

an improvement in that form of coupling in which the bumper is formed with a hooked head and provided with a hinged jaw that engages with the hooked head of the adjoining car.

An improved tool for cutting plate iron has been patented by Mr. William T. Bennett, of Petersburg, Ill. This invention is more particularly intended for cutting pieces from steam boilers in order to insert patches, but it may be used for various other purposes. It consists in a cutting blade and a handle or lever and its fulcrum, and the combination and arrangement thereof with relation to each other, so that by operating the handle the blade will cut or saw the metal.

NEW MACHINE FOR WASHING BOTTLES.

The engraving shows a simple machine for washing bottles, lamp chimneys, tumblers, and other similar vessels. It consists of a shaft revolved by a small water wheel propelled by a jet of water from the faucet on the water pipe.

The brush, which is inserted in the bottle or other vessel to be cleaned, may be of any suitable size or form; the illustration shows three wire arms springing outwardly and carrying chains which are thrown against the inner surface of the vessel by centrifugal force.

These chains loosen any adhering matter and agitate the soap and water so that the bottle is rapidly and thoroughly cleansed.

This invention was recently patented by Mr. M. Cody, of Boston, Mass.

Bleaching Gutta Percha.

Dissolve the gutta percha in twenty times its weight of boiling benzole, add to the solution plaster of very good quality, and agitate the mixture from time to time. By reposing for two days the plaster is deposited and carries down with it all the impurities of the gutta percha insoluble in benzole. The clear liquid decanted is introduced by small portions at a time into twice its volume of alcohol of 90 per cent, agitating continually. During this operation the gutta percha is precipitated in the state of a pasty mass, perfectly white. The desiccation of the gutta percha thus purified requires several weeks' exposure to the air, but may be accelerated by trituration in a mortar, which liberate moistures which it tends to retain.—*Journal de Pharmacy.*

IMPROVEMENT IN FEEDING AND WATERING LIVE STOCK ON CARS.

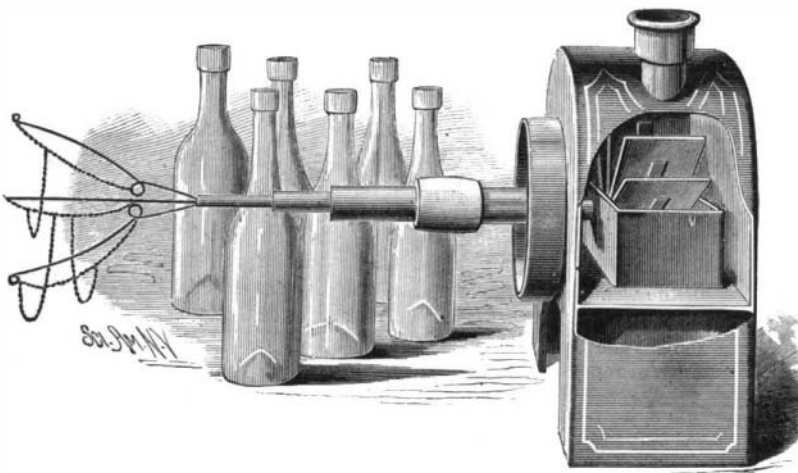
The cruel and barbarous treatment to which animals in transit from the West to Eastern markets are frequently subjected is an old and long-standing abuse. It has been clearly stated and denounced for years as shameful, inhuman, and uneconomical, but up to the present time there has been no substantial improvement in the means and methods provided over those of twenty years ago, when the business was begun.

So important has this question become that the American Humane Association has offered a premium of \$5,000 for the best device for, and most practicable improvement in, cattle cars.

From the best information at hand the estimated loss on cattle in transit equals 6 per cent, and about 9 per cent on sheep and swine, the greater portion of which loss is chargeable to improper treatment *en route*. The saving of one half of this percentage would amount to an enormous profit to

the cattle interest, and would mean as well better and cheaper meat both in this country and in Europe. Of the cattle that live, many, by reason of starvation and cruelties inflicted while in transit, and after, lose nearly a hundred pounds weight from the sweetest and best part of the meat, and come out of the cars full of fever, or with bruises, sores, and ulcers, and these, together with smaller animals, to which the loss and suffering are proportionately great, are all sold in our market for food.

If there were no other side to this question than that which pertains to the "profit and loss account" of the business ledger, we might be content to leave the subject here, letting those whose economical interests are involved discover the remedy. Such, however, is not the case, for it has become well settled through our Boards of Health at the commercial centers, societies of social science, and veterinary experts, that a large portion of the meats offered for sale in our markets is diseased and unfit for consump-



MACHINE FOR WASHING BOTTLES.

tion, which condition is very largely attributable to the improper and unnatural treatment of live stock during the time of shipment from the West to the East. We can, therefore, only hope for healthy meats for consumption, as a general rule, when live stock are cared for in transit as they should be.

From these facts it appears that cruelty to animals in transportation avenges itself upon the consumer, and that we shall never be secure against disease from eating poisonous meats until animals are properly fed and watered and thus brought in good health to the shambles. This can readily be done without materially adding to the expense of transportation, and with increased profit to all concerned, by adopting the cheap, effectual, and practical method shown in the engraving, which are devices recently perfected by Mr. A. D. Tingley, of this city, and are now owned by the Union Live Stock Feeding Company, of 27 Union Square, and are indorsed by the "Farmers' Club" and Mr. Henry Bergh, of this city. The Feeding Company are negotiating with the trunk railroad lines of this country for the early erection and operation of these feeding stations.

There is, therefore, an urgent need for the introduction of some plan by which the needless suffering of these dumb creatures in transit may be lessened. It has been fully demonstrated by actual tests that, by feeding and watering live stock regularly every twelve hours between St. Louis or Chicago and New York, 50 pounds and upward in shrink-

age was saved to each head of cattle, and the condition of the meat materially improved. The following is a moderate estimate of saving to the shipper with eight feeding and watering stations between St. Louis and New York:

Allowing 16 cattle to each car, and a saving in shrinkage of 50 lb. per head, or 800 lb. per car, worth 8 cents per lb., we have a total saving to the shipper on each car load.....	\$64.00
Deduct cost of feeding and watering at 20 cents per head at each station.....	\$25.60
Net saving to the shipper on each car load.....	\$38.40

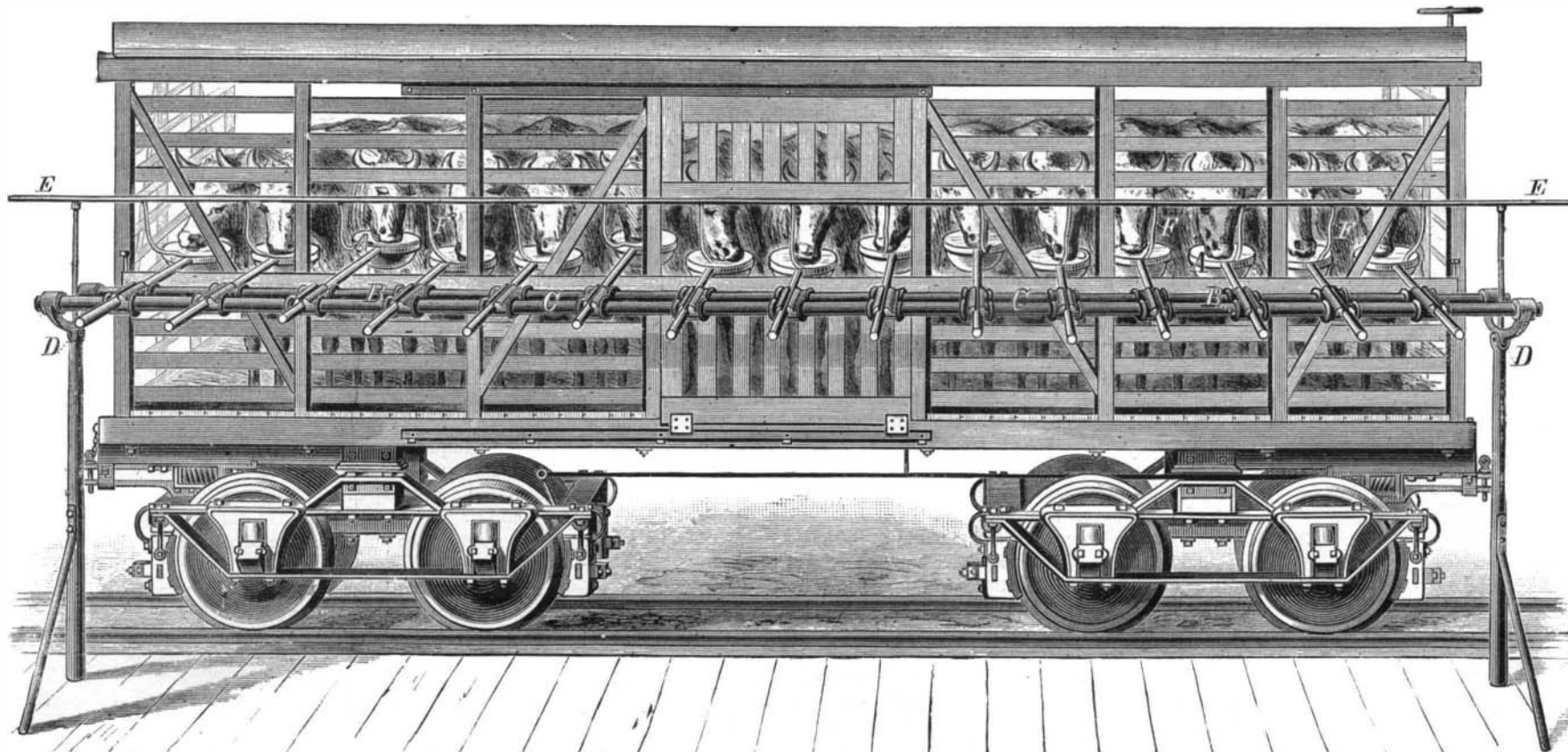
By official reports there were received and shipped at the two cities of St. Louis and Chicago alone, during the year 1879, 14,024,172 head of live stock, and the adoption and use of these devices would save millions of dollars annually to this industry, and at the small charge of five cents per head for the devices which effect this large saving, would bring the Union Live Stock Company an annual net income of over \$700,000, besides the great beneficial results to beef consumers. It is a simple device for feeding and watering, entirely separate from the cars, and is erected about twelve hours' run apart, at suitable stopping places along the track on both sides of the car. Its construction and use will appear from the following description, reference being had to letters in the engraving.

A represents a series of feed boxes, with handles which slide back and forth in socket, B, and allow the feed boxes to be pushed in and out of the car as desired. The sockets or supports, B, of the feed boxes (through which the handles slide) slide sideways on the rods, C, giving a lateral movement to the feed boxes to avoid posts and braces when the boxes are pushed into the car. D is a joint or hinge in the upright posts, which gives a slight rocking motion to the horizontal part of the framework, allowing the feed boxes to be slightly raised or lowered. E is the main water pipe, and F represents small leaders from the main water pipe, to each separate feed box. It is designed to build a row of these on both sides of the track, and thus get at the heads of the stock, wherever they are. The only alteration required to be made in the stock cars now in use is to loosen one board on each side of the car, head high, and support it on hinges and hooks, so that it may, by lowering, provide an opening for the feed boxes.

This arrangement not only provides in a simple and inexpensive manner for the comfort of the stock, but permits of their transportation with greater dispatch, since it avoids the labor and delay of unloading.

Unfit for Human Food.

At the regular session of the Health Board yesterday, Dr. Ewing, executive officer of the Night Medical Service, reported that during the month of October thirty-eight persons had been treated by twenty-five physicians. Assistant Sanitary Superintendent Dr. Janes informs the Commissioners that on the 11th inst. he visited two slaughterhouses on First avenue and seized several quarters of beef which was unfit to eat. In closing his communication Dr. Janes stated that he understood that the cattle were weak and sickly before being killed, and that the butchers were in the habit of selling the meat to Bologna sausage makers for two or three cents a pound. A committee of the leading cattle slaughterers in this city asked the Board to appoint a veterinary surgeon as an inspector of cattle and slaughter houses.—*New York Daily Herald, Nov. 17.*



LIVE STOCK FEEDING AND WATERING APPARATUS FOR RAILWAY CARS.