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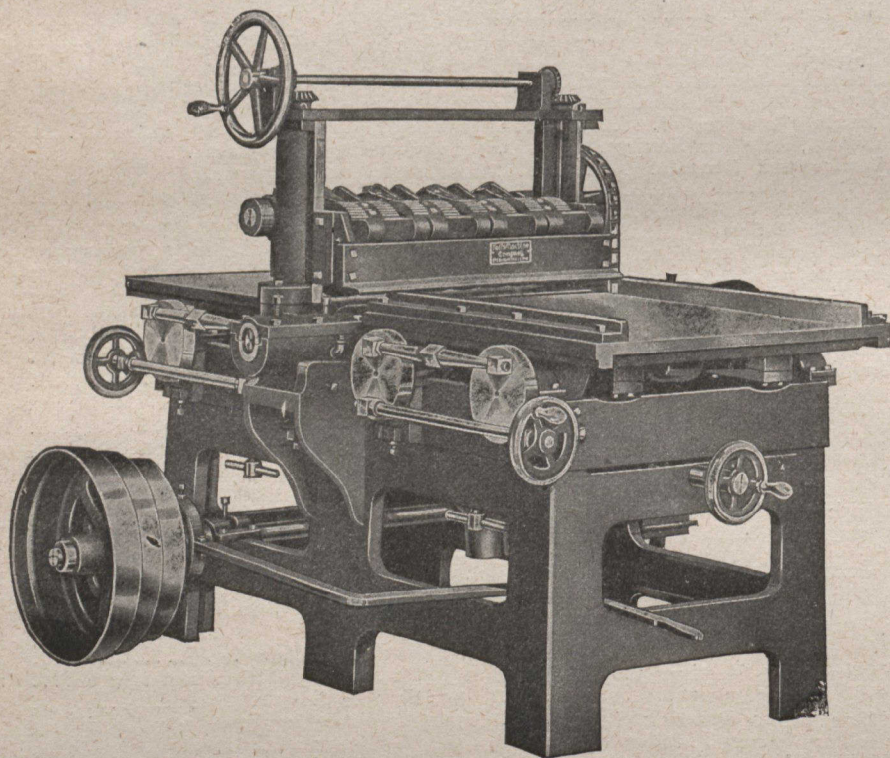
TRANSMITTING POWER BY A BELT.

The science of transmitting power from a steam engine by means of a belt is embodied in the following: In the first place, an engine which is in good proportion to its load will develop and transmit a certain power, independently of the manner in which it is connected to its load. The manner of connection determines, mainly, how much power shall be used in friction of engine and belt, and how much net power shall go to the machinery to be driven.

The diameter of a belt pulley upon the engine shaft is independent of every and all considerations, except obtaining a high belt speed, and all conditions of transmission

can be so reduced that the belt speed and balance wheel requirements coincide. If the engine is of insufficient power, or its balance wheel is not heavy enough, or its rate of revolution is too slow, or the regulating apparatus is incompetent, the delivery of energy through the belt will be unsteady, no matter how the connection is made. The whole compass of the object in view is to get the most power, in proportion to the engine, in the steadiest manner, just where it is wanted, and the method which is the most direct under the conditions conforms most closely with science and wisdom. The idea of "leverage" is, no doubt, the prominent one with those who advocate the large balance wheel and small pulley plan.

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