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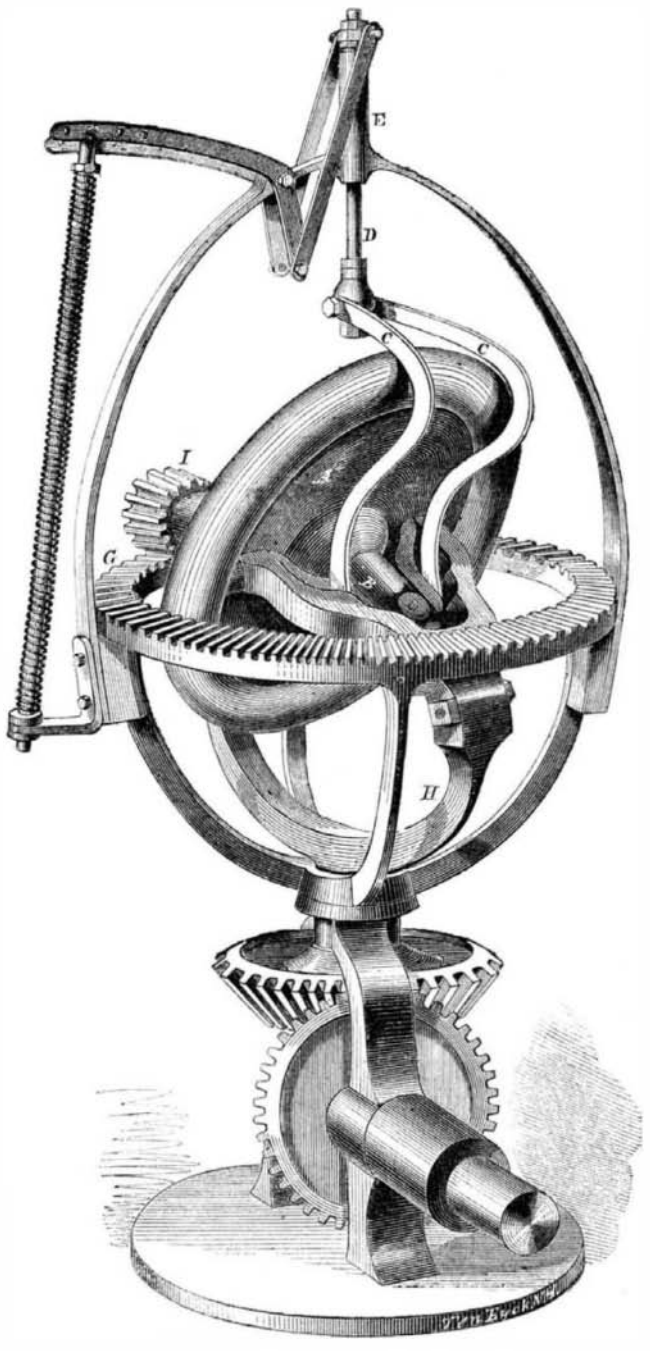
IMPROVED GYRASCOPE STEAM ENGINE GOVERNOR.

The gyrascope applied to the regulating of the speed of steam engines! The invention here illustrated is interesting to philosophers from its peculiar novelty, and it is not less interesting to owners of steamships from its great practical value, which has been demonstrated by trial on three of Cromwell's propellers on the New York and Charleston line, where it was found to add materially to the speed of the vessels, and operated in every respect entirely to the satisfaction of the engineers. In rough weather, when the wheels or propellers of steamships are at one time considerably more submerged than at another, it is frequently necessary to station a hand at the throttle to regulate the speed, in order to prevent the engine from breaking the connections when the resistance is largely diminished, and various plans have been devised to secure the regulation of the speed automatically; the uniform action of the common ball governor being prevented by the motion of the vessel. This great desideratum has been finally accomplished by means of the gyrascope, which has thus been raised from the rank of a toy to an instrument of the highest practical value. As we wish to make our description of this novel invention intelligible to all of our readers, we shall avoid mathematical formulae, and give a common sense explanation of the principle of the gyrascope that all may understand.

If a stone is tied to the end of a string and whirled around rapidly from the end of the finger as a center, and a piece of paper held at an angle is brought against the stone sideways, tending to divert it from the plane of its revolution, the stone will resist this diversion and will pass through the paper in its effort to continue to revolve in the same plane in which it was first started. Let a number of stones be fastened together in the form of a wheel or disk, and caused to revolve around a common center like a wheel on its axle, and each one of the stones will resist any effort to turn it from the plane of its revolution in the same way as the stone first cited. Thus the momentum, or inertia, of matter causes a revolving wheel to resist any effort to deflect it from the plane of its revolution; the resistance being in proportion to the momentum, in other words, in proportion to the weight of the wheel and the velocity of its revolution. This simple property of matter explains all the phenomena of the gyrascope which have so puzzled the heads of men.



ANDERSON'S GYRASCOPE GOVERNOR.

In the accompanying cut, A is a heavy metallic wheel or disk which is caused to rotate rapidly on its axle, B. The axle of wheel, A, is made in two parts, one on each side of the wheel. The pinion, I, is fastened to one end of one of these pieces of the axle, and the opposite end is connected with the center of the wheel by a universal joint in such manner that the rotations of the pinion, I, will cause the wheel to rotate, and will still permit a variation in the angle of its inclination. The other piece, B, of the axle is connected at its middle by a hinged joint with the frame, H, so that the variations in the inclination of the wheel, A, will cause the outer end of the piece, B, of the axle to rise and fall. The frame, H, being connected with the machinery through the intervention of the beveled gear, as shown, is caused to revolve upon its axis, by which means the pinion, I, is carried around upon the geared circle, G, imparting, as it rolls along, a rapid rotary motion to the disk, A, at the same time constantly changing the plane of its revolution. As the momentum of its several parts tends to hold the wheel, in the same plane of revolution, this forcible change in the plane of the revolution causes an effort on the part of the wheel to rise to a vertical position; a vertical plane being less remotely removed from the primary plane of the disk's rotation than the inclined plane into which the wheel would be carried by the onward rolling of the pinion, I. This effort of the wheel to assume a vertical position tends to carry up the outer end of the portion, B, of the axle, and with it the rods, C C and D. As this effort of the wheel is in proportion to the rapidity of its revolutions, if the rod, D, is connected with a throttle valve in the steam pipe, the speed of the engine is necessarily regulated. The use of the spiral spring, J, is to counteract and balance the action of the disk, A.

This important invention, the first perhaps of a long series in which the same principle will be made available, was patented by the inventor, Alban Anderson, of Lancaster, Ohio, and further information in relation to it may be obtained by addressing M. F. Moore or Charles H. Haswell, at No. 6 Bowling-green, this city.

A NEW CALORIC ENGINE.

A Parisian, by the name of Lenoir, is creating a great sensation among his countrymen by the exhibition of a caloric engine, which they declare is quite unlike Ericsson's, Franchot's or Sterling's. Lenoir's little shop, in a bye street, is every day besieged by a crowd of curious people from all classes—the Imperial downwards. According to *Cosmos*, and other French papers, the age of steam is ended—Watt and Fulton will soon be forgotten. This is the way they do such things in France.

Lenoir's engine is an explosion engine, in which air, mixed with hydrogen or illuminating gas, is exploded in the cylinder by an electric spark; the piston is thus shot forward and back. The engine is, in operation and construction, like those in which gunpowder or gun-cotton has been used. An engine precisely like Lenoir's, in all respects, except as to what was said about it, was exhibited at the Crystal Palace by Dr. Drake, of this city. The practical objections to such motors are the jerks (see Webster unabridged) of its action and the accummulation of heat.

But a small power to be generated from the burning of gas is a great desideratum. Gas, although much dearer (as fuel) than coal, is so cleanly and manageable, that it will some day come into use for the multitude of small engines which will be found useful for driving sewing and other light machines. Already, in very many private houses, coal has been banished during the summer, and gas isused for all the purposes of cooking. Indeed, for occasional use, gas is cheaper than coal; for there is no waste in lighting up the fire, or after its work is done.

TO MAKE RHUBARB WINE.—We take the following receipt from *The Farmer's Journal* of Lower Canada. Trim off the leaves and grind and press the stalks in any cider mill. To each gallon of juice add one gallon of water and six pounds of refined sugar, and fill the casks, leaving the bungs out. A moderately cool cellar is the best place to keep it. Fill up occasionally, either from juice kept on purpose or with sweetened water, so that the impurities which rise to the surface while fermentation is going on, may be worked off. When sufficiently fermented, which will require from one to two or more months, bung tightly, and let it remain till winter, when it may be racked off into other casks, or bottled. Some persons refine it before bottling, by putting into each barrel two ounces of isinglass, dissolved in a quart of wine.