Forge and Bench.

The large brick forge and leather bellows, so often poetized and made the theme for the artist's pencil, is rapidly becoming a thing of the past, and ere long it will be known only as a memory, or through verse and canvas. The little old dingy shop, with its huge forge and dust-begrimed bellows, served well its time and deserves its history, but it, like everything else in these days of progress, must give way to more modern methods. The portable forge and hand or power blower furnish a neater and more perfect forge than the old brick one in its palmiest days, and no modern smith would think of fitting up a new shop with any other. The advantages of these forges are their compactness and simplicity and assured draught. The small blower, whether worked by hand or power, gives a uniform blast, and one that can be regulated at will. The portability of these forges is another feature in their favor, while the room occupied by one is much less than that required for the brick. Its construction invites cleanliness, and as a result there is none of that accumulation of waste of all kinds so common with the brick forge. Every manufacturer of these forges, while claiming special merit for his own, claims for them greatly superior heating power over the brick, and a shorter consumption of coal. Combining, therefore, as these forges do, cheapness, utility, and superiority in all respects, there can be no excuse for fitting up a factory with the brick forges or retaining the old ones.

Another important improvement in the smith shop is the portable tool bench. This is built of iron tubing (gas pipe), with board top and two drawers for storage of small articles, one being fitted up for dies, taps, and other fine tools.

The bench should stand 33 inches high when on the rollers, and be about 31 inches square. The bench is inclosed on three sides to the depth of 20 inches; on the fourth side it is inclosed by a fixed board extending 10 inches below the top, to which is hinged a board of like depth. This lid is provided with hinged legs, the feet of which run on ratchet irons by which the lid is supported, converting it into a shelf. The drawers are placed below the flooring or bottom. The tool racks are of round iron, and arranged to hold all the bench tools, such as swages, tongs, etc. Special tools can be kept on the inside, as the lid can be secured by a lock; this makes a good receptacle for small forgings not completed, or can be kept for patterns as well as for tools. One of the drawers should be kept for slates, paper, chalk, etc.

Such a bench will last a lifetime, cost but little, if any, more than a plain wood bench to construct, can be moved easily and kept clean and in order with but little trouble.—The Hub.

Points in an Employer's Liability to Employes.

A workman does not assume a risk where he knows there is some danger without appreciating it.

An employer is bound to use reasonable care to see that machinery used by his workmen is in proper condition.

The mere fact that a workman received an injury raises no presumption of negligence on the part of his employer.

A workman does not assume the risk of injuries from a latent defect in machinery, because his opportunity of discovery is the same as his employer's.

An employer is bound to give notice of latent dangers, among which the employe is required to work, and of which the employer has knowledge or should have had knowledge.

A person entering the service of another assumes all risks naturally incident to that employment, including the danger of injury by the fault or negligence of a fellow workman.

The mere fact that an employe was careless in doing a certain piece of work does not show that he was a reckless and incompetent workman, whom it was negligence to employ or keep.

Where a workman knows that the appliances with which he works are defective, and he does not complain to his employer, or representative, of their condition, he assumes the risk of their use.

The fact that a superintendent assures a workman that there is no danger, and tells him to return to work, does not relieve the workman of the assumption of the risk, he being of full age and knowing the danger.

The mere fact that a manufacturer hires an unlicensed engineer to run his boiler does not render him liable to other employes for personal injuries caused by the explosion of the boiler.

An employer is not required to use the most improved kinds of machinery in his factory. It is sufficient that the machinery was reasonably safe and suitable for the purpose for which it was used.

An employer is not bound to anticipate every probable risk which may happen in the use of a machine, but discharges his duty if he give such general instructions as will enable the employe to comprehend the danger.

When an employe's duty to inspect and repair machinery is incident to his use of the machinery in a common employment with other workmen, the employer is not liable to fellow workmen for the negligence of such employe.

An employer who calls a surgeon to aid an injured employe is not liable for the negligence or malpractice of the surgeon, provided the latter had knowledge and skill ordinarily possessed by other surgeons, and the employer had no reason to suspect that the surgeon would fail in his duty.

An employe of mature years who was removed from one employment to another, without objection by him, cannot recover from his employer for injuries received through his unfamiliarity with the machinery which he was required to operate, unless his employer knew of his inexperience in that direction, or was informed of it by the employe.

When the conditions of a mill and the relative situations of the deceased and his fellow workmen would suggest to a person of common intelligence menacing and obvious perils from the use and operation of the machinery, an employe who continues to work in it assumes the risk, though it arises from the negligence of the employer, and the latter is not liable for the death of the employe.—The Manufacturer.

Motor Carriages for Postal Service.

Motor carriages of the Daimler type are employed by the post office authorities at Colombo, Ceylon, for carrying mail bags and packages to the post office and to the railway station. A saving of sixty per cent has been effected by using these carriages instead of wagons driven by horses.—Uhland's Wochenschrift.

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—Andrus S. Weaver, Newark, N. Y. This coupling has a swinging knuckle, and the invention provides a simple automatic means for throwing the knuckle to an open position on releasing its locking mechanism, the construction of the coupling being strong and serviceable, relieving shock on the coupling head while coupling cars and in starting a heavily loaded train. Spring yielding angle levers have anti-friction roller engagement with curved flanges on laterally extended portions of the head, and the shank of the coupler extends through a hanger which supports a roller on which the shank portion of the coupler may move. The coupler may be readily attached to any car, and a broken part may be readily replaced by a new one.

DUST AND DRAUGHT ARRESTER.—Hayes C. Schoyer, Altoona, Pa. To protect the occupant of a seat in a car from the draught and dust of an open window opposite the seat just in front, this inventor has devised a novel protecting plate and means of clamping it to the back of the seat in the rear of the open window. The plate may be of cardboard or a suitable panel of wood or thin metal, of a size to be carried in a hand satchel if desired, and the clamp is mainly composed of bent and coiled wire, bracing and steadying the plate, and having bowed or arched side arms designed to bind firmly on the upper edge of a car seat. The device is inexpensive, can be conveniently carried and quickly applied.

Electrical.

A SPHERICAL CAR.—Shadrach A. Mustain, Rincon, New Mexico. For transporting mail, express and other matter, at a high speed and low cost, over an elevated railroad track, this invention provides a frame in which turn carrying globes having treads to travel on the track rails. The globes have their axles journaled in the frame, and the frames have coupling devices by which several of them may be connected to form a train, which is preferably driven by a motor from an electric trolley wire, a small motor being supported on the frame to operate a brake mechanism. The globes form wheels for the support of the frame, as well as receptacles for the material transported.

INTERCHANGEABLE SIGN.—Walter J. Scott and Harold W. Shonnard, New York City. This sign is composed of groupings of incandescent lamps arranged to be interchangeable and to be assembled in an automatic or semi-automatic way, by suitable mechanism, to exhibit word signs. The invention covers a novel reservoir wheel to hold the letters or type, and deliver them to and receive them from the visual sign board or display frame, for the public announcement of news or advertisements.

Miscellaneous.

WHEEL FOR BICYCLES.—Alfred P. Le Gros, Louisville, Ky. In this wheel the hub is provided with a pneumatic cushion, the construction being light and simple and well adapted for light road vehicles, as well as for bicycles, this cushion being so arranged that it is not liable to be perforated or worn, as are the ordinary pneumatic tires. The hub is sleeve-like, and a chambered cushion secured to it has an annular hollow enlargement on its periphery, a casing provided with sockets and composed of two annular sections being secured together and arranged on opposite sides of the cushion, while spokes extend from the sockets in the casing to the rim.

BICYCLE WIND SCREEN.—Thomas L. Monaghan, New York City. This is a light and simple device, readily attachable to a bicycle, to shield the rider from the force of a head wind, and so constructed as to divide or cut the wind, thus reducing the resistance. The screen is made with a wire frame, a cross bar of which swings in a clip loosely engaging the steering head, and on the handle bar are bands carrying fingers which engage the ends of braces. When the screen is in position its upper forward end is above the plane of the handle bar, and the rider, by stooping, may readily place his head behind and within the screen, which may be folded together out of the way when not required for use.

WATER HEATER.—Albert E. Simons and Edward Hixon, Chicago, Ill. To heat the feed water of boilers by live or exhaust steam, or both, according to this invention, the water supply pipe is surrounded by a steam pipe or jacket connected with the live steam supply, and a steam pipe connected with the exhaust is passed through the water pipe, the steam in both cases flowing in an opposite direction to the flow of water, whereby the feed water will be gradually heated, being first subjected to steam at a low temperature and finally to high temperature steam. Exhaust steam may be used in both the inner and outer pipes if desired.

PRINTING PRESS IMPRESSION ADJUSTMENT.—Clarence O. Duffy, Owensborough, Ky. Instead of adjusting the impression by separately moving four screw bolts and nuts, as customary heretofore, this improvement provides for making such adjustment by rotating one shaft by a hand wheel. The several bolts are made movable in a socket and in the head of each bolt and in the side of the socket are coincident slots in which is movable a wedge, the wedges being connected in pairs for simultaneous adjustment by means of centrally connected links, nuts and a rotatable shaft cut with a right and a left hand thread. There are springs for retracting the platen, and its adjustment up or down is instantaneously effected, the platen being kept perfectly parallel to the type while being adjusted.

EMBOSSING ROLLER.—Ferdinand H. Redeker and Frank J. Timmerwilke, Cincinnati, O. For the inexpensive ornamenting of picture mouldings and similar articles these inventors have devised an embossing roller having a peripheral rim adapted to receive and support separate embossing characters, and permitting of easily and rapidly changing the characters on the roller to produce any desired lettering or ornamentation without requiring the use of costly dies. The device is applicable on mouldings covered with plastic compositions or directly on the wood, and any desired name of a business house, firm, etc., may thus be readily embossed upon the work.

STEAM DRYING MACHINE.—Henry Cutler, Wilbraham, Mass. A patent on a similar grain drier was formerly granted to the same inventor, and this invention provides an improved machine of strong and simple construction, and very effective in operation, which is not liable to get clogged or out of order, and is arranged to prevent leakage and freezing. A bucket frame revolves within a stationary casing which has an inlet and outlet for the material to be dried, and held stationary within the frame is a bundle of steam pipes. The bucket frame and casing are in an inclined position, and the grain entering at the upper end is taken up by the buckets and discharged at different points to fall downward over the steam pipes, being then again taken up by the buckets and delivered, when thoroughly dried, at discharge openings.

SEPARATOR.—Alphonse F. Gaiennie, La Fourche, La. Two patents have been granted this inventor for improvements in separators employed in connection with vacuum pans and similar apparatus for separating and collecting the vapors and minute particles of liquid, the inventions providing a simple and inexpensive construction designed to be very effective, and being also adapted for separating oil and grease from exhaust steam. The construction is such that the vapors passed through the separator follow a somewhat devious or circuitous path and deposit the liquid carried in suspension upon plates, whence it flows downward to the lower portion of the separator, the plates having inclined surfaces or being connected by depending flanges.

PIPE JOINT.—John A. Nelson, Nebraska City, Neb. This is an improved joint for use on stove pipes, water conductors, etc., facilitating the connecting and disconnecting of the pipe sections by screwing one into the other. Each pipe section is made with an extension beyond and at one side of the seam, a thread formed in the section beginning at the extension and terminating at the seam at the side opposite to that on which the extension is formed. The two sections thus made readily screw in to each other to the extent of one revolution, the projecting ends or extensions forming steps.

BOTTLE STOPPER.—John A. Woodworth, Windsor, Canada. This invention is for a stopper with which a bottle may be sealed so that, when once corked, it cannot be opened without destroying the seal for the cork, thus preventing the bottle from being refilled and sold as an original package. The neck of the bottle has at its top a collar or rim, in one side of which the ends of fastening wires are fixed in the casting or manufacture of the bottle, apertures being also formed in the opposite side of the rim, and when the bottle is corked the wires are passed over the cork and secured by twisting in the apertures, the ends being cut off so that the wire cannot be untwisted.

BOTTLE STOPPER.—Eliot E. Ford and Charles Schlundt, Rahway, N. J. This stopper is for bottles containing liquids under pressure, it being so made that liquids may be forced into the bottle through the stopper and retain their original high pressure. The stopper has a metal head portion having openings separated by a bridge, extended downward from which is a stem, and the neck portion of the head is engaged by a rubber valve stopper. The filling pressure forces the rubber valve away from the stem sufficiently to form a passage, and when the bottle is full and removed from the filler the internal pressure forces the valve against the stem, preventing the reduction of gas pressure by leakage.

FOOD COMPOUND.—John H. Kellogg, Battle Creek, Mich. This inventor has devised a new article of manufacture by a special union or admixture of digested cereals and nuts in certain proportions, producing a food that is very superior for making fat and blood. The final product, whose preparation is described in the patent, is composed of completely digested starch, completely emulsified nut oil, and nut meal in the form of thoroughly cooked and finely divided proteids or vegetable casein and albumen. This food also possesses peptogenic properties whereby it aids digestion of other foods.

GAS BURNER.—Albert Wanner, Jr., Hoboken, N. J. This burner is made with a base, and is adapted to removably support a heating burner and its appurtenances, such as a rest for a curling iron, etc., or an illuminating burner with its globe holder and globe. The invention provides an efficient heating burner of strong and ornamental construction which will preclude the possibility of gas igniting at the air inlets, while provision is made for maintaining a full and steady supply of gas to the series of flame orifices with which the burner is provided.

BURGLAR ALARM.—Oscar B. Weaver, Williamsport, Pa. This alarm is adapted to be secured to the inner side of the door above the lock, and be sounded upon the turning of the door knob. The alarm is adapted to be easily connected with or disconnected from the door knob by means of a latch on an arm having a forked lower end engaging the sleeve portion of the knob.

BOOT RACK.—Walter S. Lambert, Geneseo, Ill. To exhibit boots in stores, holding them out of contact, so that the goods will not become rubbed and shopworn, this inventor has devised a rack composed of vertical standards supporting pairs of horizontal bars on which are placed mortised cross bars whose outer ends form arms for the support of a single boot each, the legs of the boots being passed upon the arms, with the soles outward. The construction is strong and inexpensive.

PAPER BOX.—Alexandre F. Girard, Waco, Texas. This is a knockdown box, to be sold in a flattened out position to take up small space and readily set up in box form, when it may be easily and securely locked. The invention affords an improved blank for this purpose, curved or cut-away edges allowing the locks to fit closely against the side portions to avoid unseemly bulges of the corners, while permitting a nice adjustment between the top and bottom of the box.

SUSPENDERS.—James S. Holt and William E. Eldred, Seattle, Washington. These suspenders are adapted to be readily attached to or detached from the trousers, and are designed to allow free movement of the wearer's body from side to side without much strain or pull on the shoulders, each of the suspender ends readily adjusting themselves in rings connected with the shoulder straps at the back and front, while the shoulder straps may be readily disconnected from the trousers without unbuttoning.

DISPLAY DEVICE FOR STORES.—William H. Knautz, Blue Earth City, Minn. To show to the best advantage handkerchiefs, gloves, scarfs, etc., this inventor hangs a skeleton frame by a chain or cord from an overhead support, the frame being counterbalanced by an interposed balance sleeve, which permits of readily moving the frame up or down as desired. On the frame are clips or clamps to hold the articles to be exhibited, where they may be readily inspected by the purchaser, and the whole device is very neat, simple and inexpensive.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send name of the patentee, title of invention, and date of this paper.