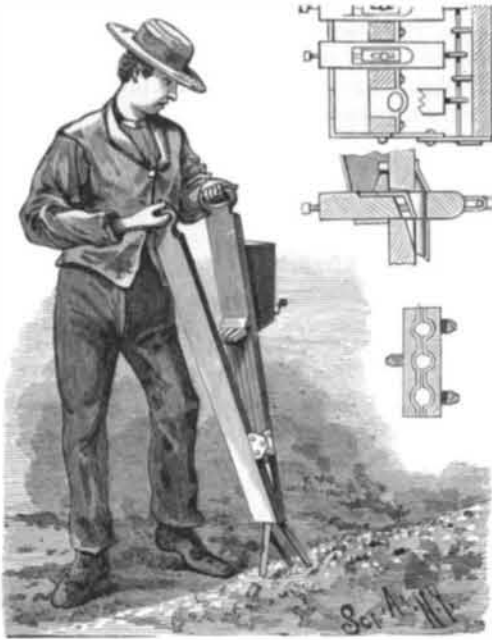


HAND CORN PLANTER.

The corn planter recently patented by Mr. J. T. Ricketts, of Camargo, Kentucky, deposits the kernels in the ground separate and in a triangular space, so as to make the hills compact and leave as much room as possible between them. To the side edges of the bars of the planter, at a little distance from their lower ends, are attached plates, the adjacent edges of each pair of which are overlapped and hinged to each other by bolts. To the outer side of one bar is secured the seed hopper, from which the seed is removed by the slides which pass through openings in the bar and in the side of the hopper. The inner ends of the slides are

**RICKETTS' HAND CORN PLANTER.**

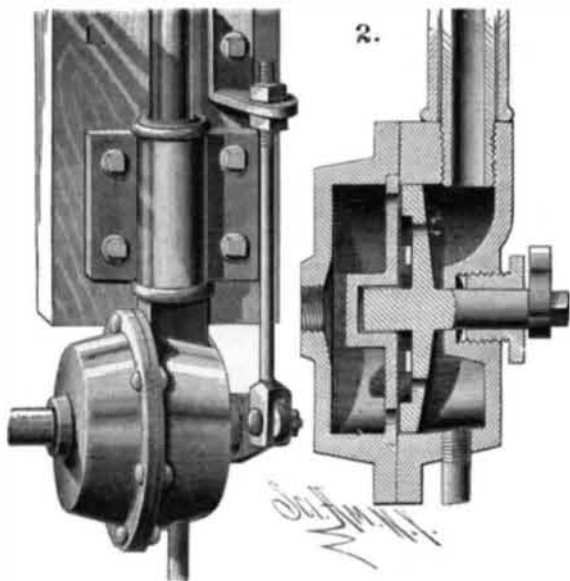
connected with the other bar, so that they will be operated by the opening and closing of the bars. (This construction is shown plainly in the upper view, which is a sectional plan through the slides; the center cut is a vertical section through the slides and hopper. The lower cut is a sectional plan through the lower part of the bars.)

In each slide is formed an opening, to receive the seed and carry it out of the hopper, and the size of which is regulated by plates inserted in the opening and adjusted by hand screws. Brushes attached to the bar above the openings through which the slides work prevent the slides from carrying out any more seed than the openings will hold. The seeds pass through passages formed by covering grooves in the inner side of the bar with semi-cylindrical plates, which extend down to the hinges, where they meet similar plates having their concave sides toward each other. At the lower ends of the bars two pairs of plates are bent forward, and the third pair is bent rearward, so that the lower ends are equidistant from each other.

To use the planter the bars are drawn apart, thereby closing the lower plates and drawing back the slides, and allowing the seeds to drop into the passages. The tubes are then thrust into the soil where the hill is to be planted, when the bars are drawn toward each other, which separates the lower plates and permits the seeds to drop.

STEAM TRAP.

The valve case is made of two circular cup-shaped plates, bolted together and containing a circular seat having ports

**MORSE'S STEAM TRAP.**

for the escape of the water condensing in the upright pipe and the first chamber, into the second chamber, from which it flows away through the outlet pipe. In the first chamber, fitted on the circular seat, is a disk valve having ports through it and chambers in the face for the escape of water when these chambers are opened to the ports in the seat, which is effected by the turning of the valve. The valve has a stem that is centered in a socket of the seat and also in a stuffing box, through which it extends to the outside of the case, where

it connects with a crank arm, from which a rod extends along the pipe a short distance, and connects with a bracket attached to a wall plate, so as to be held rigidly to shift the valve when the pipe, to which the valve case is attached, expands and contracts, so as to cause the valve to open the ports to allow the water to escape and to close them to prevent the escape of steam after the water has been discharged. As the water flows out, the descending steam heats the pipe, which expands and closes the valve; when the valve closes, the steam condenses, and contracts the pipe so as to open the valve. The valve rod is connected to the bracket by nuts, so that it can be adjusted as required. The first chamber is provided with a waste pipe for blowing out the sediment that collects in the chamber. By this means a simple, efficient, and reliable trap for steam heating apparatus and the like is formed.

This invention has been patented by Mr. Robert B. Morse, of Naugatuck, Conn. The trap is in operation at the Good-year India Rubber Glove Company's Works at the same place.

Hope as a Remedy against Disease.

Dr. J. Mortimer Granville has been lately rather severely handled by the medical press of London, because he wrote a letter on this subject to one of the daily papers. He is criticised as having performed an unethical act in thus advertising himself in an unprofessional manner in a lay journal. This question we will leave to our transatlantic brethren, while we say a few words upon the subject matter of his letter.

But little touched upon, hope as a remedy against disease is, if wisely and judiciously employed, one of the most valuable and useful means that the physician can employ. Call it what we may, and reason about it as we please, no man of experience will for an instant question that imagination, the prejudices, the mental condition, the conviction of the patient, in many cases, exerts a most powerful and a most real influence upon the progress and termination of diseased conditions. Has it not happened to every one of our readers (it repeatedly has to us) to discover accidentally, so to speak, a condition of chronic disease, which has evidently been present for years, and yet the patient has maintained fairly good health, and is, at the time of the discovery, in no immediate apparent danger; yet when told that he is afflicted with an incurable disease that may carry him off in a few days, or that he may live for months, immediately wilts, like the sensitive plants when touched, and dies in a day or two?

Again, do we not all know of cases of chronic disease, in persons with a happy, hopeful, contented disposition, disease that we felt sure would soon prove fatal? And yet we see them go on day after day and year after year enjoying apparently good health. Of course we are familiar with and thoroughly recognize the fact that worry, that mental anxiety, is diametrically opposed to good health and long life; and in this fact we recognize the explanation of the influence of depressing opinions and advice; for if we tell a man with a nervous temperament that he *may* die in a few days, from that moment all peace and contentment vanishes from his life, while anxiety, worry, and unrest take possession of his whole being.

The practical point to be deduced from these reflections is that it will redound not only to your patient's advantage, but also to your own professional reputation, to make it a rule always to take the most hopeful view that is possible of the patient's condition, especially when the man or woman is one the "nervous, worrying kind," and always to remember that "hope kept alive" is the great secret of success among quacks. Let us steal their thunder.—*The Med. and Surg. Reporter.*

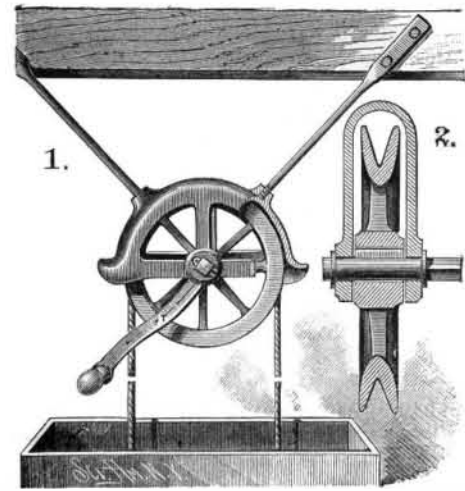
RAIN WATER TRAP.

At the top of the cistern is arranged a small receiving tank which is divided into two chambers, by a partition, one of which has a spout discharging into the cistern and the other has a pipe discharging into the bucket below. Over the tank is a section of the leader pipe, which is hung on a pivot and connected to a shifting cord by which it will be moved from side to side over the tank, according as the water is to be discharged into one or the other of the chambers. From the pipe the cord extends in opposite directions, connecting on one side with a weighted lever, and on the other side with a lever from which is suspended a float in a tank standing under a spout discharging from the bucket. As the water enters this tank it raises the float, when the weighted lever pulls the pipe so that it will discharge into the chamber leading to the cistern, the roof having been washed clean by the water which escaped through the tank. The center bucket is provided with a waste passage through which most of the water passes away, while some discharges into the lower tank to raise the float, so as not to allow the spout to be shifted too soon. In order to prevent the spout from shifting when the rainfall is not sufficiently heavy to wash the dirt from the roof, but is so continuous that it would raise the float and shift the spout, a notch, placed lower than the outlet pipe, is made at the lower side of the waste passage in the bucket, so that all the water will escape and none will flow into the float tank when the volume of water is too small to thoroughly wash the roof. After the rain is over the water is allowed to flow off from the lower tank, when the float descends and the spout is pulled back over the waste chamber ready for the next rainfall.

This invention has been patented by Mr. E. T. Toomer, of Mobile, Alabama.

WELL BUCKET WINDLASS.

The supporting frame consists of a pulley cap and spider frames which are cast together, and in the hubs of the spider are formed bearings for the shaft. Upon the upper quarters of the cap are formed bosses in which holes are tapped for connecting the suspension rods by screwing them in. These rods are attached to a board set up edgewise over the well, and supported upon posts placed at opposite sides of the well. The cap is provided with flaring ends to allow of swinging the buckets out over the well curb for emptying them. Keyed upon the shaft is a groove pulley that carries the bucket rope. One end of the shaft is squared to receive the crank. The shank is formed with a key, collar, and groove for ring to prevent its working out, and a squared portion, by casting or in any other suitable way. The groove in the pulley is made plain when a rope is to be used, but is cast with ribs when a chain is to be used. This con-

**PALMER'S WELL BUCKET WINDLASS.**

struction makes a simple, cheap, and easy working windlass for well buckets.

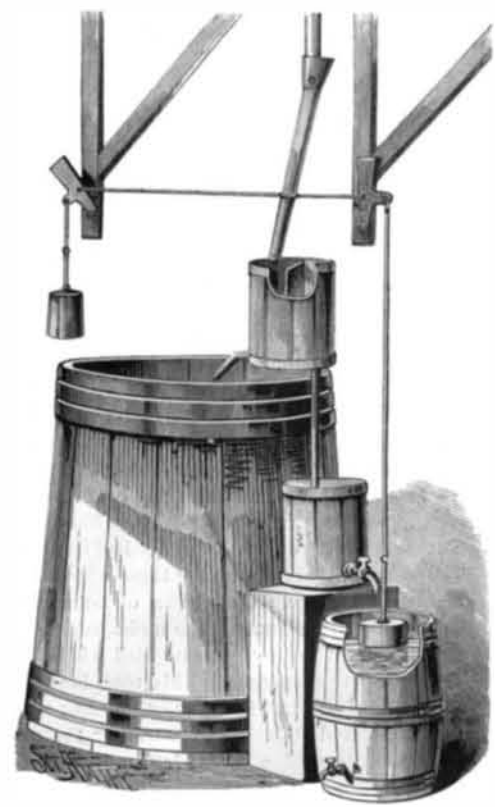
This invention has been patented by Mr. W. W. Palmer, of Nixon, Tenn.

Curious Experiments.

Among the results of Dr. Guthrie's experiments concerning solutions of salts is, that as a mixture in solution cools, the salt which is present in richest quantity crystallizes out until a certain critical point is reached.

Dr. Guthrie has shown that certain alloys of metal, such as the more fusible or "eutectic" alloys, which melt at low temperatures, behave in the same way as mixtures of salts. Moreover, there seems to be no definite molecular proportion obtaining in these alloys. A mixture of 47.38 parts of bismuth, 19.97 of tin, 19.36 of lead, and 13.29 of cadmium fuses at 71 degrees Cent., or a little less than 160 degrees F., or in boiling alcohol. This is still a lower temperature than the fusing of Rose's fusible metal.

Dr. Guthrie has also shown that definite mixtures of water

**TOOMER'S RAIN WATER TRAP.**

and triethylamine become turbid at or between certain temperatures, and on this basis he has constructed a set of temperature tubes containing the mixtures in question. When placed under the tongue of a patient, the temperature of the body at that point can be ascertained by their means. Dr. Tilden, of Edgbaston, has also shown that mixtures of water and butylic or amylic alcohols become turbid when between 20 degrees and 30 degrees Cent., and clear again between 140 degrees and 158 degrees F.