

[For the Scientific American.]

EXHIBITS OF FOREIGN TECHNICAL SCHOOLS AT THE CENTENNIAL.

Although technical education in Europe is far more general than in the United States, the importance of presenting its methods, for study at the exhibition, seems to have been overlooked by most of the countries represented. The exhibits from foreign technical schools, however, although quite limited in extent, possess many interesting features, and are worthy of at least a brief record. The schools represented may be classed as those for artisans, which are designed to supply, as far as possible, the place of the old apprenticeship, which now exists only in name, and the schools for engineers, in which a higher grade of education is attempted, combined with extensive practice in the details of the profession which the student proposes to adopt. It is not improbable that the directors of our own technical schools can derive many valuable hints from a study of the methods adopted abroad.

RUSSIA.

The elegant manner in which Russia displays her exhibits at the Centennial is suggestive of an imperial exhibitor, and will go far to atone for the delay in opening them to the inspection of visitors. Those persons, however, who have been accustomed to look upon Russia as the abode of barbarians will find that civilization has much to learn from her display. But at present attention must be given to the technical exhibits, which occupy a prominent place in the Russian section in Machinery Hall.

1.—*The Imperial Technical School of Moscow.*—This school, under the direct patronage of the government, is richly endowed, and is provided with ample resources for both practical and theoretical instructions. There are school workshops, in which students are instructed until they are prepared to enter the general shops, in which skilled workmen are employed and machinery is regularly manufactured for sale. The course is 3 years, and the annual expenses are \$225 for students who board in the school, and \$75 for day scholars. The methods adopted for practical instruction are worthy of careful study. The professors recognize the fact that practical manipulation can best be taught by proceeding in a regular system of graded steps. If, for instance, a student is to acquire a knowledge of the art of filing, he first is shown the peculiarities of different kinds of files, as illustrated by models 24 times the size of the originals. He then passes to cleaning and chipping castings, is taught to file thin edges to given lines, and is advanced, as he becomes proficient, to filing plane surfaces, two rectangular planes, planes making acute and obtuse angles with each other, cubes, and so on, through a variety of steps, the full enumeration of which must be omitted for want of space. The same system, which is briefly described above, is pursued for the course of instruction in forging, in turning in wood and metal, in fitting up machinery, and the like. The results of such a system, carefully followed, cannot fail to be most gratifying. Not the least among its meritorious features is the plan of representing cutting tools on a very large scale, so that their peculiarities can readily be recognized by the students. The cases of tools and models on a large scale, as exhibited at the Centennial, are made at this institution for sale. They would be a useful addition to any of our technical schools; and the present exhibits at least should be secured, if possible, for some one of our industrial workshops.

2.—*The Practical Technological Institute of St. Petersburg.*—The exhibit of this school admirably supplements the one described above, the results of the methods, which are essentially the same as at the Moscow school, being practically illustrated. Thus, the consecutive tasks in finishing cast iron, wrought iron, turning, and fitting, are all displayed, the last being represented by a good assortment of machine tools, consisting of planers, lathes, slotters, drill presses, and vises. A careful examination of these tools will show that they compare quite favorably with the average work turned out from regular establishments in this country.

The course at the St. Petersburg school covers five years, and has two departments, mechanical and chemical. In the mechanical department, 648 hours of the course are devoted to labor in the workshops. The other technical schools represented at the exhibition, of which brief mention will be made, are designed for the sons of artisans, and give instruction which is chiefly practical, with courses in elementary mathematics, physics, and drawing, such as will be of substantial service to the workman who desires to rise in his profession.

SWITZERLAND.

The Free School of St. Gall, for Merchants' and Artisans' Apprentices.—The students of this school are instructed in drawing, modern languages, book keeping, woodworking, and modeling. Specimens of their work, in wood, plaster of Paris, and clay, with drawings made by them, are exhibited.

HOLLAND.

The Artisans' School, Rotterdam.—This school is supported by subscriptions, and grants from the government. It was founded in 1869, in order to instruct boys in the rudiments of the trades which they proposed to follow. The tuition fee is merely nominal, being about ten dollars a year. The course covers a period of 3 years, and students on entering must be between the ages of 12 and 15. After they leave the school, the authorities endeavor to find places for them as workmen, and exercise a general supervision over them for five years longer. During the time they are at school, the boys are made to work at their several trades,

the brazier manufacturing kettles, basins, etc.; the smith, nails, locks, etc., and so on; and each is instructed in drawing, with reference to his special profession. Numerous articles constructed by students are exhibited. A few hours every day are devoted to the study of arithmetic, algebra, geometry, and mechanics. The results of this course of instruction are stated to be most gratifying, the boys being eagerly sought after by manufacturers on leaving school, and receiving much higher wages than other boys of the same age who have not been to a practical school.

Philadelphia, Pa.

R. H. B.

Incendiary Telegraph Wires.

The building of the Western Union Telegraph Company in Philadelphia recently caught fire in a curious manner. The flames broke out in the receiving box—a large cupola-like structure on the roof, into which over three hundred telegraph wires pass in their way from the operators' room to the poles in the street. The fire was quickly subdued, without material damage other than the destruction of the wires and the drenching of the building with water. Subsequent investigation into the cause gives rise to the belief that a short line wire must have touched the earth and made a return circuit, possibly communicating with a sixty-five cell Grove battery of great intensity, which speedily rendered the wire white hot, and thus ignited the adjoining woodwork.

A New Use for Iron.

One of the most incompressible discoveries—if it be true, which is questionable—that we have ever encountered is announced in a recent French journal by M. Massie. He says that the mere introduction of an iron bar, in the box in which barley, rice, bran, biscuit, and like farinaceous materials are stored, is sufficient to prevent either the ravages of decay or the attacks of insects. Full details of the experimental investigation are given. An iron bar 3 lbs. in weight is reputed to have protected 40 gallons of grain; and certain biscuits were preserved for seven months in excellent condition, while others, under like circumstances but without the iron, were totally destroyed by weevils.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From June 27 to July 13, 1876, inclusive.

AUTOMATIC TELEGRAPH.—R. E. House, Binghamton, N. Y.
BINDING GRAIN.—Johnson Harvester Company, Brockport, N. Y.
CHAIN SWIVEL, ETC.—V. Draper, North Attleborough, Mass.
COUPLING, ETC.—S. Poole, Boston, Mass.
FASTENING BOOT SOLES, ETC.—G. V. Sheffield *et al.*, Brooklyn, N. Y.
FLOURING PROCESS, ETC.—V. B. Ryerson, New York city.
HAMES, ETC.—W. Robinson, Newburgh, Minn.
HARVESTER.—W. E. Kelly, New Brunswick, N. J.
HORSESHOE MACHINE.—H. J. Batchelder, Fitchburg, Mass.
KNITTING MACHINERY.—M. Marshall, Lowell, Mass.
LAMP BURNER, ETC.—H. A. Chapin *et al.*, New York city.
OIL TANK, ETC.—C. A. Munger, New York city.
PREPARING FLAX, ETC.—J. Good (of Brooklyn, N. Y.), Leeds, Eng., *et al.*
RAILWAY COUPLING.—J. C. Mitchell *et al.*, Lancaster, N. H.
RAILWAY WHEEL.—W. A. Miles, Copake, N. Y.
REAPER AND MOWER.—G. Pye, Hyde Park, Mass.
REAPER COMPRESSOR, ETC.—S. Johnston, Brockport, N. Y.
REDUCING IRON ORES.—T. S. Blair, Pittsburgh, Pa.
REFINING IRON, ETC.—W. Sellers, Philadelphia, Pa.
REVOLVING PISTOL.—O. Jones, Philadelphia, Pa.
SAW FILE GUIDE.—E. Roth, New Oxford, Pa.
SEAMING KNIT GOODS.—C. J. Appleton, Elizabeth, N. J.
SEWING MACHINE.—F. D. Ballou, Marlboro', Mass.
SEWING MACHINE CUTTER.—L. L. Barber, Boston, Mass.
SIGNAL, ETC.—J. Gordon, Cal.
SMELTING ZINC.—F. L. Clerc, Bethlehem, Pa.
STEAM ENGINE.—H. S. Maxim, New York city.
TRAVELLER.—S. Poole, Boston, Mass.
UMBRELLA FRAME.—R. G. Radway *et al.*, New York city.

Recent American and Foreign Patents.**NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.****IMPROVED WAGON STANDARD.**

Jacob Metz, Vernon, Ill.—This is an improved standard for the bolsters of wagons, so constructed that it may be readily and quickly attached and detached. It also enables a pair of bolsters to be ironed with less labor. It consists in castings bolted to the bolster and the base of the standard, connected with the said castings by tongues and grooves, and with the bolster by a spring bolt.

IMPROVED CHIMNEY AND VENTILATING FLUE.

Amos H. Bourne, Fort Scott, Kan.—This invention consists of a chimney and ventilating flue constructed of plastic material, the smoke flue being a clay pipe, which is placed in the center of the ventilator, the last being a cement case surrounding the pipe. There are four ventilating passages between, and at two opposite sides are ribs fitting in grooves of the pipe to secure it in place. The exterior case with passages is also for protecting the building from the heat of the smoke pipe.

IMPROVED SAW CLAMP.

Joseph Shelly, Mariposa, Cal.—This consists of clamping jaws, that are adjusted by stationary and sliding clamp pieces, screw bolts, and nuts, to the saw, in connection with a central spring pin, and grinding and locking bars for holding and turning circular saws in the clamp.

IMPROVED SAW MILL.

William E. Hill, Erie, Pa.—The logs are fed against the saws, and cut by the downstroke of the same, producing, by the slight inclination during the downstroke, the equal cutting of all the teeth, until at the lower part of the downstroke the saws are carried back far enough to give the sawdust a chance to drop or fall out before the saws get any perceptible upward motion. This prevents the teeth from carrying the sawdust back up into the cuts, and avoids thereby the choking or clogging of the saw teeth while coming down for the next cut. The receding of the saws from the cuts admits the regular forward feed of the logs during the rearward oscillation of the saws, and brings the saw teeth, at the completion of the upward stroke, forward again, to meet the cleared cuts and cause the cutting of the logs exactly at the commencement of the downstroke. The cutting is thus accomplished in the shortest

time compatible with the clearing of the cuts. The feed rollers are geared to prevent the cant or log from rising or lowering when it feeds up.

IMPROVED FENDER FOR CAR WINDOWS.

Raphael P. Proctor, Edinburg, Va.—This improvement is in the form of a hood or funnel converging to a cylindrical tube at its lower extremity, and pivoted to a bracket beneath the car window, to adapt it to be turned to either side thereof, and then secured by a catch, which is likewise pivoted to said bracket.

NEW HOUSEHOLD INVENTIONS.**IMPROVED WELL AND CISTERN TOP.**

John M. Bull, Sidney, O.—This invention consists of a platform with hinged door and recess and pump arranged at the top part of a sediment-collecting pot at the bottom of the cistern or well.

IMPROVED LAMP BRACKET FOR SEWING MACHINE TABLES.

Frank T. Knauss, Scranton, Pa.—This is a folding lamp stand, arranged so as to be vertically adjustable on a bracket, which is to be attached to the sewing machine table by screwing to the under side. The object of folding the stand is to dispose of it compactly when not in use.

IMPROVED SASH FASTENER.

Gustavus H. Reck, Bethlehem, Pa.—This consists of a bolt for locking the sash, and a spring presser for holding the sash up by friction, so combined that the locking bolt is thrown out of action by the act of unlocking it and raising the sash. It does not interfere with the function of the presser, nor act upon the jamb so as to injure it, and is put in action again by the closing of the sash down. The invention also consists of a novel contrivance of the spring presser and the handle for working it, to apply the pressure and release.

IMPROVED CHAIR.

William T. Doremus, New York city.—The back frame of this chair is so constructed as to hide the springs and the devices by which the seat is connected with the pedestal.

IMPROVED WASHING MACHINE.

William H. McFarlen, Dysart, Iowa, assignor to himself and G. Aschenbrenner, of same place.—This is an improvement in that class of washing machines in which an endless carrier, formed of slats placed side by side and attached to belts, or otherwise flexibly connected, is arranged to travel in contact with one side of a rotating drum, and thus rub and cleanse the clothes by their combined action. The improvement relates to so arranging the endless carrier that it nearly encircles the drum, space only being left for the introduction and removal of the clothes.

IMPROVED LAMP REFLECTOR.

Martin P. Warner and Jabez F. Warner, Morrison, Ill.—This is a reflector covered at the reflecting surface with a thin layer of mica. The device is applied to the lamp by spring clamps at the lower end, which are bent of one piece of wire and attached by forward extending arms to the lamp at the juncture of burner and bowl.

IMPROVED OSCILLATING CHAIR.

Stephen C. Osgood, Georgetown, Mass.—In this device there is a combination of the knife-edged pivots of the seat frame with the spring-cushioned bearings of standards, to produce the giving of the seat when sitting down.

IMPROVED WASHING MACHINE.

Joseph Klein, Allentown, Pa.—This consists of a revolving endless belt made of hinged, grooved, or corrugated sections set into a wash tub, and of a reciprocating rubber with elastic ribs working thereon.

IMPROVED MOSQUITO NETS AND CANOPIES.

Mrs. C. Ballou, Watervliet, and G. G. Lee, Paw Paw, Mich.—This invention is an improvement in that class of nets or canopies which are applied to beds and other articles of household furniture, to exclude mosquitoes, flies, and other insects, and consists of a series of folding frames having their respective arms or end bars pivoted to common centers to adapt the frames to open and close like the leaves of a fan, and in a clamping device for adjusting and holding the pivoted frames in the desired position, also in the construction of the longitudinal main bars of the frame, also in other features.

IMPROVED STOVE POLISH.

Charles H. Curfew and Alfred Hall, Fiskedale, Mass.—This is a compound of plumbago, nitrate of silver, salt, and cream of tartar, said to produce a brilliant polish with little labor.

IMPROVED MEAT TENDERER.

John Roemer, Champion, Mich.—This consists of a handle and corrugated squeezing plate, pivoted to a stationary corrugated plate by means of a vertically sliding pivot block. Over the latter is a strong spring, to allow the pivot block to rise in case the steak is thick and hard, and an adjusting stop screw to limit the rise of the pivot block, as required for steaks of different thicknesses. Under the block is a light spring, to prevent the block from dropping down too low when the steak is removed.

IMPROVED CLOTHES LINE SUPPORTER.

Smith M. Knapp, Hoboken, N. J.—This is a crank for clothes lines, so constructed that the clothes may be put upon the line within the room, so as to avoid all danger of falling out of the window while putting out or taking in the clothes, and which will allow the window to be closed while the clothes are upon the line.

IMPROVED AUTOMATIC FAN.

Mrs. Laura E. Haack, St. Louis, Mo.—This invention consists of a spring with a gearing of spur wheels, contained in a suitable box or suitable frame, and operating a suitable fan, the said box being located in a convenient position above the bed, and supports in a detachable and peculiarly constructed frame, which consists of legs, having at the bottom forked feet, which fit upon the head and foot boards, and have in the top tenons, which fit into sockets attached to the box.

IMPROVED COOKING RANGE.

Thomas A. Carrington, Baltimore, Md.—This invention relates to an improved double cooking range, and it consists in the particular construction and arrangement of the ovens and furnaces, so arranged with respect to a common flue, and controlled by dampers, that the heat may be variously applied, at the top or bottom of the ovens, and either side of the range, with its oven and furnace operated and controlled as to its heat, independently of the other.

IMPROVED PETROLEUM COOKING STOVE.

Fredrick Hildebrandt, New York city.—The invention consists of a perforated sheet metal body resting directly on the lamp, and supporting an interior chimney that is connected at the top by an inverted conical diaphragm with the body. It is provided at the base with a burner-encircling cone inside of the chimney, to conduct the air both at the inside and outside of the cone to the flame of the burner.

IMPROVED LAMP WICK ATTACHMENT.

Henry Rauschousan, Cornwall, Canada.—This consists of a clamp formed of the two plates, hinged to each other at one end, and provided with teeth on their alternate side edges, to adapt it to connect and hold the adjacent ends of two wicks.

IMPROVED LAMP CHIMNEY.

Emil Honerjaeger, Watertown, Wis.—This chimney is formed of a brass frame, having the inner edges of its top, bottom, and side strips scalloped, to hold a sheet of mica. There is besides a metal top piece. With this construction the sheet of mica will be held securely in place, and may be readily cleaned or replaced.

IMPROVED DOOR CHECK.

William J. Clarke, Trenton, Canada.—By this device the door may be readily retained in any position. It consists of a toothed latch bar, raised in any suitable manner, and locked by a slide with a stop pin applied to the end of a swinging lever hinged to the door casing.

IMPROVED BASIN FAUCET.

Edwin S. Rich, New York city.—The compression valve is placed at the end of the pipe to prevent leaking, as the drip water is conveyed directly into the basin, instead of running down the pipe, or between the slab and basin. The nozzle may be unscrewed at any moment from the sleeve when the valve commences to leak, and a new rubber or other packing placed into the seat of the valve.

IMPROVED PRESS BOARD.

Charles H. T. Kruse, Fishkill Landing, N. Y.—An ordinary press board is supported upon blocks or pedestals having a recess in which, when not required for use, a smaller board is deposited. The latter has one side or edge curved to adapt it for use in ironing curved seams of garments. The main feature of the invention, however, consists in forming a slot in one end of said press board, and providing a detachable ironing block adapted to fit in the seat. This block may be adjusted to project above the press board, or beneath it. In the former position it is used in ironing shoulder seams of coat sleeves, etc., and in the latter position, it simply forms part of the smooth surface of the press board proper.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED PADDLE WHEEL.

Richard D. Cauthorn, Waverly, Mo., assignor to himself and William P. Milnor, of same place.—This is a paddle stern wheel, made of two sections with separately revolving shafts, and buckets placed at an angle of inclination symmetrical to the axis of the vessel, to produce, by the separate working of the sections, the turning about of the vessel without the rudder.

IMPROVED FEED WATER REGULATOR.

John Slade, Bay City, Mich.—This is an improvement in the class of feed water regulators in which the pump is continuously operated, and means are provided by which, when a sufficient quantity of water has been at any time supplied to the boiler, the current may be shut off and caused to return to the pump. The invention relates to devices for indicating the height of water in the boiler. There is also an adjustable connection between the arm of the rock shaft, which is operated by the float, and the arm of the valve by which the entrance of the water into the boiler and return of the same to the tank or immediate source of supply are regulated.

IMPROVED CONSTRUCTION OF SHIPS.

Julius A. D'Hémécourt, New Orleans, La.—The planking is tongued and grooved, and secured by wires running through widthwise in the case of small boats. The wires are pulled taut, and soldered to metal plates fitted to the rim, and the flat bars are flanged or bent over at the top, and secured in any approved way.

IMPROVED STEERING APPARATUS.

Charles R. Suter, St. Louis, Mo., assignor to himself and Elliott E. Furney, of same place.—This consists of one or two winding drums, revolved by suitable power, around which the tiller ropes are wound, when slack merely is taken up by the steering wheel and barrel in steering. The power drums are provided with ratchet wheel and pawl, to admit the use of the apparatus directly from the steering wheel when the driving wheel is not in working order.

IMPROVED MIDDINGS SEPARATOR.

James Stewart, Atlanta, Ga.—This invention is based upon the fact that under the impulsive force of a current of air the middlings will have greater momentum than the dust or fiber from which they are to be separated, and consists, mainly, in using a fan, so as to move the middlings in one direction, while the dust will be driven out in another at a tangent to the fan.

IMPROVED RAILROAD FROG.

David Y. Payne, Corning, N. Y.—This invention is an improvement upon the combination frog, forming the subject of letters patent No. 138,835, and relates to a certain construction and arrangement of parts, whereby a frog is produced which has advantages in respect to cheapness, durability, and facility of handling and repair.

IMPROVED CARBURETER.

James M. Pollard, New Orleans, La., and Wallace R. Barton, Galveston, Texas.—The chief objects of the invention are, first, to cause the gas to take up, or absorb, the heavier or least volatile portion of the hydrocarbon liquid, and thus avoid leaving a residuum; second, to render the volatilization of the hydrocarbon, and the quantity taken up as vapor by a given amount of gas, more uniform; and, third, to render the carbureter safer in use than those heretofore employed. To these ends, the invention consists in an improved process of feeding or supplying the gas to the carbureting vessel, at or near the point of exit of the hydrocarbon, so that they (the gas and hydrocarbon liquid) will flow through said vessel in opposite directions; in completely surrounding or submerging the said vessel, the reservoir of carbureting liquid, and the gas supply and discharge pipes, with a body of water; and lastly, in combining a liquid seal with the said reservoir.

IMPROVED CRUSHER FOR COKE, ETC.

George R. Root, Indianapolis, Ind.—This consists of a couple of hollow roller drums, having strong bars parallel to the axis, attached at suitable intervals apart for the bars of one drum to mesh into the spaces of the other without quite touching. The coke is fed into the crusher between the drums, which are geared together and revolved by power. The bars are tapered from the outside inward, so that any pieces entering between the outer edges of them will be free to escape to the inside, and thus prevent clogging the bars. The invention also consists of cone-shaped cores within the drums, to cause the crushed coke to escape from one end.

IMPROVED SPIKE DRAWER.

Andrew J. Conway, Salina, O., assignor to himself and Edgar Michael, of same place. This consists of a gripping tongs suspended from a toothed bar, which gears with a toothed segment of a lever pivoted to a stand. On the latter is a slideway for the toothed bar. The whole is so arranged that the gripe of the tongs on the spike is increased as the power applied to the lever increases.

IMPROVED PLUMBER'S GRAPPLE.

William H. Dewar, New York city.—This consists in the combination of suitable jaws with rods or tubes in such a way that the jaws may be operated in pipes or other narrow places for removing obstructions.

IMPROVED MACHINE FOR REDUCING RAILROAD RAILS TO THE FORM OF PLATES.

James N. Whitman, Pembroke, Me.—The object of this invention is to change T and double-headed rails into flat plates by spreading out or flattening them transversely, without crimping or doubling over their external surface, producing plates homogeneous in texture, and suitable for shovel plates, nail plates, etc.

IMPROVED PADDLE PROPELLER.

William Davenport, Philadelphia, Pa.—This consists of two or more paddle cranks, from which the paddles are suspended and braced by a simple contrivance of stays, supported by one crank and connected to the paddle of another, and the paddles are fluted to enable them to hold the water better than flat ones do.

IMPROVED KEY BOARD FOR TYPE WRITERS.

Philander Deming, Albany, N. Y.—This inventor has lately been giving considerable attention to the improvement of the type writer. His latest device is intended so to improve the key boards of type writers that the sound of the keys is perfectly deadened and the type writer worked without noise, so as to be employed in court and other places, for stenotypic purposes, without annoyance. The invention consists of the key board, provided with a number of layers of cloth, rubber, and similar fabrics, and intermediate washers, fitted to the stems of the keys.

IMPROVED BELL-RINGING APPARATUS.

James W. Coffey, Ellettsville, Ind.—This consists of a double bell hammer, suspended on an axis over the bell. A hammer is placed on each of the two sides, so that when one is pulled down to strike the bell the other rises, preparatory to striking its blow; and each is balanced by the other, so that but very little power is required.

IMPROVED MAIL BAG CRANE.

James A. Boals, Dinsmore, Pa.—This consists of a crane for holding mail bags for the catcher of a running train, contrived so that the arms which hold the bag will drop out of the way of other passing trains and hang by the post as soon as the bag is taken off by the catcher.

IMPROVED PUMP.

Henry Durre, New York city.—This consists of a revolving shaft that imparts rotary motion to two sliding pistons, which are simultaneously reciprocated, so as to move alternately toward or away from each other, and produce thereby a compound action of the valves.

IMPROVED HYDRANT.

William Todd, Portland, Me.—This relates to an improved service pipe and gate for post hydrants, by which the water may be readily shut off from the main pipe and entirely drained off, so as to leave no water in the connecting pipes. It thus prevents the freezing and bursting of the latter. The invention consists of a sliding gate of the main pipe, and of a drain valve of the connecting pipe, that are jointly operated from the top of the hydrant, so that the gate is closed simultaneously with the opening with the drain valve and vice versa.

IMPROVED SCREW-CUTTING DIE CHUCK.

John G. Born and George J. Born, Pittsburgh, Pa.—This invention consists of the two parts of a divided screw-cutting die, fixed on slides, which are fitted in a supporting plate and combined with an eccentric and shaft in such manner that the die is opened and closed readily by the eccentric.

IMPROVEMENT IN TIRE TIGHTENERS.

Ensley Martin, Edward N. Davie, and Charles E. Thornton, Rockford, Mich.—This device is composed of adjustable arms and screw blocks, for pressing against the felly, and a post, which is applied to the hub, and provided with guide plates attached thereto, in which said arms are secured and adjusted.

IMPROVED GRAIN SCOURER.

Frederick E. Klopffelsch, Milwaukee, Wis.—This is a mill in which the grain is scoured between the periphery of a horizontal stone and the shell of a surrounding case or curb, so that the grain enters between the stone and the case at the bottom, and is worked upward in the process of scouring, and delivered through a spout which shifts up and down to vary the height. By this means, the grain is scoured more or less, as may be demanded by grains of different qualities and conditions.

IMPROVED SLIDING CAR FOR RAILWAYS.

John Westcott, Tocol, Fla.—The object is to cheapen transportation and reduce the first cost of stock. To this end, the invention consists in dispensing with the wheels and trucks of cars, and substituting for them swiveling pedals, which move in channeled rails with a sliding friction from the draft of the locomotive driver upon a separate rail. The rails are channeled for the purpose of containing and guiding the pedals and holding lubricant with which the rails are charged. Dispensing with the wheels and trucks of the cars lessens the first cost, and the easy gliding movement of the pedals in the lubricated channels lessens the wear and cost of maintaining the stock. The invention is designed for elevated railways, but is applicable also to the railways of ordinary gage.

IMPROVED NUT LOCK.

A. J. Potter, Omaha, Neb.—This invention relates to the construction of a staple and provision of elongated coincident slats in the fish plate and out-locking plate of a rail joint, by which said staple is adapted to be inserted in and removed from the slats, and thus, by the operation of gravity, to hold said plates locked together.

IMPROVED SEAL LOCK.

Sylvester J. Tucker, Richmond, Va.—This invention is an improvement in that class of fastenings for freight car doors in which a glass plate or seal requires to be broken, both when the fastening is tampered with or properly opened. The fastening consists of a pivoted hasp bar, which engages with a lug on one of the doors whenever its loop or hasp proper engages the spring catch, or lock, on the other door. The bar may be secured to the lug (which is perforated for the purpose) by means of a padlock.

IMPROVED CAR COUPLING.

John Q. Johnston, Yankton, Dakota Ter.—This consists of two linked-shaped drawbars, folding one within the other, that are fulcrumed to a lateral cross pin, and operated by a fulcrumed front lever. The lever is carried back by the entering of the coupling link bars, so as to close the spread link bars by a longitudinal rod, operating a double elbow lever, fulcrumed to the rear part of the interior link. The inner link bar has a pendent locking pin at the front end, that couples the entering link of the opposite drawbar. The uncoupling is obtained by a cord attached to the lower end of the swinging front lever, while a second cord attached to the lower end of the double elbow lever closes the link bars for coupling.

IMPROVED DIE FOR CAN SPOUTS.

John Gilbert, Newark, N. J.—These are dies for forming curved spouts for oil cans and other uses, which will enable the said spouts to be formed rapidly and neatly, requiring only soldering for their completion.

NEW AGRICULTURAL INVENTIONS.

IMPROVED BEE HIVE.

Orson A. Davis, Sacramento, Cal.—This invention consists, first, of an adjustable entrance gage to regulate the size of the passage to suit the wants of the colony, having perforations to admit air for ventilation when the passages are closed, and so contrived that it can be readily taken away to clean; second, of the construction of the boxes for surplus honey in sections, adapted to be separated with the divisions of the comb, and arranged so that the upper joints serve for comb guides, by which the divisions of the comb will coincide with the divisions of the boxes.

IMPROVED BAG HOLDER.

Gideon Marsh, Steamburg, N. Y.—This consists of two separate main standards, with backwardly inclined upper parts, which are adjusted at suitable distance, according to the width of the bag. The standards are firmly attached to a suitable support by fastening strips and clamping screws, and arranged with top and side hooks for hanging the bag thereon.

IMPROVED HAWK TRAP.

Joseph White, Anderson, Tex.—This trap is so constructed as to adapt it to be attached to a pole or a post set in the ground. The construction is quite simple, and is based on an ingenious arrangement for tripping the jaws.

IMPROVED GRAIN BINDER.

John O. Schuster, Long Prairie, Ill.—This invention relates to a novel construction of a grain binder, and it consists in a set of devices adapted to be placed upon the harvester table in a position to receive the cut grain from the elevator apron, which devices are so constructed as to hold back the accumulating grain until a sufficient gavel has been obtained, when it is admitted to a trough, and then by a series of consecutive movements it is clamped and tied with a wisp of its own straw and the bundle thrown out, the binder being then ready to receive another gavel.

IMPROVED PORTABLE LINT ROOM.

Fielding L. Ellis, Greenville, Ala.—The object of this invention is to provide a portable fireproof lint room, in the form of a car, for carrying the lint from the gin house to the cotton press, and it consists in the construction and arrangement of the car, which is provided with an air vent and a flooding water tank to obviate danger and loss in case of fire, the said car being mounted upon an inclined tramway or track, and connect with the side of the gin house.

IMPROVED SHEEP COLLAR.

James A. Armentrout, Staunton, Va.—This collar is composed of two perforated leather bands or plates, armed with projecting spikes. The perforations allow proper ventilation, and the spikes prevent dogs seizing or holding sheep by the neck, which is the most vulnerable as well as most common point of attack.

NEW CHEMICAL AND MISCELLANEOUS INVENTIONS.

IMPROVED UNDERSKIRT.

Edwin D. Smith, New York city.—This consists of the employment of ruffle, flounce, and binding bands, which are produced by specially weaving them in the breadths required, and in the style and character corresponding to the goods, and without raw edges, and in sewing them on without hemming and binding. A machine with two needles is used, and thus the band is sewn on along both edges at the same time.

IMPROVED COMBINED PORTMANTEAU AND SHAWL STRAP.

Mrs. Diana S. Mathews, Adrian, Mich.—Two or more shawl straps are attached by buckles to the bottom of the portmanteau, to be detachable therefrom or riveted thereto at one side, or to be stationary, as desired; the opposite ends of the straps are secured by buckles at the opposite side, to strap a shawl, overcoat, or any other article of wearing apparel, to the portmanteau, and admit the storage of smaller articles in the case.

IMPROVED FIRE ESCAPE.

Arthur W. Crockett, New York city.—In using this escape a holding rope is secured inside the building, and bars, with the ladder and chute folded upon them, are turned out through the window, the lower end of the ladder and chute dropping to the ground, and the brace bar resting against the wall of the building beneath the window sill. The brace thus holds the ladder and chute out from the wall, so as to clear the blinds, awnings, etc., that may be attached to the side of the building.

IMPROVED POCKET BOOK FASTENING.

Franz F. Weiss, Jersey City Heights, N. J.—This is an ingenious lock consisting of three parts only, and forming a reliable closing device that is adjustable to the expansion or contraction of the pocket book.

IMPROVED SHOE.

Jakob Zwicker, New York city.—This consists of a shoe or gaiter made of a vamp of one continuous piece, with front or back stays attached to a quarter of one piece, provided with a front extension or flap. This gives a shoe without side or back seams.

IMPROVED UNIVERSAL STENCIL PLATE.

Joseph A. David, New York city.—This consists of a stencil plate on which all the letters of the alphabet and numerals are so combined that any combination of them may be made. The stencil plate is provided with space sections at the sides, and top and bottom guide pieces.

IMPROVED PICTURE FRAME FOR FLORISTS.

Diedrich Wilhelmi, New York city.—This consists of the outer base part of a picture frame, with a raised wire or other frame, that forms a space around the frame for arranging and holding flowers therein.

IMPROVED SATCHEL.

Mrs. Euphemia Vale Blake, Brooklyn, N. Y.—The ends are constructed of suitable flexible material, to fold or double inward above the bottom portion, in which they are secured. The sides and ends are constructed with flap pieces of leather, contrived to button together, for the large bag, and to fold down inside to close the bag up in small form. The satchel is provided with a hand strap having a sliding loop, which is made to slide, to provide for variations in the size of the satchel, as when filled, partly filled, or empty.

IMPROVED SPRING BOARD FOR PANTS.

Charles H. T. Kruse, Fishkill Landing, N. Y.—This invention is an improvement in devices for stretching the bottom of pantaloons legs, and imparting to them a certain desired shape. The device is composed of three parts, a sliding wedge, and two formers or forming pieces attached to the wedge in such manner that by adjusting the latter the width of the board is increased or lessened accordingly.