

## Inventions New and Interesting

Simple Patent Law ; Patent Office News ; Notes on Trademarks

### A New Tire for Motor Trucks

By C. Francis Jenkins

IN motor truck construction, the tire problem has yet to be solved. Motor, transmission and steering gear have been worked out to a practical basis; but tires do not wear correspondingly. The life of the solid rubber motor truck tire is so short that tires cost more than all the other running expenses added. The tires do not wear out, they simply go to pieces under the pounding of the cobble-stone streets. And the thicker the rubber the greater the loss. For this reason thin tires are frequently recommended for heavy trucks, rubber being employed almost exclusively.

If, therefore, something can be found which will give as good traction as rubber, cost less and wear longer, it will merit serious consideration and extended tests. Wood seems to fulfill these conditions admirably; and so tests of wooden tires were undertaken.

Wood is proving its good qualities in similar service, i. e., in street paving, ferryboat and warehouse flooring, and such other surfaces as are subjected to excessive attack. It has been so in use for a long time, and has proved superior to other materials, especially in its excellent adhesive qualities. Its surface does not become slippery in wet weather.

These qualities, i. e., good traction and long wear, recommend the use of wood as a truck tire; and at first the question seemed simply a matter of selection of the suitable wood. After a long search and much experimentation, a wood was found which seemed to lend itself admirably to this service. And it could be had in sufficient quantity, and, fortunately, is not very suitable for anything else. It is close-grained, yet soft enough to make it practically noiseless, and so tough that it cannot be split with an ax. The grit of the roadway buries itself in the tough, end-grain of the wood and provides most excellent traction, as good as solid rubber in dry weather and a thousand times better on a wet street.

There was one initially insurmountable difficulty, however, the tire would expand when it got wet, and then when it dried out again the blocks would separate and the tire would go to pieces. The contraction and expansion wasn't much, to be sure, but it was enough to ruin the tire. This difficulty was finally overcome by the very simple expedient of imbedding in the tire a powerful spring band, either a heavy spiral spring entirely inclosed in the tire, or sinuous flat spring bands located in a shallow groove in the tread of the tire. The blocks which constitute the tire are doweled together laterally, inclosing the spring band, and then, after being thoroughly dried, the tires are placed in a vacuum chamber and impregnated with a water repellent.

Such a construction makes the tire integral, and capable of being handled, shipped, marketed and used as conveniently as a rubber tire. They should, of course, be made in all standard sizes and in such widths of tread as may be required by the loads to be carried.

Thus, apparently, an entirely satisfactory tire for motor trucks has at last been evolved. A tire made up of blocks of wood, set, like street paving blocks, with the grain end-on to the point of attack, that is, with the grain of the wood radial to the wheel; and having a powerful spring band imbedded in the tire to hold the blocks in place and compensate for longitudinal contraction and expansion. It is easily and quickly secured in place on the wheel; the driver simply unbolts the old rims, throws away the worn-

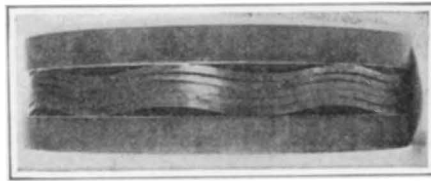
out tire, and replaces it with the new tire.

These tires will travel over softer ground, last many, many times longer than solid rubber tires, and cost but a small fraction as much as rubber for the same loads. They are noiseless, and give better traction, and do not skid on wet pavement.

At first it was thought that, per-

haps, the use of solid wood tires might transmit too much shock to the motor mechanism; but this was disproved in actual service, as shown by the rec-

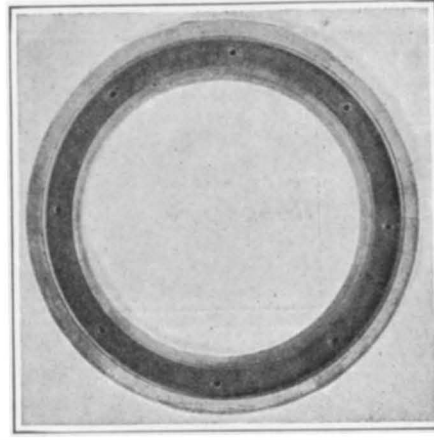
ords made in an instrument for showing the vibration and shock when the wheel was shod with solid rubber, and then with the new solid wood tires.



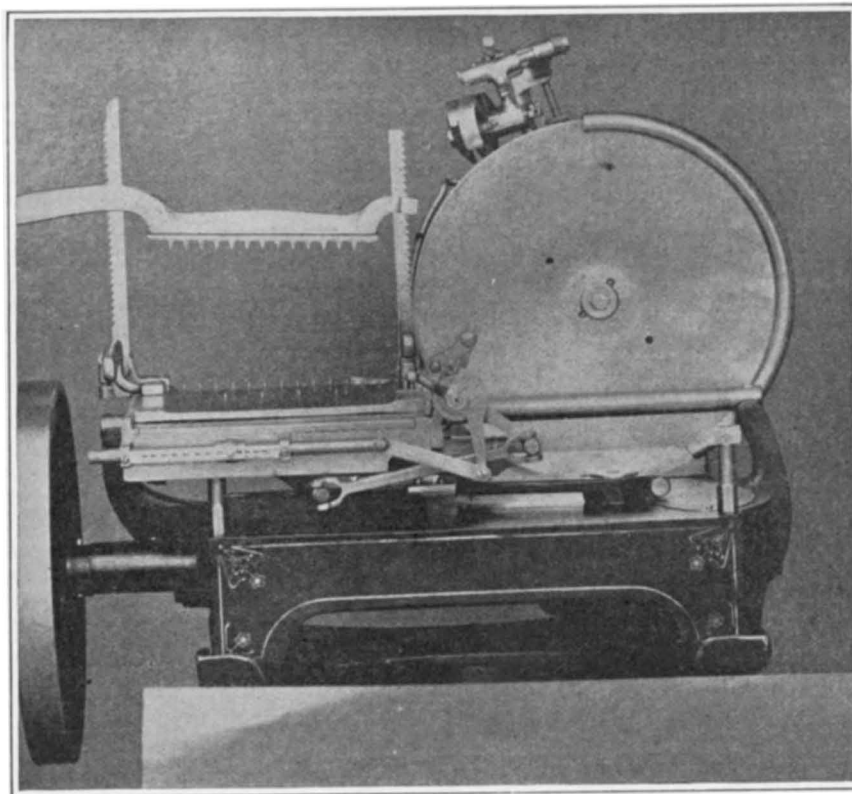
Wooden tire showing peripheral spring band.



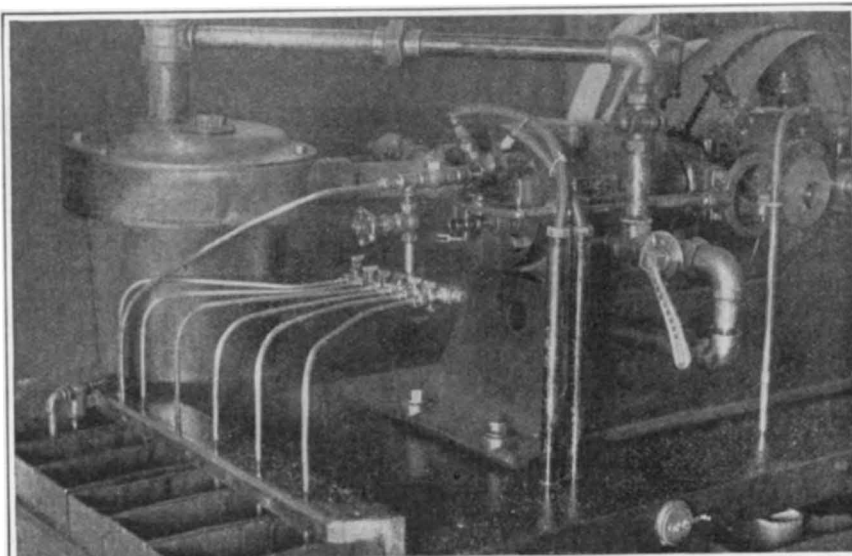
Wooden tire, made of blocks and fitted with demountable flanges. In center is a cross-section of tire, showing imbedded springs.



Wooden tire before flanges are applied. It is set with the grain end-on, that is, the grain of the wood is radial to the wheel.



An electric meat slicer fitted with an automatic knife sharpener.



The Tismer engine, showing the method of feeding fuels of different types.

### An Automatic Sharpener on an Electric Meat Slicer

By Frank C. Perkins

THE accompanying illustration shows a novel automatic meat slicer which is operated by either an electric motor or by hand, and is an efficient labor-saving device.

The first useful slicer was invented in 1899 by Mr. W. A. Van Berkel, a practical butcher of Rotterdam, Holland, and this machine was a great advance on the old method of slicing by hand knife. After a time, as with most inventions, experience proved that the machine was not a perfect proposition as one of the most important defects was the impossibility of keeping the knife sharp enough to prevent loss of waste meat due to damaged slices.

The secret of the successful working of this new slicer with an automatic sharpener is in maintaining a keen edge on the knife all the time. The automatic sharpener is an ingenious device, is always ready for use and is operated by simply turning the handle of the machine. The work is done in a few minutes, it keeps the knife in perfect condition, and is readily adjusted to take up wear. It saves time and labor and abolishes the risk involved in the use of the old hand stone.

A knife guard is provided which prevents the operator's hand coming in contact with a knife, and it is so arranged that the user cannot cut himself, hence is far safer to handle than the ordinary hand knife.

Should the electric motor be out of commission the slicer can be converted to hand-power in a few seconds. The electric motor is belted to the slicer from below the counter, the slicer being fitted with intermediate gear for use in speed reduction.

### An Engine That Will Run on Several Fuels

THE present high price of gasoline and the probability of still higher prices in the future have brought the fuel question into such prominence that more than ordinary interest attaches to any plan that promises relief or suggests possibilities in the way of lowering construction and operation costs.

Whether or not the motor designed—or, to speak correctly, converted—by P. G. Tismer of New York is all that is claimed for it in the way of a consumer of heavy oils of almost any kind, remains to be proven by actual commercial service in the hands of disinterested users. In the mean time, one motor now is running to demonstrate the principles involved; it is in the hands of the inventor, however, who cannot, even if he would, handle the engine as a stranger would handle it. That there is much that is of interest in the engine, however, may be gathered from the fact that it runs on various hydro-carbons ranging in density from gasoline and crude oil to gas house tar without other adjustment than the changing of the feed valve opening; that there is no special fuel feeding mechanism, such as a pump, pressure system or spraying device; that there is no cooling system, either air or water; and that though there are no rings on the piston there is apparently no more loss of compression than in an engine with a ring-packed piston.

The Tismer engine is an old-fashioned machine of the vintage of the days of hot tube ignition, with certain alterations in more or less important details. It operates on the straight four-stroke Otto prin-

ciple, however, and cannot in any way be compared with engines operating on the Diesel principle.

It has a single horizontal cylinder with a bore of  $3\frac{1}{2}$  inches and a stroke of  $4\frac{1}{2}$  inches; both valves are in the cylinder head, the inlet valve being of the automatic type. The changes that have been made tend to simplify rather than to complicate. The cylinder has a water-jacket, which, however, is empty, the water pipes having been removed and the jacket left merely a useless appendage. A new piston has been made, the chief characteristics of which are that it is a plain cylinder with no packing grooves, fitting the cylinder with a clearance of one half thousandth inch all around, and that it is deeply recessed at the head. The recess forms by far the greater part of the combustion chamber, and the piston approaches very near to the cylinder head.

The intake pipe with its throttle valve remains, but there is no carbureter; the pipe is a plain air intake and is fitted with a valve. The oil feeding mechanism consists of a small pipe leading from the fuel tank directly to the cylinder head, into which it opens through a brass fitting. Oil is drawn in by suction, and is not sprayed or otherwise atomized. The spark plug is unusually located in the brass fitting that serves to connect the oil pipe to the cylinder head and its two electrodes are separately mounted and insulated, for convenience in altering the spark gap. High tension ignition is employed.

At each intake stroke of the piston, the oil drawn in passes over the sparking points and has a cooling effect that is increased by a small current of air admitted to the fuel pipe back of the intake check valve. It seems probable that this column of air has some slight effect in breaking up the oil in addition to cooling the spark points. However, the engine runs as well without it as with it except that without it the plug points burn away rather quickly, which form of plug trouble caused much annoyance until the opening was made.

In order to make it a simple matter to run the engine alternately on any one of several fuels, the intake pipe is connected through a header having several branches leading to six small open fuel tanks containing kerosene, fuel oil, machine oil, gas house tar and the condensed oil that collects in the muffler, and is drained out from time to time and again fed to the motor. Each of the pipes is fitted with a stop cock.

As far as can be judged from watching the operation of the motor, it will burn any of the fuels in the tank with equal facility and will run at practically the same speed no matter which one is fed. The same holds true of any combination, though it would seem that when two or more cocks are open at the same time the lighter liquid forms the principal ingredient in the fuel. Unfortunately, the motor runs without load and, therefore, there is no way of determining its power on the various fuels. It is said that for a considerable period the motor was run regularly, driving the machine tools in a small shop, and that the results obtained were relatively the same as when running light. During half an hour's running there was no indication of overheating, despite the absence of the cooling system. There was no difficulty in throttling down to a very low speed and acceleration was fairly good if not remarkable. Instead of regulating the amount of fuel admitted in altering the speed of the motor, or of throttling the air passage, speed is reduced merely by admitting exhaust gas to the air intake pipe. This has the effect of reducing the amount of oil burned, the unburned portion being thrown out with the exhaust, where it drains into a sump and is re-fed to the engine.

When the motor is perfectly cold it will start readily on crude oil after two or three revolutions; it will not start on kerosene or any of the other fuels until heated, when, however, it will start read-

ily on any of them except the oil drained back from the muffler. As to the formation of deposits, it would seem that they are avoided either by adjusting the fuel feed so accurately that there is no residue or by feeding considerable excess fuel, part of which is burned and part thrown out with the exhaust. The latter method is preferred as the simplest, as very little care then is required in adjustment. The running of the motor with an excess of fuel is attended by considerable volumes of smoke with many particles of burning fuel in the form of sparks and a small amount of red flame though the temperature of the exhaust is comparatively low. With the fuel feed correctly proportioned, the exhaust is exceedingly clear, and is free from objectionable odors.

The ringless piston is the result of the inventor's opinion that piston rings serve no more useful purpose than to scrape the cylinder walls so clean of oil that it must be constantly replenished; moreover, that the thin film instantly is effected by the heat. Consequently, the engine has been constructed upon the theory that the piston should "float" on a comparatively thick film of oil as a journal in its bearing; that the layer of oil if thick will not be effected by the heat in the short space of time required for the explosion, and that considerably less heat will be dissipated through the cylinder walls. In fact, the compression of the motor is very good not only when the cylinder is cold and the oil thick, but when it is hot and the oil presumably is considerably thinned. The compression is very close to 100 pounds to the square inch.

Unfortunately, no accurate tests of any kind have been made with the Tismer engine; fuel consumption, horse-power, efficiency still are unknown quantities. Apparently, the inventor has concerned himself only with the production of a motor that will run on any one of a variety of fuels without material adjustment, special effort having been made to utilize gas house tar which may be purchased in some localities for as little as a cent a gallon. Laboratory tests soon are to be made, however, when we hope to be able to give a more accurate account of its efficiency, both thermal and mechanical.

### The Equity Rules and Patent Causes

THAT the new equity rules will unquestionably reduce the cost and time involved in patent litigation, is almost a certainty. One of the rules states that "in the trial of a patent cause, whether in open court or by deposition, or partly in each way, only one expert witness shall be allowed to each side, unless leave shall previously be obtained from the court on motion made and cause shown."

Whenever in the opinion of the court intricate technical or scientific questions of fact are involved in the cause, "the court will upon consent of all parties, appoint some disinterested person skilled in the art to act as an assessor." This assessor is to sit with the judge at the hearing of the evidence, and is to help the court in its deliberations. In this manner, the court will be able to appraise conflicting testimony properly.

The voluminous testimony which has been an unfortunate feature of patent litigation of the past is to be cut down. When testimony is taken by affidavit "the witnesses shall not give their opinion as to the meaning of any patent claim or specification, but their testimony shall be strictly confined to an explanation of the operation of relevant arts, processes, machines, manufactures, or compositions of matter, and of the meaning of terms of arts or science, and of diagrams or formulae."

### Death of Tolbert Lanston

TOLBERT LANSTON, patentee of a number of inventions, but whose most important invention was that of the Lanston type-setting machine, generally known

as the monotype machine, died at his home in Washington city on February 18th.

Mr. Lanston early evidenced his inventive genius and took out numerous patents for inventions having more or less utility, but did not achieve any considerable or marked success with his inventions until he approached the problem of the type-setting machine which resulted in the issue of patents to him for the well-known Lanston machine. This machine has gone into extensive practical use and forms the basis of a large commercial or manufacturing establishment.

Mr. Lanston was born in 1844 in Ohio, and after a brief service in the Ohio volunteers in the civil war was appointed a clerk in the Pension Office at Washington, in which office he gradually arose to the position of chief clerk. He graduated at law and was admitted to the bar, but on the completion of his important invention resigned his office and devoted his attention thereafter for some time to the invention. Some years ago he suffered a stroke of paralysis, which left him an invalid.

### Trade-mark Notes

**Trade-mark of a Selling Agent.**—In *Strawn v. Ontario-Cucamonga Fruit Exchange*, first Assistant Commissioner Billings, in holding that a fruit exchange, which is the selling agent for several associations of fruit growers, is not entitled to register a mark used by all of them, said: "Each of the associations, therefore, having the right to use the mark during its membership in the exchange and the latter being merely a selling agent for these associations, it cannot be held that the latter has such ownership in the mark as will entitle it to registration."

**Similarity of Trade-marks.**—First Assistant Commissioner Billings in the trademark opposition of *Holt & Co. v. Kansas Milling and Export Company*, has decided that in determining the similarity of trademarks three features must be considered—first, the appearance of the words; second, the sound of the words when spoken, and third, the significance or meaning of those words and applying the reasoning, holds that the word "Nobility" was properly refused registration in view of the prior use by another of the word "Noblesse" as applied to the same goods.

**Life-boat Apparatus.**—Patents Nos. 1,043,914 and 1,043,915 have been granted to John E. Erickson of Chicago. In the former a life boat is disclosed, whose structure is closed on all sides with an upwardly projecting tower and a hatchway in the upper end of the tower and a step-ladder arranged in the tower, the lower end of the tower being closed by a door and the upper end by a hatchway and a stair being provided which leads downwardly from the door into the hold of the structure. In patent No. 1,043,915 are provided two spaced supporting rails with boats arranged between the rails, with studs at their ends, which rest upon the rails, together with means which engage the studs, so that the boat may be moved longitudinally along the rails and lowered at the ends.

**A Novel Convenience for the Filing of Patent and Trade-mark Applications.**—In a decree of August 27th, 1909, the Peruvian Government authorized certain of its consulates abroad to receive applications for the registration of trade-marks and by decree dated July 22nd, 1910, a similar provision was made for the filing of applications for patents. The Peruvian Government has attributed the lack of complete success of these measures for facilitating the registration by foreign applicants, to the fact that foreign patent attorneys have not come to realize that they can deal directly with the Peruvian Consulates. Certain charges are fixed and the provision seems a wise and a fortunate one especially in connection with cases in which the early filing of an application is desirable or necessary and a similar provision on the part of many of the other foreign countries would doubtless be viewed with favor.

### Notes for Inventors

**Branding the Dough Before Baking.**—In patent No. 1,044,179 William C. Horner, of Indianapolis, Ind., describes a method of producing bread in which the dough is branded by locally applied heat after which the branded dough is baked.

**A Novel Arrangement of Locomotive Cabin.**—Thomas F. F. Lee, of New York city, has patented, No. 1,044,199, a locomotive in which the cab is at the front end, the water tank at the opposite end and a boiler and fuel receptacle are located between the cab and the tank.

**A Woman's Device for Prolonging Sleep.**—In patent No. 1,047,163 Helena M. S. Bullock shows a device for prolonging sleep in which an eye shield or band of light absorbing material extends from temple to temple over the eyes, has at each end a loop to fit around the ear to hold the eye shield in place.

**A Novel Swab.**—Hobart DeLancey Rapsion of Philadelphia, Pa., has secured a patent, No. 1,047,703, for a toilet swab which consists of a large number of paper strings detachably bound together for a portion of their length by a binder which is so united as to be removed by water to release the strips.

**Sentiment and a Dog Cracker.**—You would not expect sentiment in a dog biscuit, but it is there. A patent has issued on the invention of Carleton Ellis of Larchmont, New York, for a biscuit in which the dog-food mixture is molded in the shape of a bone with knob-like ends to render it attractive to dogs and to make it capable of being readily grasped by a dog.

**Convertible Motor Boat and Automobile.**—Hartley A. Mitchell of Newport News, Va., has secured patent No. 1,047,271 for an automobile boat which combines an automobile body and has a boat hull together with detachable wheels and detaching means which are operable from within the boat and hoisting means which are operable after the detachment of the wheels for raising the wheels into the boat.

**Convertible Boat and Sled.**—William Offenburger of Evergreen, N. Y., has secured patent No. 1,048,337 for a boat which has a detachable sleigh attachment comprising runners and a cradle supporting the boat with steering mechanism operable from the boat and connected with the runners and propelling means in the form of a bladed propeller operating in the air so it can drive the device either in or out of the water.

**The Lazy Man's Fire Lighter.**—Earl Norris Swan and Alton Beightol of Scotia, Cal., in a patent, No. 1,048,372, show a fire lighter in which a match holder located in the fire box of the stove has a heating wire which holds the head of a match and an electric circuit includes the match-holding member and a circuit closer located alongside of the bed so the match can be lighted electrically without getting out of the bed.

**Harnessing Child to a Bed or Couch.**—Ida M. Brown of Somerville, Mass., provides means for securing a small child to a bed or couch. This, as shown in her patent, No. 1,048,033, includes a cross-shape anchor composed of two straps provided near their ends with safety pins by which they may be secured to the bed or couch and at the crossing point there is secured a belt on which are suspender-like devices for going around the child's shoulders, the entire device being easily applied for use.

**An H. Ward Leonard Patent.**—H. Ward Leonard of Bronxville, N. Y., has patented an electrically propelled vehicle, No. 1,042,698, in which he develops upon the vehicle itself by means of a gasoline engine, the power employed in the propulsion of the vehicle which power is transformed into electric energy through dynamos, and this energy is supplied to propelling motors at such a voltage and current as will cause the vehicle to travel at the speed desired. The invention also affords a simple arrangement for holding the vehicle stationary when either going up a grade or going down a grade and without brakes.