

HARDENING SAWS.

Saws are generally hardened in mixtures of oil, tallow, wax, and other substances, says the American Manufacturer. It should be noted, though, that the hardening mixture loses its properties after a certain time of continual use. The saws are heated in long furnaces and then dipped in horizontal position with the tooth edge into long troughs filled with the hardening substance. As soon as the saw is cooled sufficiently, it is taken out and wiped lightly with a piece of

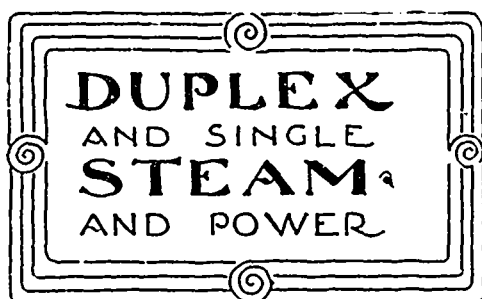
leather, so as to remain still greasy; then it is placed over a bright coke fire until the grease coating inflames and has burned off with a bright flame. This burning off produces the necessary elasticity.

A good hardening mixture is obtained by melting five quarts of train oil, two pounds of tallow and a quarter pound of beeswax thoroughly together. This mixture is excellently adapted to hardening all kinds of steel. By adding one pound of resin heavier articles can be hardened,

but care should be taken that the proportion of resin is not exceeded, as otherwise the objects may become too brittle and crack. If the saws are too especially hard, only a part of the grease coat is allowed to burn off; if softer, more. In the case of springs, burning is allowed to continue until the flame goes out. If the objects are of irregular thicknesses, the burning process is repeated, altogether or partly, until there is reasonable assurance that the object is of equal hardness at all places.

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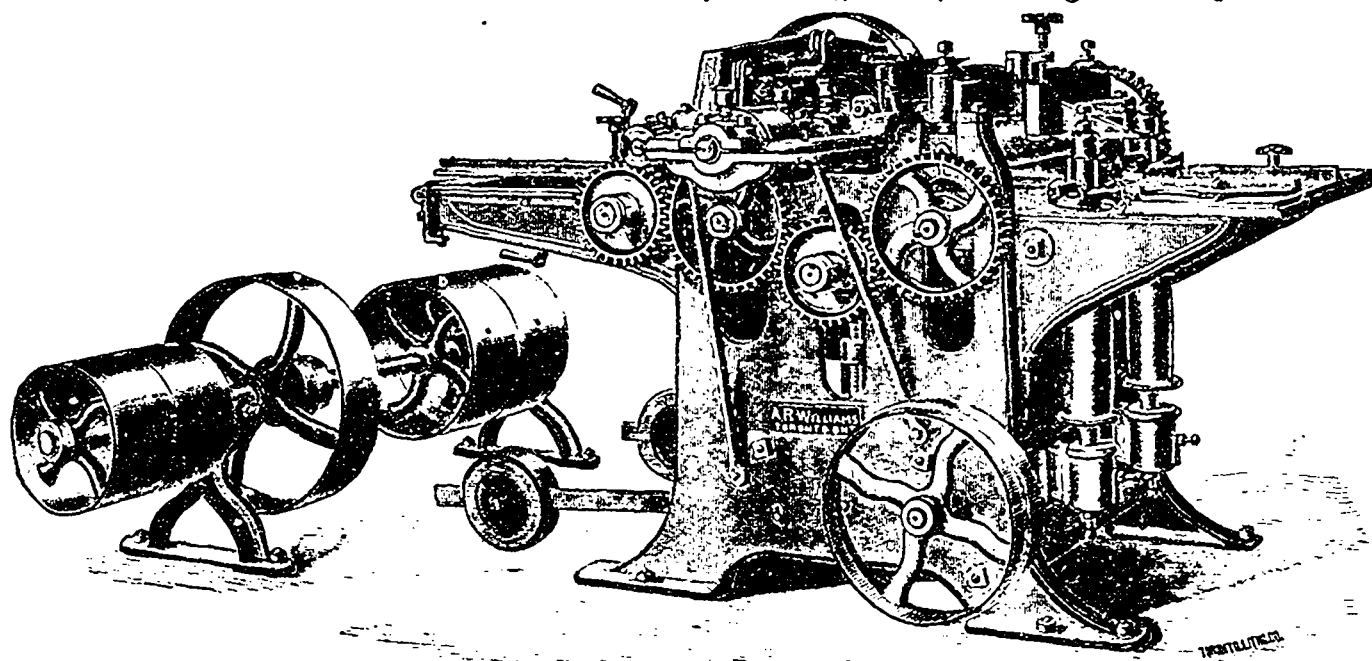
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