

Improved Caloric Engine.

From many parts of the country, correspondents are frequently writing to us requesting information on caloric engines and their adaptation to small manufactories. The engraving published herewith, represents the Ericsson caloric engine which has now been in practical use for many years, doing all kinds of work where only a moderate degree of power is required. The advantages arising from the use of such machines are that they are economical of fuel, use no water and can be worked by any one of common intelligence. They also warm the rooms in winter, thus saving the use of extra fuel for that purpose. They are entirely free from liability to explode and may be used on any floor of any building without increasing the rates of insurance. Many improvements suggested by a practical experience of ten years have been introduced, making them much more durable and efficient than when first offered to the public. For further particulars apply to the manufacturer whose advertisement is always to be found in our advertising columns. For a full account of what the engine is we quote from the report of an eminent consulting engineer who thoroughly investigated the subject for a firm in England who proposed to manufacture them. He says:

"The plan of the caloric engine is good, as regards its fitness for obtaining power directly from the dry heat of incandescent fuel, being properly fortified against its effects. Its mechanical arrangement for transmitting this power is also excellent, the parts being well proportioned, and having the necessary provision for adjustment, and compensation for wear. The furnace, or heater, is a cast-iron chamber, and is within the cylinder, and being constantly exposed to the action of dry heat, it may be regarded as undergoing a gradual deterioration; it is accordingly so constructed that when unfit for use it can be expeditiously replaced with a new one. This operation, however, is by no means so frequent as might be supposed of a heater lasting from two to six years.

"The engine has a good machine-like appearance, and is principally composed of cast iron, the use of which material enables the manufacturer to get them up at a small cost.

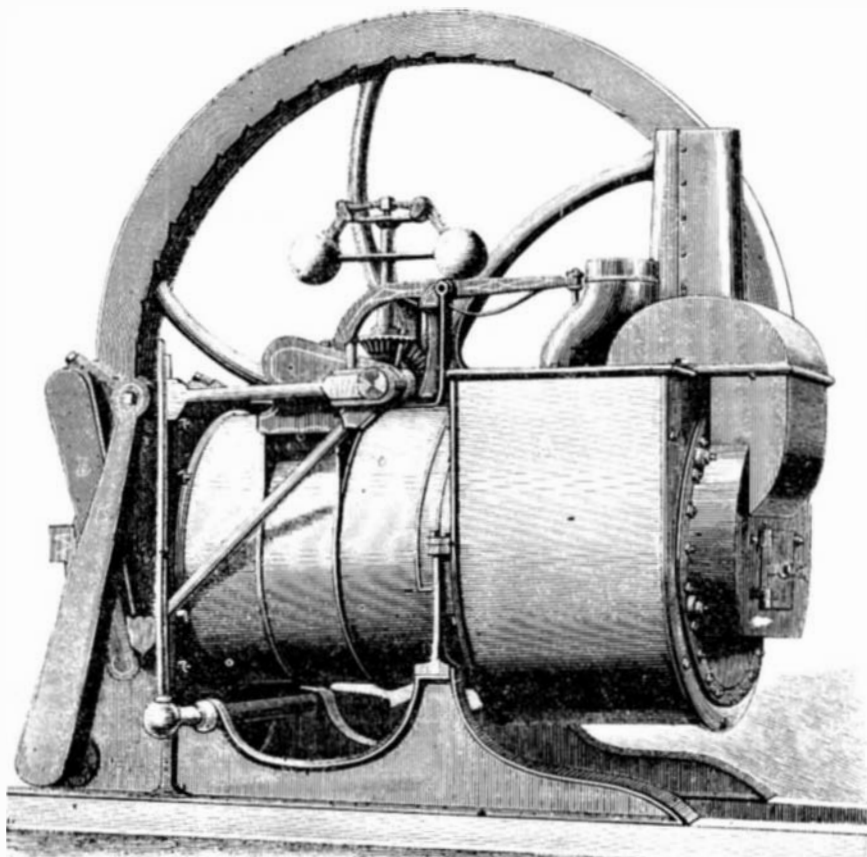
"In determining the question of economy in the production of power by this machine, reference must be had to the steam engine, because in both, power is produced by the consumption of fuel, thus presenting for both a common measure of cost.

"But in addition to the matter of fuel, there are other considerations which should not be lost sight of in this comparison: Steam engines are exceedingly variable as to their economic results, being affected in this respect by a number of independent circumstances, such as the arrangement of the boilers and of the furnace, draft of chimney, proportion and set of the operating valves, etc. A great deal is also dependent upon the skill and faithfulness of the attendant. And it is in view of these circumstances that some steam engines cost twice as much as others to produce the same amount of power. It is also worthy of notice, as a well-established fact, that small steam engines consume more fuel accordingly than larger ones, while at the same time they require more care and manipulation to run them properly, especially in managing the boiler and water-
 ed. The caloric engine is entirely free from all such difficulties, requiring no attention whatever after starting, except the occasional supply of fuel, and a little oil to the bearings and joints, while the speed is as regular as the vibrations of a pendulum.

"I have examined a number of these caloric engines

in operation, which were doing the work heretofore accomplished by small steam engines.

"They all gave complete satisfaction and apparently ample power for the purposes to which they were applied; but without experiment it is impossible to say what quantity of power they actually furnish respectively, but, judging by the appearance of things they all worked well and with surprising regularity evidently developing a much larger amount of power from a given quantity of coal than could be obtained



ERICSSON'S CALORIC ENGINE.

from steam engines as at present constructed, of corresponding powers. And being such that they may be placed in any location from which a chimney may be reached, and not requiring water or skilled attendance, they are particularly desirable as a driving power for small manufactories, who are thereby enabled to conduct their operations in the business parts of the cities, by occupying upper lofts.

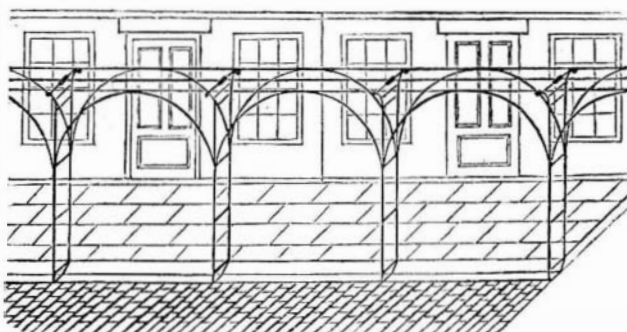
"No attention is required for them while running, beyond what is necessary to throw in a few coals occasionally, which is all that is required to keep up a constant and uniform motion—which considerations become of importance to those who require a small power only.

"As to the appreciation of this machine by the public, it may well be said that whereas it was a few years ago looked upon as a mere mechanical curiosity, it is now regarded and acknowledged as a reliable motive power."

Address Jas. A. Robinson, 164 Duane street and 136 Reade street, New York, for further information.

ELEVATED RAILWAY FOR STREETS.

We present herewith an engraving of a suspended



railroad, which we copy from Gillespie's "Manual of Road Making," published by A. S. Barnes & Co., No. 51 John street. The arrangement was suggested by the late Charles Ellett, Jr., in 1844, for an atmospheric

railroad. Prof. Gillespie makes the following remarks:—

"A railroad worked by a stationary engine, would be the most convenient method of relieving the rush of travel through Broadway. The railroad track should be supported on iron columns, out of the way of carriages, as in the figure. These columns might be placed on the edges of the sidewalks, where now are the lamp and awning posts, and by extending over the gutter they would have a base of three feet. Their lower extremities should be set in heavy masses of masonry. At top they should spread outward, a foot on each side, which would give sufficient width for the railroad track. The columns should be set at distances of 15 or 20 feet, and connected by flat arches. There would be no flooring over the street, and the rails would intercept no more light than do the boards which now connect the awning posts. No locomotives, or even horses, would pass over the road; but an endless rope would continually run over pulleys, and light cars would be under the most perfect control, and could be attached to it, or disengaged, at will, and stopped more easily than an ordinary omnibus. At the upper end of Broadway, a stationary engine, or the water power of the Croton, would easily and cheaply keep up the circulation, which would pass up one side of the street and down the other. At each corner might be a platform, to which there would be a short flight of steps from the sidewalk, the ascent of which would be very easy; or a certain number of corner houses might be used as depots, so that passengers might step into the cars from their second story windows.

As these cars would replace the omnibuses, the entire street would be left for miscellaneous travel."

FRYE'S BUCKLE

This buckle is one of that class which has no tongue, or rather no tongue which penetrates the strap, but in lieu of it a pawl or lever which holds the strap by jamming it between two contrasted openings.

Heretofore such buckles have been restricted to the use of straps of a certain thickness, otherwise they became inefficient. The inventor of this buckle claims that he has discovered a remedy for this trouble, and that straps of any thickness within reason can be used in it.

This is effected by making the pawl, A, of a different form from that commonly used. Instead of having the V-form it is made nearly flat, and is fitted with a short spur, B. This sticks into the strap and aids to draw the pawl to its seat, and also prevents any back movement from unbuckling it. No strain comes on the spur after the pawl is down to its seat. The entire patent is for sale.

A patent was procured on this invention through the Scientific American Patent Agency on Jan 23, 1866, by R. E. Frye; for further information address him at Manchester, N. H.

The Chincha Islands do not exceed in extent two and a half square miles, yet for years past they have supplied guano to an average of four hundred ships per annum, the value of such cargoes in Europe being upward of £50,000.