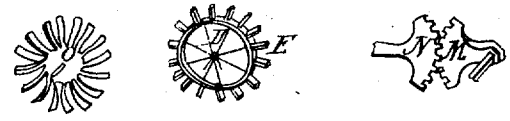
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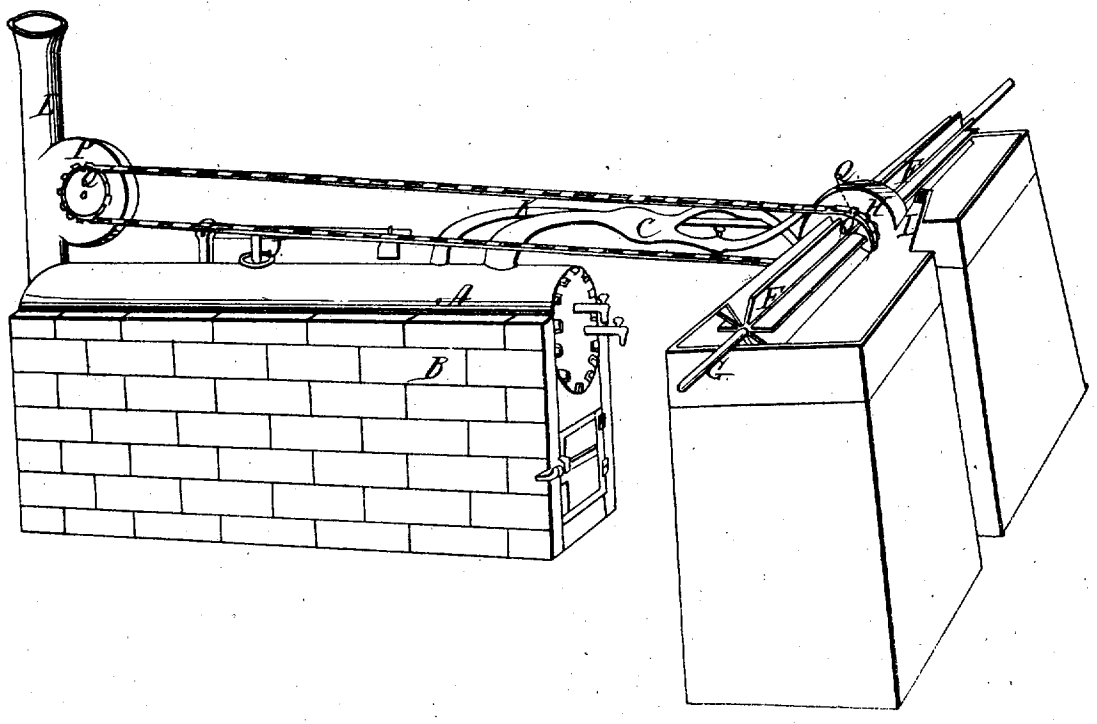
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G. CAMERON.

RAREFIED AIR AND ROTARY MOTION STEAM ENGINE.

Patented Aug. 17, 1835.





George Cameron Aug 17, 1835

The schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said George Cameron himself of his improvement in a rarefied air and rotary motive Steam Engine —

Be it known that I George Cameron of the City of Washington and district of Columbia have made an improvement in the useful arts being a rarefied air and rotary motive Steam Engine. This Machine consists of the following principle parts viz. A cylindrical boiler and a furnace of the ordinary form and construction. A forked or double Steam pipe attached to the boiler in the usual manner, which conducts the Steam from the boiler to the Steam wheel through the Steam wheel case, both of which, (that is the Steam wheel & the Steam wheel case) are made of sheet iron or of sheet copper, sustained or supported by sundry hoops or circular bands made of wrought iron each differing from the other in diameter extending in different circles at short distances from each other, from near the centre to near the extremity or outer edge of both the wheel and case, the whole, both the wheel and the case respectively, secured by means of rivets or screws. The Steam wheel having a rim of proportionate width and thickness in which is attached buckets of any convenient size, shape or number, made of the same material and secured in the same manner as above stated, both wheel and case to be perfectly true and fitting each other so closely, that while the former revolves upon its axis within the latter freely and without touching, they are still sufficiently close together to require no packing of any kind to prevent the Steam from escaping down the sides of the rim, to any injurious degree. The Steam is led by the buckets on the Steam wheel from the steam — — — pipes, through the Steam wheel case, to which they are attached in a strong and close manner, one forked pipe

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of which enters the case above the other and delivers the steam into the buckets in opposite directions around the steam wheel and they must be used separately, so that by opening or turning a cock in either fork to admit the passage of the steam upon the wheel, and closing the cock in the other fork the steam wheel is turned up or down, forwards or backwards, progressive or retrograde with equal force or power. The steam wheel revolves upon an axle from which the power is communicated by a cog wheel or pulley in the usual manner. In the steam wheel case opposite to where the steam pipes enter it or at some other convenient point, there is a chimney or pipe affixed through which the superfluous steam escapes and the water formed by the condensation of the steam, drops out of the way of the steam wheel through a small aperture in the bottom of the case into a trough or cistern from whence it may be taken and used again. The force pumps and safety valves required to be used in this machine are made and applied in the usual manner. The rarefying air or fan wheel is also made of sheet iron or copper with the rings or fans similar to those in an ordinary wheat fan, & is enclosed in a case likewise made of sheet iron or copper both being secured by means of rivets or screws and fixed in the pipe which conducts the smoke from the furnace, the case of the wheel being open except, the inside or flue of the pipe, and the wheel is operated upon by the rarefying air as it escapes up the chimney or pipe from the furnace where it is generated, and its power is communicated by a band or chain from a pulley or cog wheel which is attached to the end of the axle upon which it revolves. Operation. The steam being generated in the usual manner, it is conducted to the steam wheel within the steam case through the forked or double pipe, the prongs of which being arranged one above the other and pointing in opposite directions around the wheel and both having cocks or stops in them, either is opened as it may be necessary to turn the steam wheel one way or

or the other, up or down, forward or backward, progressive or retrograde, the power of action of the steam both ways, and the steam wheel being perfectly free by its slow action of the cast iron frame arising from the water produced by the condensed steam, or the surplus vapour, and in no way obstructed by friction, rubbing any other, excepting the gudgeons of the shaft on which it rests, it has nothing to contend against but the machinery attached to it for business purposes, the power of the fan wheel is applied through a band reaching from a pulley on its axle to the pulley on the axle of the steam wheel. For further explanations, see drawings and Model deposited in the Patent Office. The invention here claimed and desired to be secured by Letters Patent is the combination arrangement and adaptation of the several parts of the above described machine and machinery to steam in propelling rotary motion steam engines, the use of a forked or double steam pipe in producing a retrograde, double or contrary motion in rotary motion steam engines, and in the construction of the steam wheel and steam wheel case with, or by the use of the materials and for the purposes before mentioned.

Witnesses
Mathew Wilson
John D Clark

George Comeroy

Drawing

(1032 words)

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