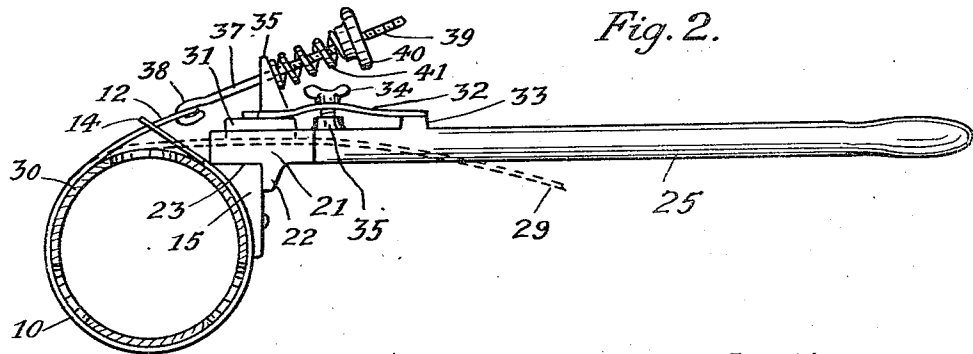
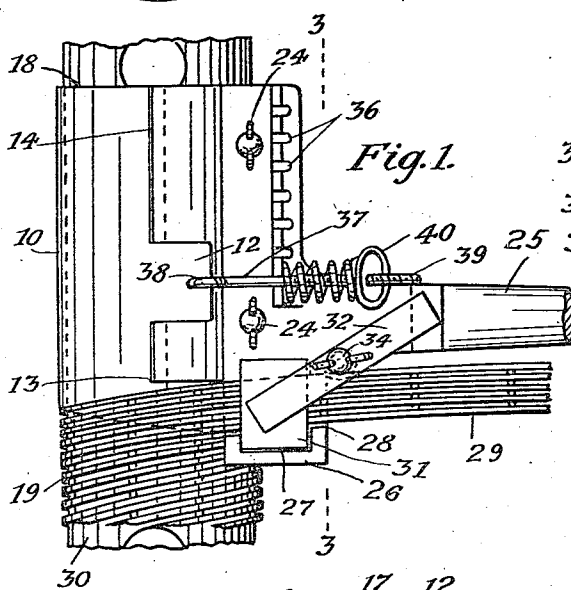
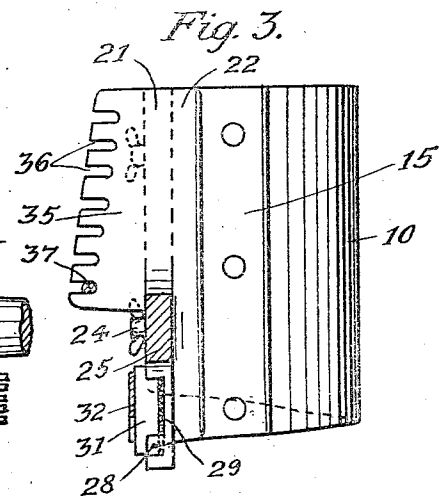
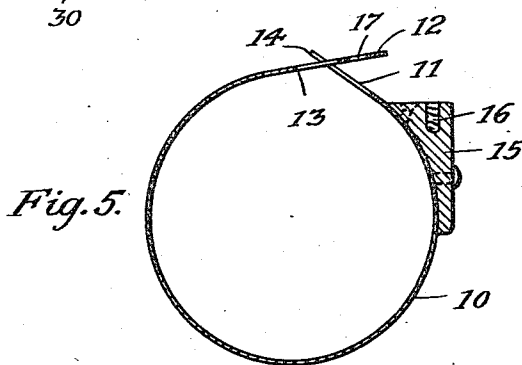
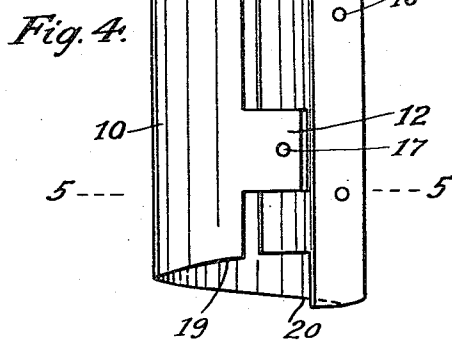


E. E. JOHNSON.
 DEVICE FOR APPLYING METAL RIBBON TO PERFORATED PIPE.
 APPLICATION FILED SEPT. 10, 1914.

1,272,452.

Patented July 16, 1918.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD E. JOHNSON, OF ST. PAUL, MINNESOTA.

DEVICE FOR APPLYING METAL RIBBON TO PERFORATED PIPE.

1,272,452.

Specification of Letters Patent. Patented July 16, 1918.

Application filed September 10, 1914. Serial No. 861,031.

To all whom it may concern:

Be it known that I, EDWARD E. JOHNSON, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Devices for Applying Metal Ribbon to Perforated Pipe, of which the following is a specification.

My invention relates to devices for applying metal ribbon to perforated pipe, the ribbon being similar to that shown and described in my Patent No. 1,040,342, granted March 8, 1912.

The metallic ribbon of the said patent comprises a series of strands secured together in spaced parallel relation, said strands being so shaped as to be more separated at the points where they engage the pipe than at the outer portion of the strands. The pipe to which the strands are applied may be any type of metal pipe of any size having a series of large holes punched in the same. When the ribbon is upon the pipe and secured in position thereon the holes are covered and a series of enlarged channels are formed between the pipe and the several pairs of strands of ribbon, so that such a pipe when so wound with my ribbon comprises an effective strainer to be used in sand or gravel, or otherwise. It is the object of my invention to provide a convenient device for application to pipes of different sizes which will guide the ribbon to the pipe and cause the same to be laid upon the pipe in successive abutting coils and will move the guiding device longitudinally along the pipe as the ribbon is laid. The operation of laying the ribbon may, preferably, be effected by rotating the pipe within the guiding device.

The full objects and advantages of my invention will appear in connection with the detailed description thereof and are particularly pointed out in the claims.

In the drawings, illustrating the application of my invention in one form,—

Figure 1 is a plan view of my device assembled upon a pipe and showing the strainer ribbon being guided into position.

Fig. 2 is an edge view of the parts shown in Fig. 1. Fig. 3 is a section on line 3—3 of Fig. 1. Fig. 4 is a top plan view of one of the clamping rings segregated from the handle and from the pipe. Fig. 5 is a section on line 5—5 of Fig. 4.

My device comprises primarily a casing to be fitted to the pipe, and a handle comprising guiding means for the strainer ribbon which is attached to said casing. Since many different sizes of pipes will require to be wound and each casing must be made to fit a particular size of pipe, the handle and guide mechanism is made readily detachable from the casing, one such handle and guide serving to be used with a complete set of casings. The casing comprises a band of sheet metal which is shaped to conform with the particular size of pipe to which the band is to be applied. One edge of the band is provided with a slot or cut-out portion 11, and the other edge of the band has thereon a tongue 12 adapted to engage through the slot 11, the edge portion 13 at the side of the tongue 12 coming under the edge 14 in which is formed the slot 11. Upon the band 10, just below the slot 11, is secured by bolts or rivets, or otherwise, a casting 15 which is curved at one side in an arc having the same radius as the outer circumference of the pipe to which the band is to be applied. The casting 15 has thereon one or more threaded bolt-holes 16. The tongue 12 is provided with a hole 17. A curved end edge 18 of the band is in a diameter of the band, but a curved edge 19, at the other side, is cut so as to form a spiral, as best indicated in Figs. 1 and 4, providing an offset ledge of the width of the band of strainer ribbon to be applied to the pipe. These parts comprise the bands, which are made in a series of different sizes for application to pipes of different diameters. All such bands are exactly as above described, varying only in the matter of size.

The handle and guide member which is made in a single size and is interchangeably applicable to any of the bands, will now be described. This comprises primarily a sin-

gle integral casting having a head or base portion 21 which is provided with an independent flange 22. The head 21 may be applied to the casting 15 so that the right-angled shoulder of said casting comes within the right angle formed between the lower face of the head and the flange 22, as indicated at 23 in Fig. 2. The head 21 is removably secured in position upon the casting 15 by means of finger bolts 24. It will be seen, therefore, that this head may readily be applied to and detached from the castings of different sized bands. A handle 25 is preferably made integral with the head 21 so that the same is secured to the bands by means of said head. Near the handle 25 the head 21 is provided with an extension 26 having set therein a depression 27 and a channel 28 formed across the walls of said depression. The channel 28 has its walls obliquely turned so as to extend in parallel relation with the end wall 19 of the band 10 when said band is secured to the head, and the width of the channel is very slightly greater than the width of a ribbon strip 29 which is to be wound upon a perforated pipe 30. Within the depression 27, so as to extend across the channel 28, is a block 31, preferably of wood, which is pressed into engagement with ribbon 29 when the same is being fed through channel 28 by means of a leaf spring 32 held in adjusted engagement with block 31 and a leg 33 on handle 25 by means of a hand bolt 34 threaded into a boss 35 on handle 25.

Upon the portion of head 21 extending away from the handle 25 at the other side of said handle from extension 26, is a broad flange or outward extension 35, the top of which slopes toward the head 21 from its highest point near handle 25 and has formed therein a series of notches 36. The notches 36 receive the shank of a bolt 37 which has a hooked end 38 engaging through aperture 17 of tongue 12. The other end of bolt 37 is threaded as indicated at 39 and has thereon a hand nut 40. Between hand nut 40 and the face of the rib or extension 35 is a spring 41. By means of this arrangement the band 10, which normally is slightly larger than the pipe to which said band is applied, may be drawn so as to fit closely upon the pipe 30. The spring 41 permits yielding of this band so that the pipe may be turned in the direction away from said spring. Any effort to turn the pipe in the opposite direction will, however, result through the action of the spring in clamping the band tightly upon the pipe beneath the portions 14, whereby rotation of the pipe will be prevented.

In the operation of my device, the metallic ribbon 29 is passed through channel 28 beneath block 31 and is turned around the pipe

30 so that the edge of ribbon 29 contacts with the spiral edge 19 of band 10. The end of the ribbon is brought past the edge of the body of the ribbon running from the supply, and such end is secured, by solder or otherwise, to the body of the pipe. The pipe is then preferably turned by a pipe wrench or otherwise while the band is held stationary by means of handle 25, the pipe being turned in a direction to wind the ribbon 29 upon the same. The ribbon contacting with the spiral edge 19 of the band on one side, and with the adjacent parallel edge of the ribbon already placed upon the pipe, will be laid spirally upon the pipe in close conjunction with the coils previously laid, at the same time exercising a lateral thrust upon the edge 19 of band 10 whereby said band is caused to move longitudinally of the pipe; or, reversely considered, the pipe is caused to move longitudinally of the band. In this manner, with an ordinary horse for holding the pipe any extent of the pipe desired may be covered by the ribbon 29. The tensioning device, consisting of block 31 and spring 32, causes the ribbon to be laid tightly upon the pipe. The pipe can be turned in the band only in the direction to wind the wire upon the pipe, and is prevented from rotation in the reverse direction; so that the ribbon remains under tension as it is placed upon the pipe. When the desired amount of ribbon has been wound upon the pipe, the end may be secured to the pipe by solder or otherwise and the strainer casing will cover the pipe in effect as an integral casing. Of course if desired, the coils of ribbon may be secured to the pipe at intermediate points between the ends of the ribbon, although this is not ordinarily necessary. It is to be noted, also that the band independently of the ribbon tension guide on the band and the handle, when secured in position upon the pipe provides, through the spiral edge, an accurate guide for laying the first coil of ribbon upon the pipe; so that for this purpose a band such as I have described may be used independently of the tension guide or handle. When so used the ribbon is carried about the pipe and laid in overlapping relation with an edge of the coil in contact with the spiral edge of the band. When in this position, the end of the coil is rigidly secured, by solder or otherwise, to the pipe. This sets the ribbon in position to be wound in a true spiral, so as to lay the ribbon progressively upon the pipe, a thing which I have found difficult, if not impossible, of accomplishment independently of my ribbon guiding band. In this connection it is to be borne in mind that there can be only one proper spiral coil for each size of pipe, so that not only a separate band must be employed for each pipe, but there is obvi-

ously no rule of thumb method by which the first coil can be accurately laid independent of a mechanical guiding device.

I claim:

5 1. A device for winding strainer ribbon upon pipe, comprising a handle having secured thereto, a substantially cylindrical clasping member having a spiral edge, means for securing said clasping member
10 about a pipe so that said spiral edge will form a guide for laying ribbon spirally upon the pipe, and means associated with said handle for guiding said ribbon so that the edges thereof will contact respectively with
15 the spiral edge and the edge of the last coil of ribbon laid and that the relative turning of the pipe and clasping member will lay said ribbon upon said pipe with adjacent coils in contact while causing the clasping
20 member to move longitudinally along the pipe.

2. A device for winding strainer ribbon upon pipe comprising a band having a spiral edge, means for holding said band fitted to
25 the pipe so that the pipe may be turned therein, said holding means comprising a yielding device such that the band will yield to permit the pipe to be turned in one direction only, and means for guiding the ribbon
30 in contact with said spiral edge so that turning of the pipe will lay said ribbon spirally upon said pipe with adjacent coils in contact and will feed the band longitudinally along the pipe.

3. A device for winding strainer ribbon upon pipe comprising a band having one edge cut so as to form a spiral when said band is secured about a pipe, means for
40 yieldingly holding said band fitted to the pipe with the meeting edges thereof overlapping, and means for guiding the ribbon in contact with the said spiral edge so that turning of the pipe will lay said ribbon spirally upon said pipe with adjacent coils in
45 contact and will feed the band longitudinally along the pipe.

4. A device for winding strainer ribbon upon pipe comprising a band having one edge cut so as to form a spiral when said
50 band is secured about a pipe, means for yieldingly holding said band fitted to the pipe with the meeting edges thereof overlapping, means for varying the tension of said holding means, and means for guiding
55 the ribbon in contact with the said spiral edge so that turning of the pipe will lay said ribbon spirally upon said pipe with adjacent coils in contact and will feed the band longitudinally along the pipe.

60 5. A device for winding strainer ribbon upon pipe comprising a cylindrical band having the adjacent edges formed one with a slot and the other with a tongue extending within said slot so that said edges over-

lap, a yielding member secured to said
65 tongue and adapted to fit the band to the pipe when the same has been placed in position thereon, the end of said band being cut so as to form a spiral peripheral edge, and means for guiding the ribbon in con-
70 tact with said spiral edge so that turning of the pipe will lay said ribbon spirally upon said pipe with adjacent coils in contact and will feed the band longitudinally along the pipe.

6. A device for winding strainer ribbon upon pipe comprising a cylindrical band having one edge cut so as to form a spiral when said band is secured about a pipe and having the meeting edges formed one with
80 a slot and the other with a tongue extending within said slot so that said edges overlap, a member including a handle adapted to be removably attached to said band, a rib on said member provided with a plurality of
85 notches along the same having their bottoms at different heights above the plane of the member, a hook bolt adapted to be connected with said tongue and to pass through one of said notches according to the size of
90 the band to which the member is applied, means for yieldingly drawing up the hook bolt to fit and hold the band about the pipe with the meeting edges thereof overlapping, and means for guiding the ribbon in contact
95 with the said spiral edge so that turning of the pipe will lay said ribbon spirally upon said pipe with adjacent coils in contact and will feed the band longitudinally along the pipe.

7. A device for winding strainer ribbon
100 upon pipe comprising a band having one edge cut so as to form a spiral when said band is fitted about a pipe, a guide for the ribbon having its edges parallel with said spiral edge of said band and one of its edges
105 in alinement therewith, and means for holding the ribbon in the guide and tensioning the same as it is fed upon the pipe by turning of the pipe.

8. A device for winding strainer ribbon
110 upon pipe comprising a band having one edge cut so as to form a spiral when said band is fitted about a pipe, a guide for the ribbon having its edges parallel with said spiral edge of said band and one of its edges
115 in alinement therewith, a wood block resting upon the ribbon above the guide, a leaf spring engaging said block to force it upon the ribbon, and means for varying the pressure of said spring.

9. A guiding device for use in winding strainer ribbon upon pipe comprising a band having one edge cut so as to form a spiral when said band is fitted about a pipe, and means for removably holding the band fitted
120 to the pipe so that the first coil of ribbon may be fixed upon the pipe in contact with said spiral edge.

10. A guiding device for use in winding
strainer ribbon upon pipe comprising a band
having one edge cut so as to form a spiral
when said band is fitted about a pipe, the
5 spiral so formed being such that the adja-
cent ends thereof in an element of the pipe
cylinder are separated by a distance equal
to the width of the ribbon to be wound, and
means for removably holding the band

fitted to the pipe so that the first coil of rib- 10
bon may be fixed upon the pipe in contact
with said spiral edge.

In testimony whereof I affix my signature
in presence of two witnesses.

EDWARD E. JOHNSON.

Witnesses:

F. A. WHITELEY,
H. A. BOWMAN.