SPIRIT SLATE WRITING AND KINDRED PHENOMENA.—II.

BY W. E. ROBINSON.

A favorite trick of mediums at séances is to procure a message from the unseen on the blank piece of paper which has been placed between two slates. The medium holds the slates high above his head, and on taking the slates apart the paper is found covered with writing. This again calls for the use of an extra, or false flap, as shown in Fig. 1. (See our last issue.) A piece of paper with writing on it is placed downward on one of the slates and covered with the false flap. Of course, it now looks like an ordinary slate.

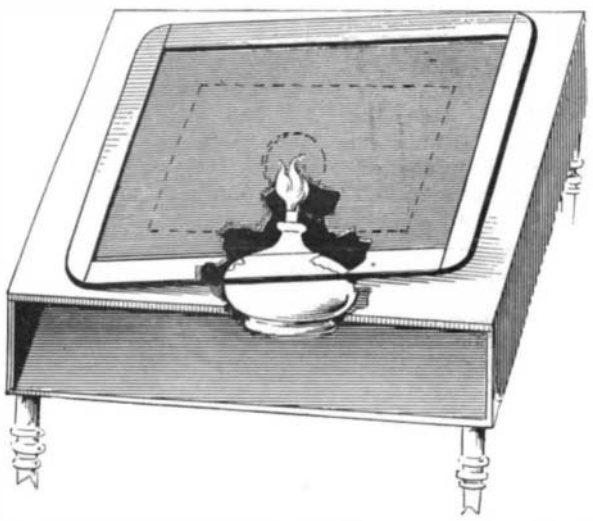


Fig. 4.—FALSE TABLE FOR DEVELOPING COMMUNICATIONS WRITTEN WITH SYMPATHETIC INK.

On this is placed the plain piece of paper, and over it is placed the second slate. The slates are now held up, and, on being lowered to the table, they are reversed, thus bringing the blank piece of paper under the false flap and the one with the writing on it on top of the flap which has fallen from the slate. On the removal of the top slate, the writing is found on what is supposed to be the original blank paper.

If the paper is to be privately marked by those who attend the seances, so as to make sure that the writing really appears on the piece of paper selected, another method must be employed, and the aid of the so-called "sympathetic ink" is invoked. Sympathetic inks are of various kinds, some appearing through the aid of a reagent and others through the agency of heat. The latter method is usually employed by mediums. The writing is done with dilute sulphuric acid, which is made weak enough so that the paper will not be destroyed. The heat required to develop the writing is obtained from a spirit lamp, which is concealed in the top of the table. The lamp is set directly under a trap in the table top. When the slates are placed on the table, they are laid over the trap, which is opened and the slates allowed to become well heated. The trap is then closed, and the prepared paper, upon coming in contact with the hot slate, is covered with writing.

Another method to produce spirit writing is to place a wide mouthed bottle over the trap. A piece of paper is put into the bottle, which is corked and sealed, and the writing makes its appearance after setting the bottle over the small trap in the table so that it receives heat from the alcohol lamp.

Unfortunately for the medium, he does not always have an audience that is willing to take the manifestations on faith. Some of the people who come to the séances insist on bringing their own slates. The medium takes the slates, which are tied and sealed by skeptics, and has no difficulty in obtaining writing upon them. The result is that it furnishes the most positive proof of spirit power to the unbeliever. Let us suppose that the spectator brings a thoroughly clean slate and holds one end of the slate in one hand and the medium the opposite end, and both persons clasp their disengaged hands. In a short time the slate is turned over and a few words are found written in a scrawling hand. The secret of this phenomenon will be readily understood by referring to Fig. 5. A piece of slate pencil is fastened to a thimble and this is attached to the medium's fore-finger of the same hand which holds the slate. The thimble is fastened to an elastic which goes up the sleeve, so that, the instant the writing is concluded, the thimble is pushed off with one of the fingers and disappears up the medium's sleeve. There is always considerable danger of detection to the medium in using this device; so that the method shown in Fig. 6 is adopted by some mediums. A tiny piece of slate pencil, no bigger than a pencil lead, is placed on the tip of the forefinger, and over it is secured a piece of flesh-colored court plaster. The finger is painted with aniline or other colors, so that the line of demarkation between the court plaster and the flesh is eliminated. After the court plaster has set, a small aperture is made in it, so as to allow the point of the pencil to come through far enough to be able to mark on the slate. The writing is done with this prepared finger. The message must be written backward, so that when the slate is reversed it will appear in its correct position. The message must necessarily be short, on account of the limited distance which the medium's finger can travel.

A Course in Railway Mechanical Engineering.

Cornell University has always been in the lead in the introduction of novel and eminently useful courses, and now one more course has been added. It is called the Graduate School of Railway Mechanical Engineering, and, of course, it comes under the Sibley College of Mechanical Engineering, of which Dr. Thurston is the Director. The school was organized in February, 1898. Its purpose is to concentrate and systematize the work in the mechanical engineering of railway machinery previously constituting a subordinate part of the existing courses, and to offer special instructions to students who have completed a general course in technical institutions of high rank, and, furthermore, to members of the engineering profession desiring special knowledge in this field. For all such, in addition to instruction in this department of engineering, immediate practical value courses of work are also available in other departments of the college and of the university. The courses in the school will have special relation to the design, construction, operation, and maintenance, and the test trials of locomotives and other kinds of machinery employed in railway operation. They will be particularly adapted to the needs of the engineer seeking to find his way into the departments of construction of railways, and ultimately into the positions of superintendent of shops and of motive power. In addition to the courses offered in Sibley College as purely professional, there will be found in the scheme of the special courses leading to advanced degrees opportunities of pursuing work in economics, in law, and in allied professional and scientific departments. The school will so arrange its work as to connect closely with the undergraduate work of Sibley College. Students in the undergraduate courses may begin to specialize in their junior year and to increase considerably this specialization in their senior year. The principal of the school is Prof. H. Wade Hibbard. He has been well known in the railroad world since his graduation from Brown University, thirteen years ago.

FATE OF STERNWHEELERS DESIGNED FOR THE YUKON.

Of the forty sternwheel steamers designed for navigation of the Yukon River and which have attempted the ocean passage, only about eight, or one in five, have been successful. The larger number of these vessels have sailed from Seattle and kept to the inside route, along the coast. Several attempts have been made also from Portland and San Francisco, but with the most disastrous results. The experience almost invariably has been that frail, light draught steamers of this character cannot withstand the great ocean swells, and, in a vast majority of cases, collapse. Fortunately the loss of life in these catastrophes has not been great, as they are always accompanied by an ocean steamer, upon which the passengers in time of danger have been transferred, or else the boats have been so near port as to enable them to return before being completely disabled. There are now about sixty sternwheelers navigating the Yukon, most of which have been constructed in the lower ports, their timbers then being taken apart and carried to St. Michael's and there set up.

The last attempt to sail sternwheelers by the ocean route was made at Astoria, Oregon, some weeks ago, when two, in every respect equal in size and power, started for Alaska, filled with passengers and weighed down with freight. They had been built in Portland and were advertised as being staunch and seaworthy. They were about 125 feet in length and were rated at 300 tons. They were fitted with all the conveniences for travel, electricity, hot water, etc., and each one had over a hundred passengers. They were named the "Game Cock" and "Stag Hound," and cost altogether $125,000. They were accompanied by the steam collier "Elihu Thomson" and left port with every prospect of a fine voyage. It was only a few hours afterward these same steamers returned in the condition shown in the photograph. The great swells off the Columbia River bar had proved fatal. At the first essay both boats were wrecked and were only prevented from sinking by the fact that before starting every particle of space had been utilized for storing wood for the boilers. By great good fortune the two succeeded in reaching port, where they were photographed for the SCIENTIFIC AMERICAN.

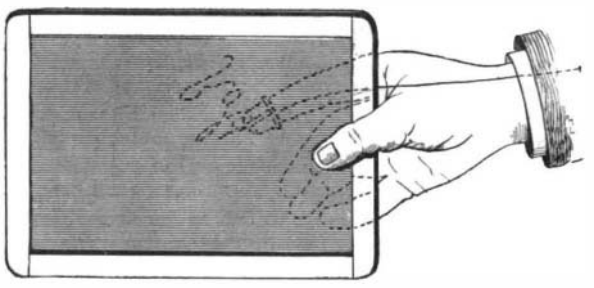


Fig. 5.—WRITING ON THE SLATE WITH THE PENCIL THIMBLE.

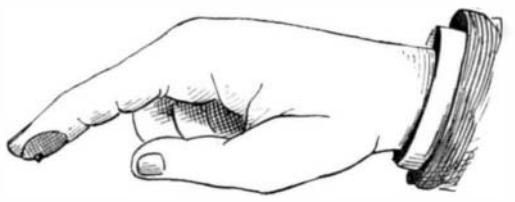
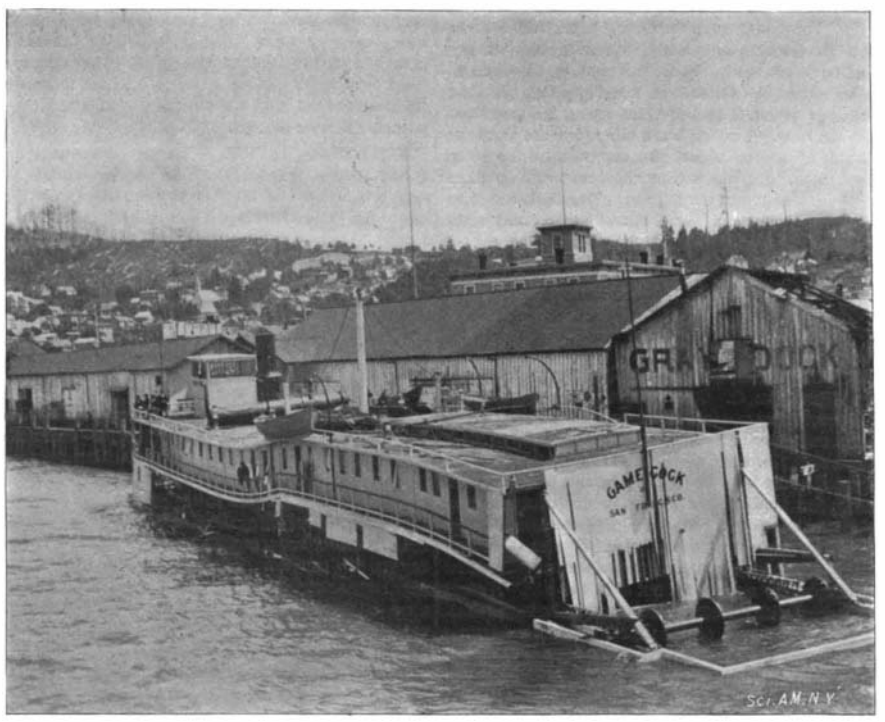


Fig. 6.—THE PREPARED FINGER.



STERNWHEEL RIVER STEAMER WRECKED BY GROUND SWELL IN ATTEMPTING OCEAN PASSAGE TO ALASKA.

A Brave Deed.

Few readers are aware that our warships carry boiler makers who are often called upon to perform perilous repairs, and, in cases of emergency, these men go inside of the boiler or furnace, which but a few minutes before had been filled with boiling water or red hot coal. There is no task too dangerous for these men to do. One of them undoubtedly saved the "Castine" from destruction in the harbor of San Juan. The "Castine" went into action under full speed. The furnaces were heated to the highest degree, forced draught being used. Without warning, a fierce hissing noise was heard inside one of the furnaces. A socket bolt in a back connection at the farthest interior extremity of the furnace had become loose, springing a leak. The steam was pouring in upon the fire, threatening in a few minutes to put it out and stop the progress of the vessel, if it did not cause a terrific explosion. All in the boiler room knew that, unless this hole was stopped, disaster was at hand. One of the boiler makers, named Huntley, ordered the forced draught turned off and the fires banked. Taking a plank, he threw it into the furnace on the top of the wet, black coal with which the fire had been banked and then climbed far back to the place where the steam was rushing from the loosened socket. For three minutes he remained inside the furnace. His friends drew him out of the door: the forced draught was turned on, and in a few minutes the ship was proceeding on her way as though nothing had happened. In view of such deeds as this, there is little wonder that the engineering corps in our navy is receiving the highest praise on every side.

THE faintest stars visible to the naked eye are of the sixth magnitude; the faintest telescopic stars are reckoned of the sixteenth or seventeenth magnitude.

Italian Railways.

The Italian engineer Giuseppe Spera makes in his book, which has lately appeared, some interesting revelations with regard to the Italian railways, and his remarks are worthy of general attention, says The Engineer. Italy possesses a railway system of the value of 140 milliards of lire and 9,334 miles in length, and thereby occupies the eighth place among the countries of the world; but, when one compares the length of the railway system with the number of the inhabitants, Italy is reduced to the forty-first position on this list.

The management of nearly all the Italian lines is in the hands of three companies since 1885, when the state leased the three systems of the Mediterranean, the Adriatic, and the Sicilian railways to the above companies. But, by reason of the shortsighted and bureaucratic nature of the system of management laid down by the state, the development of the railways has been hampered, and as a result of its policy in this respect the sum of £240 has to be granted every year by the state for every kilometer, or about two-thirds of a mile. The time occupied in short journeys leaves much to be desired, and in this matter the Italian railways are in evil plight; this is all the more remarkable since 70 per cent of the passengers make only short distance journeys.

The express trains convey only first and second class passengers, and the passenger trains can at most attain but a speed of from 20 to 23 miles an hour. The passenger rates are certainly not higher than those in use in other countries, but they are much too high in comparison with those current in England, for the population of Italy has scarcely one-fourth of the income enjoyed by the population of England per head. The goods traffic is in an equally bad state; viewed as a whole, the forwarding of goods by rail in Italy is becoming worse and worse, and is far behind the system of conveyance by carriers.

Although the unsatisfactory state of the railways from a commercial point of view may in some degree be traced to the unstable condition of Italian politics, yet the technical shortcomings of the whole system and the unreasonableness displayed in its administration must not be lost sight of; thus, there are from seven to nine officials for every 1,100 yards of railway, while in North America three officials are found to be quite sufficient for the same extent of line. In comparison with other countries, Italy has the largest railway staff. Moreover, the uncertainty and want of security in the goods traffic leave very much to be desired. It is said that matters have come to such a state on the Italian railways that the authorities have resolved to introduce very thorough and drastic reforms.

Travelers have for many years suffered at the hands of the Italian customs officials at the frontier stations, and it is certainly surprising that Italy has been so long in realizing that more attention ought to be paid to the wants of the traveling public, so far as the Italian railways are concerned; year by year new routes are being opened up for the tourist, and the conditions of travel upon such routes are of a nature that for the most part leads one to avoid the discomfort that, as a rule, falls to the lot of the tourist in Italy.

The Current Supplement.

The current SUPPLEMENT, No. 1189, contains a large number of interesting articles and engravings. The first page cut shows the destruction of a balloon 2,000 feet high by means of the new French 7·5-cm. field-piece, and the effect on intrenched infantry of shrapnel fire. "The Chimes of Saint-Germain-l'Auxerrois" describes the most modern form of mechanical bell ringer. "The Electrical Suspension Railroad" is accompanied by a full-page engraving showing the railroad between Elberfeld and Barmen as it will appear when finished. This is an extraordinary development of the elevated railroad, in which the cars are suspended from inverted Y's. "Kangaroo Hunting in Queensland" is illustrated by a spirited engraving showing the hunters in full chase after these animals. "Color Vision," by F. P. Whitman; "The Development of Photography in Astronomy," by Prof. E. E. Barnard, and the "Inaugural Address of Sir William Crookes," are concluded or continued in this number. "Musical Susceptibility of Animals" is an interesting article by Nicolas Pike. Among the technical articles are: "The Dangers of Acetylene," "Black Printing Processes," "Spinning, Stamping, and Working of Aluminum and Brass Sheet," and "Culture and Preparation of Orris Root." "The Neo-Occultism" describes a striking experiment with the X-rays. The column of "Selected Formulæ" is given up in this issue to formulas for the destruction of animal parasites.

Contents.

(Illustrated articles are marked with an asterisk.)

RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

LAWN-MOWER.—HARRY JACKSON, Kingston, N. Y. The purpose of this invention is to provide a lawn-mower in which the knives are so shaped as to obtain the best cutting action, and in which the cut grass will free itself from the machine, thus preventing clogging. In a frame a shaft is mounted carrying blades formed of plain metallic plates. The plates are held diagnally with reference to the shaft, the blade having a tapering flange at its outer edge. This flange is at an angle to the blade and projects beyond one side, running gradually from zero at one extremity to the greatest width of the flange at the opposite extremity. A ledger-knife is held to be engaged by the edge of the knife-flange.

Bicycle Improvements.

UNICYCLE.—VERNON D. VENABLE, Farmville, Va. The unicycle forming the subject of this invention is provided with a rim or spokeless wheel composed of two parts, one sliding upon the other. A seat-support is pivoted upon the inner part of the rim to swing in the plane thereof. A drive-wheel is carried by the inner rim, engages the outer rim and has a limited movement relative to the inner rim. To the inner rim a saddle-post is pivoted and a frame secured. A drive-wheel is adjustably mounted in the frame and has recesses to receive projections on the outer rim. A pedal-shaft is carried by an upright and operates a driving connection between the pedal-shaft and the shaft on which the driving-wheel is mounted.

Electrical Appliances.

ELECTRIC RAILWAY SYSTEM.—GEORGE L. CAMPBELL, Dushore, Pa. This invention is an improvement in electric railway systems, and comprises means by which a closed conduit may be operated. A surface-rail made in short, insulated sections is used, and a trolley or follower within the conduit communicates with a continuous conductor and the third rail or sectional conductor. The car is made to travel by the influence of a magnet mounted on the car. The third rail is normally "dead." The system is hence exceedingly safe, and needs no protection in the way of fences. The workmen employed need take no special care to avoid the rail.

Engineering Improvements.

ROTARY-ENGINE.—JAMES C. WALKER, Waco, Tex. The rotary-engine of this inventor is an improvement on an engine already patented by him. The present engine comprises a fixed annular chamber, a sliding abutment, a drive-shaft having a concentric piston, shaft-operated means for lifting the abutment and a steam-chest for the chamber having a duplex set of steam-ports, one set being at each side of the abutment. A hand-operated sliding valve opens and closes the inlet of one set and the exhaust of the other set of ports. The chest has independently and automatically operated supplemental valves, movable over the inlets and ports. Fixed cams are carried by the shaft to move the supplemental valves in one direction, centrifugal adjustable cut-offs moving them in the reverse direction. Either of the supplemental valves may be set out of engagement with the shaft. Cam and cut off devices hold this valve to close off its respective steam inlets.

ICE-STEAMBOAT.—ANTOINE I. SHERMAN, Punta Gorda, Fla. In this steamboat, improvements in construction are found which enable the boat to be readily handled and navigated on ice or snow, the driving mechanism being operated by steam-power. The boat comprises a frame having adjustable runners thereunder mounted upon vertical pivots, a steering-wheel connected with certain runners whereby they may be used as rudders, and propelling mechanism carried upon the frame and consisting of a rotating wheel having teeth engaging the ice.

Mechanical Devices.

LOCK.—ALFRED L. GARLOUGH, St. Paul, Minn. The lock forming the subject of this invention is of especial value in tenements, offices, and the like, where it is usually necessary, when key-locks are used, to fit new keys for every new tenant. With this lock it is only necessary to change the combination, and thus the expense of new keys is avoided. The lock comprises a casing in which a locking bolt and a latch-bolt are movable. A series of tumbler-carriers are mounted to swing in the casing, and have openings at one side in line with a projection of the locking bolt. Tumblers are adjustable across the openings. The tumbler-carriers may be lifted one independently of the other, the locking and latch-bolts being moved inwardly after the carriers have been lifted. The combinations of the lock may be changed by removing the several carriers.

ALARM MAIL-BOX.—CYRUS R. FUREY, Logansport, Ind. The mail-box provided by this invention is adapted for private use and is an improvement in such boxes as have an alarm attachment, designed to be operated when the lid is opened. The present box has a body with a sounding box in which a gong is located. A wheel is arranged facing and close to the gong, and is provided with a series of curved teeth. A spring has its free end arranged for contact with the teeth, and is provided with a clapper adapted to strike the gong. A rod connects the hinged box-lid with that side of the wheel toward which its teeth are curved, to operate the device on opening the lid.

APPARATUS FOR MANUFACTURING WOOD-ALCOHOL.—MARTIN F. QUINN, Straight, Pa. The main object of this invention is to devise an arrangement so that provision is made for the expansion and contraction of the retort in its housing, without injuring the surrounding brick-work. With this end in view, the inventor places the retort in a housing which has a pier midway of its length and on which the central portion of the retort rests. Two or more other piers are placed on each side of the first-named pier, and on these the retort loosely rests. By this means the retort will contract toward each end from the middle. The discharge-pipes leading the products of distillation from the retort to the condenser are passed through openings in the side of the housing of larger diameter than the pipes. Hence the side walls of the housing, as well as the ends and top, have no connection with the retort, and the housing is not injured by the expansion and contraction of the retort.

TIRE-BOLTING MACHINE.—JOSEPH R. WHITAKER, Wilmington, O. This machine comprises a slotted beam provided at one end with means for securing it to a support and carrying an adjustable hub-pin held in place by a clamping device. A slide is held adjustable on the outer end of the beam and has a post also formed with a bearing, in which a frame is movable that carries a casing at its inner end. Meshing gear-wheels are held in the casing, one of which is provided with a central tapered opening in which a nut-jaw is removably fitted and adapted to engage the nut of a tire-bolt. A shaft is connected with the other gear-wheel and a lever is fulcrumed on the post of the adjustable slide and carries a tool adapted to engage the slot in the head of the bolt.

WOOD-TURNING LATHE.—NELSON R. SPRINGER, Dixfield, Me. The lathe forming the subject of this invention is provided with a movable carriage with which a lever is connected. A toothed bar is adapted to be engaged by the lever to move the carriage forward a predetermined distance. A cutter-head controlled by means of the lever moves in the carriage and is adapted to face off the end of the stick. On the carriage a cutter is fixed for turning the end of the stick round before facing it. The machine is especially adapted to the turning of checkers.

MERRY-GO-ROUND.—WILLIAM HERFURTH, New York city. This merry-go-round comprises principally a revoluble frame having its axis inclined from a vertical plane, and a flexible platform supported freely from the frame to permit the sections thereof to assume a horizontal position by gravity. When the frame revolves then the hobby-horses or other devices always stand in a horizontal position, so that, when the machine is in motion, the hobby-horses incline toward the platform. Thus the rider, carried by one of the hobby-horses, is always in a level position, with a changing floor or platform, so that a spectator gains the impression that the hobby-horse with its rider is moving or rocking.

FRUIT-JUICE EXTRACTOR.—GEORGE N. GUTHRIE, Gallatin, Tenn. The apparatus patented by this inventor is adapted to extract the juice of fruit and comprises a casing, a perforated cylinder having cutters for reducing the fruit to pomace and mounted to rotate in the casing, a screw-shaft extended through the cylinder, and a presser-plate in the cylinder adapted to be moved by the screw-shaft. This machine may be made of any size and will be found useful for household purposes when it is desired to make a small amount of fresh cider and the like.

Miscellaneous Inventions.

METHOD OF AND MEANS FOR DELIVERING PNEUMATICALLY-CONVEYED GRAIN.—FREDERIC E. DUCKHAM, London, England. In conveying grain pneumatically, the grain flows in a somewhat attenuated stream suspended in a current of air of such high pressure that the air and grain travel at a great velocity. The result is that it is well-nigh impossible to deposit the grain in any particular spot if it is projected from the discharge pipe at a high velocity. In the present invention, this objection is overcome by changing the direction of the grain just before it emerges, whereby its high velocity is destroyed. Before the air current can overcome the inertia of the grain and again impart to it its initial high velocity, the air will have become dispersed in the surrounding atmosphere, while the grain, freed from the propulsive action of the air, masses in a thick stream and flows out slowly, so that it may be deposited wherever desired.

DERAILING-DEVICE.—DAVID ANDERSON and DAVID BEVAN, Delphos, O. This device consists of a base adapted to be fastened to a railroad tie, to which base a flange is pivotally connected, having its free end formed with a trough arranged to fit down over the head of the rail. The flange is formed with a diagonal groove commencing at one end at the inside of the trough and below the upper wall thereof and extending over the trough to its outside. An abutment follows the line of the groove on the inside thereof, the upper edge of the abutment being considerably above the upper surface of the free end of the flange above the trough.

SACK-HOLDER.—MONTY A. LYON, Wisdom, Mont. The device provided by this inventor comprises a standard having a central support and side members between which the support is located, and a holder consisting of a band adapted to engage a sack or the like at the mouth and engaging the side members of the standard, the holder being provided with a hook adapted to engage the support. The hook can be readily disengaged whenever desired, to permit the sack to be shaken, after which operation the hook can be again conveniently attached to the support and the filling completed.

WRENCH.—CHARLES S. METCALFE, Silver City, New Mexico. To provide a wrench which will grip either round or polygonal bodies with equal firmness is the purpose of this invention. The shank of the wrench is provided with a fixed jaw and carries an adjustable traveler. A movable jaw is fitted upon the shank and pivotally mounted at its heel upon the traveler. A lever is interposed between the front of the movable jaw and the traveler and fulcrumed on the latter, the lever having a cam-surface in engagement with the movable jaw at the front thereof.

DISCHARGE-VALVE FOR ASH-PITS.—JOSEPH SEDLMAYER, New York city. This invention is an improvement upon a device of a similar nature for which a patent was granted to the same inventor. The chute is provided with hinged wings. A sliding hinge-bolt is also provided, having above its axis a sleeve with a wedge-shaped end adapted to engage the upper surface of the wings to lower or open them. Another sleeve is secured to the bolt below its axis and is provided with a wedge-shaped end adapted to engage the lower surface of the wings to raise or close them.

COIN-CHUTE.—CHARLES J. TAYLOR, Shelbyville, Ill. The chute devised by this inventor is designed more especially to be used in connection with telephone pay-stations. In one side of the casing of the chute are fixed stops one above the other and insulated from one another. A vertically-moving plate is located at the opposite side of the casing and is provided with two stops, one above the other. The two lower stops are in an electric circuit designed to be closed by a coin engaging with the lower stops. The telephone-lever has connection with the movable plate. The movable stops are so related to the fixed stops that when the telephone lever is held downward the two upper stops will retain the coin; when the lever is raised, the coin will be released from the upper stops and caught and held by the two lower stops until the lever is moved downwardly, releasing the coin from the lower stops.

DISH-DRAINER.—HENRY M. TSCHOPP, Pickerington, O. This dish-drying tray has a leg to support its outer portion and has a fastening device or jaw capable of engaging the edge of a pan, whereby to support the inner portion of the tray and permit the dishes to drain into the pan and to dry upon the tray.

TIRE-HOLDER.—JOHN D. AITKEN, Northport, N.Y. The purpose of this invention is to provide a device to support a tire above a blacksmith's anvil so as to carry most of the weight thereof and permit ready manipulation. The support comprises a tube with a series of lateral pin-receiving holes, a bar slidable within the tube and having a side-extending hook upon its lower end, a spring attached to the upper end of the bar, and a pin adapted to pass through the holes in the tube and engage the upper end of the spring.

ACETYLENE GAS-GENERATOR.—GEORGE L. HOGAN, Baltimore, Md. This acetylene gas generator belongs to that type in which an external tank, holding water, is combined with an inverted bell or buoyant gasometer dipping down into the water at its lower edge and containing a basket for the calcium carbid. The gasometer, on being raised out of the water by the pressure of the gas, carries the carbid out of contact with the water and thus stops further generation until the gas already generated has been consumed. The present invention adapts this form of generator for use as a street-lamp and for other large lamps.

TOBACCO PIPE—THOMAS McE. GILL, Mexico, Mo. This invention seeks to do away with the varnish and filling or other polished finish commonly used on cob and wood pipes, which varnish often destroys the desirable qualities of a pipe. To secure a fine external finish and shape which will permit the thorough cleaning and ready renewal of the bowl or lining of the pipe, which will at the same time form an air-chamber surrounding the lining to prevent the exterior of the pipe from being overheated and which will permit the convenient adjustment of the casing to take up shrinkage from time to time as may be desired, the pipe forming the subject of the present invention has been devised. The inventor also secures such results by a special construction of casing which serves to form an ornamental exterior and which strengthens the material.

Designs.

COMBINATION GARMENT.—JACOB H. FLEISCH, New York city. This garment is a combination coat and waistcoat, and constitutes a desirable sporting costume. To the flaps of a coat waistcoat flaps are secured, which, when buttoned, present the appearance of a waistcoat beneath a coat.

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