

pacity for the engine running pressure at 50 pounds, and, therefore, the relative volumes being 14 1/3 at 200 pounds and 4 1/3 at 50 pounds, we find that the tank should have a capacity of 31 cubic feet at 200 pounds pressure, or say 3 feet diameter by 12 feet in length; and for 100 pounds initial pressure, a tank twice the capacity, or 4 feet diameter by 13 feet long. 2. Could a windmill be used for compressing the air, thus conveying the energy of the wind to the engine, and thence to a dynamo, for electric lighting, etc.? Would we not by so doing convert the unsteady, jerky motion of a windmill to an even, steady motion suitable for any purpose? A. A windmill can be used for compressing air to run a motor for driving a dynamo, and with ample storage the 24-hour day's work of the windmill may be stored for supplying the evening light current, either by compressed air or by direct driving of a dynamo and charging storage batteries. See SCIENTIFIC AMERICAN SUPPLEMENT Nos. 709, 606, on windmills for electric supply. 3. About what power would one get for use on the dynamo from an ordinary 8-foot windmill with the speed of wind at which it would do satisfactory work pumping from an 80-foot well? A. An 8 1/2-foot windmill is only equal to one-tenth of a horse-power in a 16-mile per-hour wind, and is totally unfit for transmission of pneumatic or electric power for any available work. A 30-foot mill is a useful source of power for such work, or equal to 3 horsepower in a 16-mile wind. 4. How many gallons of water flowing from an elevation of 50 feet, when applied to a water motor, will give 1 horse-power for one hour? If I could not use the compressed air as above suggested, could not the wind and water method be used? A. Four thousand gallons of water falling 50 feet in one hour are equal to one theoretical horse-power, and in the way you suggest may be made available for constant power by a reservoir of 12,000 or more gallons. A windmill 25 feet diameter, which has a capacity of 6,000 gallons per hour, 50 feet high, in a 16-mile wind, and with an adjustable pump which will work in any wind down to 8 miles per hour, may be made a useful source of power.

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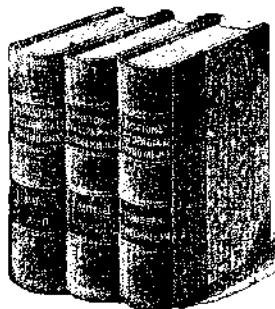
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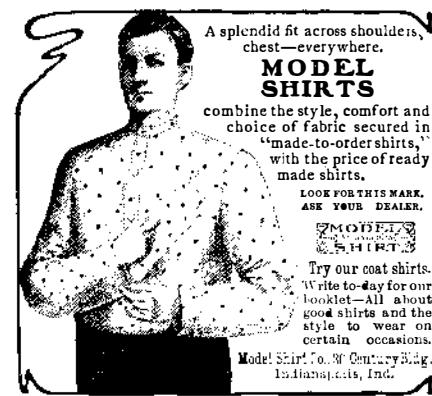
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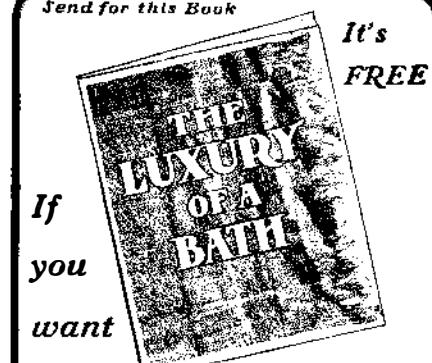
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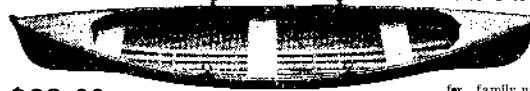
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