

or hacked, which frees it from all the tow and dust, and leaves it in a proper state for market, or use.

The great advantage resulting from the foregoing process, arises out of the ease and facility with which large portions of hemp can be prepared in a small space, and in a manner equal, if not superior, to that which is water rotted on the wood or bullen, and in a great measure, removing the difficulties arising from the unhealthy and offensive effluvia growing out of the decomposition of vegetable matter.

ABRAHAM K. SMEDES.

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*Specification of an improvement in the mode of operating the rotary Steam Engine for Propelling Vessels, or Machinery, or for any purpose to which steam power is applied, by the application of steam to mercury. Patented by STILLMAN BLAKE, Providence, Rhode Island, October 11, 1828.*

A BUCKET wheel is constructed, similar to the common bucket water wheel, and either solid, or close, so as to exclude any surrounding fluid from the inside. This wheel is made of iron, or any other strong material.

The wheel is enclosed within a cylindrical box or shell, which is air-tight, and sufficiently large to leave a small space between it and the surface of the wheel, for purposes hereinafter mentioned. This box is also to be made of iron, or some other strong material, in two or more parts, and secured together by bolts.

Into this box, a steam pipe is introduced, and passes down between the wheel and shell, terminating nearly under the centre of the wheel.

From the upper part of the box, an abduction pipe leads to a condenser, where the steam, after having performed its office as below described, is condensed, and leaves nearly a vacuum in the upper part of the cavity between the wheel and box, allowing the wheel to act more advantageously than it otherwise would.

The machine thus constructed, the space or cavity between the wheel and box, is filled with mercury nearly as high as the centre of the wheel. The steam is injected into the mercury, through the steam pipe, and immediately rises into the buckets, nearly under the centre of the wheel, and displaces a portion of the mercury.

The buckets, on one side of the centre of gravity of the wheel, being successively filled, or partly filled with steam, its buoyancy gives motion to the wheel, and the power afforded is in proportion as the weight of the mercury displaced, exceeds that of the steam employed.

Motion is communicated to machinery, or to whatever steam power is applied, by passing the shaft of the wheel through an accurately fitted bearing, in the end of the box or shell.

It is intended that the buckets be filled about one-third part full of

steam at first, and as they ascend, the pressure upon the steam is gradually diminished; it, consequently, expands, and, at the surface, occupies the whole space within the buckets, to the entire exclusion of the mercury, and affording a proportionable increase of power.

STILLMAN BLAKE.

*Remarks by the Editor.*—We have, repeatedly, made known our views respecting the inefficiency of all the rotary steam engines hitherto made, and, we apprehend, that the present attempt will not cause us to relax in its favour. A vast power will be required, to force the iron buckets to wade through so dense a fluid as mercury; in doing this, we suspect more power will be lost than that from the friction of the piston, and all the other parts of the ordinary engine. Highly elastic steam must be used; for should the wheel be six feet in diameter, more than the pressure of an atmosphere will be required to cause the steam to issue from the induction pipe.

A condenser is proposed to be used: there must, of course, be an air-pump, or the condenser will not operate; as no particular plan is given, this, we suppose, is to be constructed in the ordinary way.

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*Specification of an improvement in the art of Melting and Fusing Glass, and the materials for making and forming glass. Patented by THOMAS W. DYOTT, M. D. Philadelphia, October 10, 1828.*

THE discovery and improvement consists in using the *resin of pine*, commonly called rosin, as fuel, either alone, or together with other fuel, for the melting and fusing glass, and the materials for making and forming glass.

The advantages of the improvement consists—in the economy of time, in bringing on a melt, two or three hours sooner than can be obtained with wood; in the greater certainty of the quality of the glass; the *bache*, or composing materials, being frequently subjected to a strong heat by a wood fire, yet, in consequence of the quality of the wood, not strong enough to fuse; no heat applied afterwards, will make the glass of good quality, although it may be melted, the salt and pearl ashes being decomposed before the fusing point of heat is brought on. By the use of rosin, this difficulty is obviated, the quality of the fuel being always the same, and unaffected by a damp atmosphere.—In the greater economy of the materials; the pots containing them being frequently broken, and the metal running into the furnace, mixes with the coals and ashes, and becomes black, of less strength, and fifty per centum less in value. In the use of rosin, the glass subjected to such accident, will run out nearly clear, and be as strong as at first.—In a great economy in the cost of fuel, saved principally in the difference of labour in sawing, splitting, oven drying, and preparing the wood; and in the difference of freight and hauling for the rosin; and in the greater