New Inventions.

Lake and Ocean Navigation.

A firm in the city of Detroit advertise for no less than twenty first-class vessels, to sail from lake ports through the chain of lakes and St. Lawrence, thence across the ocean to Europe. Their cargoes will be staves, choice timber, and flour. A large trade between the interior of our continent and Europe will soon be established; and much of the produce that was at one period sent from the West by canal to New York to be re-shipped, will be forwarded direct to Europe.

Boilers of Steamboats.

The Board of Steamboat Inspectors of Buffalo have issued a new order, intended to secure the greater safety of passengers on Lake steamers. Hereafter no new boiler intended to generate steam in passenger steamers will be passed by this Board unless the same shall be submitted to their inspection without any coating of paint, or other substance calculated to cover up the marks or any imperfections in the iron of which the same shall have been manufactured.

To Rescue Persons on Fire.

Several deaths have recently taken place by the light dresses of ladies and children catching fire, and for the want of sensible means employed to extinguish the flames. The first thing a lady should do, in case her clothes take fire, is to lie down on the floor, roll over and over, and shout "Fire!" "Help!" If a second person is at hand, and witness such an accident, he or she should at once lay the unfortunate person on the floor and roll her over in the carpet or whatever can be most promptly used to exclude the air from the flames.

Facts about Cotton.

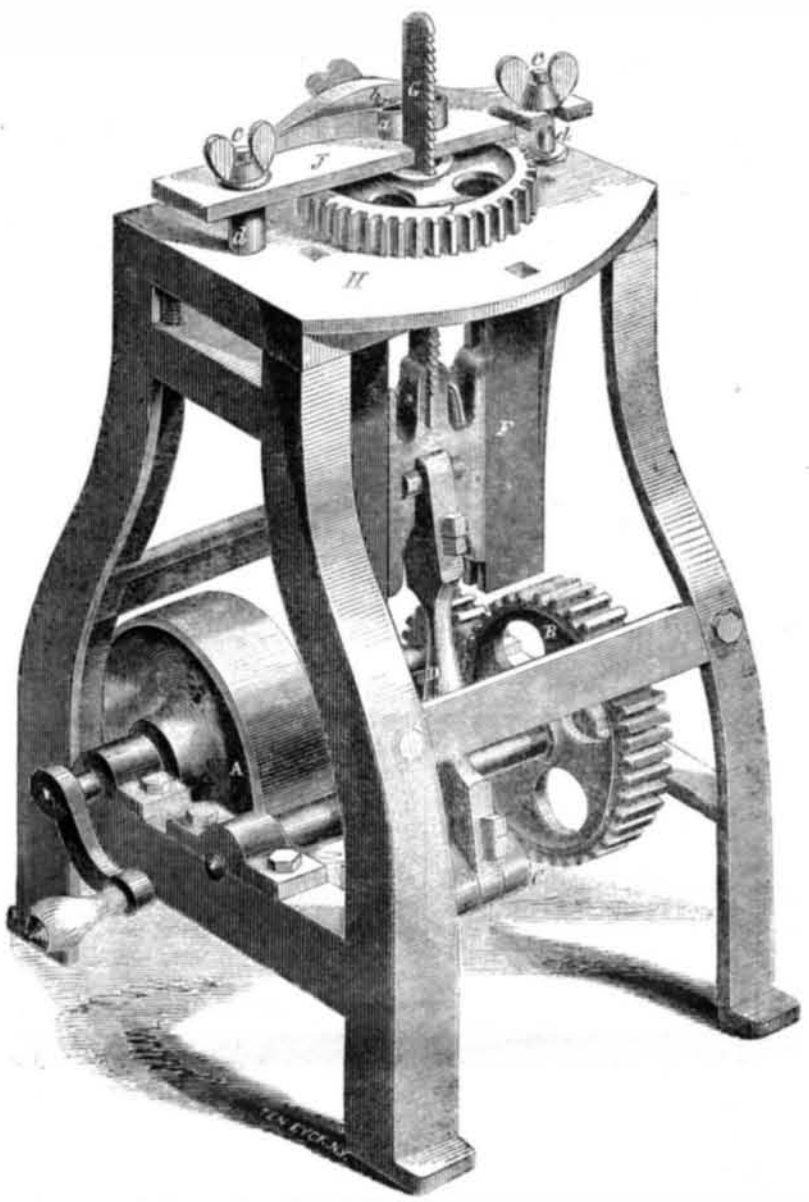
The quantity of cotton-wool consumed in 1850 by the chief cotton manufacturers of the world was 795,000,000lbs., more than half of which was used up in Great Britain. The total value of the latter, when manufactured, has been stated by Mr. Henry Ashworth to be $307,400,000, of which only about one-third may be estimated as the value of the raw material—the cost of labor, machinery, and profits being estimated at about $187,500,000. The effect of a temporary cessation of the wonted supplies of cotton would be to throw hundreds of thousands into beggary; and all the landed property in the north of England would soon soon be swallowed up to maintain the population thus thrown upon the poor-rates for support.

New Slitting Machine.

It is scarcely necessary to inform the readers of the Scientific American for what purpose this invention is designed, as there are few of them who are not daily associated with band wheels, cog wheels, or wheels of some kind, that have to be mounted on an arbor, and they well know the use of the slit; but for the benefit of the few who do not, we will give a brief explanation, and then describe this machine. It is seldom that a wheel and shaft can be cast together, and as the shaft is round, the center of the wheel is bored round too, in order that it may easily slide on to take its proper position on the shaft. The wheel, however, has to be rotated by the shaft, and to accomplish that against any resistance, a portion of the shaft is filed flat, and a small slit is cut in the internal round portion of the wheel, so that when the slit in the wheel is brought over the square portion of the shaft, a key can be driven in, which will hold them tight to the shaft, arbor, or pinion. This slit is also called a "key-way."

The machine which is the subject of our illustration is the invention of T. R. Bailey and G. W. Hildreth, of Lockport, N. Y., and it is designed to cut the key-way in wheels.

HILDRETH & BAILEY'S SLITTING MACHINE.

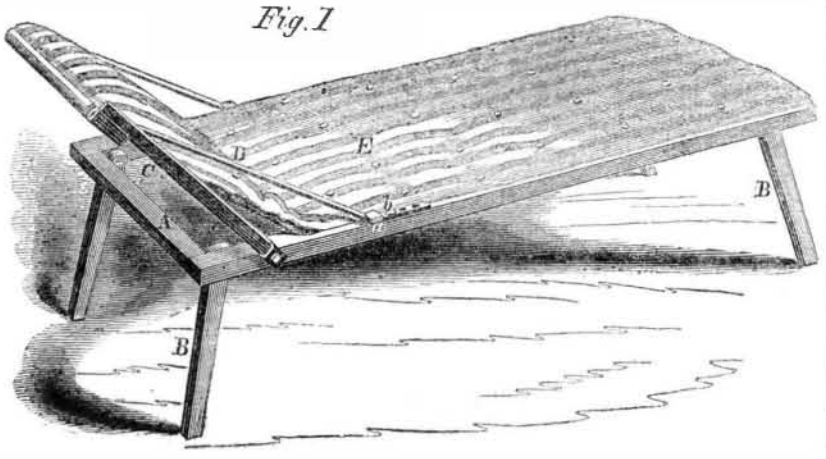


Being mounted in a suitable frame, power is received from any convenient motor by the band wheel, A, or crank handle, and by a cog wheel on the end of the shaft of A, the crank, C, is put in motion by the cog wheel, B. To this crank, C, a connecting rod is attached, that is also connected to a cross-head, E, which it moves up and down in guides or ways, F. To the cross-head, E, is secured the saw, G, which passes through the center of the wheel, I, in which the slot is to be cut. The wheel lies on a table, H, and it can be ecured to it by clamps passing through the table itself, as well as by a permanent clamp, J, that is held down on the wheel by the screws, *d*, and nuts, *c*. The saw, G, works up and down in a slot in J, and it is pressed against the inner periphery, or provided with the requisite feed by a spring, *a*, that can be tightened by a screw, *a*. This is a remarkably simple machine, and at the same time a very efficient one, as it cuts the key-way perfectly true, and very quick.

The inventors will be happy to furnish any further particulars upon being addressed as above.

FAVOR'S INVALID CHAIR AND BED.

Fig. 1

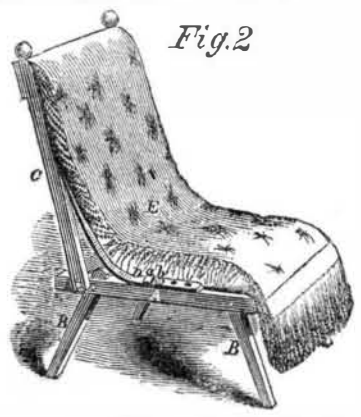


Among "the ills which flesh is heir to," there are very many, the radical cure of which is only to be effected by rest. The poet has called it "Nature's sweet restorer," and sleep, the acme of all rest, Shakespeare has defined as "Nature's soft nurse." So we have poetic as well as medical authority for making the assertion. When in a state of health a man can sleep anywhere and on anything, if tired; some can even fall into the "arms of Morpheus" leaning against a tree, and others court the "drowsy god" under the benign shade of a stone wall. But when sickness has wasted the "human form divine," and weak inanation preys upon the mind and body of a poor sufferer, some truly comfortable and simple device must be had recourse to, in order that a change of position may be easily effected without disturbing the patient. This device should be cheap, portable, and simple, and such a one is found in the subject of our engravings.

Fig. 1 represents an invalid bed which is also suitable for the camp or the emigrant. A rectangular frame, A, is supported by four short but strong legs, B, which are secured to A by a pin, and they can be folded inside, or kept firmly in the position shown by a small catch. The head-board, C, is pivoted to the frame, and the sacking or mattress, E, is attached to its top rail, so that the elevation of the head-board forms a pillow of any hight, thus raising the body to that angle at which the person can secure the most rest, or at which the greatest comfort is obtained.

The proper angle of the head-board is arranged by having it supported by two straps or cords, D, attached to its upper end, one on each side. The other end of these cords or straps has a metal strip secured to it, and this strip is perforated by a number of holes, which, passing over a stud, *b*, in the frame, A, hold the head-board in any desired position. The strap passes also through a guide, *a*, to hold it in the proper line. The sacking can be attached by ropes and slats, or by ropes alone, or nailed to the frame, as may be most convenient, and it forms one of the best invalid couches which we have ever seen.

Fig. 2



The chair, which can also be made into a couch, and is for the invalid a truly *easy* chair, is represented in Fig. 2; and it will be seen at a glance that its construction is essentially the same as the couch, the back, C, being placed instead of a head-board, and the cushion, E, replacing the mattress. There is one use to which we think these couches and beds are especially adapted, and that is for the country surgeon or druggist; they take up so little room and are so easily and quickly fixed, that they are the very thing for accidental sufferers who may chance to be brought in, and require an operation or amputation before they can be removed with safety; but everywhere and anywhere they will be found convenient and comfortable, and, as we before remarked, cheap.

They were patented April 20, 1858, by Z. C. Favor, of Chicago, Ill. Any further information can be obtained from the agent, E. H. Brown, of the same city.

Ice-cream.—I. S. Clough, of this city tells us that he has discovered a new method of making this luxury, the only fault being that it can only be made in winter, and when the principal ingredient of his mixture—icy snow—is on the ground few persons want a cooling drink. But here is the recipe:—Take a tumbler full of clear icy snow, place a teaspoonful of white sugar on it, and add a little milk; mix them with a spoon and eat it as a tonic for bad spirits.

The hardness of a lobster shell resists expansion; but to provide for the growth of the fish at certain seasons of the year, the shell becomes soft, the animal then swells its body, and by a tremendous motion casts it off; in this defenseless state it retires into holes in the rocks; in the space of forty-eight hours a new concretion is formed.

A piece of pine wood forced down into the sea to the depth of 200 fathoms, becomes so compressed, that when drawn up again, it is found to be so heavy as to sink like a stone when thrown into the water.