

NEW TESTING MACHINE.

The testing machine shown in the accompanying illustration was built for the Pennsylvania Railroad Company. It is said to be one of the most complete and accurate machines yet produced at the Philadelphia Scale and Testing Machine Works, Riehlé Brothers proprietors. Although not of so great a capacity as a 300,000 lb. chain tester recently built at the same works, it contains a greater number of new and peculiar features, it being arranged for tensile crushing and transverse strain or pressure. The range of the machine is great; the crushing and tensile powers can accommodate specimens from four feet in length down to an inch or two, while the transverse power can be applied to bars from one to five feet in length. On the table, which is five feet in length, there are movable supports, that can be adjusted to any position to suit the specimen. A girder or beam of any length may be tested by bringing to bear against it a beam or girder of superior strength, the pressure on the center being indicated on the weigh beam. The machine is compact, powerful and well designed. The hydraulic cylinder in the center of the bottom frame, is encompassed by the leverage which supports the iron table or platform. The heavy base, which consists of a single casting, contains the steel bearings which support the levers, and in it is formed the reservoir which supplies the hydraulic pumps. The machine is thus self-contained, requiring no special foundation. The pump has three plungers, and consequently throws a steady stream. The stroke of these plungers or pistons can be lengthened or shortened, without stopping the motion, by turning the hand wheel seen at the rear end of the machine. This arrangement readily reduces or increases the flow of oil. When a long and ductile piece of iron is being tested the fast feed may be employed, and when about finishing the test, the stroke may be shortened. The manufacturers state that delicate tests of brittle substances can be made, as the minutest quantity of oil can be thrown into the hydraulic cylinder, and the supply of oil may be cut off or turned on instantaneously, while pumping still continues.

The upright hand lever, seen to the right, governs the rise and fall of the plunger, acting like the reversing lever of a locomotive. In case the operator should, through carelessness or neglect, allow the machine to act continuously, no injury can occur to the machine, as a safety valve opens automatically, and allows the oil to flow back into the reservoir. As it is sometimes desirable for the strain to remain upon the specimen for hours or days the manufacturers have provided a device which clamps the plunger, maintaining the strain at the required point. This is not a necessary portion of the machine, but it is a useful adjunct. The whole capacity of the machine, 50 tons, is marked upon the beam. The gripping tools are made for headed specimens, the well known clamshell pattern being used. Wedge grips are also provided for flat, round, or square specimens, the change from one to the other being readily made. The Pennsylvania Railroad Company, in their binding specifications, required extreme accuracy. It was required that in every case the registries of the loads on the scale beam must be within one two-thousandths of the actual load transmitted to the machine. This variation was allowed in consideration of the tremendous shocks to which the machine was subjected during the contract test from the breaking of the steel specimens, which was calculated to displace the parts; but it remained intact, and registered the pressure correctly.

These tests, together with others, were made at the works of Riehlé Brothers, and occupied the greater part of three days, at the end of which time the machine was approved. This apparatus was designed by T. Olsen, M. E., superintendent of Messrs. Riehlé Brothers' works, and patented February 11, 1879.

The dimensions of this machine are as follows: Height, 10 feet; width, 3 feet; length, 7 feet; weight, 6,800 lbs.

Gloomy Thoughts and Gloomy Weather.

Dull, depressing, dingy days produce dispiriting reflections and gloomy thoughts, and small wonder when we remember that the mind is not only a motive, but a receptive organ and that all the impressions it receives from without reach it through the media of senses which are directly dependent on the conditions of light and atmosphere for their action, and therefore immediately influenced by the surrounding conditions. It is a common sense inference that if the impressions from without reach the mind through imperfectly acting organs of sense, and those impressions are in themselves set in a minor æsthetic key of color, sound, and general qualities, the mind must be what is called "moody." It is not the habit of even sensible people to make sufficient allowance for this rationale of dullness and subjective weakness. Some persons are more dependent on external circumstances and conditions for

their energy—or the stimulus that converts potential into kinetic force—than others; but all feel the influence of the world without, and to this influence the sick and the weak are especially responsive. Hence the varying temperaments of minds changing with the weather, the outlook, and the wind.—*Lancet*.

A NEW HONEY EXTRACTOR.

The advantages afforded by the judicious use of the honey extractor are acknowledged by every bee-keeper. The invention of the movable comb frames by Mr. L. L. Langstroth, and that of the honey extractor by Major V.

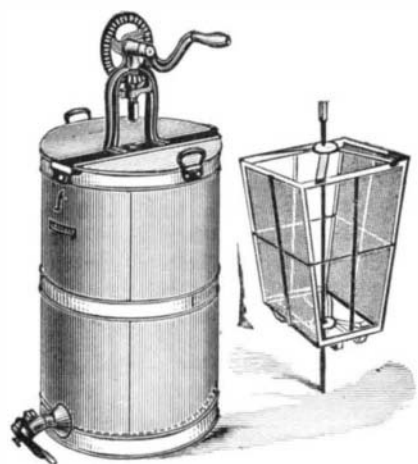


MUTH'S HONEY EXTRACTOR UNCAPPING KNIFE.

Hruschka, are perhaps the greatest among all improvements pertaining to the apiary, having done more to systematize bee culture and multiply the product than all other inventions combined.

The accompanying engravings represent a new honey extractor recently patented by Mr. Charles F. Muth, of 976 and 978 Central avenue, Cincinnati, Ohio.

The construction of this machine will be readily understood by referring to the engravings. The comb basket, which consists of wire cloth fastened to a frame having slanting sides, is supported by a vertical shaft which is journaled in a substantial tin can. On the cover of the can are mounted a bevel wheel and pinion, by which a rapid rotary



motion is imparted to the comb basket. The separation of the honey from its comb is effected by centrifugal action. As the honey tends to separate from the comb by its own gravity the advantage of inclining the sides of the comb basket will be apparent.

The can is intended to hold 60 lbs. or more of honey below the comb basket, and the baskets can be made to suit the size of the comb frames in any particular case. The top of the can is tightly fitted to exclude dust and insects.

It is stated that this machine will extract the honey from the comb very rapidly and effectually. In the smaller figure

is shown a thin-bladed knife for uncapping the honeycomb previous to placing it in the basket of the extractor.

Further information in regard to this useful invention may be obtained from the inventor, whose address is given above.

Treatment of Delirium Tremens.

Dr. G. W. Balfour, in a clinical lecture on the treatment of delirium tremens, printed in the *Lancet*, calls attention to an opinion very widespread, not only among the public but even among the profession, that delirium tremens does not arise from drinking, but from ceasing to drink. This idea he pronounces fallacious in the extreme. We are often told that so long as the patient is kept drinking, so long will he keep from an attack of delirium, while the very reverse is the case. So long as he keeps drinking he usually keeps from a bad attack, because a serious attack, as a rule, is associated with a loathing of drink; but he always keeps coming nearer to it, and the sooner his drinking bout can be arrested the less risk he runs of having an attack at all. So long as the patient is permitted to obtain drink, just so long will his case prove intractable to treatment; while when the treatment is continued, minus the drink, the cure is rapidly obtained. Dr. Balfour concludes that the administration of alcohol in any form during the course of delirium tremens is necessary only in very rare cases, where exhaustion is great, and even in these cases it delays the cure. Under the treatment recommended by him (which, for the benefit of professional readers, we may state is chloral), so rapid in its action, he believes it possible that alcohol may never be required in such cases, and that ordinary tonics may supply its place.

Recent Sunless Weather near London.

The past two months have been remarkably sunless, and although the records of registered sunshine at the Royal Observatory, Greenwich, only extend as far back as February, 1877, it will not be without interest to note a few facts from the records of sunshine since that date. Both in 1877 and 1878 June was the sunniest month, the number of hours of recorded sunshine being respectively 267.1 and 183.4. After June the monthly amount of sunshine declined steadily in each year to 27.0 and 16.3 hours respectively, in December, 1877 and 1878. In January, 1878, the hours of registered sunshine were 35.0, and in February, 32.9; whereas in the January of this year only 14.8 hours of sunshine were measured, the smallest monthly amount on record. During January last on only eight of the thirty-one days was any sunshine recorded; indeed during the fourteen days ending 5th February no sunshine was registered. With reference to the recent departure of frost it may be noted that the change of wind from northeast to southwest on Feb. 5th was accompanied by a marked increase in the amount of ozone in the air. The daily amount of ozone measured in the ten days ending 4th February was but 0.7, whereas in the four days of southwest wind ending on Saturday last the degrees of ozone averaged 9.9.—*Lancet*.

RECENT AMERICAN INVENTIONS.

A novel tool for the use of glaziers and manufacturers of picture frames, has been patented by Mr. Wm. H. G. Savage, of Kingston, Ontario, Canada. It consists of a receptacle having a spring acted follower, and containing the points or brads used in fastening the glass. A metallic plate is connected with the handle of the instrument, and contrived so as to carry a single brad or point out of the receptacle and drive it into the sash or frame as the handle is moved forward.

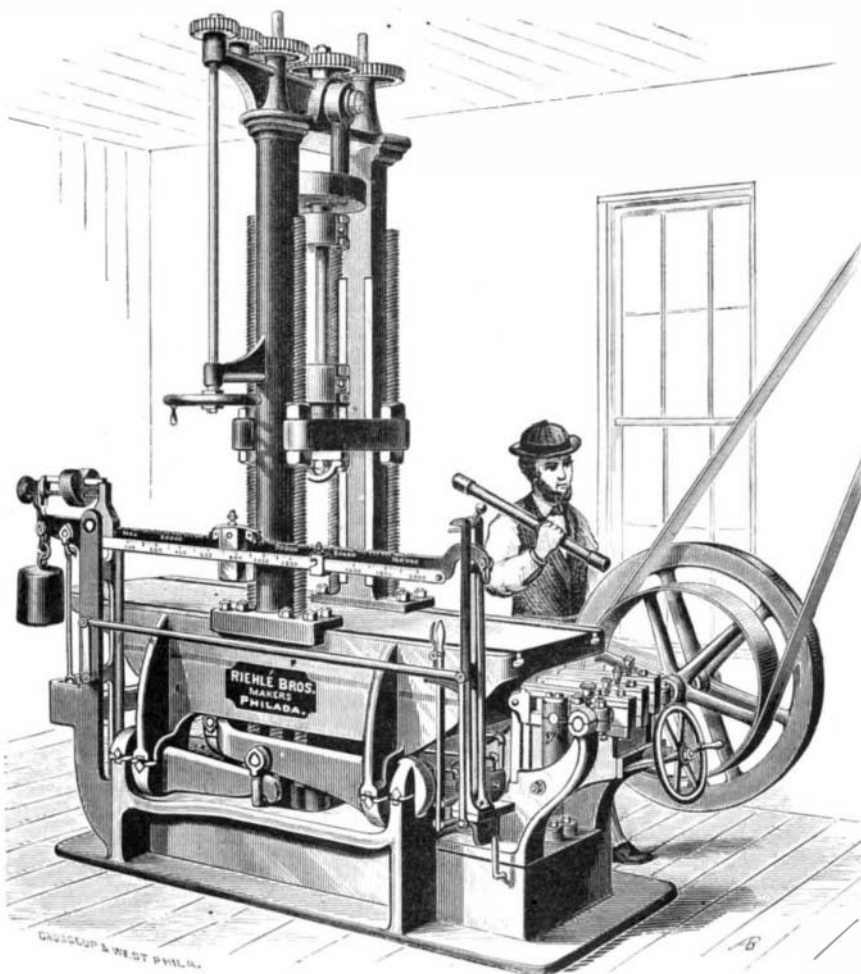
An improved coffee roaster, invented by Rachel Davis, of Omaha, Neb., is constructed so that the body of the cylinder in which the coffee is placed, as well as the handle for moving it, are kept from actual contact with the stove during roasting, thus avoiding the burning of the coffee.

Mr. A. L. High, of Mount Holly, N. J., has invented a picture exhibitor, consisting of several picture carrying wheels journaled on a common axis in a suitable picture frame, and arranged so that they may be turned by a key inserted in the face of the frame, to bring the pictures successively into view.

An improved bill file, in which the papers can be arranged in chronological order without being folded, has been patented by Mr. E. H. Owen, of Los Angeles, Cal. It is designed to facilitate the inspection of the papers and to avoid folding.

Messrs. John Searl and E. G. Bly, of Haverhill, Mass., have invented a shoe, whose vamp, quarters, and flap are made in one piece from a blank of peculiar form. The button hole piece is made separately and sewed on.

An improved animal trap has been patented by Mr. S. J. Bennett, of Harrison Township, Daviess County, Mo. This is an improvement in tilting platform traps for catching rats, mice, mink, and other animals. It combines several novel features, which cannot be described without an engraving.



TESTING MACHINE. DESIGNED BY T. OLSEN.