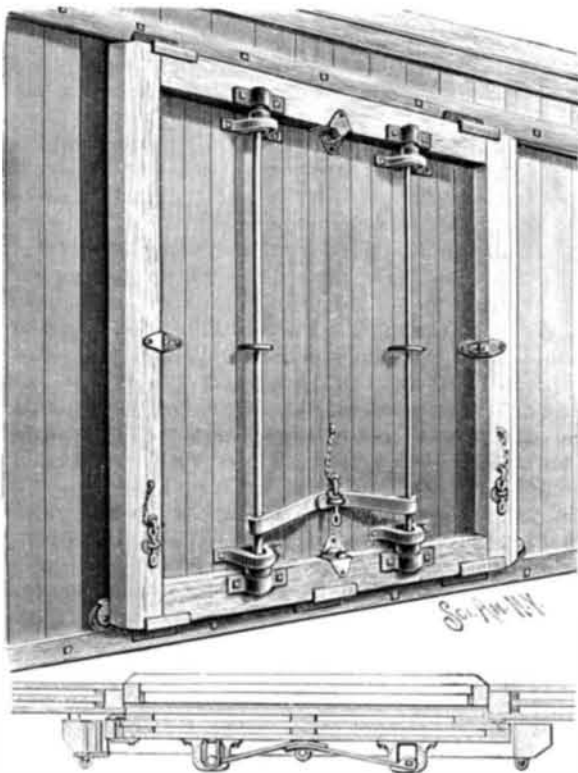


AN IMPROVED CAR DOOR.

The illustration represents a door of simple and durable construction, which may be readily opened and closed, and is designed to be absolutely air and water tight when closed. The improvement is more especially for use on refrigerating, fruit, box, and other cars, affording perfect protection to the contents of the car. It has been patented by Messrs. Manly T. Carson, of Jackson, Tenn., and James D. Gurganus, of Whistler, Ala. The door frame has shoes or rollers to facilitate readily moving it to or from the car door opening, and in the frame slides a panel to close the opening, the panel having on its inner face an offset fitting on to a rabbet in the door opening, as shown in the sectional plan view. The panel is movably supported in the frame by a series of tongued and grooved castings secured to the inner edges of the frame and the outer edges of the panel, the panel being put in place in the frame before the car door is hung on the side of the car. To conveniently give the desired sliding motion to the panel, eccentrics are secured on vertical shafts turning in suitable bearings in the front of the frame, these eccentrics engaging straps on the front face of the panel, so that when the shafts are turned, the panel is moved inward or outward to or from the door openings. Hasp arms on the shafts are adapted to engage a staple on the front of the panel, by which the latter may be locked in closed position, there being a staple at each side of the frame for the engagement of the arms when they are swung outward in opening the door. The inner edges of the panel are formed with a packing to be pressed in contact with the door casing, a similar packing being arranged on the inner face of the offset abutting against the rabbet



CARSON & GURGANUS' CAR DOOR.

of the door opening, whereby the panel hermetically seals the door opening and makes an air and water tight joint. The panel may be moved in the frame without unlocking the latter from the side of the car, and the interior of the car may be ventilated as desired without entirely opening the door.

The Filer Objects.

If there is one thing more than another that disturbs the equanimity of the average genius who presides over the filing department of the saw mill, it is carelessness on the part of the laborer who removes the bark from the hardwood log, and does not carefully remove old iron projections from the same, invites death to the workmen, destruction to the mill, disaster to the proprietor and demoralization to the saw by his lack of cautiousness.

The *Timberman* recently picked over a pile of hitching post pins and rings, horse nails, iron slabs and wedges, horse shoes and what not, that had been removed from walnut logs at the mill of the Lesh, Prouty & Abbott Co., of East Chicago, Ind., or had been discovered when too late to save the saw in use, and damaged this instrument when it bit into the stranger in its progress through the timber. During the writer's visit to the mill named, and but for the fact that the *Timberman* would have been a witness to the murder, the filer would doubtless have brained the careless Pole who chopped the end off a nail with his ax in taking the bark from a walnut log, but failed to remove the larger portion of the nail from the log, as he should have done before sending it to the logroll.

The band saw is a costly instrument. It is usually made of excellent material, and the filer expends much labor in adjusting it to the work at hand, but he does not fix it to cut iron, hence his indignation when his pet saw is injured, or perhaps utterly destroyed, be-

cause of the carelessness or indifference to the possible consequences from an attempt to cut iron. Serious accidents are frequently recorded as resulting from the unfortunate contact of the saw with a wedge or similar instrument found buried in a log, but in most instances these mishaps can be averted by a watchful eye. The price of a band saw, which is about \$50, is itself enough to suggest the greatest watchfulness on the part of all concerned in placing the timber before the saw.

A few days ago, while a saw was singing through an ash log at the Copenhagen mill in Xenia, Ohio, a clanging sound was heard, which alarmed the population of the place, and when the cause of it was discovered, it was found that every tooth of the large saw in the mill mentioned was gone, leaving nothing but a round piece of steel. It had struck something hard in the center of the log, and when split open, buried in its very heart was found an iron wedge which the saw had cut in two. The log was 2½ feet through, and the wedge had been in the tree evidently for as many as fifty years. In this case there was nothing on the surface that would indicate that anything was inside, and besides, there was not enough left of the saw to cause the filer to mourn the possibility of his being obliged to reconstruct it, but the mill men who faced death for a brief moment fell to their knees in thankfulness for a favorable result, notwithstanding the proprietor lost \$115 by the mishap.

The Columbian Exposition.

Inventors and manufacturers who may desire to exhibit goods, tools, etc., at the World's Columbian Exposition should take note of the following summary of the rules and regulations:

There are no charges for space, and a limited amount of power will be supplied gratuitously. All show cases, cabinets, shelving, counters, fittings, countershafts, pulleys, belting, decorations, signs, etc., must be at the expense of the exhibitor, and conform to the general plan adopted. No single piece or section of greater weight than 30,000 pounds will be accepted, if machinery is required for its installation. The expense of transportation, receiving and arranging exhibits and removal at the close of exposition shall be paid by the exhibitor. Exhibitors may insure goods and employ watchmen, subject to certain regulations.

The installation of heavy articles, requiring foundations, should, by special arrangement, begin as soon as the progress of the work on the buildings will permit. The reception of articles will begin November 1, 1892, and no article will be admitted after April 10, 1893. Space not taken possession of April 1, 1893, will revert to the Director-General for reassignment. Exhibits intended for competition must be so specified, or they will not be examined for award. Articles that are in any way dangerous or offensive, also patent medicines, nostrums and empirical preparations where ingredients are concealed, will not be admitted, and any article dangerous or detrimental will be removed. Exhibitors will be held responsible for the cleanliness of their exhibits and the space surrounding the same, and be in complete order at least thirty minutes before the hour of opening. The removal of exhibits will not be permitted prior to the close of the Exposition.

All packages containing exhibits intended for the several departments must be addressed to the "Director-General, World's Columbian Exposition, Chicago, Ill." In addition, the following information must be written on the outside of each package:

- (a) Department in which exhibit is to be installed.
- (b) The State and Territory from which the package comes.
- (c) The name and address of the exhibitor.
- (d) The number of the permit for space.
- (e) Total number of packages sent by the same exhibitor, with serial number on each package, list of contents of each package, and freight prepaid.

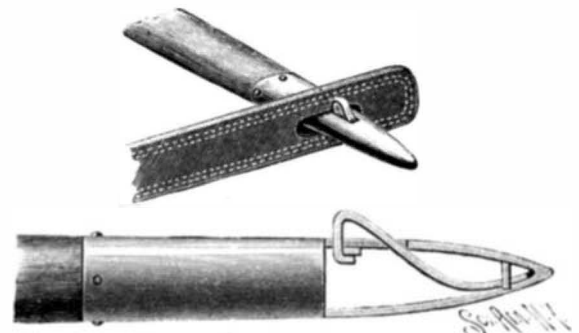
By addressing the Director-General, World's Columbian Exposition, Chicago, Ill., an application paper will be sent.

Steam Boilers in Out-of-the-way Places.

It may appear to be an extravagant statement, but it is believed that, in mechanical plants that use steam, the boiler room is, in nine cases out of ten, so located as to insure a waste each day of heat and steam large enough to constitute a respectable sum when figured out in dollars and cents. The men who plan such plants seem to have a mania for forcing steam to pass through long lines of pipe and to pass numerous bends. In these things they insure two wastes or losses: 1. Loss of heat and consequent condensation. 2. Loss by friction and by the bends, each of which subtracts from the initial pressure. Is it wise, asks the *Iron Industries*, to locate a boiler room so that these two wastages must go on just as long as the plant is in operation? Any one with average intelligence would think not. Yet this plan is everywhere seen, and in every case it implies a waste of money in first cost, a waste of more money in repairs necessarily made greater, a waste of money in steam made and not fully used, and a waste of money for the fuel and labor to make the steam,

A TRACE-HOLDING WHIFFLETREE ATTACHMENT.

A device designed to prevent a trace or tug from accidentally slipping off the whiffletree, yet permitting of its being readily passed to place and easily removed when required, is shown in the illustration, and has been patented by Mr. Gustave Carlson, of Sparks, Neb. A metal cap or tip is made to snugly fit each tapering end of the tree, and a tug or trace-holding lug or dog



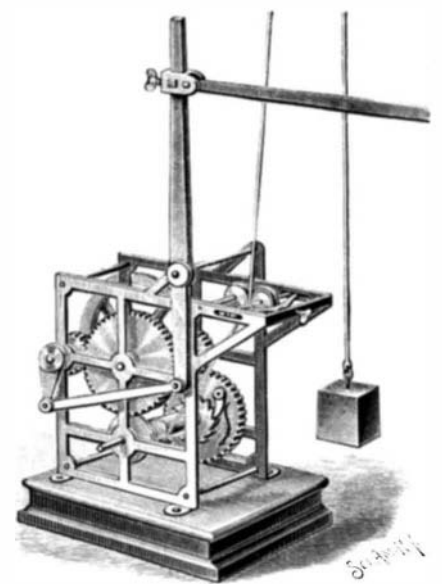
CARLSON'S WHIFFLETREE HOOK.

is fitted to work in a slot cut in the end of the tree, and through a corresponding slot in the cap or tip, as shown in the sectional view. The lug is formed of a spring bent to protrude through the slot, and when in its normal or raised condition its lower front end catches under a cross bar within the cap. The spring is sloped on its back, that the trace or tug may be readily slipped over it, the spring being thereby depressed, but being thrown outward at its free end when the tug has been passed to place. By pressing inward upon the spring the tug or trace may be readily slipped off the tree.

For further particulars relative to this improvement address the inventor or C. H. Corwell, Valentine, Neb.

A MOTOR TO DRIVE SMALL MACHINES.

A simple motor for driving sewing machines, churns, etc., has been patented by Mr. Charles J. Neef, of Texarkana, Ark., and is shown in the accompanying illustration. In a suitable frame is pivoted an upright lever on which is an adjustable sleeve in which is secured one end of a pitman or link connected with the machine to be driven, the other end of the lever being connected by a link with a crank arm on a shaft carrying a fly wheel and a pinion in mesh with a large gear wheel on another shaft. On the latter shaft is a pinion in mesh with a loose gear wheel carrying a spring-pressed pawl engaging a ratchet wheel on the hoisting drum. The outer end of the drum shaft is square, for applying a wrench or crank arm, by which to wind up a rope on the drum. The rope extends upward between two rollers and over a pulley secured to the ceiling or other convenient place, a weight being attached to its outer end. One of the rollers between which the rope passes is held in stationary bearings, while the shaft of the other roller is mounted in slots, in which extend the ends of a brake beam adapted to bear against the ends of the shaft, the pressure of the brake beam on the shaft being regulated by a screw rod screwing in a cross beam of the frame. One of the rollers is grooved while the other has a rubber rim and is adapted to clamp the rope and hold it in a fixed position to stop the machine. The crank arm and link may be readily arranged, if desired, to communi-



NEEF'S MOTOR.

cate motion to the main operating lever when the latter is adjusted in a horizontal position.

DR. H. T. WEBSTER, of Oakland, Cal., has cured several cases of persistent snoring by cutting off the uvula and tonsils. When these organs are too large, and when relaxed in sleeping, the passage of air through the mouth causes them to vibrate, and noise results,