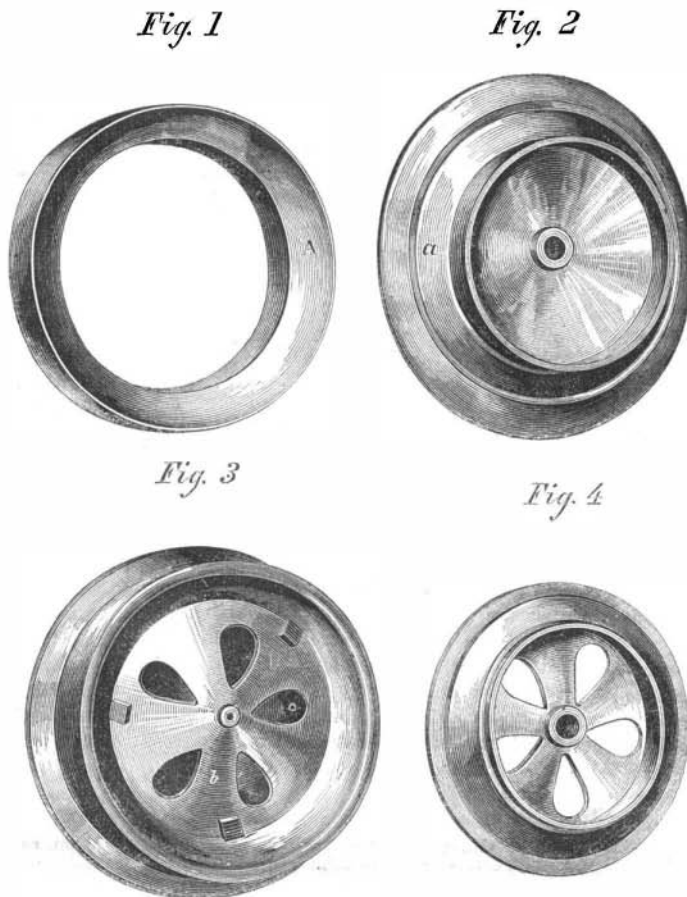


Improved Car Wheel.

In rounding curves on railroads, great strain and friction is brought to bear upon the side of the track by the flanges of the car wheels; the effect produced is an increased consumption of the tractive force and an injurious abrasion of the wheels themselves. Not unfrequently, by the breaking of a flange at such points, entire trains are thrown from the track and precipitated down embankments or otherwise seriously damaged. These difficulties and dangers are measurably overcome by the car wheel here illustrated. It consists in applying a revolving band or tread to the wheel, which, by slipping on the main part of the same, eases the lateral strain. Fig. 1 shows the loose tread, A, made of wrought iron or any other metal most desirable for the purpose. Fig. 2 is a representation of the wheel with the seat, a, for the loose tread turned on it. Fig. 3 is a view of the wheel with the tread in place, and Fig. 4 is the remainder of the wheel, which is inserted in Fig. 3, and there secured immovably by bolts. The apertures, b, allow oiling of the ring when necessary; the threestops or projections meet the ring on Fig. 3, and keep it at any distance to which it may be regulated so as to permit more or less lateral play. This invention is clearly explained by the engraving, and its operations will be apparent to all intelligent persons. As the train sweeps around the curve the loose tread recedes or advances, laterally, on the seat, and greatly facilitates the movement; it also prevents that side play and oscillation so disagreeable in the cars, which is caused by the unequal action of the flanges of the wheel against the side of the track. This wheel is the invention of Mr. Geo. C. Beecher, of Livonia Station, N. Y., and was patented Jan. 6, 1863. Further information can be had by addressing the inventor as above.

and packed in boxes from three to four feet square; dry salted sufficiently to preserve them on their passage. They are brought by railroad from Ohio, Illinois, &c., and shipped principally by the Canadian line of steamers from Portland. During the month of January last, these steamers took 12,950

heated in their bearings in consequence of having been neglected, and when they are in this condition the metals in contact cut and tear each other and destroy that fine surface which is so necessary to easy running machinery. Herewith we illustrate a new and ingenious oil cup constructed on well-known philosophical laws; it effects a steady and constant lubrication of any machinery to which it may be applied. It consists of the glass cylinder, A, confined between two metal caps, B, by the small rods, a. The tin tube, C, inserted in the bottom, has two small holes, b b, in it through which the oil is fed down to the axle below. The principle upon which this cup works is that of atmospheric pressure and a limited capillary attraction. The rotation of the shaft below is said to cause a partial vacuum in the tube, by which, and the capillary attraction of the small holes, the fluid finds its way down to the shaft. The advantages of such a self-feeding oil cup are very great, and the transparent walls also afford a means of readily observing the quantity of the lubricator supplied to the work. All the oil which passes through the tube must of necessity fall upon the shaft, and as the cup operates only when the machinery is in motion, it will be seen that it is what it purports to be—an automatic oil-feeder. A great saving attends the use of such appliances to machinery, as the expense of a special attendant in the factory is obviated, and by keeping all the wearing surfaces of machinery thoroughly oiled less motive power is required and less expense is entailed on the proprietor for repairs. These cups can be regulated for the amount of work they are required to do, that is, to feed fast or slow; and, we think, they will give satisfaction to those requiring such instruments. This



BEECHER'S PATENT CAR WHEEL.

cup was patented on October 21, 1862, by A. C. Dewies, of the kingdom of Prussia, and further information may be had by addressing C. Tollner and Hammacher 209 Bowery, New York.

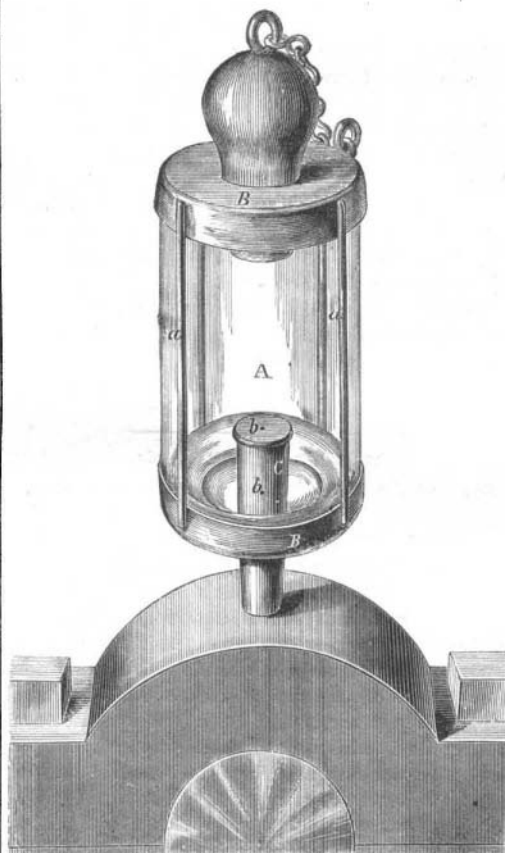
packages of meat, containing 7,371,360 pounds, valued at \$870,496 60. Lard, hams, &c., are also exported largely by the same line.

DEWIES' PATENT OIL CUP.

The importance of oiling machinery properly can-

A Difficult Task well executed.

We recently saw a large gun at the Novelty Iron Works, in process of construction, which was 13 feet 2 inches in length. The gun is cast solid, and is of a peculiar shape and design. The bore, when finished and rifled, one turn in 36 inches, is to be only $2\frac{5}{16}$ ths inches; the initial bore, two inches in diameter, was put through the gun from end to end safely, in a common lathe, by Mr. William Wade, a skillful mechanic employed at the Works. The operation was one attended with much anxiety, as it was uncertain whether the texture of the iron was homogeneous throughout. Apprehensions were expressed that fissures or blowholes might exist, which would divert the point of the drill from its center, but, fortunately, the tool went through and came out at the right place. This is a very successful performance, and we doubt if the counterpart of it can be produced. The wrought-iron turret-shaft of the *Monitor*, 6 feet in length, had a $1\frac{1}{2}$ -inch hole bored through it, at the same Works, but the other achievement is something more difficult than even the last one quoted.



AMUSING.—A Boston contemporary understands that Martin Farquhar Tupper, the author of "Proverbial Philosophy," wrote a short time ago to a prominent senator of the United States, entreating him to exert his influence with the President to prevent the latter from using the guillotine which he had imported for decapitating the rebels! It expects soon to hear from English sources that the Vicksburgh "cut off" is a machine for cutting off rebel heads, and would not be surprised if a remonstrance against its barbarity was sent to the Commander-in-Chief.

Ahlstrom's Patent Expansion Screw Fastening.

A very excellent and convenient little invention is advertised in another column of the SCIENTIFIC AMERICAN, to which we desire to call the attention of our readers. It is an expansion screw or bolt surrounded by a slotted case having a crotch at the bottom, into which a wedge-shaped nut is drawn by turning the screw itself, this expands the case very forcibly against the sides of any hole in which it may be placed. It is particularly useful in the army and navy or other situations where the conveniences for drilling and tapping holes are not at hand; also for foundrymen, carpenters and marble and stone cutters; in fact, the patent expanding screw fastening will be found available in every mechanical occupation. Our readers who use such things should give it a trial.

Sizes of Steam Cylinders.

Much confusion and popular ignorance exists upon this point, and errors of statement are continually made respecting this or that steamship or boat. There are two vessels building in this city, called the *Dictator*—one is the famous iron-clad battery of that name, the other is a North river steamer; the iron-clad will have two cylinders each 100 inches in diameter by 4 feet stroke of piston; the latter vessel will have one cylinder 83 inches in diameter and 16 feet stroke of piston. The *Dunderberg* will have engines whose cylinders are of similar dimensions to the *Dictator's*. The largest steam cylinder in any steamboat or steam vessel in this country, known to us, is 105 inches; the cylinder of the *Metropolis*—a Sound boat—is of this size, as are also those furnished to the *Golden City* (now building), and the *Constitution* belonging to the Pacific Mail Company; these vessels are the only ones that have cylinders 105 inches in diameter.

The exportations of fresh meats from the Western States to Europe, by the way of Portland, Maine, (says the *Portland Press*) has grown to be an extensive business. The meats are cut up, partially dried

not be over-estimated, as by doing so a large amount of time and money is saved which would be expended in repairs. Very frequently lines of shafting get

THE quantity of anthracite coal sent to market in 1862, was 7,955,206 tons, being an increase of 314,948 tons over the quantity sent in 1861.