

was short of water. I do not think that would obtain as well with the flat crown sheet. My honest opinion is that we would not make an explosion by pouring cold water on a hot crown sheet. You might make a crack and by that way relieve the pressure without causing an explosion.

When I was a boy they would tell me not to put water on a hot stove as I would break the lids. That may be so, as if you keep putting water on the stove you might possibly break it, but it would not explode. Expansion and contraction in a crown sheet is not sudden enough to make it explode with cold water. This is a pretty bold statement to make, and I expect to be attacked severely.

Mr. Bly,—

My experience is something like Mr. Wickens, that is with the marine and not with the locomotive boiler. In reference to Mr. Wicken's statement where he says that a boiler explosion is only due to a rupture, I would state that would depend upon how big it was to make an explosion. A short time ago we had an explosion at Sunny-side. That was due, I suppose, to a rupture, as Mr. Wickens says. That was a boiler explosion as you all know, there being some two or three men killed and injured. The boiler was lifted off its foundation and turned right around; just as though you put it on a waggon and turned it around. You could not have done it nicer. The crown sheet had drawn out where it was overheated, until it was quite thin, almost like a knife edge.

I have seen myself in pumping cold water in a marine boiler to cool it off, it would put a crack 6 inches long in the back leg plate. Another time in my experience with the marine boiler, which is similar to the locomotive type, the crown sheet went down about 4 inches. That was due to the scale and sediment getting between the staybolts and forming on top of the crown sheet.

I have a little data which I picked up from different authorities. Perhaps it might be of interest to some of the members here. I, myself, believe a boiler explosion is due, as Mr. Wickens has said, to over working of material, or that the pressure is too high for the material to stand.

In the United States in the year 1880, 170 boiler explosions were reported with a loss of 555 lives.

In 1887 there were 198 explosions and 652 persons killed or injured.

In 1900 there were 268 explosions and 785 persons either killed or injured.

In 1901 there were 423 explosions with a loss of 312 lives and 646 persons injured.

The Hartford Steam Boiler & Inspection Co. reported