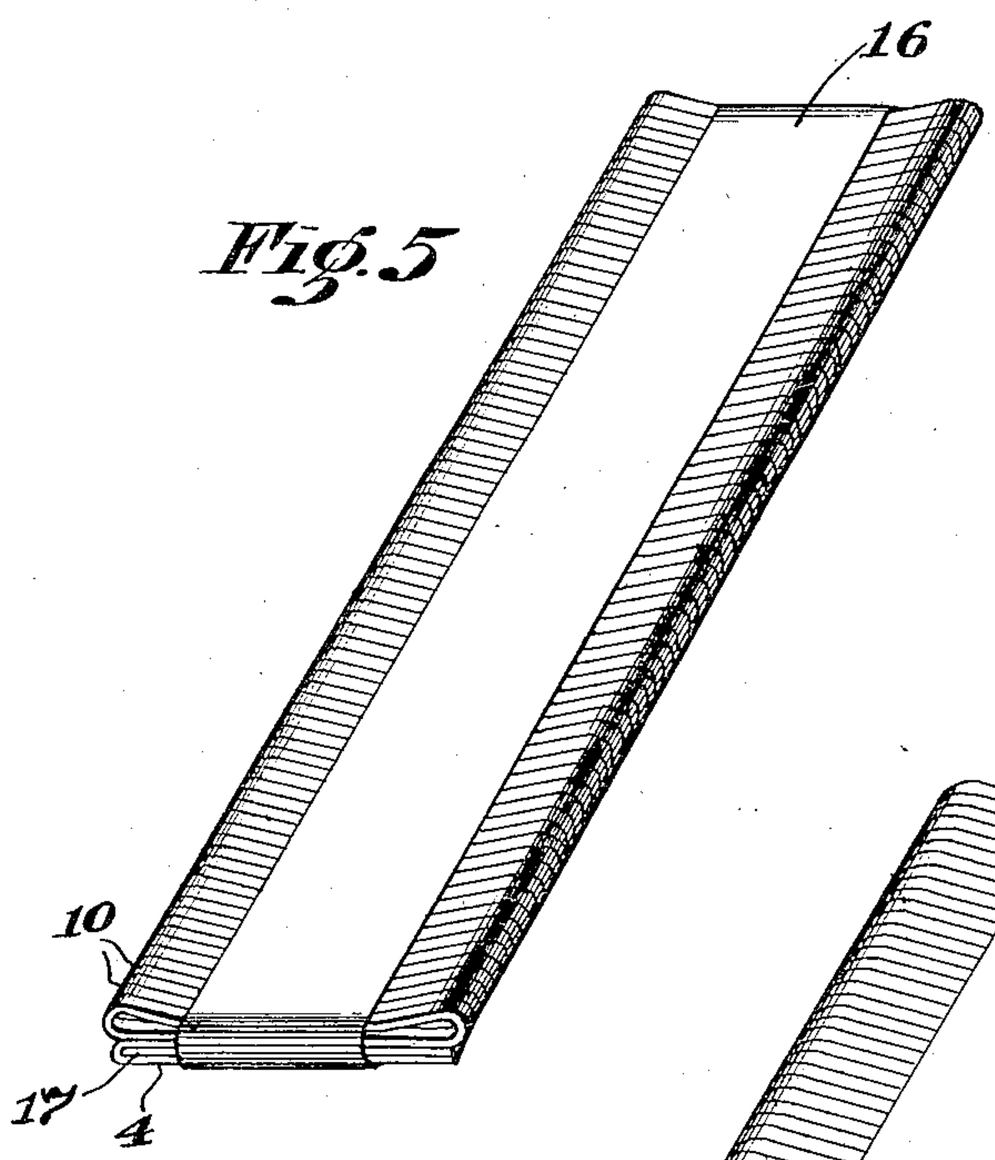


Fig. 6

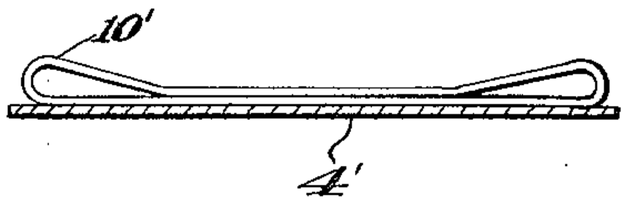
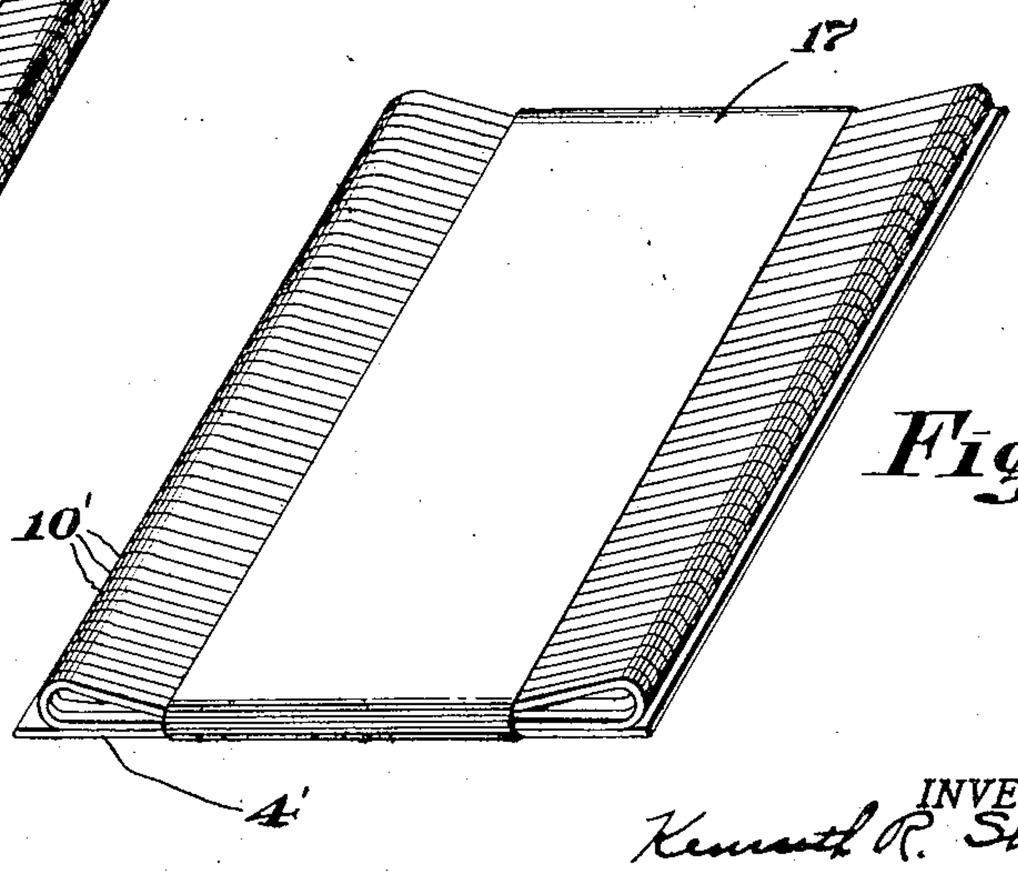


Fig. 7



INVENTOR
Kenneth R. Shaw,
BY
J. H. McCready,
His ATTORNEY.

Patented Aug. 20, 1935 2,012,058

UNITED STATES PATENT OFFICE

2,012,058

RUBBER BAND PACKAGE

Kenneth R. Shaw, Easthampton, Mass., assignor to Easthampton Rubber Thread Co., Easthampton, Mass., a corporation of Massachusetts

Application May 5, 1930, Serial No. 449,815

2 Claims. (Cl. 206—46)

This invention relates to the manufacture and merchandising of rubber bands.

The usual method of packaging rubber bands for distribution to the trade consists in placing a definite quantity of loose bands in a box, or in collecting a certain number of bands in a bunch or bundle and encircling them with another band to hold the individual bands in the bundle together. Both methods involve a very considerable amount of hand labor and are, therefore, relatively expensive. In neither method are the bands arranged in any definite order, and consequently they occupy an excessive amount of shipping space.

The present invention deals especially with these considerations. It aims to improve rubber band packages with a view to reducing the labor involved in making them, and providing a package which will be neater, more compact, more convenient to handle, and which will facilitate the use of the bands by the ultimate consumer.

The nature of the invention will be readily understood from the following description when read in connection with the accompanying drawings, and the novel features will be particularly pointed out in the appended claims.

In the drawings,

Figs. 1 and 2 are perspective views illustrating steps of the method provided by this invention;

Fig. 3 is a perspective view of a portion of a finished package forming one embodiment of the invention;

Fig. 4 is a perspective view illustrating details of another package embodying features of this invention;

Fig. 5 is a perspective view of the completed package, a portion of which is shown in Fig. 4; and

Figs. 6 and 7 are sectional and perspective views, respectively, of still another embodiment of the invention.

Referring first to Figs. 1 and 2, a rubber tube, such as those from which rubber bands are cut, is indicated at 2. Such a tube may be made according to any usual or suitable process and of any desired dimensions. According to the method illustrated one or more strips 3 of paste, glue, mucilage, or adhesive of any suitable kind, are applied to a support or backing strip 4 of paper, cardboard, or other appropriate material, cardboard usually being preferred, and the rubber tube 2 then is pressed against the coated surface of the backing strip and is adhesively fastened thereto. These operations may be performed by hand or with the aid of relatively simple equipment, including means for rolling the adhesive coating or coatings on the strip 4 while this strip is fed across the surface of a table 5, and a roll 6 for pressing the tube 2 against the adhesively coated portion of the backing strip. In the particular arrangement shown in Figs. 1 and 2 only a portion of the flattened tube 2 overlies the backing strip 4, a considerable part of the tube projecting beyond the edge of said strip.

The tube so supported on the backing strip is next cut transversely to divide it into individual rubber bands. Since a continuous length of the rubber tube is adhesively secured to the backing strip 4 by the adhesive coating or coatings 3, the cutting operation will leave each individual band adhesively fastened to the backing strip. This cutting operation may be performed by hand with shears or other cutting implements. The operation is expedited, however, by using an organization shown diagrammatically in Fig. 2 and comprising a table 7 over which the tube 2 and the backing strip 4 are fed. A stationary shearing block 8 is provided at the end of the table 7, and a vertically reciprocating knife 9 cooperates with this shearing block to cut the tube 2 into individual bands 10. Preferably a presser foot or stripper 12 is associated with the knife 9 and is spring pressed downwardly slightly below the edge of the knife where it serves to press the tube flat against the upper edge of the shearing block while the knife 9 passes down in contact with the front face of the block and cuts through the tube 2, this member 12 also serving to prevent the tube from sticking to and following the knife as the latter rises. The cutting operation also is facilitated by making the cutting edge 9′ of the knife inclined so that the cut starts at one edge of the tube and progresses across the tube to the opposite edge. A part of this cut is made against the backing strip 4, and it usually is desirable to carry the cut somewhat beyond that edge of the tube lying on the backing strip so that the complete separation of the individual bands from each other and from the tube will be ensured. In the arrangement shown in Fig. 2 the knife 9 cuts not only through the tube but also through a considerable portion of the backing strip 4. The tube is cut and then advanced or fed lengthwise a short distance equal to the width of the band desired, and cut again, these cutting and feeding movements being repeated indefinitely to produce a continuous line or row of bands lying side by side.

The tendency of the cut edges of the tubes to readhere to or reunite with each other has proved

to be a particularly troublesome factor in making rubber bands by this method. I have found, however, that this difficulty can effectually be overcome by heating the knife 9. This may conveniently be accomplished by securing a flat electric heating unit 13 of a common type to one face of the knife 9, the unit being equipped with binding posts 14 for the attachment thereto of the supply conductors. A high degree of heat is not required, a temperature of, say 200° to 300° F., or about that at which the ordinary flat iron is used, being sufficient. The reasons for this improved result are not entirely clear, but I have definitely determined that the heating of the knife in the manner just described effectually overcomes the tendency of the cut surfaces of the rubber tube to reunite. When the bands are formed in this manner they do not adhere to each other notwithstanding the fact that they lie side by side in contact with each other.

When the knife 9 has made a predetermined number of cuts and thus produces a corresponding number of bands, it may be given an additional longer cutting stroke to sever the strip 4, thus producing a package containing a definite number of bands each secured to the backing strip. Or, the backing strip may be cut by hand to produce packages of the desired lengths. A label 15, Fig. 3, bearing a trade-mark, or the manufacturer's or distributor's name, and any other desired information, may be cemented to one side of the backing strip.

The packages produced in this manner may be merchandised without further preparation. The adhesive union between each band 10 and the backing strip 4, while readily breakable, nevertheless has ample strength to prevent accidental removal of the bands. In such a package the bands are arranged in an orderly manner so that they occupy a minimum of shipping space. This arrangement also facilitates the use of the bands by the ultimate consumer, it being merely necessary, when he wishes to use a band, to pull one off the backing 4, the other bands remaining undisturbed by such removal. The partial cutting of the backing member 15 into strips which occurs during the cutting of the tube to produce individual bands is of advantage to the ultimate consumer in permitting him to tear off sections of the backing strip as the bands are removed so that the total bulk of the package can be diminished as the number of bands left on it is reduced.

A further variation of the package above described is shown in Figs. 4 and 5 in which the backing strip 4 is folded upon itself to bring the entire row of bands 10 over upon one face of the uncut portion of the cardboard support or backing strip 4. A label or binder 16 having its ends cemented to the rear surface of the backing strip 4 is stretched across the row of bands 10 where it overlies them and holds them collectively against the backing strip. If desired a stiffening piece 17 may be inserted between the folds of the backing strip to give additional rigidity to the entire package.

Still another embodiment of the invention is shown in Figs. 6 and 7 in which the backing strip 4' is made approximately equal to or slightly wider than the width of the rubber tube when in its flattened condition, and the tube for its entire width is superposed on the backing strip and is adhesively united thereto near the opposite edges of said strip. The tube may be cut while in this position by a knife or cutter which cuts against the backing strip but does not cut through it, the knife having a straight edge extending parallel to the backing strip. This cutting operation divides the tube into individual bands 10', each adhesively secured to the backing strip 4', and the strip later is cut into suitable lengths for individual packages. Preferably a binding strip or label 17' is stretched across the entire row of bands 10', as shown in Fig. 7 and its ends are fastened to the backing strip 4'. If the backing strip is made somewhat wider than as shown in Fig. 7, the knife may be made to cut through the backing strip leaving uncut margins at opposite ends of the bands.

It will now be appreciated that the invention materially reduces the hand labor involved in packing rubber bands for distribution through the ordinary merchandising channels, and that it provides a novel rubber band package which not only can be manufactured economically but which is neat and attractive in appearance and is convenient to handle. The fact that the bands are held in definite and orderly relationship in readiness for use and until the supply in the package is completely exhausted is a material advantage to the users of these goods.

While I have herein disclosed typical packages embodying my invention, it will be understood that the invention is susceptible of embodiment in other forms.

This application is a continuation, in part, of my application Serial No. 404,279, filed November 2, 1929. The method disclosed in this application is not claimed here but is claimed in my pending application Serial No. 509,230.

Having thus described my invention, what I desire to claim as new is:

1. A rubber band package comprising a backing member of sheet material and a row of rubber bands positioned on said backing member side by side and closely adjacent to each other approximately in abutting relationship, said backing member being partially cut into strips corresponding in number and position to said rubber bands, the bands being adhesively secured to said respective strips.

2. A rubber band package comprising a backing member of sheet material, and a row of parallel rubber bands detachably fastened to said backing member side by side in substantially abutting relationship, said backing member being partially divided into strips by cuts extending approximately parallel to said bands and adjacent to each other, whereby said strips can be torn off as said bands are used up.

KENNETH R. SHAW.