

NEW ICE HARVESTING INVENTION.

Mr. Louis Townsend, of Terre Haute, Indiana, has devised and patented a number of useful and ingenious inventions, destined to cause much saving of labor in the cutting, transporting and housing of ice. Not only this but an ice increasing machine is introduced by which the thickness of the ice in rivers, lakes, etc., can be materially augmented. This device consists in a number of sections made of two planks each, nailed together at right angles and braced by an end piece. As soon as the ice has acquired a sufficient thickness to bear the workmen, a sufficient number of these sections to enclose the desired space are placed end to end and secured to one another. The lower edges of the sections are wet so that they become frozen to the ice. Water is then pumped into the enclosed space to a shallow depth, which readily freezes. Another supply of water is added, and so on until ice of the desired thickness is formed. This invention was patented April 23, 1872.

Having made his ice, Mr. Townsend invents an ice cutter which consists of a T shaped frame work carrying a set of circular saws which mark the ice similarly to an ice plow but do not cut through. Then driven by suitable mechanism are vertical saws destined to cut the blocks, power being transmitted by means of a horse walking on an endless belt. The power may move forward automatically as the saws cut their way through the ice, and may be placed at a considerable distance in advance so that being far from the edge of the ice there is no danger of its support breaking through. When it is desirable to have the saws work in advance of the power, they are reversed and the latter is mounted on a boat or raft. The date of this patent is Oct. 8, 1872.

The blocks being cut, in order to float them to the elevator or flume where they are to be stored, a device is presented formed in three sections hinged to each other. Each section consists of a top bar, bottom bar and a series of rounds, so that the apparatus resembles an ordinary ladder. It is placed around a block of ice, a rope is attached and the whole floated to the desired point. Patented April 23, 1872.

The blocks having been brought to the store house, Mr. Townsend supplies an invention for carrying or moving them about. It consists of a carrier the bottom of which is a metal plate made somewhat in the form of an earth scraper, but with its forward edge turned up. Metallic straps pass around the lower side of the plate and serve as runners, also as guides to hold the ice, and their ends fasten the plate to the long bars or handles. The carrier is made of such a width as to receive two blocks of ice placed side by side, and is designed to secure the ice as it falls from the chute, carry it to the place where the packing is going on, and there be easily slipped from under its load. This invention was patented April 23, 1872.

IMPROVED SEED PLANTER.

The accompanying illustration represents a convenient and ingenious form of hand planter which may be readily adapted to various kinds and different sizes of seeds.

A and B are two blades meeting at their lower extremities and there protected by a metal sheath, as shown. Attached to the blade, A, is a seed receptacle, a part of which is exhibited as broken away in order to show the interior arrangements. At the bottom, and passing through an opening in the receiver, is a wedge-shaped valve, C, which is secured by being pinned in a slot in the blade, B. This valve has a circular orifice at D, and immediately above it, and resting upon its upper side, is a sliding piece, E, countersunk in the blade, A. The two blades are held apart by the spring, and are connected by the bearing, F, on which the moving blade, B, works, and also by the arm, G, to which is attached a hand lever, the fulcrum of which is at the upper extremity of the blade, A.

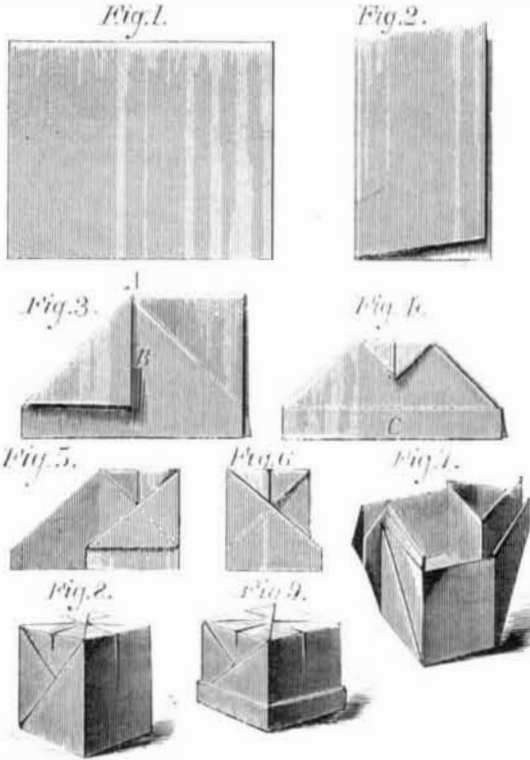
In operation, the receiver being filled with seed, the apparatus is thrust into the ground. A downward and backward motion of the hand lever, to the left in the engraving, causes the blades to separate at their lower extremities. The valve, C, is thus withdrawn through the opening in the receiver, as far as to permit the seeds which have settled in the orifice, D, to drop therefrom, fall down into the point of the planter, and thence pass through an opening into the ground. The slide, E, descends by its own weight as the beveled upper side of the valve is drawn under it, thus preventing the seeds, beyond what are contained in the orifice of the latter, from escaping, and then ascends as the valve is pushed back. Different valves, with various sized orifices, may be used to suit the varieties of seed employed. Patented



June 11, 1872. For further particulars address Mr. Henrick Lage, glass box 1,055, Omaha city, Nebraska.

HOW TO MAKE PAPER CAPS.

It is a noticeable fact that, in workshops and factories where numbers of men are employed, a large percentage of the operatives will be found to be prematurely bald. If the cause of this affliction be sought, it will be traced to the pernicious habit of continually wearing the close cap or hat, thus keeping the scalp at an unnatural heat, and cutting off

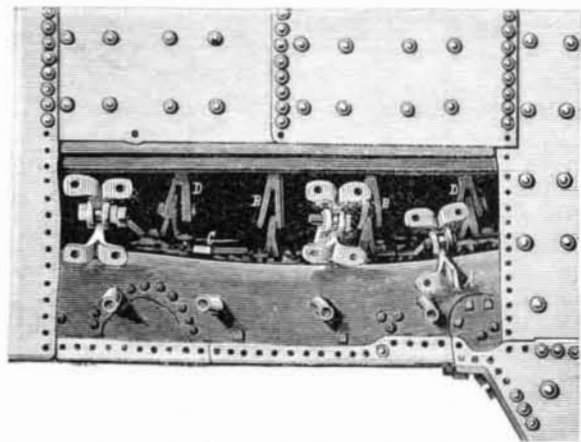


from it all ventilation. The hair under such treatment is, as a matter of course, weakened, and, decaying at the roots, falls out in large quantities. In defence of the practice, it is urged that the head and its covering must be protected from the dirt and dust that fills the air of the work rooms, and that an old hat is about as good as anything that can be used. We think that all will concede that a light paper cap that costs nothing, or at best a penny for a sheet of brown paper, will answer every requirement of protection, while at the same time being both light and cool. Besides, it is much more cleanly to renew one's head gear with a fresh sheet of paper every once in a while, than to continue wearing a grimy, greasy, thick piece of felt or cloth for months at a time. In order, therefore, that all may be able to make their own caps, we have prepared the accompanying engravings which, with the following few words of explanation, will show how they are folded:

First, provide a sheet of moderately thick brown paper, size from eighteen inches to two feet, shape as in Fig. 1. Smooth it out perfectly flat and double over as in Fig. 2. Turn it round with the fold from you, and mark the exact middle of the piece at A, Fig. 3. Then bring down both corners and measure off on the edge, B, from the point, A, Fig. 3, a distance equal to one quarter the circumference of your head. Mark the point. Now, turn the paper over so that the under side will be uppermost, and bend the apex of the triangle back from the point just marked, as in Fig. 4. Fold over the sides, Figs. 5 and 6, and with scissors cut off the lower portion, C, below the dotted line and also the points of the two lower corners of the pieces just bent over. Next unfold the paper; spread it out flat. You will find a square marked in the middle, and creases leading therefrom to the corners of the paper. Double up the material on these creases, so as to bring up the paper as sides of a box, of which the middle square is the bottom, as in Fig. 7. Smooth the folds flat, and your work will appear as in Fig. 8. Lastly, turn up the edges of the box all around, twice, folding the paper on itself. Your cap is then complete, and, if the measurement directed above was correctly made, it will exactly fit your head.

STEAM BOILER EXPLOSIONS.

It will be remembered that a series of experimental ex-



plosions of steam boilers, at Sandy Hook, attracted much attention some months ago. The boiler tested were, before

being submitted to excessive steam pressure, several times subjected to hydrostatic pressure until ruptured at their weakest points. After one of these boilers, No. 3,* had given way at the crown sheet under this treatment, Mr. F. B. Stevens, who planned and conducted the experiments, had a sheet cut away opposite the crown sheet, and the interior photographed. We now have the pleasure of presenting a copy of this photograph in the accompanying carefully made engraving.

The boiler was built by the well known firm of T. F. Secor & Co., in 1846, and was 25 years old at the time of its removal from the boat.

The excellent proportions of its bracing are shown by the fact that no one detail seems to have shown special liability to fracture. The ear of a crow-foot brace, at A, the pins at B B, and the body of a brace at C, have all given under about the same pressure. The crown sheet seems to have gone down considerably under B B, and is much distorted elsewhere. Far back, at D D, we can see, in spite of the lack of light, braces that still held. The picture is an interesting study.

Brain Work.

One thing I would like to impress upon those who are exceptionally excitable. The very slightest stimulants, which others may use with impunity, are bad for them. I have known cases of chronic neuralgia, from which torture had been endured for years, cured by ceasing to drink tea and coffee regularly, or by leaving off smoking. The nerves are such delicate affairs that they often make us a great deal of trouble with very little cause, seemingly. Excessive brain work renders them much more susceptible. This susceptibility must be counteracted by the avoidance of those things which tend to excite. What a steady brain worker wants is to replace (not stimulate) his vitality as fast as he uses it up. To this end he wants everything that is nourishing and soothing. A stimulant crowds out some part of the requisite nourishment, since the system can only receive a certain proportion of matter into it at a time and appropriate it harmoniously. If you set it to work on a stimulant, or set a stimulant to work on it, the action is mutual. It will not assimilate fully the nourishment which may come immediately afterward.

All the diseases to which we are constitutionally liable are aggravated by the use of stimulants. They assist the development of chronic complaints, and make all sickness harder to cure. It is not necessary to speak of their bad effects on ailments of the brain. But most of these, I believe, are to be traced originally to their use. A healthy brain naturally seeks relief in sleep when it is tired. But one that is spurred and driven on by stimulants loses that inclination. From the inability to rest springs the whole train of nervous and cerebral diseases.

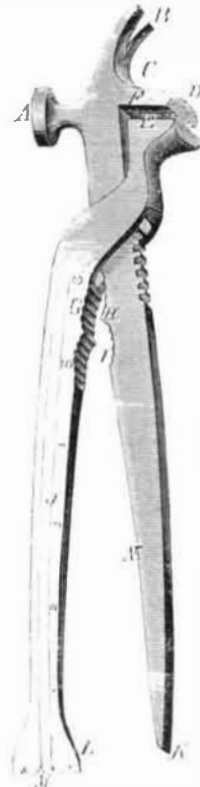
I believe that one, working the brain at proper hours and giving it the requisite rest, relaxation and nourishment, and never stimulating it into unhealthy action, might go on doing the very hardest mental work from youth to extreme old age and never suffer an atom from it—on the contrary, be benefitted.—Howard Glyndon.

COMBINED TOOL.

The ingenuity of some of our inventors has often been exercised upon the combination, in one instrument, of the tools in daily use by some classes of mechanics, and especially by house-keepers; and we here illustrate a successful arrangement of many of the useful implements most commonly needed. It is not necessary that we should give a lengthy description, as our engraving will show the numerous and varied uses for which the appliance is available; and its simplicity of form is such that it can be sold at an economical price.

The invention consists in combining the following named useful tools, in convenient form for general purposes, namely, hammer, A, tack and nail puller, B, stove cover lifter, C, scraper, D, pincers, E, adjustable wrench, F, gas burner tongs, G, nut cracker, H, cork presser, I, six inch rule, J, screwdriver, K, box opener, L, carpet stretcher, M, door fastener, N.

It was patented May 9, 1871, by Mr. J. Gorrick



THE school ship Mercury, owned by the city of New York and used as a reformatory for unruly boys, recently sailed on her third cruise. The vessel will proceed to the Volcano Islands, south of the equator, taking soundings and deep sea temperatures as often as may be practicable; thence to Rio and Barbadoes, and then back to New York. All necessary instruments for determining velocity of currents, sounding and collecting deep sea plants are provided. The information obtained will doubtless be of much scientific value, inasmuch as no correct charts of tropical ocean currents have as yet been published.

*Experimental Steam Boiler Explosions, by Professor R. H. Thurston: Van Nostrand, 1872.