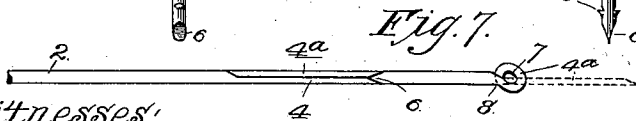
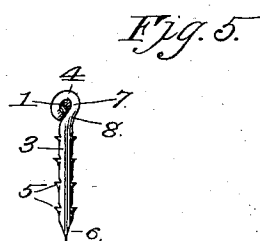
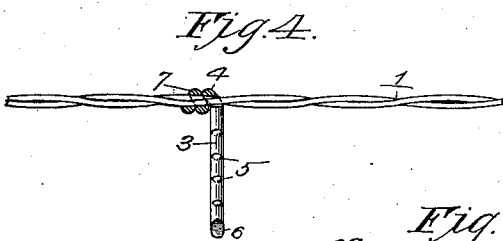
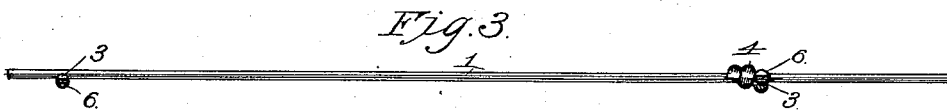
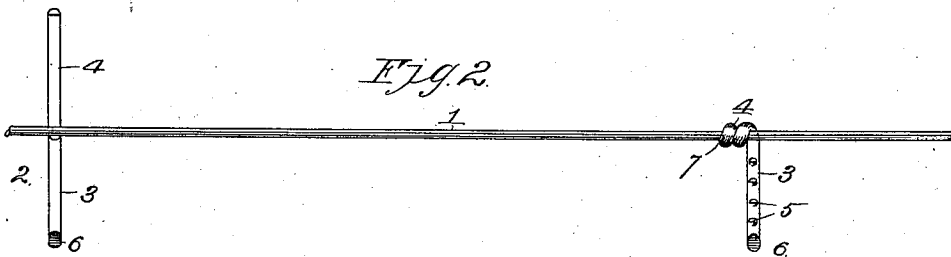
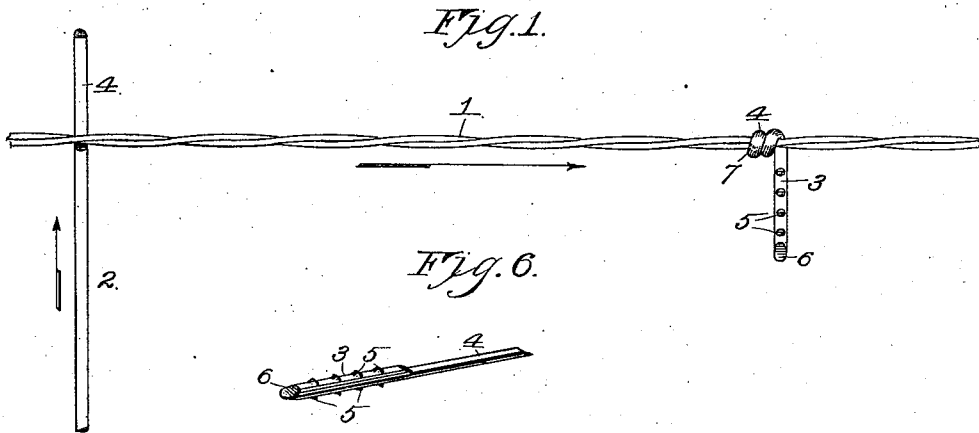


(No Model.)

N. G. ROSS & J. J. WOLF.
METALLIC STRAP.

No. 574,452.

Patented Jan. 5, 1897.



Witnesses:

M. R. Remley
L. J. Thorpe

Inventors:

N. G. Ross & J. J. Wolf.

by: Higdon & Higdon
Attys.

UNITED STATES PATENT OFFICE.

NOBLE G. ROSS AND JULIUS J. WOLF, OF KANSAS CITY, MISSOURI, ASSIGNORS
TO THE WOLF SAFETY BOX STRAP COMPANY, OF SAME PLACE.

METALLIC STRAP.

SPECIFICATION forming part of Letters Patent No. 574,452, dated January 5, 1897.

Application filed February 17, 1896. Serial No. 579,620. (No model.)

To all whom it may concern:

Be it known that we, NOBLE G. ROSS and JULIUS J. WOLF, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Metallic Straps or Bands, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

Our invention relates to flexible metallic straps or bands for securing and strengthening shipping-crates, boxes, packages of various sizes, and slack-barrels, such as are used in barreling green and dried fruits, potatoes, salt, &c.; and it consists, essentially, in the combination, with a flexible metallic cable, of stiff wire nails having diminished extensions which are coiled or bent tightly around the cable, so that the shanks of the nails maintain their proper relative positions upon the same and all project in the same direction.

To this end the invention consists in certain novel and peculiar features of construction and arrangement, as will be hereinafter described and claimed.

In order that the invention may be fully understood, reference is to be had to the accompanying drawings, in which—

Figure 1 represents a section of a flexible metallic strap or band embodying our invention and also shows a section or piece of wire from which the nails of said strap are formed. Fig. 2 represents a similar view, except that the cable is of single strand instead of double strand, as shown in Fig. 1. Fig. 3 is a view of the under side of the strap shown in Fig. 2. Fig. 4 is a sectional view to illustrate more clearly the method of securing the nails upon the cable. Fig. 5 is a cross-sectional view of the same. Fig. 6 is a detail perspective view of a nail complete, except that the eye, formed by coiling one end of the nail, does not appear. Fig. 7 is a view of the wire from which the nails are made.

Referring to the drawings, 1 designates a flexible metallic cable, preferably of wire, which may be twisted or not, as desired, and may be of single or multiple strand.

2 designates a heavy wire from which the nails are formed. Such nails comprise the shanks 3 and the extensions 4, of about equal length. Such extension is approximately

semicircular in cross-section, and is provided, preferably, by splitting the nail longitudinally along its center for a suitable distance and removing one of said halves. The body portion 3 of each nail is bearded, as shown at 5, so that it will penetrate into the wood boxes without difficulty, but because of being bearded or roughened, as shown, will be exceedingly hard to extract after being once driven home, as will be readily understood. The lower ends of said nails are beveled or sharpened, as shown at 6, and their upper or diminished ends 4 are coiled or bent tightly around the cable 1, in the form of embracing eyes 7, at suitable intervals, with their shanks or body portions 3 projecting therefrom in the same direction. At the junction of the diminished portion with the shank each nail is bent or formed with a shoulder, as shown at 8, so that said shank, after the nail is secured properly in position, will extend in a vertical line with the flexible cable 1. Thus it will be seen that by employing a flexible metallic cable in combination with nails the upper portions of which are diminished and coiled or bent to form eyes, through which extends and is clamped tightly therein the cable, we have produced a metallic strap which can be quickly and easily clasped and secured around a box or crate of any size and in a most reliable manner by simply driving the nails successively home into the wood in a well-known manner.

In the manufacture of this flexible strap or band we arrange the cable and nail-forming wire relatively, as shown in Fig. 1, that is, at about right-angles to each other and with the diminished portion 4 of the nail-wire projecting beyond the cable. Said diminished portion is then bent or coiled tightly around and upon the cable, and is also bent in such manner that the shank of the nail will be centrally disposed with relation to the cable, as hereinbefore described. The wire, at a suitable distance from said coiled end, is split longitudinally for a suitable distance, and one half of such split portion—viz., the portion 4^a, indicated in Fig. 7—falls or is pushed out of the way, and at the same time the front end of said split portion remaining is cut away so as to sever from the same and the body of the wire that portion which has

its diminished end coiled around the cable, the cut being made at an angle, so as to produce a nail having a sharpened or pointed end 6, which nail is already fastened securely upon the cable, as described. The diminished portion of the body of the wire in the formation of the next nail is then projected beyond the wire, as before, and the action just described is repeated. The cable upon which the nails are strung, when formed of two strands, is twisted in opposite directions between each pair of nails, in order to prevent its entanglement at the point from which it is fed. The securing of the nails at such point, of course, prevents the unraveling or untwisting of the cable. Said nails, preferably after being secured upon the cable, are bearded or roughened in any suitable manner.

It is important that the nail be provided with a diminished portion or extension, owing to the fact that to get the desired stiffness and strength in the nails a heavy-gage wire must be employed, and because in attempting to twist the undiminished or unsplit portion of said wire around the comparatively weak cable-wires tightly and rigidly by automatically-operating mechanism (not shown) said cable-wires are almost invariably cut in two, and also because if it were commercially practicable to coil such heavy wires around the cable by hand they would not be clamped sufficiently tight upon the cable, and the eye or head formed by coiling the nail would be exceedingly large and clumsy and would prevent the cable being secured as snugly against the faces of the boxes strapped as may be accomplished when such heads or eyes are formed of material of diminished

thickness. It is also obvious that to employ a wire that could be clamped neatly around the cable without splitting the same would be impracticable, owing to the fact that the shank would not be sufficiently stiff and strong.

Having thus described the invention, what we claim as new, and desire to secure by Letters Patent, is--

1. A flexible metallic band or strap, comprising a cable, nails consisting each of a shank which is circular in cross-section, and a diminished extension which is semicircular in cross-section and is coiled tightly around the cable, substantially as shown and described.

2. A flexible metallic band or strap, comprising a cable, and a nail consisting of a bearded or roughened and sharpened shank, and an eye which embraces tightly said cable and is formed by bending or coiling around the cable a diminished extension of said shank.

3. A strap or band, comprising a flexible cable formed by twisting two wires upon each other, and a nail consisting of a stiff bearded shank, and an extension projecting from the upper end of said shank and of only about half the thickness of the same, and bent to form an eye which embraces tightly said cable, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

NOBLE G. ROSS.
JULIUS J. WOLF.

Witnesses:

M. R. REMLEY,
G. Y. THORPE.