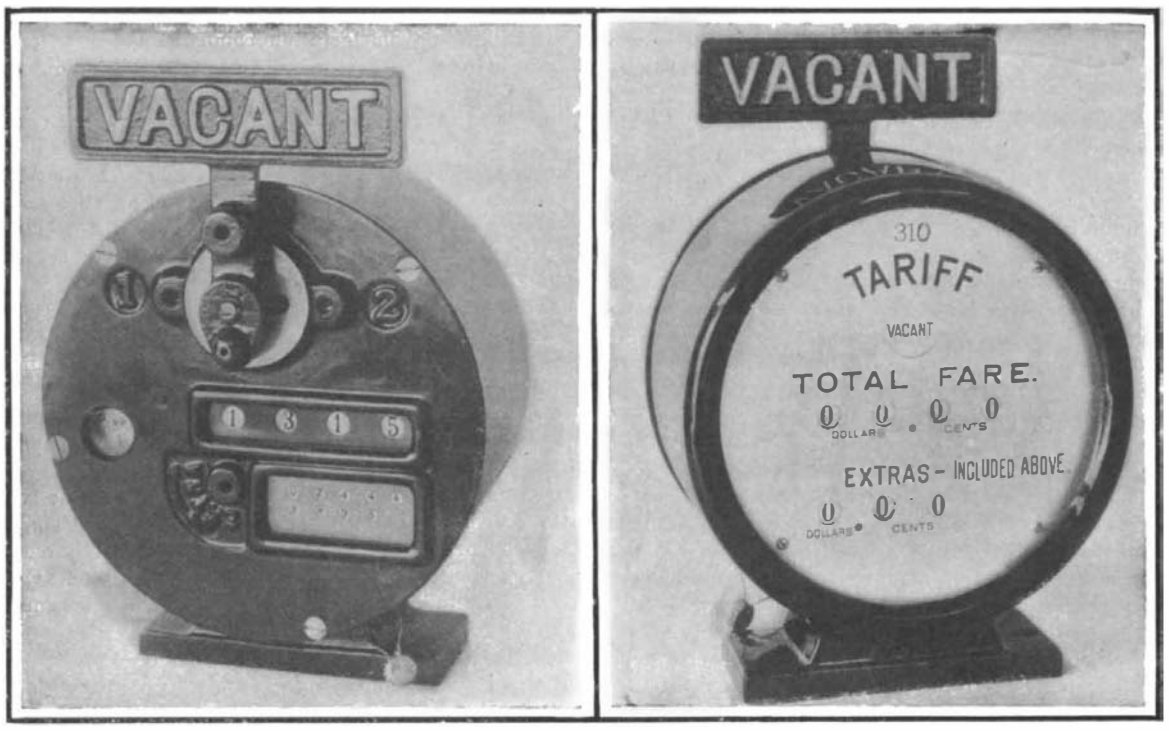
TAXIMETER FRAUDS.

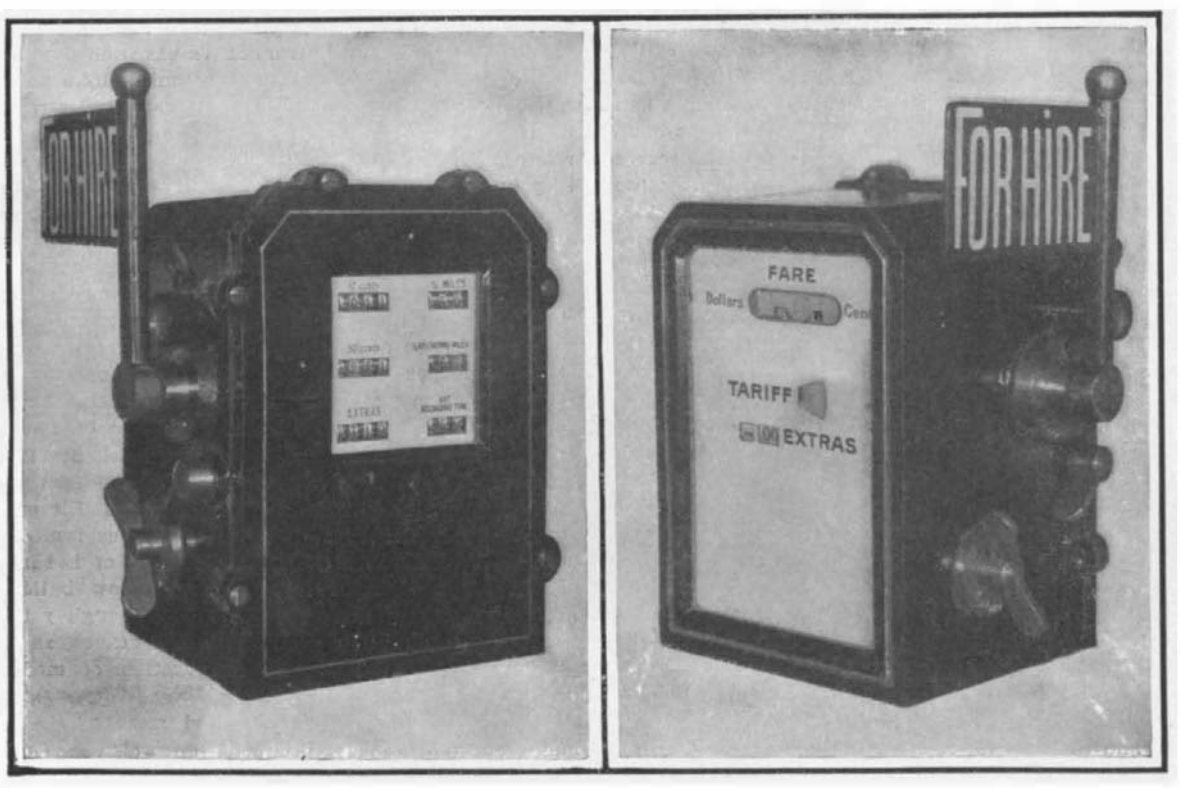
BY ROGER B. WHITMAN.

When the taximeter was first introduced into New York city, the cab-using portion of the population was more or less familiar with its workings through hearsay, and expected at once to receive the benefits that were being derived from its use in the European cities. This was not immediately the case, and the complaints of overcharges were more frequent than with the older system of payment. Even after an experience of two years, it is common to hear complaints made of the service; and it is very generally supposed that it is because the chauffeurs have methods by which they can handle the instrument in such a way as to defraud the public. This was undoubtedly possible when the instruments were first brought out, for it was only to be expected that unscrupulous chauffeurs should attempt to tamper with the mechanism, in order to cause it to register incorrectly. The different methods by which this was done have been learned by the taximeter manufacturers, and step by step they have provided safeguards for the mechanism, until at the present day it is difficult, if not impossible, to derange it without detection.

The claims of overcharge now being made are usually due to the ignorance of the riding public in the reading of the instrument, or in their neglecting to take simple precautions. The mechanism of the taximeter is complicated, but the results as far as the passenger is concerned are simple. In most cases, he will find on the face of the instrument the charge for the mileage covered, or for the time which the vehicle has been kept waiting. A separate dial charges the cost of carrying luggage, and the figures on this are to be added to those on the principal dial to obtain the total charge. In at least one instrument it is necessary to make only a single reading, all charges appearing as one set of figures.



Rear and front views of the Jones taximeter.



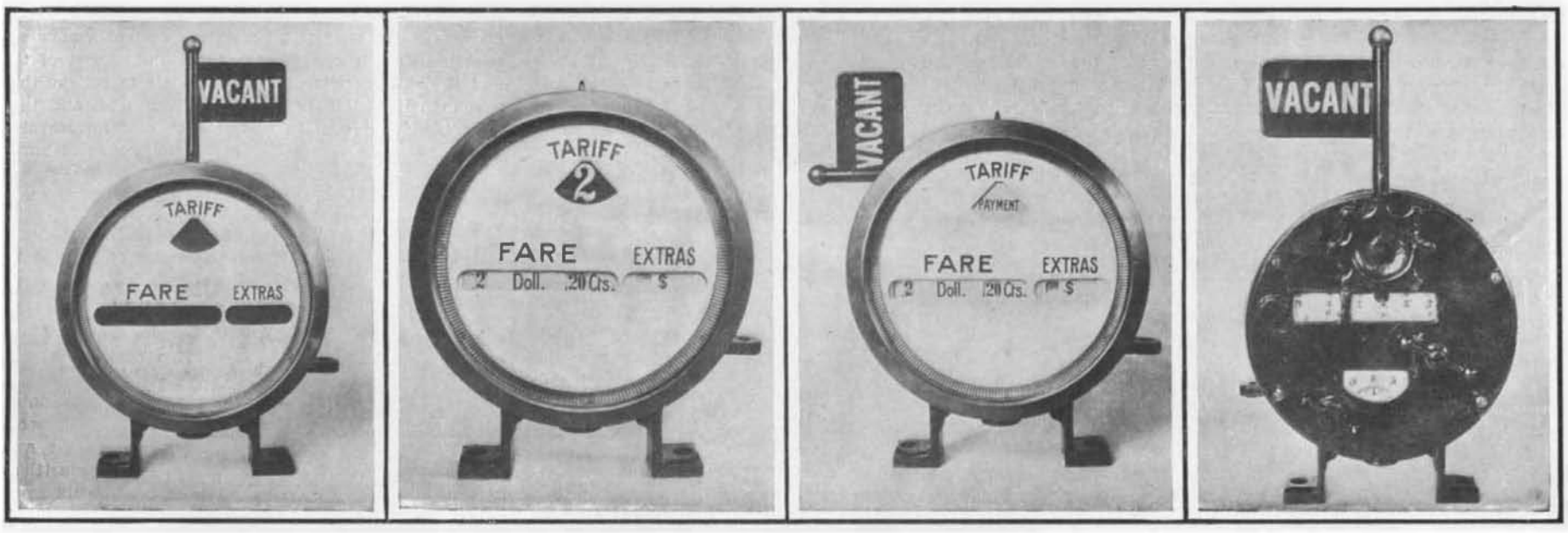
Rear and front views of the Lavalette taximeter.

In order to safeguard himself from an overcharge by an unscrupulous chauffeur, the passenger must have some knowledge of the instrument itself. The mechanism consists of two wheels or disks, one of which is operated by the movement of the car, and the other by a clockwork. One or the other of these two wheels actuates the counting mechanism, that shows the charge against the passenger on the face of the dial. If the car is moving, the wheel driven by the forward movement of the car operates the figures, the wheel actuated by the clock then moving more slowly, and having no effect on the counter. If the passenger halts the vehicle, it is the wheel driven by the clock that operates the counters.

The various makes of taximeters in use in New York city differ somewhat in their action, and familiarity in the reading and possible misuse of one may not protect the passenger who encounters another. In the Kosmos taximeter, the flag has four positions. When in the upright position, the mechanism is thrown out of engagement, and this is used when the car is waiting for a passenger. The flag is attached to a shaft, and when the vehicle is hired, the flag is moved in such a manner as to give the shaft a portion of a revolution, which will cause the figures 1 or 2 to appear on the dial under the word "tariff." With some cab companies, tariff 1 is used for one or two passengers, tariff 2 being employed when three, four, or five passengers are carried. Other cab companies have but one tariff, regardless of the number of passengers.

When hiring a taximeter cab, the passenger should first inquire from the driver under which tariff the taximeter will be operating; and as there are different rates in use in New York city, he should have it made clear whether he will be charged 30 cents or 50 cents for the first half mile. On accepting the passenger, the chauffeur turns the flag, and the charge figures for the first half mile appear on the face of the dial, the passenger being entitled to transportation for that distance. On the completion of the half mile, the charge for the next quarter or half mile is added, the passenger thus being charged in advance. If the passenger requires the cab to wait, the charge for this form of service is added by the clockwork, new figures appearing at the end of every six or ten minutes, according to the tariff.

At the end of a trip, the flag should be thrown to a third position, known as "payment." This will disconnect the recording mechanism from the clock and vehicle wheel, the figures indicating the charge remaining exposed on the dial. This position is provided in order that the passenger may make change without having the total fare altered by the action of the clock. When the fare is paid and the transaction completed, the flag is moved to the "vacant" position,



The flag of the Kosmos taximeter has four positions. There are two tariffs. The passenger should note the position of the flag and the tariff number.

and the figures on the dial then become obscured.

The flag on the Franco-American taximeter has but two positions, the "vacant" and the "recording." The number of the tariff to be used is operated by a key or lever, as is also the "non-recording" device.

The flag shaft on the Jones instrument makes a revolution for each transaction, passing successively through the positions of "tariff 1," "non-recording," and "tariff 2" to the "vacant." In these two instruments the "non-recording" position is used while the passenger is paying the fare, and also when the car is held up by a traffic block, a mechanical derangement, or other cause for which the passenger should not legitimately be charged.

The unscrupulous chauffeur can profit by the ignorance or inattention of the passenger. One passenger having been discharged, and another immediately hailing the cab, the chauffeur may not throw the flag from the "non-recording" position to the "vacant" and then to the "tariff" position, as he should do, but on some makes of taximeters can move it from "non-recording" backward to "tariff." If the passenger does not notice this, at the end of his trip he will be required to pay the sum shown on the taximeter, which includes the charge of the previous passenger as well as his own. This is particularly likely to be the case where the first passenger had only a short ride, the chauffeur being reasonably certain that the second passenger will not quibble over a matter of 30 to 60 cents. Again, with any make, at the end of the trip the chauffeur may move the flag from the "tariff" position through the "non-recording" to the "vacant" without stopping. The figures will thus disappear from the face of the instrument before the passenger has had time to read them, so he must take the chauffeur's word as to the charge.

If the passenger will assure himself of the correct position of the flag, and will insist on reading the taximeter before making his payment, he will protect himself against an overcharge.

The taximeter is actuated by means of a flexible cable driven by a star wheel that is operated by the rotation of one of the vehicle wheels. The connection between the star wheel and the vehicle wheel may be by spur gears, or by a spiral of 1⅛ turns attached to the spokes of the driving wheel. With taximeters operating by a spiral, it is possible in some cases to bend this in such a manner that it engages two teeth of the star wheel where it should engage but one, the taximeter then registering double.

An accurate operation of the taximeter cannot be secured when it is driven by one of the driving wheels of the car. The driving wheels are controlled by the engine, and if running on a slippery pavement, they may revolve more than once where the front wheels, which are actuated by the forward movement of the car, would make but one revolution. If a chauffeur runs his car with the taximeter-controlling wheel on a slippery portion of the pavement while the other driving wheel has good traction, a far greater mileage will be recorded by the instrument than should justly be the case. It is quite usual to see taxicabs operating on slippery days with a non-skid device on the wheel that is not operating the taximeter. The action of the differential, due to the difference in the traction of the two driving wheels, will then cause the taximeter to register a far greater mileage than is legitimate. The profit due to this comes only in part to the chauffeur, for he usually gets a percentage of the day's takings. It is the company operating the taxicabs that will receive the greatest benefit from an arrangement of this sort. In certain European cities it is against the law to operate taximeters by one of the driving wheels of the vehicle, and this is undoubtedly a great protection to the traveling public.

The taximeter itself is protected by lead seals, which must be broken in order that access may be gained to any part of the mechanism. Because of this, the chauffeur does not attempt to dismount any of the mechanism; and even should he disconnect the star wheel, so that the instrument will not register at all, the discrepancy between the normal mileage of his car and the reduced mileage shown by the instrument as a result of his act, would lead to his prompt detection.

It is possible for the chauffeur to defraud the company by carrying passengers while the taximeter flag is in the "vacant" position, collecting from them what they are willing to pay, and explaining the extra mileage shown by the instrument as having been required in returning from some distant point after the discharge of a passenger. He can also run with the flag in the "non-recording" or "payment" position, when no corresponding charge will appear on the instrument; but as the taximeter clockwork records for the benefit of the company the minutes during which the flag is in this position, an excess would lead to his detection.

In London, all taximeters are under the strict supervision of the police department; and not only must each make be passed upon, but every instrument must be tested and stamped before it can be put into service. In Paris, as well as in London, the police have the authority to stop any taxicab for the purpose of inspecting the instrument and receiving assurance of its correct operation, and can also arrest any chauffeur whose flag is not in the proper position for the number of passengers he is carrying.

The large transportation companies operating taxicabs in New York city are sincere in their endeavors to protect their patrons from overcharges, and inquire into all complaints. They state that a considerable proportion of the complaints made to them are due to the carelessness of the passenger in not noticing the position of the flag or in neglecting to read the instrument, and in unfamiliarity with its operation. In going to a point exactly one mile distant from the starting point, for example, the direct run would record a charge of 50 cents; but if traffic conditions required the driver to go even slightly out of the way, the instrument would record 60 cents. The taximeter measures the distance in units of one-quarter of a mile, and makes its charge in advance. A recognition of this fact would remove one cause of discussion between passenger and chauffeur.

When a knowledge of the taximeter is instinctive in the traveling public, the chauffeur will not attempt to mislead or to overcharge; but until then it is only to be expected that unscrupulous drivers will endeavor to add to their incomes by imposing on the ignorance or credulity of their passengers.

CLAY PRODUCTS OF THE UNITED STATES.

Bricks have been found as old as 4000 B. C., so that their use is coeval with the birth of history. In the Middle Ages, with the rise of Gothic architecture the use of brick greatly declined. It was not until the reign of Queen Elizabeth that the manufacture again flourished in England, and it was not until 1625 that bricks began to be made of uniform size.

In this country brick were probably first burned in the colony of Virginia as early as 1612, says Charles E. Hall in an interesting Bulletin of the Bureau of the Census. In New England brick and tile making seems to have been followed as an independent calling about the year 1647. Though the product was of good quality the industry did not thrive, as money was scarce and timber plentiful, and it was not until after the revolutionary war that home-made bricks came into general use. With increasing prosperity the desire and necessity for more substantial structures arose. The growth of the industry from year to year naturally provided a stimulus for the invention of machinery that would produce better brick, new shapes, and different sizes; and in turn these new inventions contributed to further the growth of the industry. The earliest record of a patent issued by the United States Patent Office for brickmaking is dated May 15, 1800, and was for a brick and tile machine invented by G. Hadfield, residence not recorded. Other patents issued about that time were one to E. Miller, July 17, 1802, for a brick machine; one to N. and P. W. Miller, January 5, 1804, for a brick and tile machine; one to W. Hodgson, Richmond, Va., May 22, 1805, for an apparatus for making tile, brick, etc.; and one to J. F. Gould, Newburyport, Mass., March 1, 1806, for a brick machine. The first patent granted for a brick-kiln was issued to H. Read, of Kensington, Pa., June 17, 1840; and the first for a brick dryer, to S. M. Parish, of Baldwinsville, N. Y., August 16, 1864.

Although much the same process for making brick and tile has been used for ages, the evolution of the industry through the use of improved methods and machinery has brought about a great change in the character of the product. It is a long stride from the use of hand pick and shovel to steam shovel in uncovering the clay bed; from the old-fashioned ring pit to the machine that grinds, tempers, and molds; from the use of a hand mold to the machine with a capacity of 100,000 bricks per day; from the open air system, or a weather beaten drying shed, to the utilization of artificial heat for drying; from the temporary to the patented continuous kilns; and from the poorly made product of years ago to the firm, straight-edged, and otherwise well finished product of to-day. Of the $119,956,959 capital invested in this industry, the machinery, tools, and implements represent $33,295,324, or 27.8 per cent, an increase in five years of $16,045,486, or 93 per cent.

Common Brick.—Enormous quantities of common brick are manufactured in all sections of the country. Surface clays are generally used, and more attention is given to the volume than to the color and general qualities of the product, as the price is low and the brick used mostly in ordinary wall construction and foundation work.

Sand-lime Brick.—The sand-lime brick industry has passed the experimental stage, and though still in its infancy there is every reason to believe that it will eventually rank among the foremost of the country. The successful manufacture of sand-lime brick in foreign countries appears to antedate that in this country by several years. According to United States Consul-General Mason, at Berlin, the discovery that freshly pressed bricks of sand and lime could be hardened in a few hours by heat and pressure of steam was made in Potsdam, Germany, about 1880. Plants on a large scale were subsequently constructed, and the industry extended throughout Germany and Great Britain. In the United States the industry has grown from one plant, established in Michigan City, Ind., in 1901, to fifty establishments in 1905. In some instances these brick were made in establishments having clay products as their chief output, while in others they were products of plants exclusively confined to the manufacture of sand-lime brick.

Red Front Brick.—In the production of red front brick great care is exercised in the selection of raw materials and in the process of manufacture. The clay must be well tempered; the brick molded free from flaws or sand cracks; the method of drying be more complete than for common brick; and the repressing and subsequent drying, setting in kiln, and burning, skillfully and systematically managed. This additional attention necessarily increases the cost of production. Every State reported the manufacture of red front brick except Florida, Nevada, South Dakota, Vermont, Wyoming, and the Territory of Arizona. The State of Pennsylvania ranks first in value of product, New Jersey second.

Fancy and Ornamental Brick.—Fancy colored and ornamental brick are primarily pressed brick. The different shades of color in the former are produced by the addition of artificial materials or by the manipulation of the kiln fires, while the distinguishing feature of ornamental bricks are the designs in relief or in intaglio upon the surface to be exposed.

Fire Brick.—As the name implies, fire brick are used where intense heat must be withstood, as in cupolas, blast and glass furnaces, coke ovens, locomotive fire boxes, etc. The utility of the appliances just mentioned depends largely, it not altogether, on construction out of materials which will stand intense heat without fusing, cracking, or yielding in any way.

A new fire brick made from ashes has been produced by a Michigan firm. The ashes are united by a powerful binder, molded, and the product conveyed straight to the drying room. It is claimed that the brick are ready for laying five days after manufacture; that they have been tested in fire and water with satisfactory results; and, further, that the product is two-fifths lighter than terra cotta, and yet stands considerable crushing force.

Enameled Brick.—These bricks are ornamental, and in addition to being used for external decoration in the construction of buildings, are extensively used for sanitary purposes, their glazed and vitreous surfaces rendering them waterproof and easy to clean. As the surface of the brick to be enameled must be smooth and free from sand, pressed and fire brick are most often used.

Hollow Building Tile and Blocks, and Fireproof Brick.—On December 9, 1856, a patent was issued to M. and J. H. Buck and F. A. Cushman, of Lebanon, N. H., for a machine for pressing hollow building brick or building tile. This industry, though yet in its infancy, is rapidly growing in importance, as the product is essential to the construction of modern fireproof buildings.

Possibly nothing has contributed more to the demand for burnt clay products, and brought more clearly to the attention of the public their value as a fire retardant, than the recent great fires in Baltimore, Rochester, and San Francisco. Without considering, however, these occasional catastrophes, it is estimated that the United States yearly sustains a fire loss of $250,000,000, a sum almost double the combined value of all clay products manufactured in this country during the same time and nearly three times the total value of all the brick, fireproofing, terra cotta, lumber, hollow building blocks or tile, and roofing, floor, and encaustic tile. With such an enormous annual property loss, and with the thinning out of the forests of the country, it is reasonable to believe that a change in building methods is imminent, and that the new era of construction will be of immeasurable benefit to those engaged in the manufacture of burnt clay building materials.

It is claimed that the annual fire loss in this country during the past five years amounted to about $2.50 per capita, as against only 33 cents per capita in the larger European countries. This unsatisfactory showing for the United States has resulted in a growing demand for a fireproof brick that can be used in the construction of moderate-priced dwellings, and several large plants are now making a specialty of such an article.

Drain Tile.—The manufacture of drain tile also dates back to early ages, and many instances of its general use by the ancients have been found. That it was used, probably in a crude form, by the early settlers of this country can not be doubted, as patents were issued for its improved manufacture in the year 1800.

Pottery.—It is recorded that a white ware was produced at a pottery erected in Burlington, N. J., in 1685 by the American agents of Dr. Daniel Coxe, of