July 21, 1964 L. H. MORIN 3,141,914

METHOD OF MAKING FILM COATED WIRE TRAVELERS

Filed Sept. 29, 1961

FIG. 1.

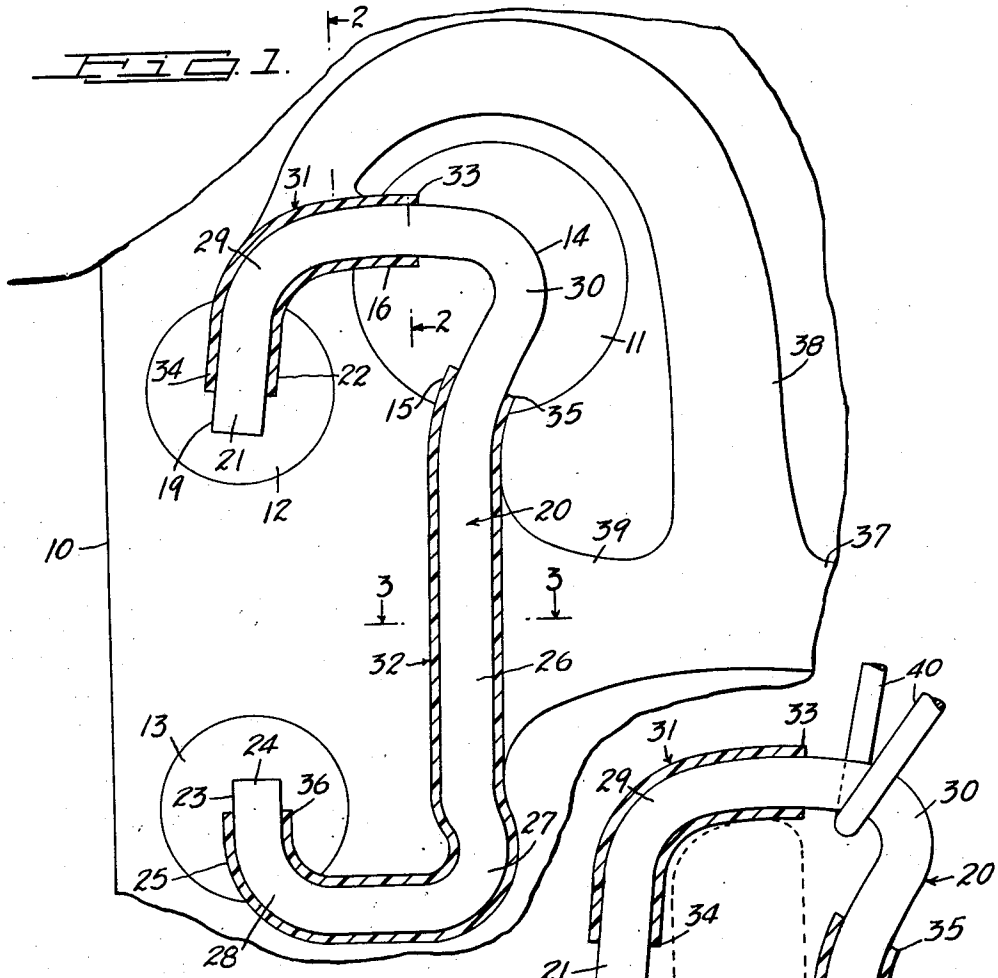


FIG. 2.

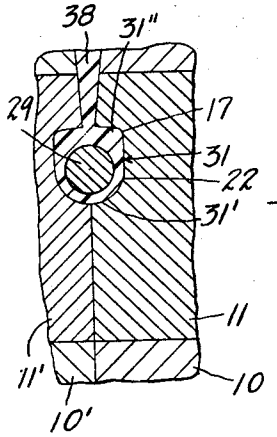
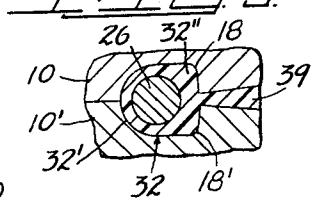


FIG. 4.

FIG. 3.



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METHOD OF MAKING FILM COATED WIRE TRAVELERS

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This invention relates to travelers, particularly of small sizes, wherein the body portion of the traveler is fashioned from a suitable rod or wire of wear resistant material and portions of the traveler operating upon the traveler ring are coated with a thin coating of plastic material maintaining the rod or wire spaced with respect to the traveler ring at all times. More particularly, the invention deals with a novel method of producing travelers of the character defined.

The novel features of the invention will be best understood from the following description, when taken together with the accompanying drawing, in which certain embodiments of the invention are disclosed and, in which, the separate parts are designated by suitable reference characters in each of the views and, in which:

FIG. 1 is an enlarged diagrammatic face view of a part of one die, illustrating insert plug supports for the traveler rod or wire and indicating the plastic coating in section, with the gate shown in elevation.

FIG. 2 is a schematic section through one of the insert plugs and diagrammatically illustrating the rod or wire and part of the coating thereon, the latter section being taken on the broken line 2—2 of FIG. 1 and, further, illustrating portions of both parts of the die.

FIG. 3 is a small sectional detail view taken on the line 3—3 of FIG. 1, again illustrating both parts of the die; and

FIG. 4 is a view of the upper portion of a formed traveler illustrating the plastic coating in section, the traveler ring being indicated, in part, in dotted lines and a thread engaging the exposed portion of the traveler rod or wire.

In FIG. 1 of the drawing, I have shown a face view of a portion of one die **10**, the companion die being indicated, in part, at **10'** in FIGS. 2 and 3. Arranged in each of the dies are a plurality of readily removable or replaceable supports or insert plugs **11**, **12** and **13**, it being understood that similar plugs are in the companion die and, in FIG. 2 of the drawing, the companion to the plug **11** of the die **10** is shown, in part, at **11'**, the latter being in the die **10'**.

To simplify the disclosure, the structural features of the plugs **11**, **12** and **13** only will be described, it being understood that the associated plugs of the other die are similarly formed. The plug **11** has a recess **14** on its face of curved contour registering with silghtly enlarged recesses **15** and **16**. Considering FIG. 2 of the drawing, it will appear that the recesses **15** and **16** are of irregular contour, the recess **16** only being shown and this irregular contour forms what might be said to be an enlarged cavity portion **17** for the purposes later described. This same contour is followed through the dies **10**, **10'**, as is illustrated, for example, at **18**, **18'** in FIG. 3 of the drawing.

The plug **12** has a recess **19** supporting one end of a traveler rod or wire **20**, as illustrated at **21**. The plug **12** also has an irregular contoured recess **22**, similar in cross-sectional form to the recess **17** and the recesses **18**, **18'**.

The plug **13** has a recess **23** receiving the other end **24** of the rod or wire **20** and a recess **25**, generally similar in cross-sectional contour to the recess **22**. The rod or wire **20** may be said to comprise the wire backbone of the traveler and comprises a straight intermediate portion **26**, one end of which has a curved offset **27** and an

inwardly curved portion **28** terminating in the end **24**. A similar curved portion **29** is at the other end of the rod or wire which terminates in the end **21** and between **29** and **26** is a curved thread engaging portion **30**. This portion **30** seats in the recess **14** of the plug **11** and the ends **21**, **24** seat in the recesses **19**, **23**, respectively, of the plugs **12** and **13**. This definitely positions the rod or wire in and between the dies, preparatory to the molding operation, molding the thin plastic coatings **31** and **32** on end portions and the intermediate portion of the backbone **20**. The coating **31** has ends **33** and **34** formed in the recesses **16** and **22** of the plugs **11** and **12**; whereas, the coating **32** has ends **35** and **36** formed in the recesses **15** and **25** of the plugs **11** and **13**, respectively. The coatings are of the irregular cross-sectional contour shown in FIGS. 2 and 3 of the drawing. In other words, the coating **31** has a semi-circular inner surface **31'** and the coating **32** has a semi-circular inner surface **32'**. The coatings **31** and **32** also include enlarged or thicker portions **31''**, **32''** formed by the enlargements, as at **17**, for example, in the plugs and **18**, **18'** in the dies. The purpose of these latter enlargements is to provide free flow of the plastic material around the backbone in producing the thin walled semi-circular inner portions.

In FIG. 1 of the drawing, I have diagrammatically illustrated in elevation a main gate **37** and, in the construction shown, two branches **38** and **39**, the branch **38** extending through the die to position to form the coating **31**; whereas, the branch **39** extends through the die to form the coating **32**. In some instances, it may be desirable to extend another branch, similar to the branch **38**, to the lower portion of the coating **32**, as viewed in the drawing, in order to insure filling of the cavities to form the lower end of the coating **32**. In practice, I have found that it is desirable to suitably heat the dies to insure positive flow of the plastic material to the respective cavities forming the two coatings **31** and **32**. By utilizing readily removable and replaceable plugs **11**, **12** and **13**, a minimum cost would be required in maintaining the die structure operable at all times, in the event that any of these plugs should become damaged, due to faulty alinement of the backbone insert **20** in the dies, which faulty alinement might occur due to improper registration of **21**, **24** and **30** with the recesses **19**, **23** and **14**, respectively, of the several plugs.

Now, considering FIG. 4 of the drawing, here I have diagrammatically illustrated the use of the traveler and, in said figure, **40** represents the thread operating upon the thread engaging portion **30** of the backbone **20**. This operation is maintained between the ends **33** and **35** of the coatings **31** and **32**, respectively. At **41** I have indicated, in dotted lines, part of the traveler ring and it will clearly appear from this showing and the viewing of FIG. 1 of the drawing that end portions **42** and **43** of the ring are maintained at all times within the environment of the plastic coatings **31** and **32**, so that, at no time, is the traveler ring engaged by any part of the wire backbone **20**. It will also be apparent that the portion of the coatings which contacts the ring is semi-circular in form, which means that there is no interference with the lean of the traveler as it rotates around the traveler ring **41**.

It will be apparent that, after forming the coated traveler as diagrammatically illustrated in FIG. 1, the gate portions extending to the coatings **30**, **31** are trimmed off, so as to produce the end result, as clearly illustrated in FIG. 4 of the drawing.

For purposes of description, the traveler may be said to comprise rounded ring engaging ends with an intermediate shank, wherein the shank joins one of said ends in a rounded thread engaging portion.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

The herein described method of forming travelers comprising a rod member having rounded ring engaging ends, a shank, and thread engaging portion between said shank and one ring engaging end, which consists in supporting said rod member at both ends and said thread engaging portion in injection molding dies, so that at said points of support the dies make peripheral contact with said rod member, providing a space between the other parts of said rod member and the inner walls of said dies to receive suitable plastic coating material, and injecting plastic coating material into said dies to coat said rod member except at the ends thereof and at said thread engaging portion.

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