

a very interesting paper on alloys of nickel and steel, in which he says: "The alloy can be made in any good open-hearth furnace working at a fairly good heat. The charge can be made in as short a time as an ordinary 'scrap' charge of steel—say about seven hours. Its working demands no extraordinary care; in fact, not so much as is required in working many other kinds of charges, the composition of the resulting steel being easily and definitely controlled. No special arrangements are required for casting; the ordinary ladles and moulds being sufficient. If the charge is properly worked nearly all the nickel will be found in the steel—almost none is lost in the slag, being in this respect widely different from charges of chrome steel.

"The steel is steady in the mould; it is more fluid and thinner than ordinary steel, it sets more rapidly, and it appears to be thoroughly homogeneous. The ingots are clean and smooth in appearance on the outside, but those richest in nickel are a little more 'piped' than are ingots of ordinary mild steel. There is less liquation of the metalloids in these ingots, so that liability to serious troubles from this cause is much reduced. Any scrap produced in the subsequent operations of hammering, rolling, shearing, etc., can be remelted in making another charge without loss of nickel. The importance of this fact will be at once appreciated, especially by users of articles made of this metal, seeing that scraps and old articles will have a value for remelting in proportion with their contents of nickel.