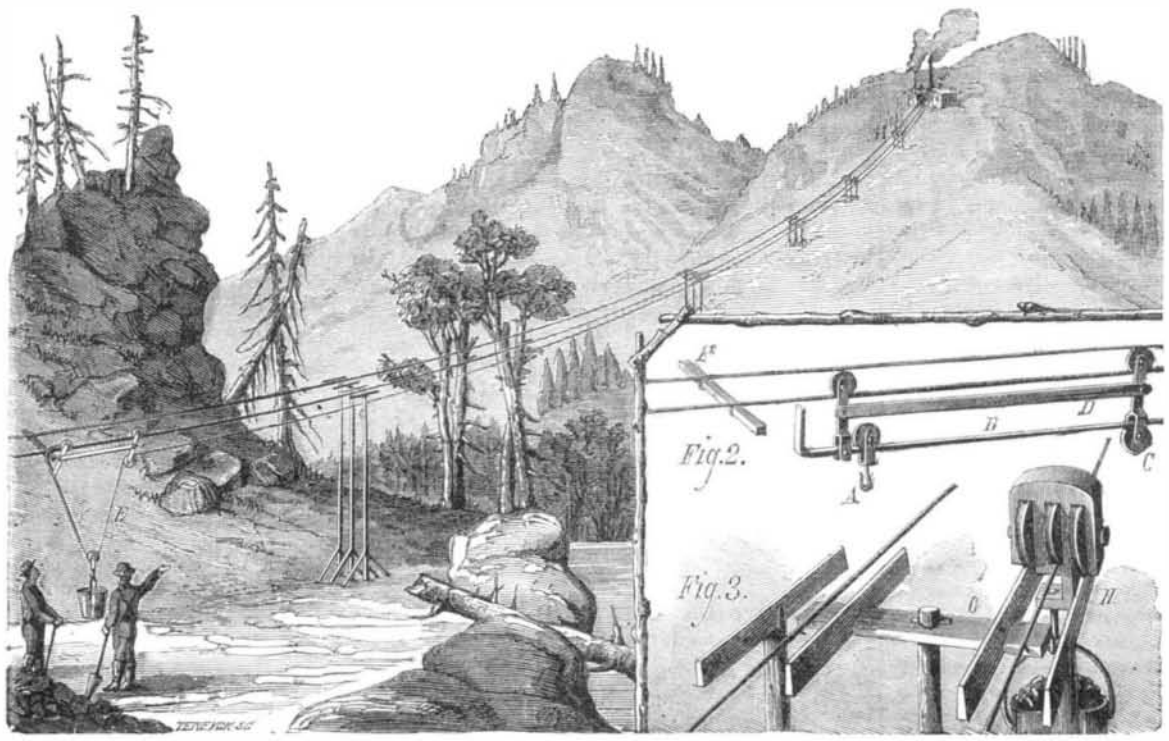
WIRE WAY FOR TRANSPORTING ORES, ETC.

The invention illustrated in the annexed engraving is another of the modern useful arrangements for lowering and raising buckets or cars from or to an elevation, for the purpose of transporting water, minerals, merchandize, etc. The receptacle travels down the way, which may be at any angle to the horizon until it reaches a desired point; there, by mechanism below described, the bucket is caused to descend perpendicularly to a convenient hight from the ground for emptying or filling. On returning, the bucket is first lifted up to the way, and then hauled to the elevated point from which it started. This is all done automatically by a motor stationed on the eminence.



WIRE WAY FOR TRANSPORTING ORES, ETC.

In our engraving is shown a general view of the invention, and in Figs. 2 and 3 the principal portions in detail. The bucket ready to descend is affixed to the hook, A, which is attached to a pulley which slides freely on the rod, B. The forward portion of the latter is hook-shaped, and is pivoted to a suitable support. The rear end rests upon a pulley, C, in a similar arm. Both supporting arms are provided with wheels above to run on the wire, as shown, and are connected by a rod, D, pivoted to both. The lowering and hoisting rope, E, in the large view is, as represented in Fig. 2, attached to the rear end of rod B.

An empty bucket, starting on its downward course, is lowered by the rope, E, until the point at which the filling is to take place is reached. On the way, and directly at such point, is secured a crossbar, F, which the hook end of rod, B, strikes against. The effect of this is to disengage the rear end of rod, B, from the pulley, C, through the action of rod, D, and to allow said extremity to descend. The bucket of course slides down by its own gravity, leaves the rod, and reaches the rope, being finally lowered as represented to the left in the large engraving.

As soon as the receptacle is filled, the motor commences to pull on the rope, and in so doing would naturally drag the car along the ground. This tendency, however, is immediately prevented by resistance of the hook end of rod, B, which, having caught over the crossbar, F, as the opposite extremity descended, retains its hold until the ascending bucket has reached the rod, B. The gravity of the receptacle causing it to descend to the hook end of rod, B, its weight disengages the hook from the crossbar, leaving the car free to be pulled up the incline.

In Fig. 3 is shown the mode of holding up the wire, G being the support. Adjacent to this, in order to allow of the passage of the car, is a short railway, on which the outer wheels of the traveling pulleys, which are threefold, revolve. These being a trifle larger than the middle wheel, the wire will be relieved of the weight of the buckets while the same are passing the supports, and the opening, H, permits the parts which form it to pass with their pendent burden.

The apparatus is adaptable to various uses, and may, it is suggested, be profitably employed when obstacles of any kind exist between localities from one to the other of which the transportation of materials is necessary.

Patented June 24, 1873. For further particulars address J. Whitson Rogers, manufacturer and proprietor, Peekskill, N. Y. [See advertisement on another page.]

A WIRE CLOTH BOOT.

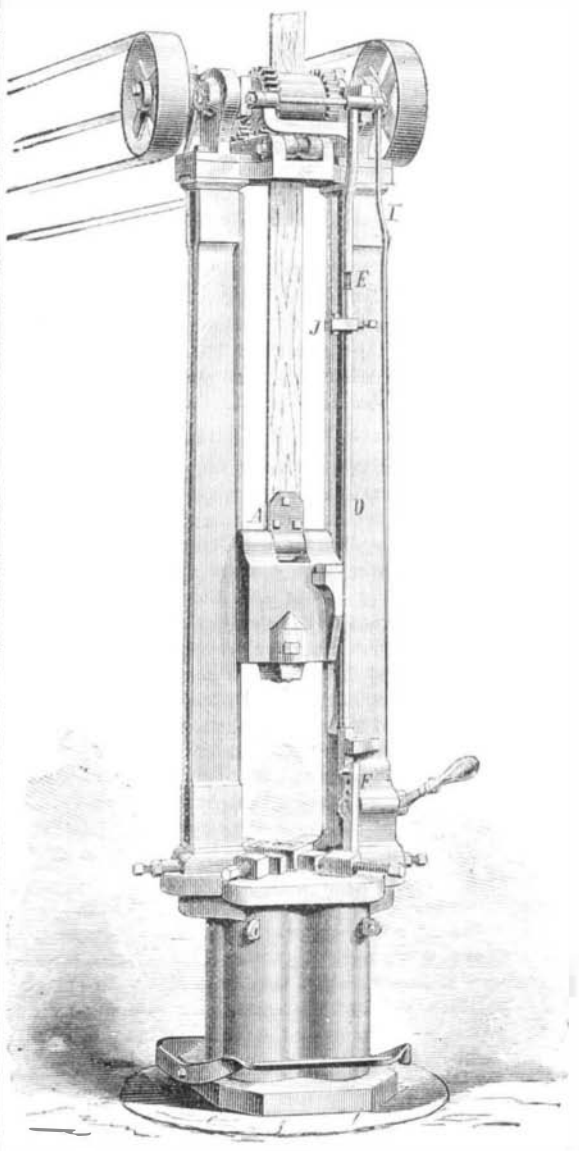
Quite a novel form of shoe or boot has been patented through the Scientific American Patent Agency, by Mr. Robert Sommerville, of Sandusky, Ohio. Instead of making the whole covering of leather or other material in common use, the inventor proposes to employ wire cloth or gauze for the upper. The sole and heel are of course of leather, and the wire portion is secured to the former by means of a strip of thin metal fastened to the top of the sole by screws, and to which the upper is soldered. The principal advantage claimed is that the shoe thus constructed gives the foot free ventilation, while the pliability of the material is such as not to interfere with the free action of the member. We presume that the inventor designs it specially for Southern latitudes or for summer wear.

Iceberg Alarm.

M. Michel lately presented a paper before the Academy of Sciences, Paris, describing as new an apparatus for vessels to be used for giving notice of the proximity of icebergs. It consists of a metallic thermometer placed outside the vessel. The moment the vessel enters water that is below a certain limit of heat, an alarm is sounded. This alleged French improvement is set forth as one of importance, and as having originated with the gentleman referred to. But the device is of American origin, well known here. It is the invention of Mr. Charles Dion of this city, was described in the SCIENTIFIC AMERICAN, April 23, 1870, and was published in various papers throughout the country about that time. This is only one of many examples in which descriptions of new American inventions are translated from our papers by foreigners, presented and read to some continental society, and credit for the origination claimed on behalf of the translator.

THE HOTCHKISS OR FRICTION ROLL DROP HAMMER.

As we have already directed our readers' attention at some length to the value of the drop hammer as a means of forging small articles in dies, it is hardly necessary to enumerate the capabilities of this class of tool, and the advantages



which it offers to the machinist. It possesses an accuracy and rapidity in operation hardly attainable by other means, and in its special work is, in many respects, more desirable, especially in point of economy, than the forms of hammer operated by the direct action of steam.

The machine represented in our engravings possesses certain improvements, covered by the patents of Messrs. Hotchkiss & Stiles, which are claimed to add materially to its efficiency. It will be noted that the device belongs to the class of tools in which the hammer is raised by a stiff belt or board passing up between two friction rolls. The hammer, instead of being attached to the board by a rigid connection, has an elastic or flexible one, as shown at A, the object being to prevent the sudden jar and probable destruction of the same, owing to the repeated shocks.

Referring to the sectional view, Fig. 2, motion is communicated between the rolls, B, by means of the two cog wheels shown. The teeth of this gearing are always engaged, and hence the revolution is constant; but in order to cause a griping of the board, the shaft of one wheel, and consequently the roll, which also works thereon, is moved up closer to the other. The teeth of the cogs are of sufficient length to allow of this movement, which need be but very slight. The sliding motion of the movable roll is effected by an eccentric, C, connected with a lever and rod, D, the action of which is clear from our illustration. The rod, D, which by the screw connection at E, Fig. 1, is adjustable as to length, is shown in Fig. 1 at the right, and its lower extremity rests upon the top of a vibrating arm, F, which is pivoted, as shown, to the frame. On the hammer, at the same side, will be noticed a wedge-shaped projection and on the vibrating piece, a short pin, which may be located in either of the holes shown.

Referring again to Fig. 2, G G are two clamps, up through which the board passes, and which are so arranged that as the hammer ascends they will freely open of themselves, but on descending they will close and hold the hammer; how this is done is obvious from their shape. Connected with one of the clamps is a lever, H, which, passing to the rear of the machine, is attached to a rod and thus communicates with the treadle. It will be readily understood that, by pressing down the latter, the operator raises the lever, H, and hence the clamps, holding the same in such position as long as he chooses and thus either freeing the board from their gripe or preventing the pair of clamps acting for any desired time. To the right of the machine (Fig. 1) is shown a handle connecting with and moving a rod, I. This acts in addition to the rod, D, to open or close the rolls at will. The lower end of rod, I, has a slot, so that the action of the hammer will not disturb the hand lever, thereby preventing the hand being injured as otherwise might be the case.

We can now, before proceeding with further detail, follow the operation of the working parts. The hammer, we will suppose, as represented in our Fig. 1, is in the act of rising. This it will continue to do until it strikes an adjustable collar, J, on the rod, D, raising the latter up. As soon as its lower end is lifted above the vibratory arm, F, a spring on the latter pulls it under, and thus the rod, D, is supported in the position to which it is lifted. The consequence of raising the rod, D, however, as we have above shown, is to open the rolls; hence the hammer falls, to be caught, however, instantly by the clamps, G. These are held open by the pressure of the foot of the operator on the treadle, and therefore the hammer is free to deliver its blow. This it does, but on doing so its wedge-shaped projection strikes the pin on arm, F, and pushes the latter out from under the rod, D. The rod falling again, by its own weight, closes the rolls, and the hammer is once more lifted. This operation is repeated just as long as the clamps are held open by the treadle, by releasing which, at any moment, it will be noted, the clamps will be thrown in action, and hence the hammer arrested at any point on its down stroke. It will be clear, from the above, that a continuous series of blows may be maintained by simply keeping the treadle down; and the force of these strokes