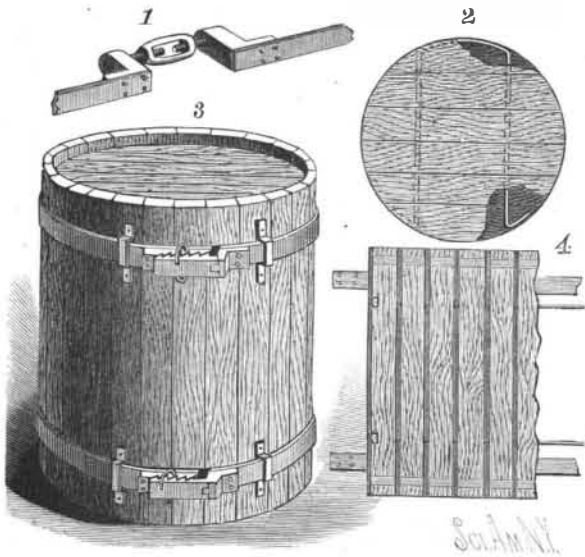


A COLLAPSIBLE SHIPPING CASK.

A convenient "knock-down" shipping cask which can be readily taken apart and put together, and returned in compact folded shape for a new shipment of goods, is illustrated herewith, and has been patented by Mr. John H. Mitchell, of Bloomfield, Iowa. Fig. 1 shows one of the hoops, with adjustable lengthening and shortening device, Fig. 2 is a bottom view of one of the heads partly broken away, Fig. 4 shows the means for connecting the staves, and Fig. 3 is a



MITCHELL'S COLLAPSIBLE SHIPPING CASK.

perspective view of the completed cask. The staves are connected together by wires extending through perforations, the vertical edges of the staves being beveled, so that when the cask is put together the edges of the staves will lie close together. The heads are formed of strips, also preferably connected together by wires extending through perforations in the strips, the wires having their ends bent and lying in grooves in opposite edges of the head. The staves have grooves at their top and bottom to receive the edges of the heads. Metallic hoops or bands are secured to the wired staves, when the latter have been folded about the heads by means of a serrated block riveted to one of the ends of each band, the other end of the band also having a block with serrated plate, their serrations engaging each other and being held by means of a wire passing through a staple and slot. When transported empty, the heads and wired staves are laid flat, and may be compactly folded together for convenient carriage.

Habits of *Thalessa* and *Tremex*.

Prof. Riley recently made some interesting remarks before the Biological Society of Washington on the habits of *Thalessa* and *Tremex*, illustrated by diagrams. The genus *Thalessa* includes our most remarkable Ichneumonid parasites, there being two species quite common in this country, the ovipositors in the female reaching sometimes over 5 inches beyond the tip of the body. They are among the largest parasites of the world, and have always attracted attention on account of this enormously long ovipositor. It has generally been supposed that the female bores into trees and stings some lignivorous larva, and particularly that of *Tremex columba*, and Packard, in his Guide, and Comstock, in the Standard Natural History, as also other authors, actually state this to be the fact. But from observations made in 1872 Prof. Riley proved clearly that the parasitic larvæ live externally on the *Tremex* larva and that the latter was never punctured or stung by the female *Thalessa*. The mode of oviposition is most curious. The female manages with some difficulty to bring the long ovipositor beneath the body so as to get its tip to the surface of the bark, bearing down upon it in such manner that the basal portion of the ovipositor rests within the tip of the abdomen and protrudes into a singular membrane between the sixth and seventh segments dorsally. The ovipositor makes a perfect coil within this membrane. The insect frequently gets stuck in the more solid wood and perishes in her endeavors to bore, and the fact that she does not reach the *Tremex* larva, and that she frequently bores into wood without reference to this last, has given rise to the belief among some entomologists that *Thalessa*

may be lignivorous and not parasitic. Prof. Riley showed that this is impossible, not only by the nature of the mouth parts of the larva, which are incapable of gnawing the wood, but also by his actual observations, having found the parasitic larva of all sizes preying upon *Tremex* larva externally. He finally referred to some observations by Prof. J. A. Lintner, the State Entomologist of New York, who records having witnessed what he took to be *Thalessa lunator* ovipositing on external larvæ of the genus *Datana*. Prof. Riley showed by the structure of the ovipositor that this was impossible, and explained Prof. Lintner's error by assuming that he mistook another parasite, *Heteropelma datana*, and which is known to be parasitic upon larvæ of the genus *Datana*. The paper was a good illustration of the value of exact observations and of their need to dispel erroneous belief and conclusions, even in reference to some of our largest and most striking insects.

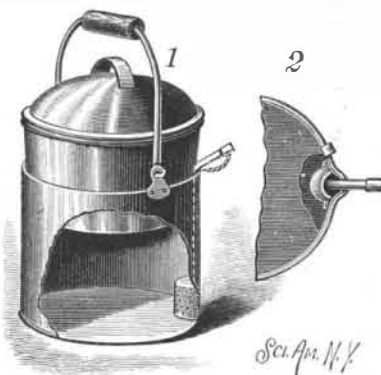
Fresh Boiled Water Necessary for a Good Cup of Tea.

All tea and coffee drinkers can tell by their taste if the water from which the beverage is made has not boiled or has boiled too much. Either of these conditions will spoil the flavor of the costliest tea or the best coffee berry. But not every one knows the reason or how to avoid the result.

The secret is in putting good fresh water into a clean kettle already warm and setting it to boil quickly, then taking it right off to use in tea, coffee, and other drinks before it is spoiled. If the water is allowed to steam and simmer and evaporate till all the good of the water is in the air, and the lime and iron and dregs left in the kettle, you must not expect a well flavored cup of tea or coffee.

AN IMPROVED DINNER PAIL.

The accompanying representation of a liquid receptacle, which also supports a lunch can, with a pipe extending from the outside to the bottom of the receptacle, forms the subject of a patent issued to Mr. John H. Yarnell, of Somerset, Ohio.



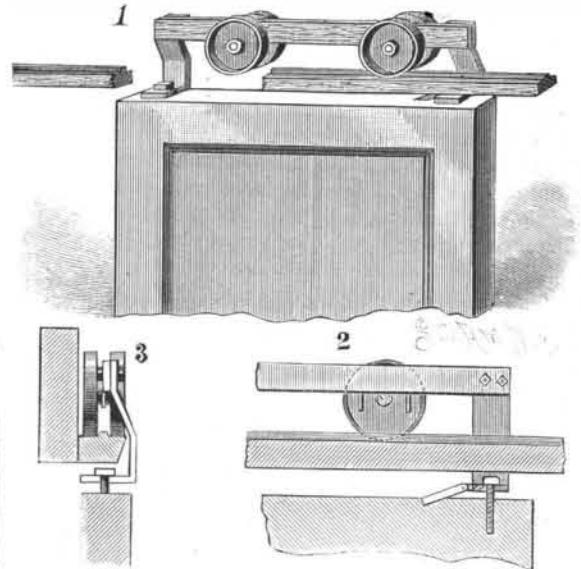
YARNELL'S DINNER PAIL.

The liquid receptacle has lugs near its upper end for supporting the bail, and in the upper end of the receptacle is held a lunch can or box, leaving a space in the bottom for coffee, milk, or other liquid. A pipe, adapted to turn in suitable bearings, extends down through a crease or groove in the side of the receptacle, its lower end extending into a strainer in the bottom of the receptacle, while its upper end has an outwardly bent part, forming a spout, which can be turned and held in place on the side of the lunch can by means of a hook on the latter. Fig. 2 is a plan view of the dinner pail on the line of the spout. The strainer is removable, for convenience in cleaning the parts when desired, and the user is not compelled to remove the lunch can when wishing to take a drink from the receptacle.

HOUSES in which the inmates complain of headache and have a languid feeling are probably wrong in a sanitary sense. The condition of the premises should be examined.

AN IMPROVED DOOR HANGER.

An improvement in connection with sliding doors, providing a simple method of attaching the door and holding it in place, and conveniently adjusting it, is illustrated herewith, and has been patented by Mr. Wilber W. Smith, of No. 180 Second Avenue, Grand Rapids, Mich. Fig. 1 shows a partial side elevation of a door on which this hanger is employed, Fig. 2 a partial longitudinal, and Fig. 3 a partial vertical and transverse section. Screws with rectangular heads



SMITH'S DOOR HANGER.

are secured in the upper edge of the door, these screws holding in position brackets which at their upper end are secured to a horizontal hanger bar. On the under edge of this bar are spaced pins, as shown in Fig. 2, to limit the play of the trucks, designed to roll upon the usual horizontal track below. The truck each consist of two wheels united by a common axle, on which rides the hanger bar. This mechanism may be readily attached to and detached from the door at will, and when the door is slid backward or forward, the trucks are designed to move noiselessly upon their tracks.

THE JEWELL CAVERN.

BY H. C. HOVEY.

The source of the Greenbrier river is at the base of the Cheat and Greenbrier mountains, West Virginia, more than 2,000 feet above tide level. The stream is 100 yards wide where it empties into the New river; that point being 1,325 feet above the level of the sea. Thus it falls about 700 feet in 100 miles, having many beautiful cascades and rapids. The entire valley is covered by a thick deposit of limestone resting on sandstone. It abounds in abrupt cliffs, alternating with deep ravines and gorges, which rise to what are called "levels" of considerable size. In these upper areas there are numerous sink holes through which the surface water finds its way to underground channels. Quite large streams are sometimes thus lost to view. A branch of Greenbrier river is known as Sinking creek before it passes under a large hill, and Muddy creek after it has emerged below. The region is evidently favorable for the formation of caverns—a fact noticed by President Jefferson, who, in his "Notes on Virginia," mentions that there are at least fifty in this one valley. Some of them yielded large quantities of saltpeter during the war of 1812; the product from a single cave being 10,000 pounds in one year. It was in one of these places that Jefferson found his famous megalonyx.

Orders were given to Captain Jewell, in the employ of the Chesapeake and Ohio Railroad, to cut down the

face of a rocky cliff that juts out over the Greenbrier river, at a point five miles east of Alderson and a mile and a half west of Fort Spring. In the discharge of this duty, a few months ago, he found that, after cutting through an extremely compact stratum of black limestone, serving as an exterior shell, the rock that remained was in a singularly broken condition. On clearing the fragments away, there was suddenly exposed to view the hitherto hidden gateway of a cave of large dimensions, which has been appropriately named, for its discoverer, "The Jewell Cavern."

At the request of parties interested in developing the resources of Western Virginia, recently visited the locality, supplied with the means for making a



THE JEWELL CAVERN, FORT SPRING, WEST VIRGINIA, GREENBRIER RIVER.