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## Improvement in Machinery for Sawing Wheel Fellyes.

The object of the machine shown in the engraving is to afford a ready and rapid means of sawing out the sections forming the rims of wagon and carriage wheels, both edges being sawed at the same time, and the machine being adjustable so that the segments may be sawed on different radii and the feed be adjusted to accommodate the nature of the timber and the design of the operator.

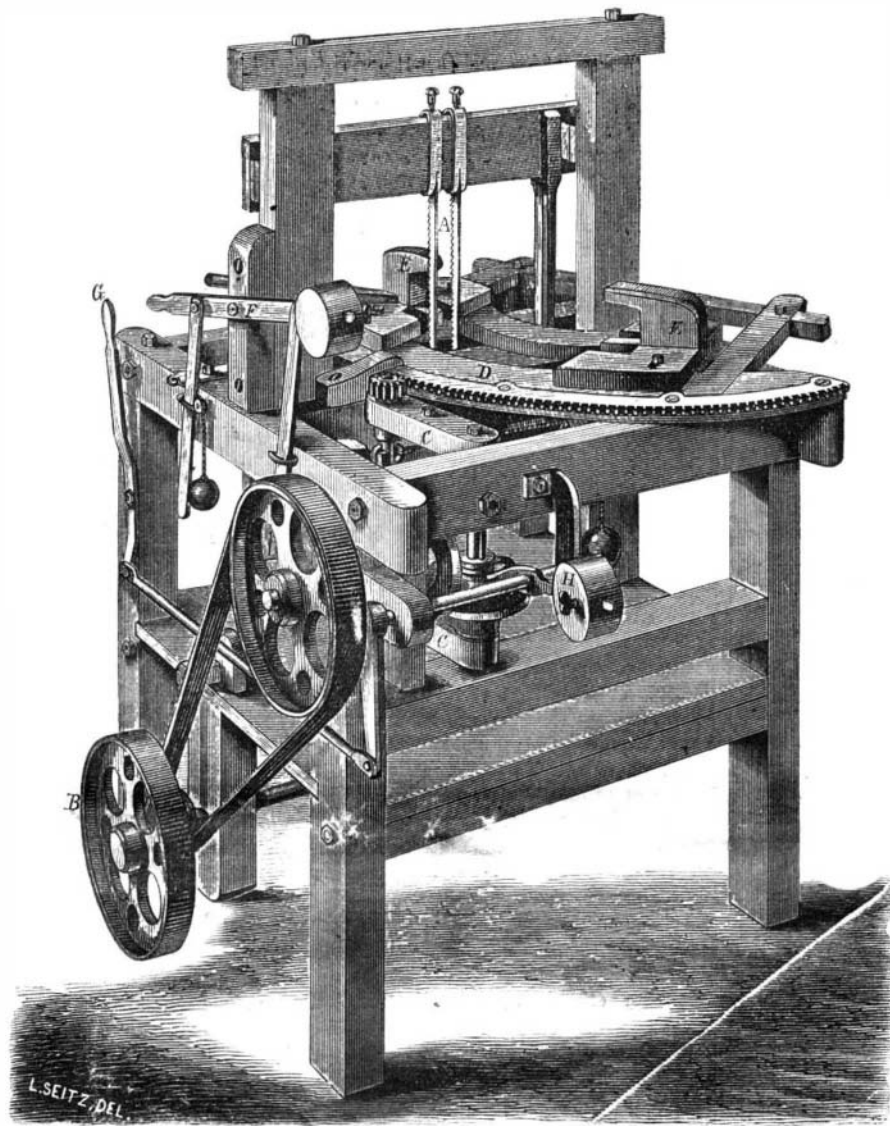
The saws, A, are suspended in the usual manner, the power being applied to the crank shaft through the medium of the pulley, B. From this shaft runs a belt connecting with another which drives the feed. On the inner end of this shaft is a friction wheel that engages with another at right angles to it and secured to a vertical shaft, which forms a pivot for the frame, C. At the inner end of this frame is an upright shaft connecting, by means of belt and pulleys, the two upright shafts. This frame may be swung from one position to another while the belt from the pivot shaft will act as well in one position as another. On the top of the inner upright shaft is a pinion that engages with the segment, D, which is suspended by an adjustable pivot so it may be moved to or from the saw, making the product of a less or greater diameter. This segment is really the table, the material being held to it by the jaws, E, which are also adjustable. A weighted lever, F, is used to throw the frame, C, and its pinions in gear with the segment, D, a catch holding it in position. This catch is disengaged automatically by an arm on the segment, when the saw has passed through the stock, so that the table can be swung around to receive more material.

The rate of feed is governed by means of the friction wheel on the pivot shaft of the frame, C, which may be raised, by means of the handle, G, operating a weighted lever, H, and clutch. As this wheel is raised toward the center of the wheel on the horizontal shaft its momentum is reduced and consequently the rate of feed.

A patent for this is pending through the Scientific American Patent Agency. All communications should be addressed to the inventor, Peter S. Beidler, South Easton, Pa.

extending transversely across the trough. A wheel, the blades of which are curved and perforated, revolves in the trough, G, about midway between the ends, and on a shaft in line and connected with the hollow shaft on which the wheel, C,

pendant valve, I, operates the register, I, and damper, K, and governs the amount of gas admitted to the juice, and the combustion of the sulphur. The pendant partitions prevent the escape of the gas, as they extend down below the surface of the liquid. A patent for this device is now pending, application having been made through the Scientific American Patent Agency by Evan Skelly, of Plaquemines Parish, La.



BEIDLER'S AUTOMATIC FELLY SAWING MACHINE.

## The Prospects of the Suez Canal.

Mere speculators, and particularly English speculators, have held aloof from the Suez Canal Company, and it has, therefore, been carried on chiefly by French capitalists. This apparent want of enterprise has been caused by the magnitude of the undertaking and the want of definite answers to such questions as, "Will the canal ever pay?" "How much more capital will be required for its completion?" and "Is there no chance of competition?" A feeling of jealousy toward France also contributed to English distrust. One of the directors of the company writes to the *London Times* to supply this deficiency. He expects that when the canal is opened two thirds of the traffic now passing around the Cape will be diverted. Such traffic he estimated at the lowest as 600,000,000 tons annually two thirds of which would yield at 2 per ton, an income of \$8,000,000 per annum. Seeing that more voyages could be made by the same vessel by the shorter distance, the writer anticipates a larger income than this which, it must be observed, is from merchandise merely, leaving passengers out of the question. The cost for maintenance and the interest on loans is estimated at about \$4,000,000, leaving the same sum for division—a very fair dividend of 10 percent. No more capital will be required after the arrangement of the present loan of \$20,000,000, the total amount subscribed being \$60,000,000. As to whether the canal is safe from future competition by the Euphrates Valley line, no great evil from opposition is apprehended. Lord Clarence Paget inspected the works in 1867, and was of opinion that they would succeed.

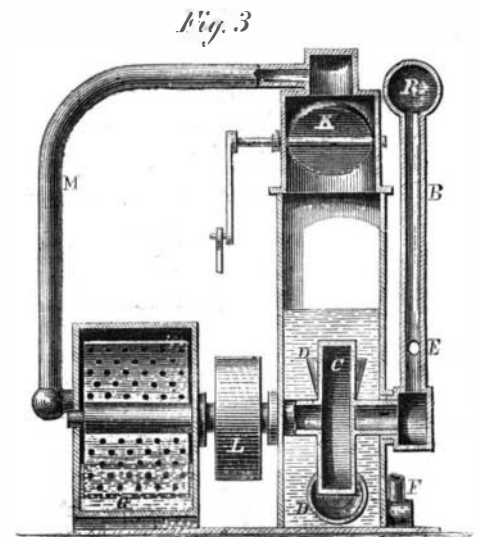
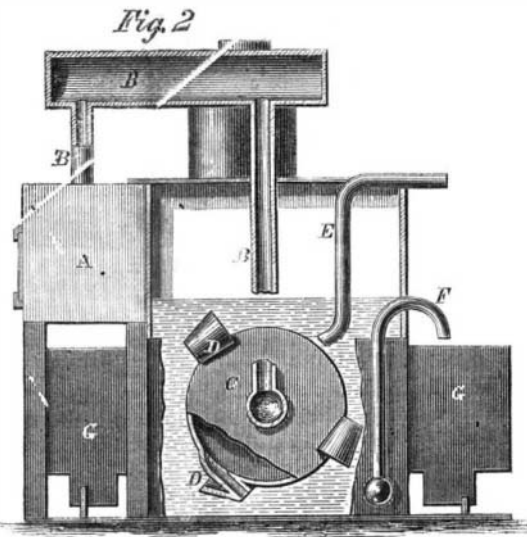
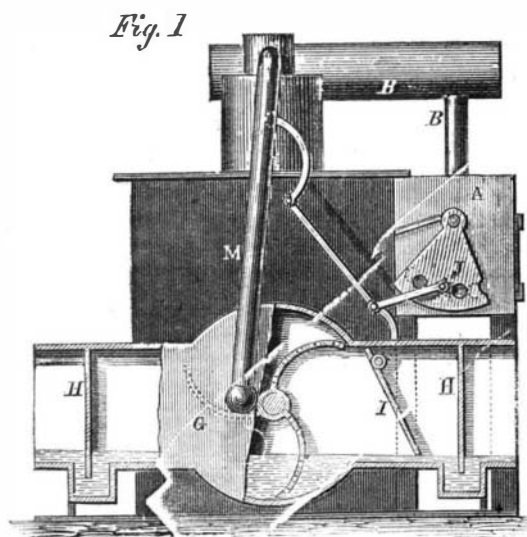
## Improved Cane-Juice Bleaching Machine.

The object of the machine which the annexed engravings illustrate, is to thoroughly and evenly bleach the saccharine juice of the cane, insuring a uniform grade of sugar. It is, to a great extent, automatic in its operation and self-regulating. In the engravings, A is a furnace in which the sulphur is burned, the gas from which is conducted by gas pipes, B, to

is fixed. At the rear of this wheel is a pendant valve, I Fig. 1, connected by jointed arms with a register on the furnace, A, and with a damper, K, in a chamber over the water tank as seen in Figs. 2 and 3.

The operation of the device can be readily understood from the above references to the parts. The furnace being supplied with sulphur and the latter ignited, the wheel, C, and that in the trough are rotated by a belt on the pulley, L,

In France the capitalists are rather slow in coming forward with any more money. The result is that the legislative body has taken the matter up, and passed a bill which allows the managers to get up a lottery in aid of the enterprise. The lottery custom was put down in 1836, but it has been again permitted—"just this once." Berryer, Thiers, and a great number of others, abstained from voting, or stayed away, and some of the minority said some dreadful



SKELLY'S CANE-JUICE BLEACHING MACHINE.

a hollow shaft and wheel, C, furnished with draft nozzles, D, and rotating under water in the chamber. E is a water supply pipe leading from any connecting reservoir, and F a discharge pipe for controlling the level of the water in the chamber.

The juice is received into the trough, G, which is slightly inclined from a level, as seen in Fig. 1, and has two depressions one at either end, to receive the pendant partitions, H,

Fig. 3, from any source of power. Water is fed through the pipe E to the chamber in which the hollow wheel, C, rotates. The rotation of this wheel draws the gas from the furnace through the pipes, B, passing it through the water to the chamber in which the damper, K, is situated. From thence it is led by the pipe, M, Figs. 1 and 3, to the dash wheel in the juice trough, G, where it is incorporated with the saccharine liquid. The action of the dash-wheel against the

things about the immorality of lotteries. And yet they have, in their time, built churches, hospitals, etc.; they helped Queen Elizabeth to beat the Spanish Armada, and they may help M. Lesseps to complete his cosmopolitan canal. In this age, however, a reasonable distrust may well be entertained of the financial management of any enterprise that resorts to such questionable means to obtain money.