

steel,* has shown that this is the case; the point of main importance being the existence of a substance which Sorby called the "pearly constituent" in soft steel. This pearly constituent is closely related to the carbide of iron, Fe_3C , of Abel, and is probably a mixture of Fe_3C and pure iron. Its presence is dia-

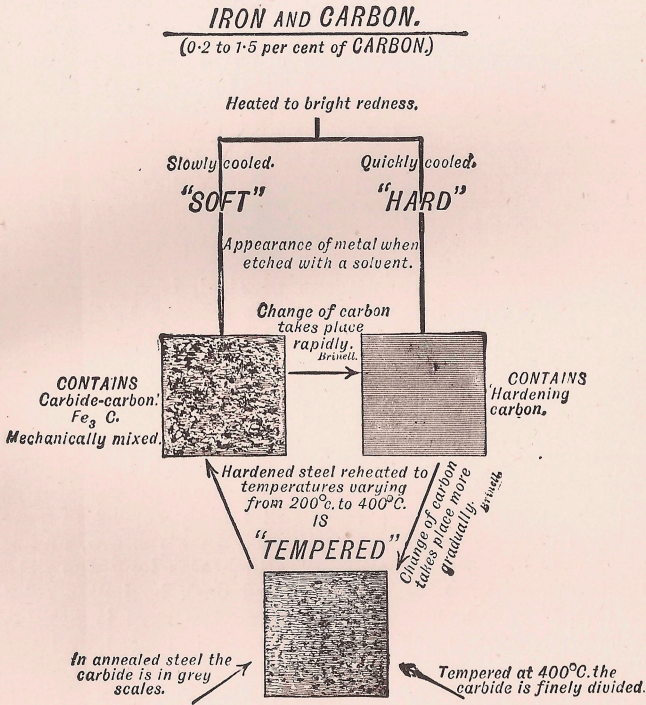


FIG. 36.

grammatically indicated in Fig. 36. The diagram will serve for the purpose of illustration to indicate the appearance when soft, hardened, and tempered steel are respectively heated with a solvent which acts gently on the mass.

By the kindness of my friend, M. Osmond, I am able to pass from mere diagrammatic illustrations to actual photographs of

* *Journ. Iron and Steel Inst.*, No. 1 (1887), p. 255.