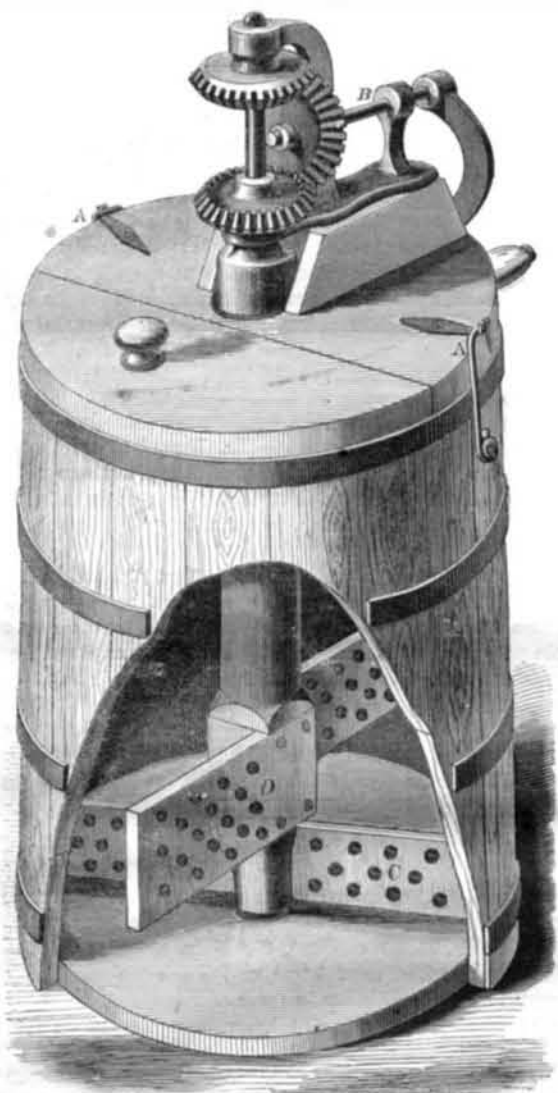


FERRIER'S DOUBLE ACTION CHURN.

The object of churning is to break up the vesicles of the milk which contain the fatty particles, and the more rapidly this is done, under the proper temperature, the quicker will the operation be completed. That is evidently the object of this improvement in churns. The top which supports the gears and their standard is secured by hook latches, A, when the machine is in operation. There are two upright shafts, one revolving within the other, and each carrying on its upper end a bevel gear. Another bevel gear is attached to the horizontal shaft, B, which has a crank, and all these gears mesh together. It will be seen that as rotation is given to the crank shaft one set of dashers, C, will rotate in one direction, while another set, D, will revolve in an opposite direction. Of course the agitation thus produced must greatly aid in breaking up the vesicles and shorten the process of butter making.

The machine appears to be well adapted and designed for its work and where used is stated to give excellent satisfaction.



Churning is at best a labor when performed by human muscles and any device which will shorten that labor must be a blessing. This churn was patented through the Scientific American Patent Agency, Aug. 7, 1866, by Wesley S. Ferrier of Indiana, Pa., whom address for business particulars.

STREET RAILROADS.

One of our English mechanical exchanges says: "The plan for the re-introduction of street railways into London is being pushed forward as rapidly and energetically as possible. In connection with this matter a number of reports on the working of tramways have been obtained from officials in the various cities and towns of America, into which the system has been introduced. The general testimony thus obtained is to the effect that the tramways do not interfere with the ordinary street traffic, though laid down in some of the most crowded thoroughfares. Opposition is said to have died out in almost every district, and, to crown all, the expenses incurred by the local authorities in repairing the roadways have been very materially lessened by the fact that the companies who use the tramways take the responsibility upon themselves of keeping such part of the road as their vehicles run upon in good condition."

Part of this paragraph is entirely correct, but when it is stated that street railroads "do not interfere with the ordinary street traffic," there may be some objection on the part of those who are compelled to drive heavily-loaded teams through these "crowded thoroughfares," or to guide their family carriages among and over these net-works of iron. Opposition has not "died out in almost every district," but, on the contrary, it is deep seated, intense, and breaks out occasionally, as now, in projects for other methods of city communication. As to the repairs of the roadway in those portions occupied with the tramways, the city had better by far assume the expense than to leave it to the corporations who swindle the people and defy the authorities.

If our opinion could affect the introduction of street railroads in London, or in any city, it would be an adverse one, judging from the results daily under our own eyes. Apart from the nuisance these iron rails are to the vehicular traveling portion of our people, these companies, controlling the avenues of transit in a city, compel those who pay them for

transportation to submit to all manner of inconveniences and to the insolence of employes so that street railroad traveling has become almost a terror. As to keeping the streets in repair, any one who makes a mile trip on our street cars can judge for himself. It is a succession of bumps and jolts from one end of the route to another.

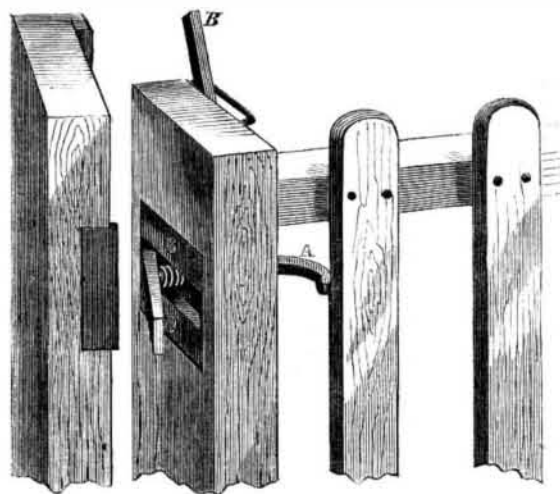
Street railroads, properly managed, may be a convenience and a public accommodation, but to fairly decide that question one should be enabled to test it under different circumstances than exist in any town or city in this country with which we are acquainted. So far as we have tested them they are simply nuisances and instruments of extortion.

Fighting Snow with Fire.

The difficulty of the Londoners with their "white elephant," the snow storm, when contrasted with our aggravated experience of the same thing in the northern American cities, illustrates the marvelous efficacy there is in being used to a thing. With four inches of snow on the London streets, business and locomotion appear to have been in great part suspended. The General Omnibus Company and nearly all the cabmen kept their horses and vehicles within doors, and the population were driven to the underground railway. To foot it seemed almost out of the question. In St. Pancras, Mr. Scott, the chief surveyor, went to work on his own responsibility and set 300 men and 120 carts at work removing the snow. He cleared 9 1/2 miles of streets, at an expense of five or six thousand dollars, and made a vast mound of snow on the intended site of the Cobden monument. But the sun came out, after two or three days, for a novelty in London, and by that special interposition of Providence the snow was all carried away into the sewers. This gave London an idea. Why might not the snow be got into the sewers without a special interposition of Providence? "The snow might have lasted a week," exclaims one able journal, yet "every winter we resign ourselves helplessly and hopelessly to this recurring visitation! Why should there not be horse-drawn snow plows to scoop it up rapidly into heaps near the sewer holes? And why should it not be rapidly melted there by steam or heating apparatus of some kind?" Then follow scientific calculations showing that 10,000 tons of coal might be sufficient and might be profitably used, to melt away a single fall of snow from the streets of London. It is impossible to conceive the plight of a Londoner, much more a London population, under a snow like that in Boston the other day, where some of the narrow streets and courts were literally filled up; or worse still, under the conditions of New York, where the snow not only will fall, but will soften under southern breezes into a semi-liquid slush a foot deep, remaining so for many days together. Undoubtedly they would collapse and lie down in despair. Yet we get on about as usual, with no special astonishment, only rather universally and uncommonly wet and dirty.

THE BUCKEYE GATE LATCH.

A simple, neat, reliable gate latch, which when once attached will not get out of order and refuse to operate, is a blessing on a farm where the security of cattle and the preservation of crops depend so largely on a closed gate. The fastener herewith represented is simplicity itself in construction and operation; while a child can open it, the most sagacious horse or cow used to lifting latches and letting down bars might try in vain.



The catch is a bell crank lever, the long arm projecting through the gate, as at A, and the shorter end engaging with rebuff plate on the post. A spiral spring let into the plate in which the latch plays keeps the catch out to be acted upon by the rebuff, which throws it into the recess as the gate is closed, and by a projection forms a stop for it. The simple lever, B, can be attached if desired for convenience of opening the gate from horseback. It merely engages with the arm, A, of the lever and pulls the latch in. If a post sags there is elasticity sufficient in the spiral spring to keep the latch engaged with the rebuff plate. The simplicity and apparently durability of the device, will recommend it to all.

It was patented, Dec. 12, 1865, by Webb Broomhall, and is now owned and manufactured by James Harsha & Co., Circleville, Ohio, whom address for further particulars.

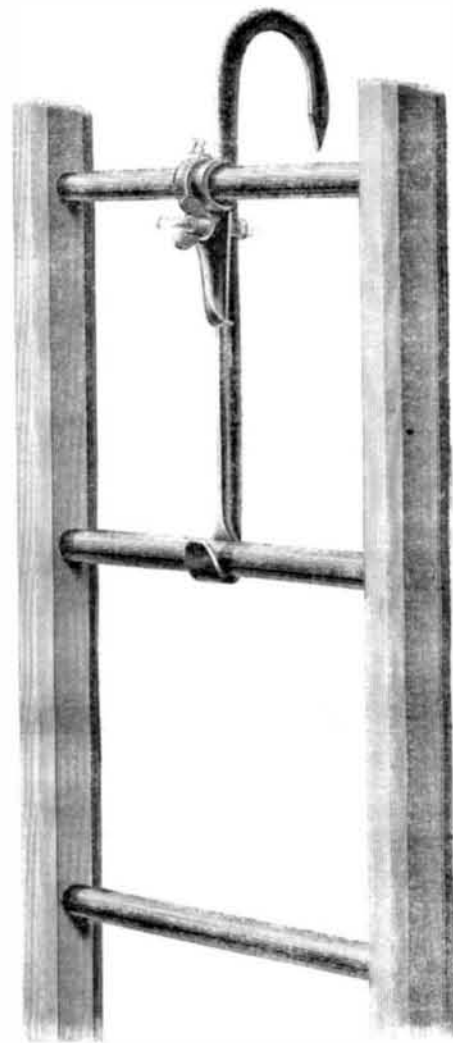
Perishable Submarine Cables.

It is announced in *Engineering* that the cable laid in 1861 between Malta and Alexandria by the British Government as a part of the telegraph line to India, is going rapidly to destruction. Scarcely is one section repaired before another breaks down, and it is anticipated that the increasing weak-

ness of the cable must soon make it impossible to lift it for repairs at all; like the Cagliari and Bonah cable of similar structure, laid in 1857, which in two years became so much disintegrated by corrosion that the attempt to lift it is compared to picking up a length of macaroni from the bottom of the sea. The protection of both cables is about the same, consisting only of eighteen No. 11 ungalvanized wires, which in the latter case were scarcely kept from rusting through in places before the cable was laid. *Engineering* attributes the responsibility of laying cables like these to the manufacturers, who had the chief vote in the mode of construction, and who perhaps objected to the roughness and occasional bits of spelter to be found on galvanized wire. The Atlantic cables are both of substantially the same construction, and although the successful recovery and working of the first cable, after a year of submersion, encourages a better hope of its durability, the result of the five years' experience of the Malta cable, it must be confessed, is somewhat ominous.

FARRAR'S ADJUSTABLE LADDER HOOK.

Ladders with hooks attached are indisputable conveniences



to house painters, carpenters, masons, lightning-rod men, and all others who are compelled to work on the outside of buildings. But those ladders which have the hooks permanently attached to their sides are inconvenient when required for ordinary use. The device shown in the engraving is a hook which can be attached or detached at will to any ladder, large or small, and one may be used or two if desired. It is simply an iron hook as seen, the small end grasping a rung and the upper portion secured to the rung by the loop, A, the shank of which passes through the movable hook, B, and is secured by the thumb-nut, C.

The advantages of this contrivance are obvious. In cases of fire, hook ladders are not always attainable, while common ladders are usually at hand. With one of these hooks the ordinary ladder may be used for traversing the slant of a roof. Painters and those who repair roofs can carry a hook instead of lugging about heavy ladders, as any ladder can then be made a hook ladder. It was Patented April 9, 1861, by Willard T. Farrar. For further information address Parmenter & Co., Waltham, Mass.

THE monthly supply of milk from the country into London is 508,000 gallons. The western counties contribute 140,000 gallons; the eastern counties transmit 125,000 gallons; the northern counties, 95,000; Hants and Berks, 55,000 gallons; and from other districts the daily supply is augmented by 18,500 gallons. Kent and Sussex are the lowest contributing counties; and at the present daily averages, 6,604,000 gallons of milk are annually brought from the country to London; and this is increased by metropolitan dairymen to an extent of another third, and is daily retailed out to about 260,000 customers. The aggregate supply of milk consigned to London is the produce of 20,000 cows in the country. The wholesale prices charged are at an average of 2s. per barn gallon (eight quarts); and the value of milk brought to London for consumption represents a sum of £660,400 per annum.

THE LAKE COUNTRY of England, referred to by our London correspondent, in connection with the project for an aqueduct for the metropolis (like our Croton) contains what is said to be the wettest spot in rainy England. The rain fall in the valley of Borrodale has attained to upwards of 180 inches in a year.