

NEW INVENTIONS.

Mr. Stephen S. Haight, of West Farms, New York city, has patented improvements in cars for transporting cattle on railroads, the object being to provide separate and quickly arranged stalls for the cattle to carry sufficient stores of food and water for their consumption during a long trip, and to provide most convenient devices for feeding and watering the cattle, and in other ways administering to their comfort and necessities. The invention consists of vertically adjustable gates or partitions of peculiar construction, of food and water receptacles or reservoirs upon and beneath the car roof, of feeding troughs of novel design, of improved devices for supplying food and water to the feeding troughs, and of other novel devices in combination with the above.

Mr. Chester F. Adams, of Toledo, O., has patented an improvement in the class of radiators which are connected with or form attachments of chimneys and flues, and are so constructed that the current of volatile products of combustion may be diverted through them at will for the purpose of bringing such products in contact with a larger conducting and radiating surface, and thereby utilizing the heat more completely.

Mr. Benjamin A. Taber, of North East, Pa., has patented an improvement in that class of bag holders in which the bags are clamped by hinged levers to the bottom of a hopper through which the grain or other substance is fed into the bag. A light frame, having legs, supports a hopper that receives the grain or feed and delivers it into the bag, which is secured to the contracted lower end of the hopper by means of clamping levers. These levers are hinged near the ends of the supporting frame, and have broad inner ends which are beveled correspondingly to angle or inclination of the end of the hopper for the purpose of adapting them to clamp the edge of the bag against the hopper. The clamping is effected when levers are in horizontal position and they are secured in this position by means of ratchet catches.

Mr. George Scott, of Montreal, Canada, has patented an improvement in that class of printers' material known as "quoins," which are used in various ways for the purpose of locking up forms for use in the press. It has more particular relation to that form of quoin in which two wedge-shaped pieces are provided with a straight series of teeth, which are geared together by a pinion key, and are projected over each other to expand the quoin by the rotary action of the key.

COMBINED HORSE POWER AND STABLE FLOOR.

The annexed engraving represents a device which enables a horse to clean his own stable, cut his own feed, run a thrasher, fanning mill, corn sheller, or corn mill, churn, saw, or pump, to wash buggies, clean windows, or wet down lawns, water stock, and put out fires. It is always ready, and can be instantly brought into action. It is adapted for a colt or horse, and may be worked by a bull or a cow. It is always stored, and forms an elastic, well-ventilated stable floor, which permits of the ready escape of liquid manure and is self-cleaning.

The engraving conveys a very perfect idea of the invention, a portion of the stable being broken away to show the construction of the parts below the floor level.

The upright frame of the stable is constructed in the usual way. The floor of the stable has an opening of the full size of the stall. In this opening is placed an endless floor, A, composed of transverse slats and endless belts or chains supported by rollers, B C, which are journaled in a frame supported by a central pivot and capable of being inclined, as shown in the engraving, by means of a screw, D, which extends above the stall partition, and is provided with a wheel by which it may be turned.

A brush or broom is pressed against the under surface of the endless floor by counterweights, E, and serves to clean the slats as the floor is revolved in the operation of cleaning the stall.

The roller, B, carries a pulley which communicates with a pulley on a centrally located shaft from which power is taken for any purpose. When it becomes necessary to clean the stall all that is required is to release the shaft so that it may revolve, and to incline the stall floor, the manure is delivered to the cart below, and the floor is quickly and thoroughly cleaned.

The inventor suggests the use of this power for driving dynamo machines for electric lighting when the employment of engines or other powers would render it either inconvenient or impossible.

This device affords a ready means of exercising horses without removing them from the sta-

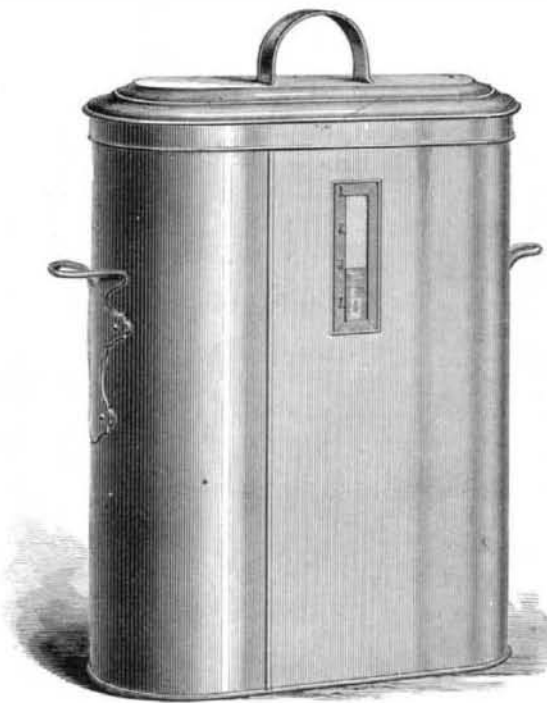
ble, and it admits of using younger horses than can be used in other horse powers. It is stated that it effects a cure of "cocked ankle" and knee spring.

The applications of this useful invention will be apparent without further explanation.

Further particulars may be obtained by addressing Mr. A. Herbert Crawford, patentee, Liverpool, N. Y.

IMPROVED MILK CAN.

The annexed engraving represents an improved milk can lately patented by Messrs. Brown and Rosa, of Wellsville,

**IMPROVED MILK CAN.**

N. Y. The novel feature is the form of the can, and in a peculiar cover, which closes the can when partly down, and seals it practically air-tight when pressed fully down. The can is furnished with a window to show the depth of the cream, and is made in what is considered the best proportions for the purpose for which it is intended. The form, as will be noticed, is oval. It is 16 inches long, 6 inches wide, and 19 inches deep. These cans are set in cabinets in the usual way, and surrounded with cold water taken from a spring, or cooled by means of ice. If the temperature is kept at 45° the cream will rise in 12 hours. If the temperature is higher the time will be longer.

By the use of this can the cream is prevented from drying, and dirt, flies, and bad odors are excluded from the milk, and good hard butter of a fine quality is secured.

The peculiar form of the cover insures a tight joint at the top, no rubber or other packing being used. The inventor

states that these cans prevent the milk contained by them from becoming sour during thunderstorms.

The cans occupy little space and may be readily removed from the cabinets and placed in the sun if desired. They are in use in dairies and in creameries conducted either on the Fairlamb system or on the common plan. They are very simple and less expensive than other cans, and are certainly as durable as any other. The inventors of the can exhibit some very flattering testimonials from persons who have them in use and from experts who have examined them.

Further information in regard to this invention may be obtained by addressing Messrs. Brown & Rosa, as above.

The Sleep Disease.

M. Talmy has presented a note to the French Academy in which he calls attention to the analogy which exists between the "sleep disease" and chicken cholera. The sleep disease (*nelavan*) is a rare affection, which, up to the present time, has been met with only among the negroes of the west coast of Africa. It was first made known by English physicians in 1819, but was not accurately observed till many years afterward (1862 *et seq.*) by the French physicians, Dugaix, Nicolas, Guerin, and very recently by Corre. In this curious affection the person attacked keeps his eyes half closed, as if he were unable to open them wide, and is frequently seized with a profound desire to sleep. Later on he sleeps continuously, and has to be awakened to take nourishment—which he does with pleasure if he is awakened sufficiently. Death approaches very gradually but surely, and the victim passes away at length without suffering any pain. The disease is always fatal, no cure yet being known for it. From the symptoms as given by the above-mentioned physicians, and from the symptoms of chicken cholera as studied by Moritz, Perroncito, Toussaint, and more recently by Pasteur, M. Talmy believes that the two diseases are of a similar character, and both due to a like cause.

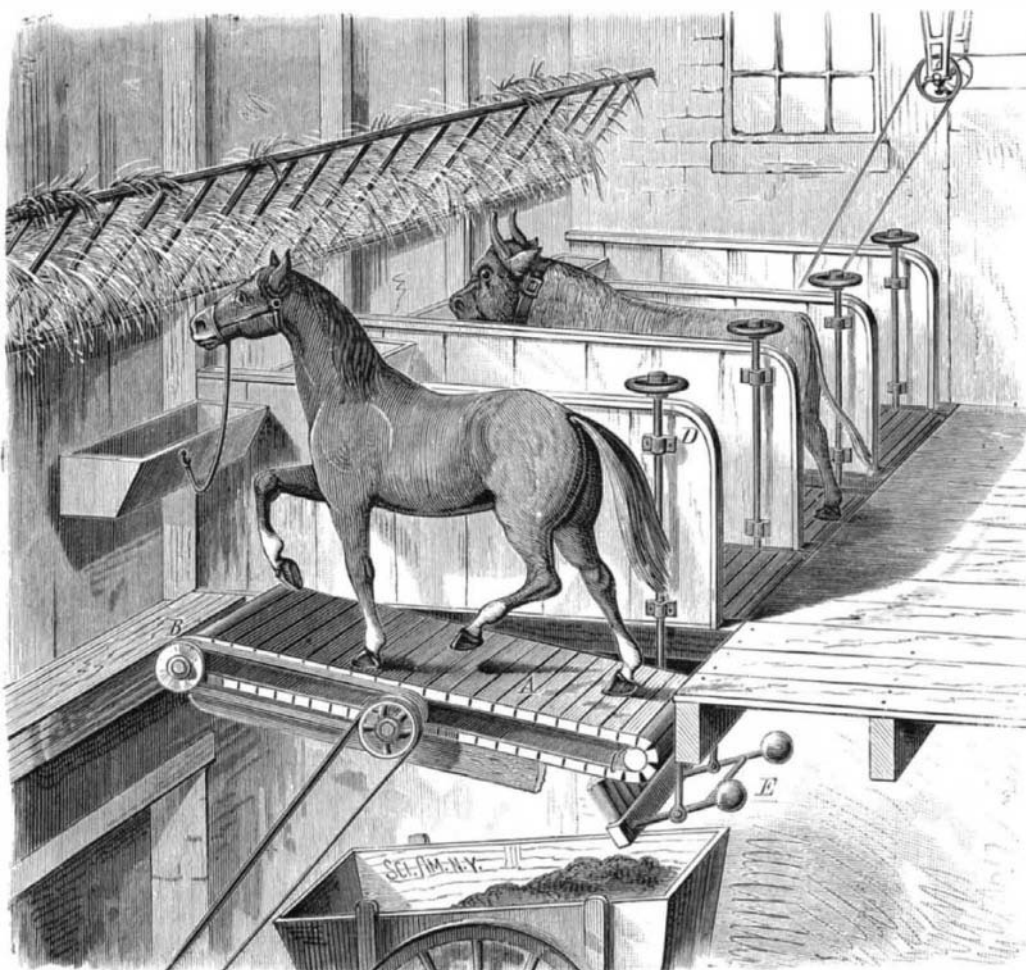
California Petroleum.

Great efforts have been made of late to bring about the fulfillment of Professor Silliman's prediction, that California would ultimately be the largest oil producing country in the world. The oil region consists of a section of coast range mountains covering 200,000 acres, and extending from Santa Cruz to Santa Barbara, a distance of 550 miles. During the past four years the Pacific Coast Oil Company have got control of the most of this territory under long leases, and within the past year they have sunk wells which yield good results, built pumping works and refineries, laid down pipe lines, and established factories for the production of casks and barrels. They have now about a score of wells, and hope soon to be able to supply not only the markets of Nevada, California, and Oregon, which require 3,500,000 gallons yearly, but Japan, China, Java, Australia, and Mexico, which require perhaps ten times as much oil.

American Sheep Sent to Australia.

The recent shipment from this port of picked sheep to be used in Australia for breeding purposes is explained as follows by Mr. William G. Markham, secretary of the National Wool Growers' Association: Some time ago Mr. Markham received from Mr. John L. Curry, one of the best known Australian sheep breeders, two entire fleeces, which he said had been taken from his best sheep, and sent here as a sample of what he could breed. These fleeces, and two fleeces taken from American merinos, were, by direction of the National Wool Growers' Association, taken to Boston and scoured. The scourers were given no information as to where the fleeces had come from, and they were all treated in the same manner. After scouring they were examined and appraised by competent and impartial judges. The American fleeces produced 8½ pounds of cleansed wool, while the Australian, when scoured, weighed less than 4½. The Australian fleeces were valued at \$4.30, while the price set upon the American was \$8.12.

Hearing of this comparison, Mr. Thomas McFarland, a prominent sheep breeder of Melbourne, Australia, who had come here to investigate the qualities of American merinos, visited the principal sheep raisers of New York and Vermont and satisfied himself that the showing was not remarkable. Finding that the American merino sheep combine the two desirable characteristics of large wool-yield and heavy carcasses, he ordered that two rams and two ewes be shipped to Melbourne for him,

**CRAWFORD'S COMBINED HORSE POWER AND STABLE FLOOR.**

These are not the first sheep sent from American to Pacific countries. Mr. Markham sent three car loads some time ago to Japan, where the government is striving to develop the best wool and carcass-producing animals.

THE ELEPHANT SEAL.

This animal differs from the crested seal by being furnished with a trunk-like extension of the nose of adult males, which has led to the adoption of one of its names, the "sea elephant." The number and arrangement of the teeth are the same as in the crested seal. A great difference is to be found in the claws of the fore feet, which in the elephant seal are merely rudimentary. The general appearance conforms with that of seals generally, but in size it is larger than any of its relations. Although the size has often been overstated, there is no doubt that it ranges from 15 to 21 feet in length. The females attain about one half the length of the males, but not over one third in weight of the male, the weight of the latter often exceeding 10,000 pounds. The head is large, broad, and somewhat elongated, the snout being greatly developed and terminating abruptly, as shown in the illustration. The upper lip has from 30 to 40 long dark-brown bristles arranged in six rows. The eye is rather large, round, and very prominent, the upper lid being destitute of lashes, the eyebrows having eight or ten bristle-like hairs. The ear is unusually small for so large an animal, and is situated not far to the rear and below the eye, and is not furnished with a flange, having the appearance of a hole.



THE ELEPHANT SEAL—(*Cystophora elephantina*.)

Pitchblende in Colorado.

Some three years ago an intelligent mineralogist discovered specimens of pitchblende on the waste dumps of Denver City, Colorado, and, recognizing the value of the mineral, gathered a quantity and sent it to Swansea, where it brought five shillings a pound, or at the rate of \$2,500 a ton. To what extent the mineral occurs in that region does not appear, but the incident affords another illustration of the facility with which unscientific miners may throw away minerals of more value than those they are looking for.

Pitchblende, or uraninite, is an oxide of uranium, obtained in Saxony and Bohemia, and used in fine glass making. Glass colored with uranium has the peculiar property of showing green when looked at, although perfectly and purely yellow when looked through.

FIGHT BETWEEN A THRASHER, SWORDFISH, AND A WHALE.

A marine battle between a thrasher, swordfish, and a whale, as witnessed by Lord A. Campbell, of Belleisle, is graphically represented in the annexed engraving. The thrasher—over thirty feet long—attacked the whale from above, springing several yards into the air, descended with fearful violence, inflicting severe slaps with its long flexible tail, while the swordfish attacked the distressed whale from below.

Other authentic accounts are given of similar fights in which the sea around the wounded whale became dyed with blood, and we have an account of a whale taking refuge under a ship to avoid his enemies, much to the consternation of the crew, who hardly dared to step or move while the huge creature maintained its position under the vessel.

Are Sharks Viviparous?

Recently Mr. E. G. Blackford, of Fulton market, described the discovery of a number of small sharks alive in the body of an old one, and raised the question whether sharks may not be vivipa-

rous. Further evidence in the same direction is furnished by Mr. John F. Lovejoy, of this city, in a letter to the *World*. Mr. Lovejoy's shark—about three feet long—was caught last May on Nantucket Shoals. Mr. Lovejoy says:

"It flopped about considerably, and in order to get the hook out of its mouth we were obliged to strike it over the head with a small capstan bar. This must have put the shark to great pain, and at any rate caused spasmodic action of the stomach, for in a few minutes we saw the head of a small shark protruding from the vent of the large one. We pressed the stomach, and first one, then another, came out. Then we cut the large shark open, and to our great astonish-

ment found four more. They were each seven inches long, with an umbilical sac hanging from them about four inches in length and looking very much like a spawn. Seeing that they worked themselves about on the deck, we wondered if they could swim, and dropped them into the water. They immediately commenced to swim, but gradually sank, the sacs seeming to carry them down. This, we think, goes to prove more fully that the shark is viviparous. The sac was not seen on the young taken from Mr. Blackford's shark, which in growing so large had absorbed it and were in a condition to take care of themselves."

A PROMISING VINE.

A French explorer in the valley of the Niger reports the discovery of a vine which promises to be of great economical value. Writing from Koundian (Gangaran), July 25, he says that the fruit of the vine is excellent and abundant; its cultivation is very easy, its roots being tuberose and perennial, while its branches are annual. It can be cultivated as easily as the dahlia. He himself had been eating the large

grapes of the vine for eight days, and found them excellent, and he suggests that its culture ought to be attempted in all vine-growing countries, as a possible remedy against the phylloxera. He has sent home seeds for experiment, both in France and Algeria, and intends to bring home specimens of the plant at all stages of development.

Why the Glow-worms Glow.

The French scientist Jousset de Liellesme claims to have discovered that the glow of the glow-worm is a spontaneous action, and that the little insect has the same object in glowing that some Parisian ladies have in displaying certain rib-

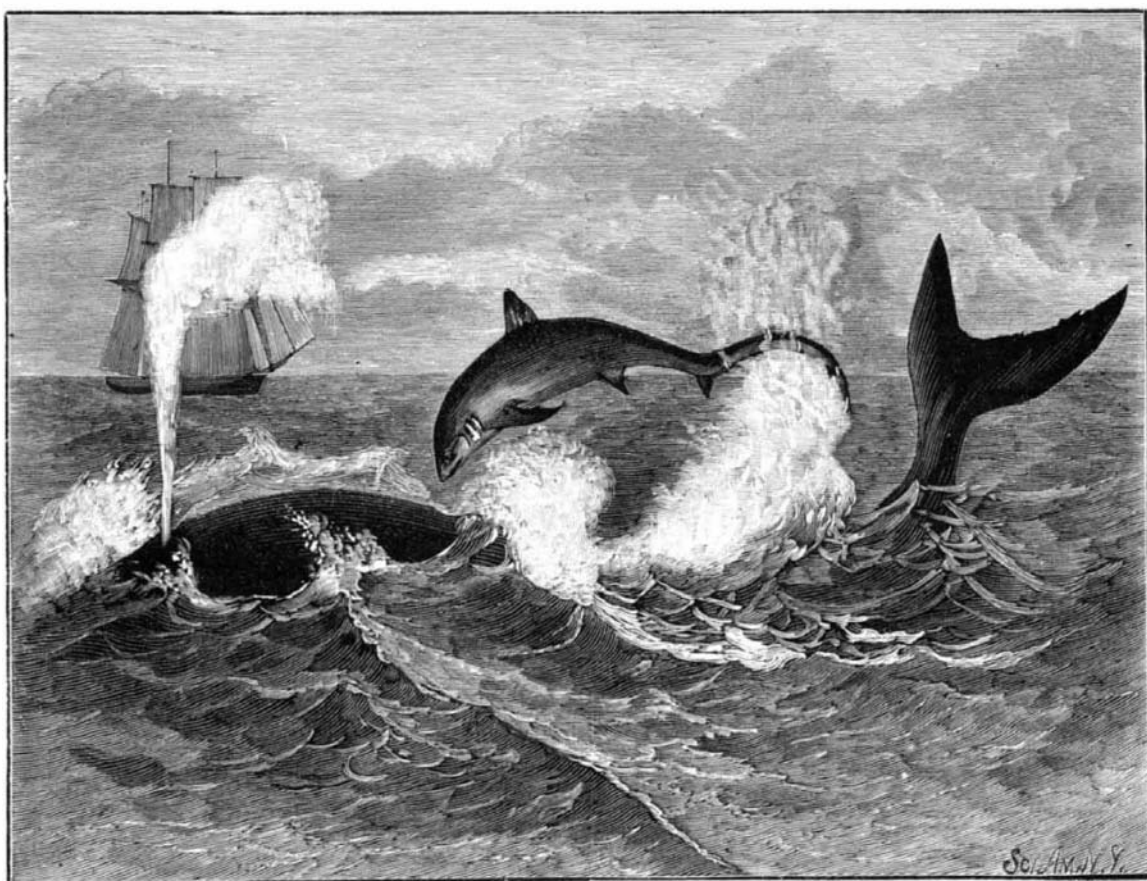
bon streamers, which are very appropriately called "*suites-moi*." It has long been known that the female glow-worm alone understands the art of glowing exceedingly well, though the male and even the larva possess some of this phosphorescence. Some earlier scientists expressed their belief that the glowing apparatus in the female served the purpose of favoring the fructification of the eggs, in so far as the male was attracted from the distance by the phosphorescent light of the female. But it was left to our prosaic age to discover that the light was produced by an essentially spontaneous action.

The above named French naturalist made an incision in the head of the female glow-worm (evidently supposing that in this animal, also, the organ of will is in the head), and the phosphorescent light at once ceased, but it returned—and this is the most important fact of the experiment—every time that the action of the brain

NATURAL HISTORY NOTES.

Phosphorescence of very Young Fishes.—Mr. John A. Ryder, while investigating the development of the bay mackerel and porgy, under the auspices of the U. S. Fish Commission, in Mobjack Bay, Va., found that the latter fish, when three days old, was very decidedly phosphorescent at night, when sudden impulses were imparted to the water in which they were swimming about; acting in this regard like numerous other marine animals, such as medusæ, polyps, infusoria, etc. The presence of an extraordinary development of amœbiform cells over certain portions of the bodies of these little fishes may be the cause of these phenomena. These cells change their form from time to time very considerably, but tend to aggregate in anastomosing clusters over the oil globule in the umbilical vesicle, over the ectoderm of the vesicle itself, and on certain parts of the body and tail. They are very different from pigment corpuscles. Besides these cells a peculiar homogeneously-distributed reddish tinge is acquired by the membranes of the umbilical vesicles of the porgy on the third day, and which is not due to the presence of blood globules. "To whichever of these structural causes the phenomenon of organic phosphorescence is attributable in this special case," says Mr. Ryder, "there seems to me to be little doubt that the prime element in the production of phosphorescence in the animal world in general is some kind of sudden molecular disturbance or impulse, disturbing the equilibrium of the molecules of the living protoplasm involved, so as to produce a kind of motion which makes itself apparent as momentary emissions of light. I have no doubt that the phenomenon in *Lampyrus*, or the fire-fly, is connected with expiration and inspiration, and possibly, in the *Medusa*, with the rhythmical contraction of the umbrella. The application of experimental methods to verify the above suggestions would be very easy."

Relation of Algae to Flower-



WHALE ATTACKED BY ENEMIES IN THE ATLANTIC.