

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

FIRE-SIGNAL.—J. H. DIXON, Pittsburg, Pa. The invention of Mr. Dixon relates to automatic fire-signals, and more particularly to the type in which a wire is made fusible for the purpose of sounding alarms. The object is to provide a cheap and practicable device for causing and transmitting signals in case of fire in a building with a minimum liability of signals being induced from other causes than fire.

Engineering Improvements.

STEAM-TRAP.—G. M. HILGER, Chicago, Ill. In carrying out this invention, which relates to improvements in steam-traps for receiving the water condensed from a steam heating or other apparatus, the inventor has particularly in view the provision of an extremely simple device which shall receive the water condensed from steam-coils or similar apparatus where it is required to remove the condensation in order to preserve what is commonly known as "dry" steam.

PUMP.—G. W. MEYER, Sparrows Point, Md. In this case the invention has reference to a duplex pump adaptable to all ordinary purposes, but especially adapted for use in places which are confined and otherwise difficult of access. It may be operated by any fluid under pressure; but compressed air is thought to be most effective.

ROCK-DRILL ATTACHMENT.—D. A. OWEN, Poughkeepsie, N. Y. The object of the invention is to provide a new and improved rock-drill attachment for drilling holes in rock to facilitate the splitting of the rock along a desired line of fracture or cleavage upon firing the explosive with which the hole is charged. The device can be readily applied to rock-drills now used, by changing the shank of the drill, to accommodate the cutter.

STEAM-TURBINE.—A. J. TAPLIN, Washington, D. C. Mr. Taplin's object is to provide a construction for driving the propellers, to provide the propellers in pairs, one right and the other left, and to operate them independently so they may be used singly or jointly for steering the vessel without the aid of a rudder. The mechanism secures greater screw capacity and speed in a vessel and controls the flow of fluid vapor—such as steam—in a manner to easily operate the reversible turbines and screws operated thereby to propel and steer without a rudder's use, with safety, economy and without vibration.

MARINE PROPULSION.—A. J. TAPLIN, Washington, D. C. The object in this case is to provide a mechanism for propelling the vessel, including draft-propellers, which may be operated by fluid-vapor, water, or other power, seeking to produce a vessel-propelling mechanism direct in operation, of minimum weight, of little or no vibration, which will occupy minimum space and will increase the carrying power, stability, and navigable properties of a vessel, and furnish a propeller and engine capable of driving a vessel at the greatest speed attainable with safety and economy.

REDUCING-VALVE.—S. MUNSON, Hastings, Neb. This valve is more particularly for use on air-brakes on railway-trains; and the object is to provide one of simple construction for gradually reducing the brake-cylinder pressure from eighty-five pounds to fifty pounds in about twenty seconds, when the fifty pounds pressure remaining in the brake-cylinder will be maintained until the train comes to a stop or the brake is released voluntarily by the engineer.

Hardware.

COMBINED LOCK AND LATCH.—A. M. DOYLE, Leoti, Kan. This device is an extremely simple secure lock that is devoid of springs; may be locked or unlocked with a key or by manipulation, and a right and left hand latch that is reversible readily, is adapted to operate to lock it entirely by its gravity, and consisting of a single piece operative by a knob-spindle rotatable in either direction.

CHISEL.—N. H. SMITH, Bonaparte, Iowa. The object in view is to provide a chisel with cutting edges so constructed that the fiber of the material being turned will be cut off in a smooth manner, not broken, and then rapidly removed. With this tool rapid, accurate, and smooth work in squaring up ends, removing superfluous grooves, either vertical or oblique, in making pulleys, rosettes, or disks is facilitated. It is useful and rapid in all face-plate work and in getting work ready for other tools.

PIPE-BENDING TOOL.—C. W. MILLER, New York, N. Y. In this case the invention relates to improvements in tools for bending metal pipes, an object being to provide a tool by means of which a very considerable pressure may be brought to bear upon the pipe or tube, thus making it possible to bend pipes of comparatively rigid metal with little manual exertion and without danger of breaking the pipe at the bend.

Machines and Mechanical Devices.

CLOTH-CLEANING ATTACHMENT FOR FLOUR-BOLTS, ETC.—J. CHARLES, Charlton, Md. The object in this improvement is to provide means for brushing the cloth of flour-bolts, and to that end the inventor has constructed a useful attachment which while intended to be used in connection with flour-

bolting machines having a gyratory motion is equally adapted to all sieves having a similar motion.

STAMP-AFFIXER.—J. OLSEN, Jersey City, N. J. In this patent the invention relates to improvements in stamp-affixers; and the object is the provision of a device by which stamps may be easily and rapidly applied to letters and other pieces of mail-matter, the stamps being moistened, cut, and pressed in proper sequence to securely affix them.

JACK.—W. R. LEWIS, Montezuma, Iowa. In this invention the improvement refers to a screw jack, the leading feature of which is a novel ratchet arrangement for operating the jack, which may engage the screw jack in any position and may be applied to or removed from the screw at will. The jack may be readily handled and stored in a relatively small space.

RATCHET-LEVER.—L. P. JACOBS, Earl- ington, Iowa. The intention in this case is to provide a lever whereby the initial movement of the lever toward the released position will operate automatically to release a dog from the rack-segment, thus dispensing with the necessity of separate devices on the handle of the lever for releasing the dog before the lever can be moved to released position. The invention is especially designed for use in connection with wagon-brakes.

WASHING-MACHINE.—E. A. GRIFFIN and HESTER M. GRIFFIN, Altoona, Pa. One object in view in this invention is the provision of means for supporting a vessel so that it can turn freely and be capable of easy operation by hand. A further object is to retain a rubber in a stationary position within the oscillatory vessel by improved means, which permit the rubber to be raised or lowered and also allow the rubber to be lifted with the vessel's cover to a raised or opened position.

FLOUR-BOLTING MACHINE.—C. L. WHITE, Anderson, Indiana. The present invention includes improvements in the means for imparting a swinging body movement to the cylinder of the machine; also, in the means for rotating independently of the cylinder proper the horizontal brushes which clean the parallel sieves and gathering-boards arranged below them; also, in the construction of such boards the better to deliver the sifted product to conductors arranged at the outer side of the cylinder. This invention is an improvement upon a former patent received by Mr. White.

REVERSIBLE TRANSMISSION GEAR.—J. A. DICKEY, Columbus, Indiana. This apparatus is fitted with a clutch for directly connecting the driving and driven elements and a set of gears for connecting said elements to run the driven elements in the opposite direction, the clutch and gears being arranged the one to be inactive upon the other, and vice versa.

CAM.—W. H. DAILY, Carthage, Ill. In carrying out this invention Mr. Daily has in view as an object the construction of a cam disk which shall take its load at a point farthest from the center or at the greatest point of leverage and shall release such spring at a point nearest the center or at the shortest point of leverage. By this means it is possible to compress a spring or a gas without the loss of any power save friction and with the least possible jar to the machinery and the operator.

PILL-COUNTING MACHINE.—W. BROUGH, Baltimore, Md. This improved machine is adapted to count automatically pills or other similar articles rapidly and accurately without injury or adhesion of one to the other. A distinguishing feature of the contrivance is an endless traveling belt having groups of sockets for receiving the pills or other articles to be counted, the pockets being so arranged as to facilitate discharge of the pills at the proper time in the travel of the belt.

Of Interest to Farmers.

HARVESTER.—H. TRAEGER, Auburn, Wash. In this patent the improvement relates to a machine for shelling and separating peas from the hull; and it comprises means for effecting these functions combined in a novel manner into a wheeled apparatus adapted to be associated with a cutting or harvesting apparatus and drawn through the field in which the peas are grown.

HOISTING DEVICE FOR SACKS, BOXES, ETC.—C. SERLEY, Wilbur, Wash. This is a simple, practical, and efficient device for hoisting and piling sacked grain, boxes, or other material in a very rapid, convenient and economical manner. By means of this machine two men can pile high about four sacks of grain per minute, which is more than twice the amount handled by the ordinary block-and-tackle apparatus.

LOADING OR UNLOADING APPARATUS.—W. T. SMITH, Ames, Iowa. Though applicable to different purposes in the arts, these improvements have reference more especially to apparatus for loading and unloading shocks of hay, wheat, barley and other grain while in the field; and the principal object of the invention is to provide apparatus which is simple in construction and organization besides being thoroughly effective and reliable in operation, as well as capable of easy handling or manipulation.

HAY-LOADER.—C. J. ROWELL and W. C. PITT, Lovelock, Nev. The purpose of this in-

vention is to provide a simple, durable, economic, and effective form of hay-loader especially adapted for use on large ranches where hay in quantities is to be gathered and stacked, the device being adapted to save the expense of shocking and pitching, and, in a measure, raking the hay into wagons.

Pertaining to Vehicles.

TRACE.—F. D. THOMAN, Toledo, Iowa. The aim in this improvement is to provide a trace which has no leather parts to wear, one which is pliable and strong, readily attached and detached. The invention consists of a wire-cable body portion surrounded by a tightly-coiled covering of metal and detachable hame and whiffletree connections. This body-portion is surrounded by a waterproof covering which is in turn surrounded by a tightly-coiled covering of metal, with detachable hame and whiffletree connections.

BICYCLE-GEAR.—J. H. TRISMEN, New York, N. Y. The aim in this invention is the provision of a bicycle-gear more especially designed for transmitting the motion of the sprocket-chain to the rear or driving wheel of the bicycle in an economical manner, at the same time insuring a high speed to the bicycle and utilizing the power exerted by the rider or motor to the fullest advantage.

WAGON.—S. H. BOONE and C. W. STAPLES, Burts Corner, New Brunswick, Canada. In most low-down axles wagons the front of the wagon-body is of reduced dimension and is not available for receiving its proportion of the load. In this invention the wagon-body may be of full dimensions throughout, and it extends beyond the front axle, thereby accommodating a larger load. This principal advantage is due to the inventor's improved manner of mounting the body on the front axle.

TRUCK.—T. H. BROWN, Sterling, Kan. By this invention a barrel of heavy goods, such as salt, can be picked up with ease and placed on a spot without touching it with the hands in loading or unloading. The clasp-arms work automatically and extend in front of the wheels, so that the truck being pushed in front of the barrel the arms roll and adjust themselves to the barrel below the quarter-hoop. The wheels being back, the clasps readily pass between adjacent barrels to position to engage with the quarter-hoops. Means are provided to pull the barrel onto the truck.

MOVING-VAN.—A. B. YETTER, New York, N. Y. The purpose of this invention is to provide a construction in which the body is roller-supported upon a running-gear and means for retaining the van upon the gear while in transportation. After the body has received a sealed load, to provide means by which the body may be released from its fastening devices on reaching a storage-house and without impediment transferred to a platform-truck, so that the body can be carried to any position by an elevator or other means. A van-box so constructed dispenses with many handlings of transported material, saves time, and wear and tear of articles.

Railways and Their Accessories.

RAILWAY-SWITCH.—T. T. CHALONER, New York, N. Y. In the present patent the invention has reference particularly to improvements in railway-switches, and the object in view is the provision of a switch of simple construction that may be readily and positively shifted by a motorman or driver on a moving car.

AUTOMATIC BRAKE FOR RAILWAY VEHICLES.—E. L. CRIDGE, Passaic, N. J. In this case the invention relates to an automatic brake for railway-vehicles, a more particular object being to devise means for automatically venting the air-brake of a locomotive, thereby causing the mechanical brakes to be applied in case the engineer disregards a semaphore-signal.

RAILROAD-RAIL HOLDER FOR METAL CROSS-TIES.—J. KATZENMEYER, Kirby, Ohio. The present invention refers to means for detachably holding the track-rails of a railroad secured upon metal or other cross-ties, and has for its object to provide novel features of construction for the purpose indicated. There is a special provision for accommodating the shifting ends of a track-rail and frog-tongue at a switch, this detail comprising the addition of a chair.

DUMPING-CAR.—W. H. DAVIS, Parachute, Col. In carrying out this improvement, which has particular application to railway dumping-cars, Mr. Davis has in contemplation the construction of a car of the "hopper-bottom" type, wherein a load of dirt, coal, ore, or similar material passing through an opening in the bottom of the car will be directed to predetermined points or places alongside the car and out of the way of the wheels thereof.

GRAIN-DOOR.—J. E. DRAKE, Blue Rapids, Kan. The purpose of this improvement is to construct a substantial grain-door for freight-cars, which door will involve few parts and none readily detachable, thus making it practically impossible for the parts to be stolen, as frequently happens at obscure railway-stations. The door is so constructed that when moved into inactive position it will not interfere with the use of the car for ordinary purposes.

BRAKE MECHANISM FOR CARS.—W. S. HOWLAND, Old Saybrook, Conn. This mechanism includes main and supplemental or emer-

gency devices for controlling the brake-shoes, the construction of both being applicable to any car, and such that the main brake may be used independently of the emergency brake, and whereby the supplemental mechanism may be almost instantly applied to the brake-shoes to add to their gripping power upon the wheels for stopping the car instantaneously upon a decided downgrade.

SPARK-EXTINGUISHER.—J. W. BRYANT, Crewe, Va. The improvement is adapted for use on locomotives, and the object is to provide a construction by which to thoroughly extinguish and pulverize the sparks and cinders without impeding the discharge of same from the stack, whereby the engine will be prevented from throwing sparks or fire, the draft of the engine will be increased, and the engine enabled to clean its front of all cinders and sparks, thus permitting of a practically perfect draft.

Miscellaneous.

SPUR ATTACHMENT FOR LEGGINGS.—W. C. BROWN, U. S. Army. The object in Captain Brown's invention is to provide a spur attachment for leggings, such as used by cavalrymen and other horsemen, the attachment permitting the user to quickly remove the yoke and rowel from the supporting member whenever the user wears the leggings under circumstances that render spurs undesirable, the attachment also permitting immediate attachment of the yoke and rowel whenever desiring to use the spur for its legitimate purposes.

CARD.—E. B. CARPENTER, Plymouth, Indiana. One of the important objects of Mr. Carpenter's invention is to provide a card readily attachable to any projection, such as a door knob or the like, the shape of the article being such that the likelihood of the card being disturbed will be obviated. Another object is to furnish an improved card with a tongue or extension cut from the material of the blank, such tongue serving as a support or brace for the card whenever it is desired to apply the same in an upright position.

ARTICLE-ATTACHER.—E. B. CARPENTER, Plymouth, Indiana. In this patent the invention relates to improvements in an article for suspending and retaining canes, umbrellas, parcels, and the like. Great inconvenience is caused and many articles are lost through carelessness, when purchasing in large and crowded stores. The inventor's object is to provide means whereby articles such as those mentioned, may be connected with the person of the wearer, to obviate the possibility of losing the same.

CHIP-RACK.—S. A. COHEN, New York, N. Y. This game accessory has for its purpose the provision of a chip-rack which is arranged to permit easy and quick attachment to or removal from a table and to bring the rack in position for a player to conveniently place the chips into the rack or remove the same therefrom.

MAIL-BOX.—I. F. COLLINS, Sabetha, Kan. This mail-box is particularly adapted for use on rural mail-routes; and the object of the improvement is to provide a box so arranged as to protect the deposited mail-matter from rain or snow and which can be quickly opened and closed, resulting in a great saving of time in collecting and delivering mail.

MOUNTING FOR RIFLE-TELESCOPES.—C. E. STALLCOP, Sac City, Iowa. The holders or mountings proper for the telescope in this invention are provided with springs which bear upon the telescope to press it both downward and laterally, and in connection with such mountings a graduated slide is provided which is practically wedge shaped and furnished on its inclined edge with an open slot whose shoulders are adapted to engage the mountings. By means of an adjustment the telescope may be lifted or pressed laterally and held in position.

HAT.—L. M. STIREWALT, Toledo, Ohio. The present invention is an improvement in hats, in which the inventor includes caps and similar head-coverings; and the object is the provision of a novel construction of ventilated hats aiming to avoid baldness and other injuries which result from wearing of air-tight unventilated hats.

COLLAR-FASTENING CLASP.—CAROLINE LASSEN, New York, N. Y. This clasp is designed particularly for use in fastening collars used in connection with ladies' shirt-waists. Primarily the inventor's object is the provision of a collar-fastener which shall overcome the numerous objections to other fasteners, such clasp dispensing with pins and enabling such fasteners as hooks and eyes, buttons, and the like to be discarded.

PUMP ATTACHMENT FOR PORTABLE CANS.—P. J. BLACKMON, Corsicana, Texas. This contrivance provides means for detachably connecting a liquid-lifting pump with an ordinary commercial packing-can containing coal-oil, and thus enables the convenient transfer of the liquid contents of the can into a lamp or other receptacle. The improvement facilitates the transfer of oil, prevents loss, and lightens the labor of filling lamps from the original packing-can.

MEANS FOR ATTACHING PINS TO METAL PLATES.—H. F. NEHR, Brooklyn, N. Y. As it is difficult or practically impossible to solder metal to aluminum, it is the general practice in making badges or the like of this metal to mechanically secure a brass or simi-

metal plate in the back of the aluminium plate, and to this brass plate the pin is soldered.

ACCOUNT-BOOK HOLDER.—A. J. SHAUL, Quimby, Iowa. This device is adapted for holding account and other books for containing records and which when not in use require to be deposited in safes.

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

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Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

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(9206) J. A. McD. says: Could you inform me in regard to the welding of copper; is it still considered a lost art, or is it readily done over the country? Are there people looking for the secret? Would you say we can weld copper successfully? A. The welding of copper is not considered, so far as we are aware, a lost art. A number of companies are now welding copper without any serious difficulties, we believe; and the trouble which there has been in the past has been caused largely by the difficulty of getting sufficiently pure copper in the market.

(9207) C. W. says: Would you kindly inform me of the best method to pump sea water from a sandy beach, when at present considerable difficulty is experienced by the sand choking the pipe and steam pump, although the suction and X pipe is run out 200 feet from shore? Is there any way of keeping the sand out of a well if sunk on the beach? I suggested digging a well and sinking a barrel with the suction pipe cemented through the bottom and buried in the sand, but they tell me that the barrel would soon fill up from underneath; would that be so? Any information on the subject will be thankfully received, also as to what pump is considered the best for salt water. A. In reply to your inquiry regarding the best method of pumping water from a sandy beach, we would advise you to have your pipe run out as far as the conditions will allow and then have the pipe as large as you conveniently can, preferably with a flaring or funnel-shaped opening, so that the velocity of the water as it enters the pipe will be very small. Extending your suction pipe another 50 feet into the ocean would not appreciably increase the work on the pump. The additional work would be caused only by the slight amount of additional friction. For pumping salt water, it is best to have a pump with a bronze-lined cylinder, a bronze piston and piston rod, and bronze valves. Almost any of the well-known pump manufacturers will be able to furnish you with such.

(9208) N. P. says: 1. Give a formula to find how many horse power I need to run this machine: Driving shaft, 130 revolutions, 20-inch pulley; machine, 66-inch pulley, 9-inch belt, 40 revolutions. 2. Name of a small book containing similar formulas. 3. They write me from Italy about a much-advertised American invention—a Muller's "acousticon" for deaf and dumb. Muller is from Alabama, and his "acousticon" was experimented with in the New York Institute for Deaf Mutes with extraordinary success. Is anything true? If so, please give me some information. A. A common formula for calculating the horse power of a belt is "a single belt will transmit one horse power for each inch of width and for each 1,000 feet velocity per minute." A double belt will transmit 1.8-10 times as much power as a single belt. According to this formula, a 9-inch single belt, traveling over a 6-inch pulley, making 40 revolutions per minute, will transmit 6.2-10 horse power. If it is a double belt, it will transmit 11.2-10 horse power. If you are figuring on an engine or other source of power to drive this machine, it would be well to allow a considerable factor of safety above these amounts, as most machines require at times a power considerably in excess of the average power which they consume. In answer to your request for a small book containing formula similar to the above, we would refer you to the "Handbook of Practical Mechanics," price \$1.00. Information as to how to reach the acousticon has been mailed you.

(9209) W. F. H. writes: Please advise me by mail or through Notes and Queries of the SCIENTIFIC AMERICAN the number of pounds of water which must be evaporated to give one boiler horse power, when the temperature of the feed-water is 32 deg. F., and the boiler pressure 70 pounds. Also when the feed-water temperature is 100 deg. F. and the boiler pressure the same as above. A. One boiler horse power equals 30 pounds of water evaporated from a feed-water at 100 deg. F., and at a pressure of 70 pounds. This equals

1110-3 B. T. A. per pound. It will require 68 more heat units to evaporate from a feed-water of 32 deg. F. Therefore one boiler horse power equals an evaporation of 28 1/4 pounds under these conditions.

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Detailed drawings of standard machinery carefully lettered and provided with a key are among the most useful means of education and reference in marine use. The detailed drawings of a four-furnace single-end Scotch boiler and a 1,250-horsepower triple-expansion engine are reprinted from and published by Marine Engineering and are excellent examples of this class of work. They are well drawn and the lettering is conveniently disposed, a feature which has been too often neglected in this kind of work. For protection the drawings are inclosed in a cardboard cover.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending October 13, 1903, AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing inventions with patent numbers and names of inventors, including items like Aerial navigation apparatus, Air brake, Air draft heater, Alarm system, Automobile sleigh attachment, etc.

Table listing inventions with patent numbers and names of inventors, including items like Clock, electric programme, Closure, E. Chapman, Clothes drier, G. M. G. & W. H. Weston, Clothes pounder, O. Hines, etc.