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YELLOW BRASS PIPE ALLOY

William R. Webster, Bridgeport, Conn., assignor to Bridgeport Brass Company, Bridgeport, Conn., a corporation of Connecticut

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6 Claims. (Cl. 75—155)

This invention relates to improvements in yellow brass alloys, particularly those for use in the manufacture of pipes or tubes.

It is known that the water supplies of many localities in the country produce in yellow brass pipe an effect known as dezincification. In this way the pipe becomes corroded and weakened and after a period of time the pipe fails and leaks. During such dezincification there is also a substantial loss in tensile strength of the brass pipe.

I have overcome the objectionable features of ordinary yellow brass which have limited its use and have produced a new yellow brass pipe which does not dezincify when used in localities where the water dezincifies ordinary yellow brass pipe. I have found that by adding a small amount of arsenic to yellow brass pipe, I produce a new brass pipe which resists dezincification and corrosion that occur when ordinary yellow brass pipe is used.

According to my invention I add a very small amount of arsenic to yellow brass and have found that only a fraction of a percent of arsenic is necessary to prevent dezincification of the yellow brass. Pipes made of the new yellow brass alloy have been used in regions where ordinary yellow brass became dezincified and corroded in use and the new pipes have not been dezincified or attacked. The range of the proportions of the arsenic to be added to the yellow brass alloy is about 0.05 of 1% to about 0.35 of 1% in order to obtain the new results above described.

Yellow brass alloy as ordinarily used contains about 60% copper and about 40% zinc together with small percentages of impurities and added elements. The percentage of copper may go as high as 67% in ordinary yellow brass. To such an ordinary yellow brass I add a small amount of arsenic so that the arsenic in the new yellow brass alloy is present in the proportion of about 0.05% to 0.35%.

Alloys made according to my invention contain about 60 to 67% copper, about 0.05% to about 0.35% of arsenic and the remainder consisting essentially of zinc. My brass alloy may also contain a fraction of a percent of lead to improve the threading qualities of the pipe or tube made therefrom.

For example, a yellow brass water tube or pipe of a new yellow brass alloy made according to my invention contains about 60% copper, about 0.21% of arsenic and the rest zinc and is especially adapted to resist and prevent dezincification encountered in the use of ordinary yellow brass pipe. Also, a water tube or pipe made from my new yellow brass alloy does not show a loss in tensile strength after it has been in use for some time as is the case with ordinary yellow brass pipe to which no arsenic has been added.

While I have given certain proportions of ingredients in my new brass alloy, it is to be understood that these are given for purposes of illustration only and may be varied within limits without digressing from the spirit and scope of my invention.

What I claim is:—

1. A yellow brass alloy adapted to be used in making brass pipe which resists dezincification and which contains about 60% copper, up to about 0.35% of arsenic and the remainder zinc.

2. A yellow brass alloy adapted for use in producing pipe which contains about 60% copper, about 0.05% to 0.35% arsenic and the remainder zinc.

3. A yellow brass alloy adapted for use in the manufacture of water tubes or pipes, which resists or prevents dezincification and corrosion and which contains about 60% to 67% copper, 0.05% to 0.35% of arsenic, and the remainder consisting substantially entirely of zinc.

4. A yellow brass pipe or tube which resists dezincification in use and is made of an alloy containing approximately 60% copper, approximately 0.21% arsenic, with the balance consisting substantially entirely of zinc.

5. A brass pipe or tube adapted to resist dezincification and corrosion in use, which contains about 60% to 67% of copper, up to about 0.35% of arsenic, and the remainder consisting substantially entirely of zinc.

6. A brass pipe or tube adapted to resist dezincification and corrosion in use, made of ordinary yellow brass alloy with the addition of a small percentage of arsenic up to about 0.35%.

WILLIAM R. WEBSTER.