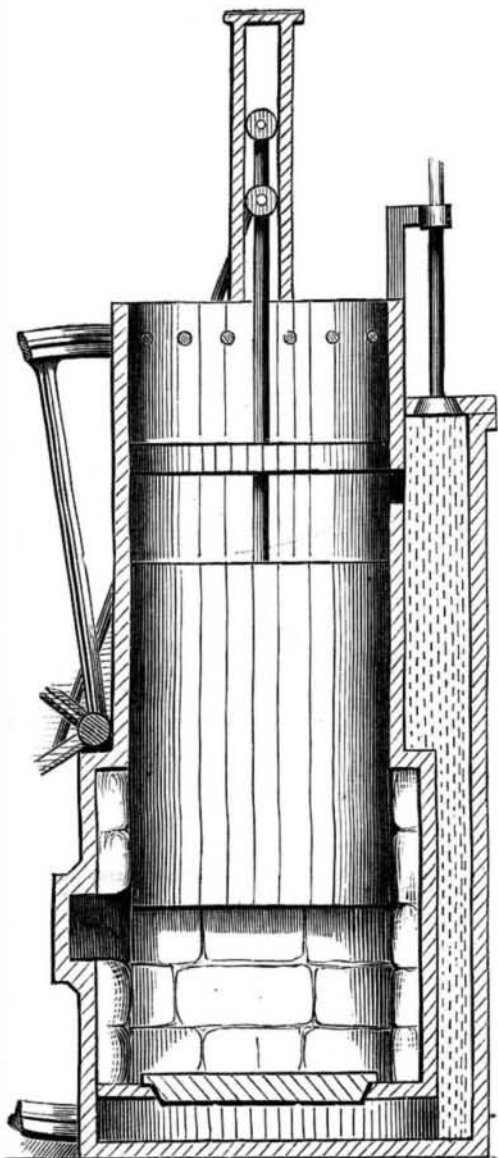


**McDONOUGH'S CALORIC ENGINE.**

(Communicated.)

This machine consists of a cylinder, open at the top and closed at the bottom. The furnace is at the lower end of this; a plunger moves in it above the fire, and also a piston at the upper or open end. The air to feed the fire is drawn into the cylinder through holes in its periphery, which are uncovered when the piston is at the upper end of its stroke. The plunger moves the air through a side pipe and under the fire. It expands and does its work by forcing the piston upward, after which the plunger expels it through an exhaust valve near the top of the side pipe.

By this arrangement only cold air reaches the pis-



ton, and as all the parts affected by heat are covered with fire-clay, it forms a durable machine. The engine, which the engraving represents, has furnished a power of more than six pounds per inch to a fifteen-inch piston, of eight inches stroke, 150 revolutions per minute—the power only acting one way—and consuming fourteen pounds of coal in four hours. The heat is utilized at more than 600 degs., probably, and escapes at 100 degs., being a step toward the development of a machine superior to the steam engine in economy of fuel.

Patented Jan. 30, 1866. Detailed drawings and castings furnished to persons wishing to build engines, ; address T. McDonough, Newburgh, N. Y.

**To Prevent Chafing.**

During the "hot term" persons of a full habit, who walk much, are inclined to chafe. This can be cured or prevented by the use, once or twice a day—at retiring and rising—of a solution of common alum in water. The alum may be dissolved in warm or cold water, but should be used cold, applied with a soft linen or cotton cloth to the parts affected. The proportions are a lump of alum large as a walnut to half a pint of water. If too strong, where the flesh is excoriated, weaken with cold water. We know by personal trial this simple remedy is effectual.

**An Ancient Stove.**

The oldest stove, probably, in the United States,

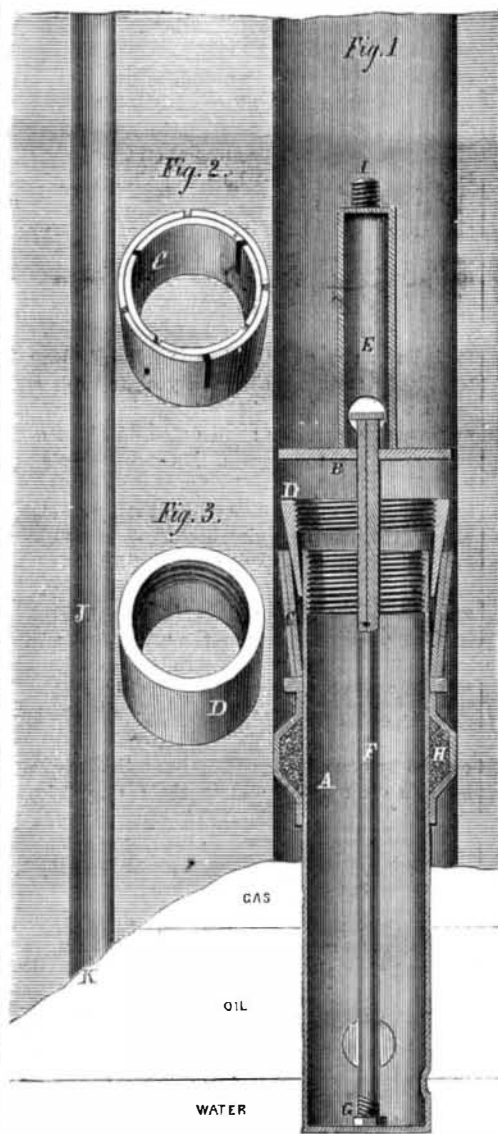
is one which warms the hall of Virginia's Capitol in Richmond. It was made in England, and sent to Virginia in 1770, and warmed the House of Burgesses for sixty years before it was removed to its present location, where it has been for thirty years. It has survived three British monarchs; has been cotemporaneous with four kingly monarchies, two republics, and two imperial governments of France. The great Republic of America has been torn by internecine strife, the breaches partly healed, and still the old stove remains, unmoved in the midst of all.

**CHRISTIAN'S DEVICE FOR OIL WELLS.**

There are many who, having sunk wells for oil and lost all they possessed therein, would rejoice if the day of their mourning was changed to gladness by the sight of the coveted fluid welling up from the bowels of the earth, and the hollow bore, which seemed only a place to bury treasure, made to yield a thousand-fold for that which was lost in it.

The inventor of the apparatus here illustrated has a theory in regard to non-productive oil wells, and he claims that his arrangement will make a well that is now pumped, yield spontaneously, or flow of itself, without the labor and expense of raising the oil mechanically. The details are as follows:—

A is an iron pipe, or its equivalent, having flanges at B, and C is a slotted, double hollow cylinder, of copper or other suitable material. At D a hollow, wedge-shaped cylinder, of steel or iron, is shown; and E is a tube, having a flange at its base, connected by the rod, F, with the pipe, A, by a nut, G, at the bottom. The seed bag is shown at H.



The device is thus operated: the drill rod is screwed on at I, when the pipe, A, and its connections, are lowered to their place in the bottom of the well, and the weight of the drill rods allowed to rest for a moment on it; this secures the tube, A, firmly in the well. The drill rods are then turned several times round to detach the rod, F, from the tube, A, by unscrewing it at the nut, G; the tube, E, and the rod, F, are then drawn up out of the well with the drill

rods. In the engraving a cavity in the rock is shown at the bottom of an oil well. As the gas arising from the oil is lighter than water, it will occupy the upper space in the cavity, and since the oil is lighter than water, it will float on the surface and remain between the two, if undisturbed; therefore, if a well is bored into the upper or "gas strata" of a cavity, the well will not be a flowing one, but will require a pump, but if this apparatus and its accompaniments are inserted in the well, as shown, down through the gas, into the oil strata, then a flowing well will be the result. Again, if a well is sunk (as shown at J, by the side of the engraving of the machine), a flowing well will be the result, for it penetrates to the oil itself; but when the surface of the oil becomes lowered, or is on a level with the bore, as at K, the flow will cease; then, it is claimed, if this machine and its accompaniments are inserted, as before described, reaching down to the bottom of the oil, and shutting off the escaping gas, a flowing well will be the result. As the oil generates gas constantly, wells that have been pumped for some time could possibly be changed into flowing wells in a short time, and at a trifling expense, by using this device.

Figs. 2 and 3 represent the construction of the copper cylinder, C, and the steel cylinder, D.

A patent was issued on the 23d of May, 1866; for further particulars address the patentee, John B. Christian, Mount Carroll, Carroll Co., Ill.

**Glass Brick Mold.**

A new mold for bricks is in use in Baltimore which is said to turn out most elegant specimens of pressed brick. The mold of wood is lined with plate glass, which forms a perfectly smooth surface and naturally gives excellent results. The cost of the mold is but little, if any, more than the ordinary wooden mold, and it can be easily applied to brick machines already in use. The brick comes out smooth, with perfect sides and edges, the mold being raised from the palette or plate on which the bricks are made. It has, we understand, given perfect satisfaction wherever used. Rights can be obtained of P. Murguiondo, Baltimore, Md., who is the patentee's agent for the United States.

**Our New Dress.**

We are somewhat proud of our new typographical costume. Our readers must have noticed in our last number, as they see in this, the sharp, clearly appearance of our new type. It is from the type foundry of Messrs. Farmer, Little & Co., 63 and 65 Beekman street (formerly White's), and the font is as fine as any we have seen. Handsome clear type, on good paper, is a commendation to the matter of any journal, and we think the character of our paper deserves a handsome dress.

A FRIGHTFUL accident recently happened at a foundry in Scotland. A heavy casting was being made, when some of the liquid escaped, and splashing on the hands and arms of the workmen, caused them to quit their hold of the ladle, which immediately capsized, and the whole of the contents, some three tons, was thrown on the workshop floor. All the men rushed for their lives to the door, but it could not be opened at once, and they turned in desperation, and actually ran through the molten metal. One fell as he ran, and was so disfigured that he was scarcely to be recognized, and his life, with that of one of the others, is despaired of.

MESSRS. ALPHEN, of Paris, are the most wealthy diamond merchants of the day. They lately presented a problem to the Academy of Science in the shape of a magnificent stone, worth \$30,000; the question to be solved was the changed color in the stone. It is naturally of a yellowish tinge but on being slightly heated changed to pink. As this metamorphosis decreases the value of the stone one-half, they were naturally anxious to know the cause. The Academy declined giving an answer until they had examined the subject more fully.

COMPILATION OF THE EIGHTH CENSUS.—From Senator Morgan we have received the statistics of the Eighth Census relating to mortality, banks, insurance, railroads, canals, real and personal estate, the fisheries, the press, educational and religious statistics, and other matters.