DEVICE FOR PREVENTING HORSES FROM CRIBBING.

Cribbing by horses is a peculiar habit, or perhaps disease, which seemingly impels the animal to gnaw its manger, seize hold of objects with its teeth, and, by the action of the larynx, to suck in air until a very uncomfortable as well as unsightly condition is the result. In the invention represented in our engraving, Mr. A. Stilwell, of Dwaar's Kill, N. Y., supplies a mechanical arrangement which, he considers, will prevent the difficulty.

The device is suitably secured to the headstall by a metallic strap, A, on which are formed arms, B and C, at right angles. With the latter connects a bent lever, D, the inner end of which, terminating just forward of the larynx of the animal, is provided with a number of sharp spurs. Attached

to this lever are curved bars, E, the inner extremities of which extend to the same point, and have semicircular flanges which, rising above the spurs, prevent the latter from pricking the horse so long as the animal remains quiet. The moment, however, the cribbing action distends the larynx, the latter, expanding, presses upon a cross, F, which, being pivoted to the curved bar, E, and also to the arm, C, pulls on the short arm of the lever, D, thus lifting the points, which punish the horse until he desists. The machine is made of iron or other suitable material, and weighs some six ounces.

Hints for the Care of Horses.

At a recent meeting of the Farmers' Club of the American Institute in this city, Mr. G. W. Johnston read a paper on "The Horse," in which we find a number of valuable hints regarding the management and care of that most useful of our dumb servants. With reference to balking, the speaker said that horses frequently resist because they fail to understand what is required of them; or it may occur from overloading sore shoulders, or being worked until exhausted. The latter is especially the case in young animals. The vice can only be corrected by kindness and gentle treatment, and it is recommended, when the horse attempts it, to jump out of the wagon, and pat and reassure him by a kind word, carefully examine the harness, and then get in again as if expecting him to go. This will generally prove effectual.

Mr. Johnston says that the French are the best authorities on the dieting of horses, and that they hold that, under all circumstances in the giving of food, age and condition should be taken into consideration. Small fodder is better than hay for old horses, as it is more easily masticated and swallowed. When a horse is working hard, his main food should be oats. If he works but little, hay alone will answer. For a saddle or a light carriage horse, half a peck of good oats and thirteen pounds of hay are sufficient. The hay should be wet with salt water—a teaspoonful of salt to a bucket of water. Oats possess more nutritious matter for making flesh than any other kind of food; but a small quantity of mown grass should always be given in the spring to horses not kept in the pasture. A horse should have river water rather than well or spring water, as the latter is cold and hard, while the former is sweet and comparatively warm. One bucket morning and night, or, what is better, a half bucket at four different times a day, is the proper quantity. If a horse refuses food after drinking, he should be allowed to rest, as the refusal is always evidence of exhaustion.

The stable should always be well drained and sufficiently lighted, because the vapors from a damp, putrid floor, and the sudden change from darkness to light, will almost certainly cause blindness. Let proper openings be made, just under the ceiling, to permit the hot foul air to escape, and free ventilation be allowed, at the bottom of the walls, to admit fresh air, for impure and confined air causes broken wind. The fresh air should enter through a number of small holes, rather than through large ones, such as an open window, as there is less danger from drafts, which cause chills and colds. The temperature of a stable should not be over seventy degrees in summer, nor under forty-five degrees in winter. Extremes of heat or cold are equally bad. Use a hot, close, and foul stable if you wish to kill your horse. By such means glanders, inflammation, incurable cough, or disease of the lungs is sure to follow. Another very important matter for consideration of the farmer is

THE MANNER OF SHOEING HORSES.

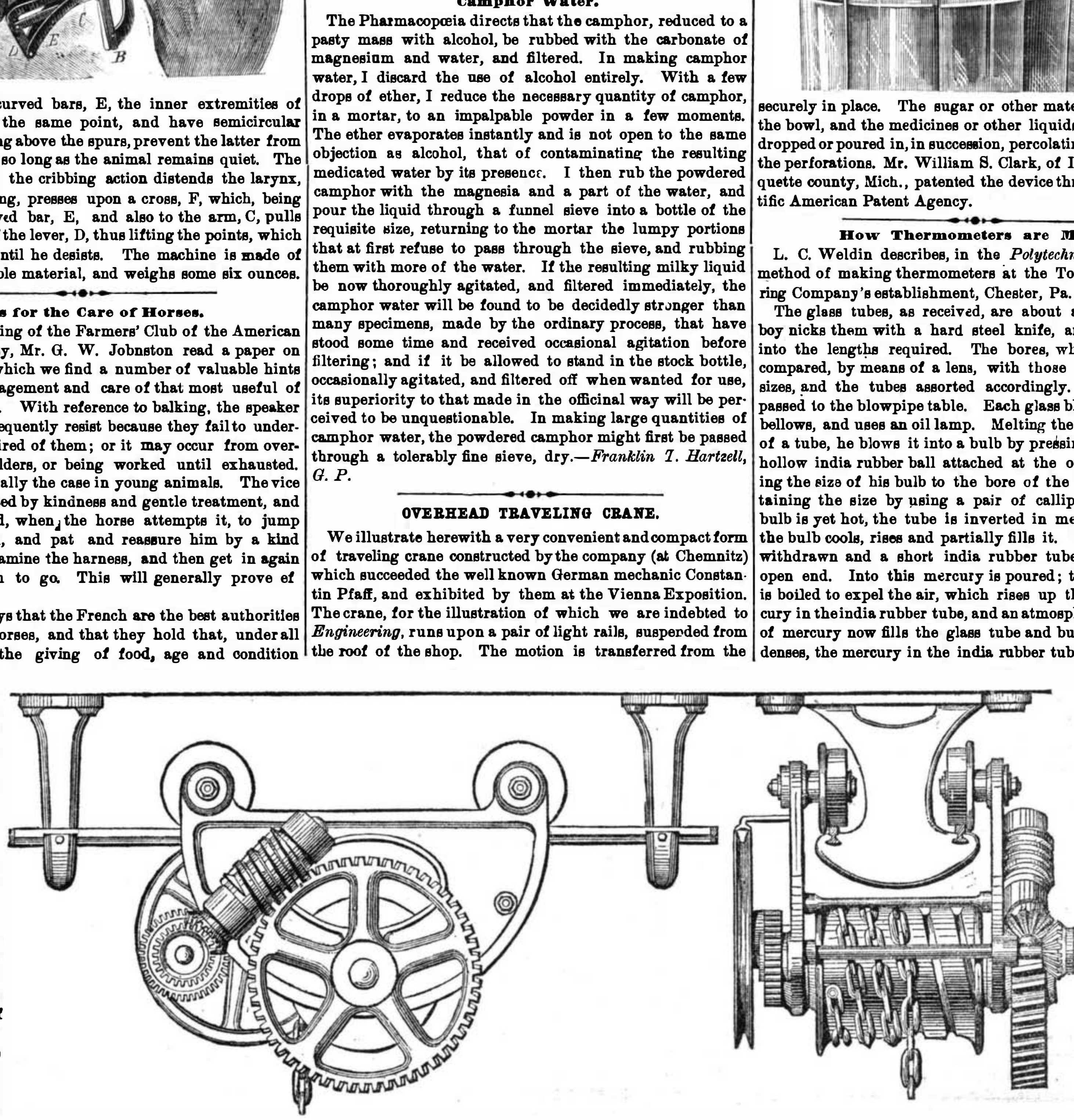
Although this subject has engaged the attention of mankind from the earliest ages, in consequence of its importance, it is wonderful how little we have yet realized in the way of securing a covering for the horse's hoof which shall answer the purposes required. Many scores of different shoes have been designed by persons ready to vouch for their excellence, but they have generally been false in theory. Of the many methods of horse-shoeing, that known as the Goodenough system seems alone to be founded upon correct principles. The frog must be preserved, or eventually the foot will be ruined. The light of reason is beginning, in this respect, to slowly dawn upon the rising generation of blacksmiths. Let us hope, for the horse's sake, that that instrument of torture, the old bar shoe, may soon be brought to mind only with memories of the Inquisition.

Camphor Water.

The Pharmacopœia directs that the camphor, reduced to a pasty mass with alcohol, be rubbed with the carbonate of magnesium and water, and filtered. In making camphor water, I discard the use of alcohol entirely. With a few drops of ether, I reduce the necessary quantity of camphor, in a mortar, to an impalpable powder in a few moments. The ether evaporates instantly and is not open to the same objection as alcohol, that of contaminating the resulting medicated water by its presence. I then rub the powdered camphor with the magnesia and a part of the water, and pour the liquid through a funnel sieve into a bottle of the requisite size, returning to the mortar the lumpy portions that at first refuse to pass through the sieve, and rubbing them with more of the water. If the resulting milky liquid be now thoroughly agitated, and filtered immediately, the camphor water will be found to be decidedly stronger than many specimens, made by the ordinary process, that have stood some time and received occasional agitation before filtering; and if it be allowed to stand in the stock bottle, occasionally agitated, and filtered off when wanted for use, its superiority to that made in the officinal way will be perceived to be unquestionable. In making large quantities of camphor water, the powdered camphor might first be passed through a tolerably fine sieve, dry.—*Franklin T. Hartzell, G. P.*

OVERHEAD TRAVELING CRANE.

We illustrate herewith a very convenient and compact form of traveling crane constructed by the company (at Chemnitz) which succeeded the well known German mechanic Constantin Pfaff, and exhibited by them at the Vienna Exposition. The crane, for the illustration of which we are indebted to *Engineering*, runs upon a pair of light rails, suspended from the roof of the shop. The motion is transferred from the driving pulley through gearing to the bevel wheels, and thence to the worm which actuates the chain drum. The crane is intended to lift and transport weights up to 2½ tuns.



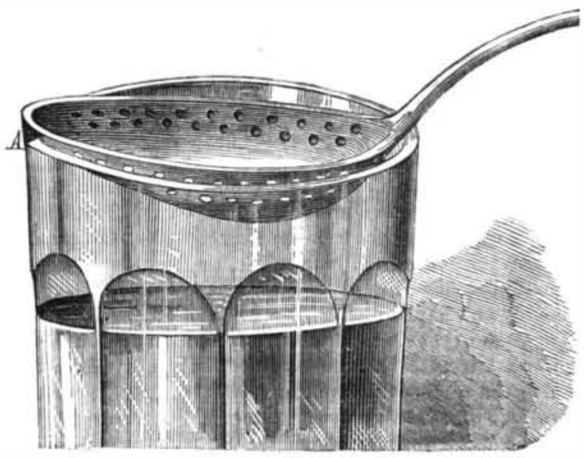
OVERHEAD TRAVELING CRANE.

LINSEED OIL.—Linseed oil is obtained from flaxseed, by grinding the same under heavy stones, set on edge and made to revolve on beds of stone. Attached to the edge stone are scrapers which throw the seed into the circular track of the roller. The ground seed is placed in strong, woven woolen bags, which bags are covered with mats made of horse hair and sole leather, of a proper and sufficient width to protect the bags in the operation of pressing. These mats with their contents are subjected to an immense hydraulic pressure, and the expressed oil flows off into large iron tanks, where it is allowed to settle. What remains in the bags after the pressure is known as oil cake. About 8,000,000 gallons of linseed oil are used annually in the United States.

IMPROVED MIXING SPOON.

If temperance agitations were not so fashionable just at present, we should innocently write that this invention is peculiarly adapted for mixing drinks; but as in some portions of the country, the latter operation, fortunately for the inhabitants, bids fair to become one of the lost arts, we restrict ourselves to the observation that the device is most suitable for combining medicines, compounds less agreeable to take, perhaps, in the beginning, but sometimes—not always—more beneficial in the end.

It is an ordinary good sized spoon, the bowl of which is made with a number of perforations and provided with a projection, A, which catches upon the edge of the vessel in which the mixing is to be done, thus holding the implement



securely in place. The sugar or other material is placed in the bowl, and the medicines or other liquids to be added are dropped or poured in, in succession, percolating down through the perforations. Mr. William S. Clark, of Ishpenning, Marquette county, Mich., patented the device through the Scientific American Patent Agency.

How Thermometers are Made.

L. C. Weldin describes, in the *Polytechnic Bulletin*, the method of making thermometers at the Tower Manufacturing Company's establishment, Chester, Pa.:

The glass tubes, as received, are about a yard long. A boy nicks them with a hard steel knife, and breaks them into the lengths required. The bores, which are flat, are compared, by means of a lens, with those of ten standard sizes, and the tubes assorted accordingly. They are then passed to the blowpipe table. Each glass blower has a foot bellows, and uses an oil lamp. Melting the glass at one end of a tube, he blows it into a bulb by pressing the sides of a hollow india rubber ball attached at the other, proportioning the size of his bulb to the bore of the tube, and ascertaining the size by using a pair of callipers. While the bulb is yet hot, the tube is inverted in mercury, which, as the bulb cools, rises and partially fills it. The tube is then withdrawn and a short india rubber tube attached at its open end. Into this mercury is poured; that in the bulb is boiled to expel the air, which rises up through the mercury in the india rubber tube, and an atmosphere of the vapor of mercury now fills the glass tube and bulb. As this condenses, the mercury in the india rubber tube takes its place, when this tube, with any mercury remaining in it, is removed. The bulb is now warmed, and the open end of the glass tube hermetically sealed.

The bulb and a portion of the tube are immersed in melting ice, and the hight of the mercury marked; they are then transferred to a bath at 62° Fah., and the hight marked; next to a bath at 92° Fah., and the hight again marked. The lengths of the three spaces of thirty degrees each are now carefully measured. If they are exactly equal, the bore of the tube is assumed to be uniform, and the degrees laid off on the brass scale of the thermometer are all made of the same length. If the spaces of thirty degrees each are not found to be exactly equal, then, by means of a highly ingenious dividing engine, the degrees on the scale are made to increase in length as the caliber of the tube diminishes. When the plate has been divided, and the figures and letters punched, it is passed, laterally, between rollers, to remove the burr left by the tools. Were it rolled lengthwise, the accuracy of the dividing would be impaired. The plate is then silvered and lacquered, the glass tube attached, and the whole slidden into the well known japanned tin case. The establishment turns out two hundred dozen thermometers a week.

THE wine crop in the United States is 20,000,000 gallons.