

Portable Liquor and Transfer Pump.

Those accustomed to the common barrel transfer pump will see at once the value of the improvement herewith illustrated. The direct application of the hand to the reciprocating motion of the piston of the ordinary pump is very trying to the muscles of the arm. It is claimed for this improvement that the use of this pump is far less wearying, and that it does the same amount of work in one-third the time. It is light, portable, and durable, and not liable to get out of order.

A is the pipe of the pump, which can be made of any length. It is furnished with studs at its lower end, which steady it in the barrel, and keep the bottom from the inner surface of the cask. At the bung hole it is secured by the enveloping wedge, B, which is fastened to the pipe by a set screw cramping it snugly. C contain the valves. The plunger, D, is worked by the "slosh wheel," E, which gives two strokes of the plunger at every revolution, by means of the sliding boxes, F, working in their respective slots. G is a stopcock to which the hose, H, is attached.

This improvement was patented July 17, 1866. The entire patent right is for sale by Tully & Reece, 235 Dock street, Philadelphia, Pa.

A Blowing Cave.

There is a natural curiosity in Georgia, known as the "Blowing Cave." It is situated on the plantation of Colonel David Barrow, Decatur county, Ga., twenty-seven miles from Thomasville, the terminus of the Savannah and Gulf Railroad. The cave is at the bottom of a small natural basin (whose diameter at any point will not exceed thirty feet), in a perfectly smooth plain, and surrounded with a dense copse of wood. From the mouth of this cave issue strong currents of air, with a continuous roar that is heard seventy yards off. At certain hours of the day, a hat or vail, or other light objects thrown at it, are blown six or seven feet high into the air, and at other hours of the day, with a suction relatively great, the mouth of the cave draws in any such article placed near it.

Elastic Cartridges.

M. Seguiet recently read an interesting paper to the French Academy of Sciences on a modification effected on rifles by a Belgian manufacturer. Several breech-loading rifles, of different calibers, were produced, the cartridges for which were so contrived as successively to conquer the inertia of the projectile by means of the gradual compression of an elastic body inserted between the powder and the missile, which consists of a steel cylinder rounded off at the top. M. Seguiet also produced a plate of soft iron, 14 millimetres (about half an inch) in thickness, shot through and through at a distance of 100 meters, a bullet weighing 45 gms. and a charge of 6 1/2 gms. of fine gunpowder; also a steel plate 29 millimetres, or more than an inch thick, likewise shot through at a distance of 100 meters, with a projectile weighing 125 gms. and a charge of 55 gms. of powder; the missile being in each case so constructed as to have its center of gravity placed far beyond the middle, and the powder being fired at the top of the cartridge just below the bullet, by means of

the explosion of a percussion cap placed inside, and struck by an air-tight piston. The elastic body placed between the charge and the bullet consists of several disks of felt, those nearest the middle being impregnated with a solution of fatty substances. The importance of this elastic wadding cannot be underrated, since, if its length be diminished, the recoil will increase and the ballistic effect will diminish in proportion. Its presence also does away with the fire which accompanies the explosion at the muzzle, and which is replaced by a line of whitish smoke; the report loses its shrillness, and becomes



TULLY & REECE'S LIQUOR AND TRANSFER PUMP.

more like the boom of a piece of ordnance. M. Seguiet concluded with requesting the Academy to open a sealed packet he had handed in on the 19th of March, 1849; this being done, it was found that M. Seguiet had at that period entertained the idea of placing an elastic substance (vulcanized india-rubber) between the ball and the cartridge.—*Mechanics' Magazine.*

Improvement in Fire Engines.

An improvement in fire engines has been recently tested by H. J. Johnson, of Providence, the object of which is to retain the water in the hose at full pressure when the engine ceases working. A faucet is attached to the nozzle, which shuts back the water whenever desirable, and the extra pressure operates upon a delicately-adjusted valve, in an attachment to the engine, and which in fact becomes a part of it, which opens and permits the water to flow back into the engine. This relieves both hose and engine from any extra pressure. The engine continues working as long as may be desirable, the water in meantime circulating through the valve, which ceases the instant the nozzle is opened and the water begins to flow through the hose.

LIFE PRESERVER.—Mrs. Edson, of Cambridge, Ill., has patented a very convenient life preserver, which deserves notice. It is easily inflated, and is so constructed that when the air is expelled, the preserver collapses, and can be carried in the pocket.

WHITE'S MOP WRINGER.

Mopping floors is at best an unpleasant and dirty job. The long-handled mop saves much labor and prevents much fatigue, but the strain on the muscles of the wrist in wringing the mop is considerable. The simple device here illustrated is a successful attempt to relieve the housewife of a portion of the annoyances of house cleaning.

It consists of a light wooden frame, the ends curved to correspond with the circumference of the pail, and is secured to the pail by means of a cam



lever under one of the cross pieces. A roller, A, turns on journals in the frame, and another, B, revolves in a supplementary frame, C, pivoted at D. Spiral springs affixed to the frame at D raise the pivoted frame and uncover the pail. When the mop is to be removed from the pail the frame, C, is pressed down by the foot, and held in position as the mop is drawn through the rollers. The attachment can be fixed permanently to a pail, or detached and used on any proper vessel.

For further information address J. F. White, Brattleboro, Vt.

In 1865 there were coined at the British Mint 1,450,238 sovereigns, 1,834,750 half sovereigns, 1,580,040 florins, 5,619,240 shillings, 1,631,520 sixpences, 4,158 fourpences, 1,746,888 threepences, 4,752 silver twopences, 7,920 silver pence, 8,601,600 bronze pence, 8,064,000 halfpence, and 4,659,200 farthings. The halfpenny is the coin of which the largest number has been issued in the last ten years; in that time more than 153,000,000 of halfpennies have been coined.



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