

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) PROTECTIVE MEANS FOR BEVELLED END FACES OF PIPES

(71) We, NIPPON KOKAN KABUSHIKI KAISHA, a Corporation organised under the laws of Japan, of No. 2, 1-chome, Otemachi, Chiyodaku, Tokyo, Japan, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to means for protecting bevel edges of steel and other pipes, so that damage because of shock to the bevelled end faces of the pipe can be effectively prevented and also for obtaining simple and easy to handle protecting means.

Bevelled end faces formed on steel pipes, especially on middle sized and large sized pipes, are subject to damage during loading and unloading operations and therefore it is necessary to protect them. Known protective means comprise wrapping a piece of canvas cloth around the pipe edges or covering them with plastic bevel caps. The former is characterised by the usual defects of being only mere cloth. Some thickness is required, there is a considerable amount of handling and the finish is unbecoming. The latter has the drawbacks of requiring expensive moulding dies for cap manufacture as well as a plurality of cap sizes and gives unsatisfactory protection against strong shocks. Moreover, both protective means have an undesirable tendency to fall off easily.

The object of this invention is to improve on such known art means by obtaining effective protection of bevelled end faces through the use of metallic means which can easily be removed and to obtain a protective means which is interchangeable and has a presentable finish.

The invention provides protective means for bevelled end faces of pipes, comprising an annular member having a split therein and provided with a flange for fitting against a pipe end face, wedge retaining means outstanding on each side of said split, and a

wedge removably fitting in said wedge retaining means for fitting said annular member to said pipe with the flange held against said pipe end face.

For a better understanding of the invention reference will now be made to the accompanying drawing in which:

Figure 1 is a front view of one embodiment of this invention;

Figure 2 is a sectional view along the line II—II of Figure 1;

Figure 3 is a part sectional view of the same embodiment after a wedge has been inserted;

Figure 4 is an internal view;

Figure 5 is an oblique view of the embodiment showing the wedge inserted; and

Figure 6 is a sectional view of a detail along the line VI—VI of Figure 5.

An annular member 1 is provided with a flange part 2 bent outwardly at right angles to the member 1 in the direction of the plane of the member 1. Slot 9 is cut in the annular member 1 and pawls 3, 3 provided on both sides of the slot 9 on the inner surface of the annular member. Wedge 4 can be freely mounted and removed from between the pawls 3, 3. In the embodiment shown in the accompanying drawing, pawls 3, 3 are formed by bending inward and parts between slits 6, 6 which are cut in member 1. Such pawls 3, 3 may be formed separately and then welded to the member 1. The flange part 2 lying at right angle to the member 1 may be replaced by one having a suitable slant or inclination so as to fit a bevelled edge 8 of the pipe 7.

The use of a protective means of this invention is shown in Figures 3, 5 and 6. The protective means is inserted within the bevelled end face 8 of the pipe 7, and the wedge 4 is hammered in between the pawls 3, 3 so as to effectively enlarge the diameter and fit the protective means against the inner surface of the pipe 7. This will achieve a tight fit against the whole of the inner sur-

5 face of the pipe 7 as it is under pressure provided by the wedge, thereby ensuring the protective means stays in position where it has been inserted. The wedge 4 and the pawls 3, 3 are both provided on the inner side of the pipe thereby giving a presentable appearance. Removal is easily effected by extracting the wedge 4.

10 In using the embodiment described above the use of steel or other metal coupled with the flange 2 will give good protection to a bevelled end face 8 of the pipe 7. It can easily be removed by moving the wedge 4 thereby simplifying manipulation. Moreover, 15 the fit is made tight by the wedge 4 which exerts a general pressure to the inner side of the pipe 7, thereby ensuring that the protective means will not fall off during loading and unloading operations. Varied degrees of 20 insertion of the wedge 4 and various sizes of wedge may be used with varied diameters of pipe and all will present a neat appearance thereby enhancing the utility of the invention.

WHAT WE CLAIM IS: —

25 1. Protective means for bevelled end faces

of pipes, comprising an annular member having a split therein and provided with a flange for fitting against a pipe end face, wedge retaining means outstanding on each 30 side of said split, and a wedge removably fitting in said wedge retaining means for fitting said annular member to said pipe with the flange held against said pipe end face.

2. Protective means as claimed in claim 1, wherein the wedge retaining means comprises upstanding pawls on either side of 35 said split.

3. Protective means for bevelled end faces of pipes substantially as hereinbefore described with reference to the accompanying 40 drawing.

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