

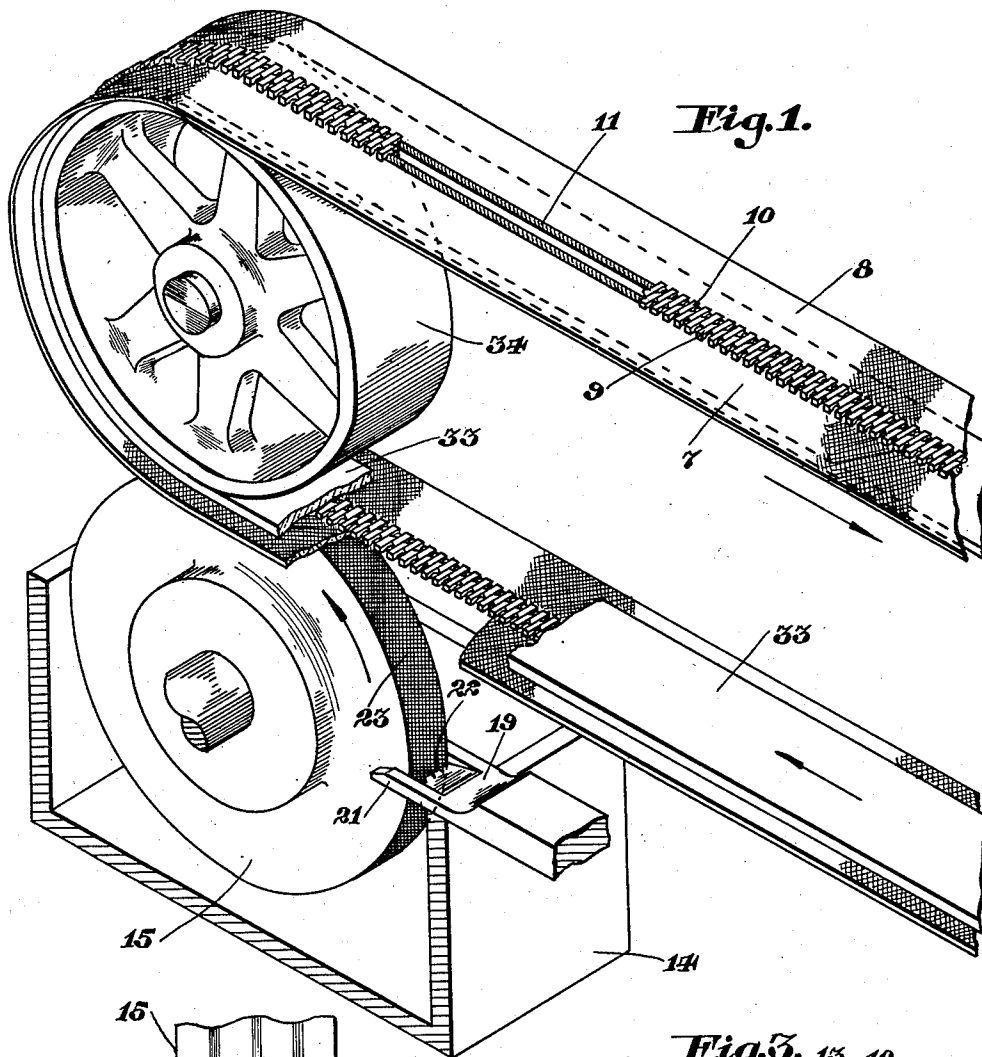
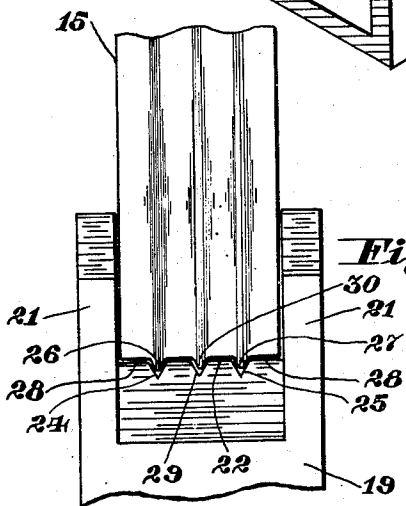
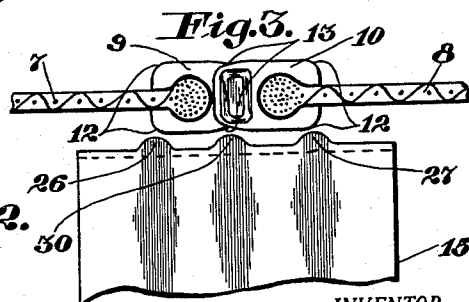
May 4, 1937.

W. J. REUTER

2,079,563

METHOD AND APPARATUS FOR COATING SLIDE FASTENERS

Original Filed Nov. 27, 1934 2 Sheets-Sheet 1



INVENTOR.
William J. Reuter.

BY *Kelley & Shisholm*
ATTORNEYS.

May 4, 1937.

W. J. REUTER

2,079,563

METHOD AND APPARATUS FOR COATING SLIDE FASTENERS

Original Filed Nov. 27, 1934 2 Sheets-Sheet 2

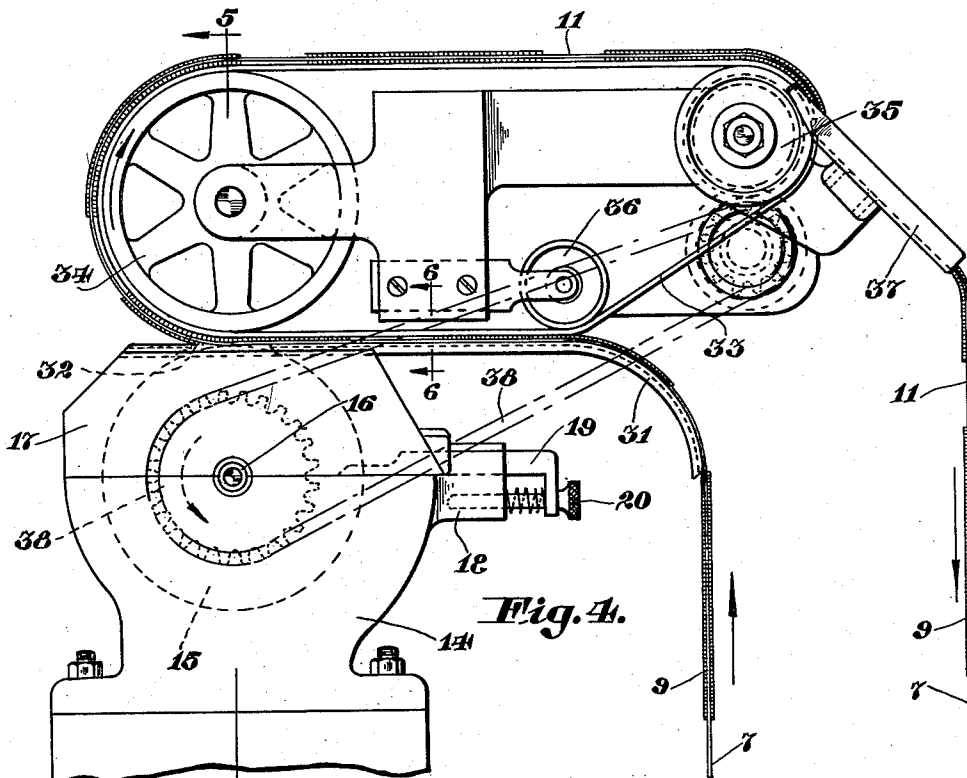


Fig. 4.

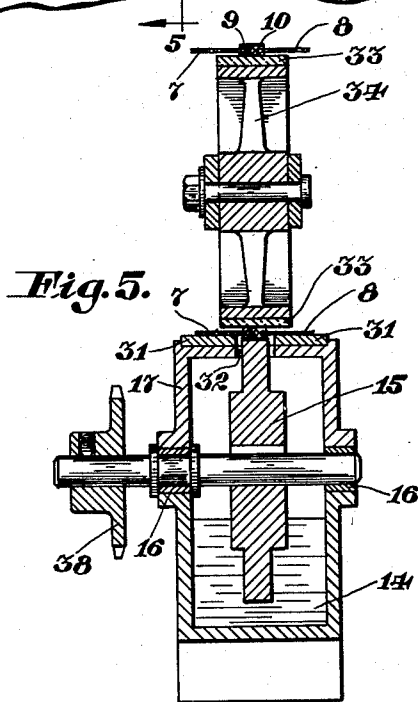
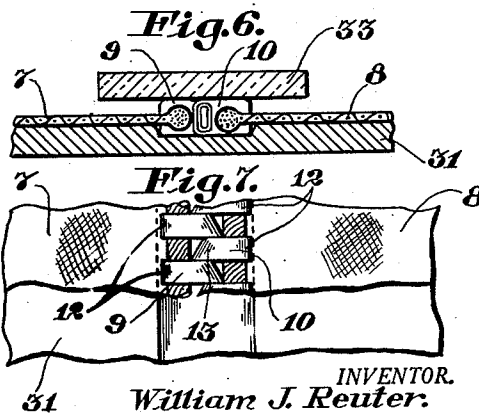


Fig. 5.



INVENTOR.
William J. Reuter.

BY Kelley & Chisholm.
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,079,563

METHOD AND APPARATUS FOR COATING
SLIDE FASTENERSWilliam J. Reuter, Meadville, Pa., assignor to
Hookless Fastener Company, a corporation of
PennsylvaniaApplication November 27, 1934, Serial No. 755,007
Renewed October 8, 1936

8 Claims. (Cl. 91—51)

My invention relates to a method and apparatus for treating slide fastener strips preferably after two such strips are interlocked together. It will be understood that by slide fastener strips I refer to strips comprising flexible fabric tapes with fastener elements, sometimes called interlock members, arranged in closely spaced relation on the edges of said tapes. Preferably my apparatus and method are adapted for handling two such strips together, said strips being mated or interengaged. For purposes of economy it is desirable to handle such fastener strips in continuous lengths and the interlocked members are attached in groups along the strip, such groups being of whatever length is desired for a finished fastener with blank spaces between the groups where the tapes may be cut in two to form individual fastener lengths.

Various methods of applying coating materials to the surfaces of the interlock members which are visible during the use of the fastener, have been proposed. One method which has been used to some extent is to spray the coating material directly to the metal parts while protecting the fabric strips along the sides of the members by means of appropriate shields. Even in this method it was difficult to keep the coating material away from the beaded edges between the fastener members. With the use of more durable coating materials for metallic fasteners, such as enamels, the flexible tapes between the interlock members are unduly stiffened if any of the coating material is applied to them.

According to my invention, the continuous slide fastener strips are passed over a surface on which has been deposited a film, such surface being preferably the cylindrical surface of a roller. The film strip on such surfaces is preferably of the same width as the over-all width of the interlocked members.

While my improved method and apparatus are intended particularly for the application of enamel to the exposed surfaces of metal interlock members, it may be used also for application of color dyes to the visible surfaces of pyroxylin fastener members and the like. It can also be used, of course, for the application of all kinds of lacquers to the surfaces of interlock members of slide fasteners whether they are made of metallic or non-metallic material.

The general objects and nature of my invention will now be apparent. One of the more specific objects is to provide an improved doctor blade for distributing the film of material in such a way that it will have an increased thickness

at the center and at the extreme edges in order that adequate material may be deposited on the sloping ends of the interlock members.

In the accompanying drawings, I have shown for purposes of illustration, one embodiment which my invention may assume in practice. In these drawings:

Fig. 1 is a schematic view illustrating the method;

Fig. 2 is a plan view of the end of the doctor blade;

Fig. 3 illustrates the application of the film of material to the exposed surfaces of the interlock members;

Fig. 4 is a side view of one form of apparatus made in accordance with my invention;

Fig. 5 is a cross-section on line 5—5 of Fig. 4;

Fig. 6 is a cross-section on line 6—6 of Fig. 4; and

Fig. 7 is a plan view of the fastener strip in the guide.

The fastener strips comprise flexible tapes 7, 8 having beaded edges to which are attached rows of interlock members 9, 10. The interlock members are arranged in closely spaced relation and the ones on the strip 7 are interlocked with those on strip 8. The blank spaces 11 on the tapes divide the fastener members into groups of any desired length.

As shown in Fig. 3, the attached ends of the interlock members may have rounded or sloping corners 12, while the opposite ends which are intermeshed together also have sloping corners 13. This presents a condition which makes it difficult to apply an even coating.

The coating apparatus comprises any suitable base 14, which is hollowed out to contain the coating material. A roller 15 is journaled at 16 on said base, and a cover 17 is placed over the base to form a housing for the roller. On the base 14 there is a boss 18 which supports a doctor blade 19 adjustable inwardly and outwardly by means of the screw 20. The inner end of the doctor blade is shown in Figs. 1 and 2. It has side extensions 21 which are for the purpose of scraping the material from the sides of the roller. It also has an edge 22 in contact with the knurled surface 23 of the roller, for scraping off all excess material to leave a film of uniform thickness. Notches 24, 25 are arranged to leave an excess of material, designated at 26, 27 respectively, along the edges of the film strip. It will be observed that the sides of the doctor blade 28 beyond the notches 24, 25, are in close contact with the surface of the roller so as to

clean that portion of the surface as thoroughly as possible. In some cases, this portion of the doctor blade and roller may be omitted if the roller has exactly the same width as the strip
5 formed by the interlocked fastener members.

There is also a centrally disposed notch 29 which in some cases may be larger than the side notches to provide a deposit 30 in the center of the film, of increased thickness. The central
10 thick portion of the film insures more uniform coating of the rather uneven and beveled surfaces at the interlocking ends of the fastener members while the portions 25 and 27 of the film insure an even deposit of the film on the
15 extreme corners of the members. In using enamel on metal elements, the material partly covers the extreme end surfaces of the fastener members. However, it is more or less immaterial whether the extreme end surfaces are covered with the coating material because they are
20 hardly visible in the finished application of the slide fastener. It is sufficient if the side surfaces be covered to the extreme corners.

The fastener strips pass over a suitable guide 31 leading to the cylindrical surface of the roller
25 15. The housing has an opening 32 at the top, and the interlock members pass through this opening directly over the roller 15, and in contact with the film on the roller. At the same
30 time the flexible tapes are kept out of contact with the roller and film, the sides of said strips being supported by the sides of the guide 31.

The fastener strips are held in contact with the guide and roller, and are maintained at all
35 times in a straight flat condition while passing over the guide, by means of a belt 33 which is preferably made of a suitable rubber composition. This belt passes over pulleys 34, 35 and idler pulley 36. It serves to propel the fastener
40 strip along the guide and to carry it to the discharge chute 37. The roller 15 can be connected to the same source of power as the pulley 35, by a suitable chain and sprocket 38.

While I have shown and described in this application, one embodiment which my invention may assume in practice, it will be understood that this embodiment is merely for the purposes of illustration and description, and that other forms may be devised within the scope of my invention as defined in the appended claims.
45 50

What I claim as my invention is:

1. The process of treating slide fastener strips of the kind comprising flexible tapes and interlock members attached in closely spaced relation
55 to the edges of said tapes, which consists of applying a film of liquid material to a rigid surface, placing the fastener strips over said surface with the surfaces of said interlock members which are visible during use of the fastener in contact with the film, while supporting said flexible
60 tapes out of contact with said film, and removing said fastener strips from said surface.

2. The process of treating slide fastener strips of the kind comprising flexible tapes and interlock members attached in closely spaced relation to the edges of said tapes, which consists of applying a film of liquid coating material to a rigid surface, placing the fastener strips over said surface with the surfaces of said interlock members which are visible during use of the fastener in contact with the film, while supporting
65 70

said flexible tapes out of contact with said film, removing said fastener strips from said surface, and hardening said applied film of coating material on said surfaces while said flexible tapes are maintained out of contact with said film.
5

3. The method of treating slide fastener strips of the kind comprising two fabric tapes and interlock members attached in closely spaced and staggered relation to one another on the opposite edges of said tapes, said interlock members being interengaged, which consists of producing a continuous film of liquid material on the surface of an applying element, said film having substantially the same width as the over-all width of said interlock members, and
10 15 placing said interlock members in contact with said film while keeping said fabric tapes out of contact with said film whereby a film of said material is applied across the width of said series of interlock members.
20

4. The process of treating slide fastener strips as defined in claim 3, wherein said film is of excess thickness in the central portion which comes in contact with the intermeshed ends of the interlocked members.
25

5. The process of treating slide fastener strips as defined in claim 3, wherein said film is of increased thickness in the central portion, which contacts with the intermeshed ends of the interlock members, and also increased thickness
30 along its edges which contact with the opposite ends of the interlock members.

6. The process of treating slide fastener strips of the kind having flexible tapes and interlock members attached in closely spaced relation to the edges of said tapes, which consists in depositing a film on the cylindrical surface of a roller, guiding said fastener strips over said roller so that the surfaces of said interlock members on one side come in contact with the film while the flexible tapes are kept out of contact with said film.
35 40

7. Apparatus for treating slide fastener strips of the kind comprising fabric tapes, interlock members attached to the opposite edges of said tapes, said interlock members being interengaged to form a strip of uniform width, comprising a cylindrical roller, means for applying to the cylindrical surface of said roller a film whose width is equal to the approximate width of said interlock members, means for guiding a continuous fastener strip tangent to said roller with the exposed surfaces of said interlock members in contact with said film, and means for keeping said tapes out of contact with said film.
45 50 55

8. Apparatus for treating slide fastener strips of the kind having interlock members secured to flexible tapes in closely spaced relation, comprising a roller supported in a vessel of liquid coating material, means for rotating said roller, a doctor blade mounted adjacent said roller having means for removing the liquid material from the sides of said roller, and having notches for distributing said material uniformly with an increased thickness at the center and at the extreme edges, means for guiding a fastener strip tangent to said roller in contact with said coating material, and means for keeping said flexible tapes out of contact with said coating material.
60 65 70

WILLIAM J. REUTER.