

RECENTLY PATENTED INVENTIONS.
Pertaining to Apparel.

HAT-FASTENER.—S. M. JOHNSTONE, New York, N. Y. The principal object of the invention is to provide simple and effective means for attaching a hat-fastener to a hat in such a way that it always remains upon the hat and does not have to be removed each time the hat is taken off, but at the same time can be removed, if desired, in order to secure it to another hat.

TROUSERS-HANGER.—A. CHELBERG, New York, N. Y. Hangers as heretofore constructed have been either too complicated for general use or have failed to provide means for supporting the garments in a proper manner. The principal objects of the invention are to construct a hanger in such a manner that although the trousers can be held in natural and proper position, yet the construction will be simple and there will be few parts liable to get out of order.

Electrical Devices.

PANEL-BOARD.—E. R. LEMANQUAIS, New York, N. Y. Each section of the sectional panel-board may be used independently, if desired, and the sections may be combined in any number, so as to make up a panel-board of any desired size. The devices for holding the fuses are improved so that the latter may be securely held with proper electrical contact and yet removable at will without danger to the operator. The board minimizes the danger of shocking persons operating or adjusting the same.

Of General Interest.

BALANCED SUCTION AND FORCE PUMP.—P. H. J. PAINDAVOINE and P. A. PAINDAVOINE-DUFOUR, Les Fontanettes à la Chapelle aux Pots, Oise, France. In this patent the invention has for its object a suction and force pump in which the effort required for operating it is distributed and rendered uniform, thus rendering its running exceedingly easy, so that far less fatigue is occasioned than would be necessary for operating under the same working conditions an ordinary suction and force pump.

CANDLESTICK.—J. KINDELAN, Leadville, Col. This readily adjusted miner's candlestick comprises a body portion consisting of a single length of spring-steel bent to form a loop terminating in segmented portions; a spike extended from one of the segmental portions; a hook on one of the segmental portions and segmental plates secured to the said portions.

VALVE.—C. E. SIMPSON, Portsmouth, Ohio. The more particular object of the inventor is to produce a valve that will prevent scale or foreign substances from being caught on the valve-seat as the valve is being closed, thereby preventing the injury often done by scale being crushed on or imbedded in the valve-seat or preventing the valve from entirely closing because of the obstruction having caught between the closing parts.

WORKING BARREL FOR OIL AND OTHER PUMPS.—W. H. WESTERMAN, Marietta, Ohio. The object in this case is to produce a working barrel which is now usually made of brass, iron, or steel that will combine the advantages of iron, steel, and brass, that will be cheaper and stronger than ordinary barrels, and one in which the cups or valves can be readily inserted without sticking and one in which the ends will not be crushed in when coupled with another section of pipe or barrel.

HOSE-CLAMP.—J. E. JOHNSON, New Paynesville, Minn. The invention is an improvement in that class of clamps that comprise a band and pivoted cam, which is permanently secured to one end of said band and adapted for detachable engagement with the other, the construction being such that in the closed position the cam holds the band drawn tightly around the hose.

DIRT-SCRAPER.—J. HARTER, Tiffin, Ohio. In this case the invention has reference particularly to improvements in dirt-scrappers for road and field work, the object of the inventor being the provision of a scraper of simple and novel construction and operating to thoroughly harrow or break up the dirt of a road or field and then smooth the same.

ROLL-PAPER HOLDER AND CUTTER.—J. F. FINAN, Cumberland, Md. The invention is in the nature of a paper-holder and cutter for holding upon a store-counter or elsewhere a roll of paper from which sheets of varying size may be cut off at will to suit the size of package to be put up. It is an improvement upon the device for which Mr. Finan was formerly allowed a patent.

Household Utilities.

TRAP FOR SINKS, BATH-TUBS, AND THE LIKE.—A. SAVARD, Omaha, Neb. In its practical entirety this trap forms an integral part of the sink, bath-tub, or wash-basin with which it may be associated. It is easy of access for the purposes of cleansing or emptying accumulated contents and possesses the capacity for long and repeated service. The invention refers more especially to traps for sinks, bath-tubs, wash-basins, and the like, pertaining generally to the type of such devices forming the subject of Letters Patent formerly granted to Mr. Savard.

CRIB.—W. W. GRIGSBY, New Orleans, La.

The invention relates, more definitely stated, to crib attachments to bedsteads, and has for its object an improved attachment of this character, adapted for ready attachment and detachment, and adapted when detached to be folded into compact condition facilitating its being shoved under the bedstead or stored away ready for use.

WINDOW-FASTENER.—R. G. FRASER, Philadelphia, Pa. Mr. Fraser's invention pertains to window-fasteners, his more particular object being the production of a simple, efficient, and reliable fastener capable of locking the upper and lower sashes in any desired position and offering certain constructional advantages, such as the prevention of windows rattling or any movement between the upper and lower sashes until desired.

Machines and Mechanical Devices.

MICROMETRICAL ADJUSTMENT FOR PRINTING-FILM FRAMES.—B. DAY, West Hoboken, N. J. Mr. Day's invention relates to the accurate hinging and holding of a printing-film frame and its printing-film so that they can be raised, lowered, removed for inking, and replaced and yet fall on the work in exactly their original positions, also to devices whereby subsequent prints from the same printing-film printed over or alongside the first print, can be manipulated with accuracy and the manipulation recorded for future reference. Many features of this invention and especially those relating to adjustment, can be operated in connection with Mr. Day's Weighted Hold-Fast, which is already patented.

LOOM-SHUTTLE.—W. H. WILSON, New Bedford, Mass. In this patent the invention relates to weaving; and its object is to provide a new and improved loom-shuttle having a spindle arranged to prevent undue wear and sidewise vibration and consequent breaking of the thread and to allow convenient renewal of a spindle-shank when broken or otherwise injured.

HEDGE-TRIMMING MACHINE.—R. SMITHERS, Nortonville, Kan. The objects of the improvement are to provide mechanism, first, to cut the top and side of hedge at the same time; second, for the proper adjustment of the sickles to cut either the top or the side separate; third, to raise or lower the horizontal sickle so that it can be adjusted to cut any height hedge while in motion; fourth, to facilitate vertical adjustment or the removal of the horizontal sickle; fifth, for adjusting the one end of the platform as may be required on inclined or uneven surfaces.

FILM-HOLDER FOR PICTURE-EXHIBITING MACHINES.—M. SMITH, Winnipeg, Canada. One purpose of the invention is to provide a film-holder for use in connection with picture-exhibiting machines, which will be readily operated and in which imperforate films can be used, thus simplifying the operation and greatly adding to the lifetime of the films.

WASHING-MACHINE.—H. F. PFLUM, New York, N. Y. A principal object of the invention is to produce a machine the construction of which especially adapts it for portability and enables the machine to be readily detached or attached in operative position. A construction has been adopted also which enables the principal part of the device to be thrown to one side, so as to facilitate the attachment of a wringer in the position normally occupied by the same. It relates especially to that class which may be operated by hand.

BLINDSTITCHING SEWING-MACHINE.—F. HERMAN, Lincoln, Neb. The object of the invention is to provide an attachment whereby blindstitching may be effected, with a greater degree of perfection and reliability than heretofore. The attachment is secured to the bedplate and head of an ordinary sewing-machine, preferably such as is employed for manufacturing purposes rather than of the domestic class, and but little modification of the sewing-machine proper is required.

Medical Appliances.

TOILET ARTICLE.—F. A. STEELE, New Rochelle, N. Y. In its preferred embodiment the invention comprises a packing of paper having on one side a mass of absorbent material—to wit, cotton-batting covered by a woolen fabric. Preferably both the paper and the absorbent material are medicated, so that when dampened the medicines will act on the anus, thus exerting a curative effect at the same time cleansing the parts.

HYPODERMIC SYRINGE.—J. W. HORNER, Columbus, Ind. Mr. Horner's invention consists of a novel form of the ordinary hypodermic syringe designed to secure a tight fit of the piston in the syringe-barrel without risk of accidental loosening of the piston and by a very simple and practical construction. One modification of the invention gives a syringe of such compact form when closed as to be especially well adapted to the limits of the small case forming a physician's outfit.

Railways and Their Accessories.

RAILWAY-CAR TRUCK.—G. C. STEWART, Marengo, Ind. The object of the inventor is to provide details of construction for a car-truck that will counteract the lateral yielding movement of the car-body on its spring-supports, either forward, rearward, or sidewise, and by cushioning such a lurching move-

ment obviate in a large degree the objectionable jerking motion incidental to the operation of cars having running-gear of ordinary construction. It more particularly relates to trucks of running-gears for street-railway cars propelled by motors actuated by electricity.

APPLIANCE FOR CAR-COUPPLINGS.—P. W. HOGAN, Durand, Mich. Mr. Hogan employs an appliance comprising a hood or bonnet to adapt the appliance to be readily fitted in place over one of the heads of a coupling between the cars in the event of breakage of some part of the head—say, for instance, the usual knuckle carried thereby—combined with which head or bonnet is a knuckle to take the place of the one broken, means being also employed for securing the appliance in position for effective operation.

Pertaining to Vehicles.

CHECKREIN-FASTENER.—C. W. BARRETT, Hanford, Cal. The invention has reference to improvements in devices to prevent accidental detachment of a checkrein from a check-hook, the object being to provide a fastening device that will be simple and inexpensive and that may be readily connected to any ordinary form of check-hook.

Designs.

DESIGN FOR A ROSARY.—B. TUBNER, New York, N. Y. This rosary as designed is very ornamental and chaste. The medals containing the heads of saints at the usual intervals are well executed, the Lord's at the junction of the loop and the pendant suspending the crucifix being in the form of a heart.

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.

Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry. MUNN & CO.

Marine Iron Works, Chicago. Catalogue free.
Inquiry No. 7958.—Wanted, makers of slot machines for vending water.

"U. S." Metal Polish, Indianapolis. Samples free.
Inquiry No. 7959.—Wanted, a machine for engraving names, etc., on glassware.

Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chargin Falls, O.
Inquiry No. 7960.—For manufacturers of wire nail machines.

I sell patents. To buy, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.
Inquiry No. 7961.—Wanted, parties to undertake the manufacture of 22-caliber round rifle barrels, 22 and 24 inches long, such as used on modern repeating rifles.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company, Foot of East 138th Street, New York.
Inquiry No. 7962.—Wanted, a pump run by electric motor, an inch inlet and 3/4 inch discharge, 16 feet suction, 40 feet raise, rotary; with motor 3/4 h. p.

Lithographing adds solidity and strength to your business stationery. Letter heads, \$2 per 1,000. Stilwell, 709 Pine St., St. Louis.
Inquiry No. 7963.—Wanted, manufacturers of dextrine.

FOR SALE.—Self-swinging gate, great improvement. Sell or lease on royalty. Patented November 21, 1905. Claude Siebring, George, Iowa.
Inquiry No. 7964.—Wanted, manufacturers of cardboard puzzles.

"Metal Novelty Works Co., manufacturers of all kinds of light Metal Goods, Dies and Metal Stampings our Specialty. 43-47 S. Canal Street, Chicago.
Inquiry No. 7965.—Wanted, balls of about 1 inch or 1 1/2 inches in diameter for static machine; also wire suitable for brushes; also rubber in sheets and rods for same machine.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery tools, and wood fiber products. Quadriga Manufacturing Company, 18 South Canal St., Chicago.

Inquiry No. 7966.—For makers of wire bands (electrically welded).
WANTED.—An experienced mechanical draughtsman. Must be competent to design machinery from sketches, must be able to accurately estimate weights and costs. No inexperienced correspondence school graduates need apply. Address or apply to Broomell, Schmidt & Steacy Co., York, Pa.

Inquiry No. 7967.—Wanted, a machine or appliance for cutting out canvas gloves.
WANTED.—Capable, business-like man to take full charge in manufacturing a line of cream separators. Must be graduate of Technical College; capable of handling men; acquainted with modern machinery and modern methods. Must have had experience in manufacturing cream separators. Only applications of first class men considered. Address or apply in person. Smith Mfg. Co., 158 E. Harrison St., Chicago.

Inquiry No. 7968.—Wanted, makers of soap-molding machines.
Inquiry No. 7969.—Wanted, the name and address of the maker of the monarch wall paper trimmer.

Inquiry No. 7970.—Wanted, makers of translucent fiber, wire glass or other material for use in factory buildings.
Inquiry No. 7971.—Wanted, parties to do enamel work of special kind.

Inquiry No. 7972.—Wanted, parties to make small steel castings in small quantities.
Inquiry No. 7973.—Wanted, information concerning the Braun-Viga calculating machine.

Inquiry No. 7974.—For parties making small castings, and who enamel them.
Inquiry No. 7975.—For makers of small castings cast in metal molds to exact size.



HINTS TO CORRESPONDENTS.

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.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(9917) V. P. says: A few weeks back I was a member of a party visiting a gold mine in Colorado. When descending the shaft we were told by operator that the elevator could be dropped faster than our bodies could fall down the shaft. A. The elevator could not fall faster than your body unless pulled down by some force other than gravity. The law of falling bodies is that the acceleration due to gravity is 32.16 feet per second.

Letting $g = 32.16$ feet per second in one second,

$v =$ final velocity, or velocity at time of contact with the earth,
 $t =$ number seconds,
 $h =$ space in feet passed in t seconds,

then $v = gt$.
Thus, a body allowed to start falling from a point of rest, resistance of air neglected, falls 16.08 feet the first second. The acquired velocity is 32.16 feet per second. The distance fallen in two seconds would be $h = \frac{gt^2}{2} = 16.08 \times 2 = 64.32$ feet, and the acquired velocity is 64.32 feet per second. The increase in velocity in each second is constant, and is 32.16 feet per second. Thus,

$$v = gt = \frac{2h}{t}$$

(9918) H. H. asks: Is the specific gravity test of kerosene oil important with reference to its condition of purity? Is it important with reference to its lighting qualities? Is the so-called heat test of kerosene oil sufficient to prove its lighting qualities as well as its purity? Can adulteration, affecting the lighting quality of kerosene oil, be discovered by any other method than the specific gravity test? Will adulteration tend to lower or raise the so-called "flashing point" of kerosene oil? A. The specific gravity, or rather the Baumé test for kerosene, is an important test as regards its purity, but is only equal in importance with other tests which the oil has to withstand. There are many adulterants which could be used which would not change the specific gravity of the kerosene. The lighting qualities of kerosene depend, with equal importance, upon the "fire test," the "flashing point," the "viscosity," and the "specific gravity" of the oil. Adulterants can be used which raise the flash point or which lower the flash point. It all depends upon the kind of adulteration. As to the detection of adulteration in kerosene oil, we would say that it would be extremely difficult for one, other than an experienced oil chemist, to discover accurately the adulterant used, for in many cases pure kerosene will come far from the required tests and still contain no adulteration. One-half of one per cent of moisture in the oil could be easily detected from the cloudiness of the oil.

(9919) P. A. R. asks: Please send to my address any statistics you may have in back issues of your paper, in regard to the controversy which exists as to when the next year will come containing fifty-three Sundays. Some say that it will come in fifty years, others say in one hundred and ten years. A. The question when a year will contain 53 Sundays is not properly a subject of controversy. It can be decided by any one who will make a table of the years with care. Each common year contains 52 weeks and 1 day. Each common year then begins and ends on the same day of the week. Each leap year has 52 weeks and 2 days, and ends one day in the week later than it began. This is all which need to be known to settle the question. Now to begin, 1905 began and ended on Sunday, and so had 53 Sundays, 1906 begins and ends on Monday, and has 52 Sundays. 1907 begins and ends on Tuesday with 52 Sundays. 1908 begins on Wednesday, but as it is leap year it ends on Thursday, and 1909 begins and ends on Friday, while 1910 begins and ends on Saturday. All these have 52 Sundays. Now 1911 begins and ends on Sunday, and has 53 Sundays. This is six years later than 1905. The years of this century which will have 53 Sundays are 1905, 1911, 1922, 1928, 1933, 1939, 1950, 1956, 1961, 1967, 1978, 1984, 1989, 1995. It is seen that the differences are 5, 6, and 11 between the years of this series.