structure, standing in constant need of repairs and liable to settlement and heavy leakage. Of late years both the government and the private shipyards, or rather those of them that can afford the more costly construction, have favored the use of masonry and concrete for drydock construction. The government. it is true, has built some masonry docks of the smaller size, and they have given most excellent service. It is pretty safe to say that all future drydocks built for the United States navy will be of the more durable construction; for although the first cost of the timber dock may be less, the cost of up-keep and the necessarily short life of the timber dock, to say nothing of the delay and anxiety incidental to its construction, more than offset the first cost.

August 26, 1905.

In our issue of April 29 of the present year we gave an article which illustrated the various stages in the process of building the handsome stone-concrete drydock at the Boston navy yard, which has recently been opened by the docking of one of the largest ships in our navy. The new dock has a total length on coping, from the head to the outer end of the table, of 788 feet. From head to outer gate sill it is 750 feet in length, and on the floor from head to outer gate sill it is 729 feet. The width on the coping is 114 feet and on the floor of the dock is 72 feet. From the coping to mean high water, it is 5 feet 2 inches, and the depth of water over the sill at mean high water is 30 feet. The drydock is built on the site of an old basin, that was used in the early days of the dockyard. This resulted in considerable saving of excavation, and, fortunately, the dock everywhere is underlaid by an excellent quality of hardpan, which was so good that no piling whatever was necessary. The dock structure consists of a monolithic mass of concrete covering the whole of the floor and sides of the dock, upon which the cut granite facing has been laid. The concrete backing is 11 feet thick on the floor, and, in places, it is as thick as 18 feet in the side walls, the granite masonry being 4 feet thick over the floor and as much as 7 feet thick in the side walls and altars. In the construction of the dock it was necessary to excavate 170,000 yards of blue clay and hardpan and then lay in place 61,800 cubic yards of concrete and 21,000 cubic yards of cut granite.

The placing of the dock in actual service was accomplished when that fine armored cruiser, the "Maryland," was floated into position over the keel blocks;

and the accompanying illustration is of particular interest since both the ship and the dock are examples of the latest and best work that has been done by the two bureaus of construction and of yards and docks. The "Maryland" was built by the Newport News Shipbuilding and Dry Dock Company, and on her trial she easily exceeded the contract speed of 22 knots per hour. She and her sisters are the longest warships in our navy, measuring 502 feet over all. On a mean draft of 24 feet she displaces 13,680 tons. She is protected by a waterline belt 6 inches in thickness, and she has a further protection of from 6 to  $6\frac{1}{2}$  inches over her barbettes and turrets, the central battery being protected with 5 inches of steel. Her main battery consists of four 8-inch guns in twin turrets, and fourteen 6-inch guns mounted in casemates.

#### Another Experiment With Ludlow's Airship.

Israel Ludlow, the lawyer-aeronautic-inventor, made five attempts to fly his dirigible man-carrying kite on Thursday, August 17. The big aeroplane, constructed after the fashion of an Eddy double box-kite, was transported from a vacant lot at 78th Street and West End Avenue, where it was built, to an open place on the North River front, near the railroad tracks, by a horde of willing helpers, including nearly all the small boys of the neighborhood. Charles Hamilton, a professional aeronaut, was the passenger, and it is generally conceded that he was fortunate to have escaped without injury at the conclusion of the trial. The machine was placed upon the ground facing the wind, and attached by means of a long rope to an 80-horse-power automobile. Three times the rope broke or became disentangled under the strain, and, with the exception of the first attempt, the aeroplane refused to rise. At the mentioned initial trial, when the rope parted the structure had risen some 10 feet and fell with a crash. rudely bumping Hamilton, but leaving him otherwise uninjured. The fourth time the airship was sent aloft without a passenger. It soared for a few moments and then fell, breaking its rudder and otherwise somewhat damaging the framework. At the fifth trial, with Hamilton aboard, the aeroplane rose gracefully into the air under the powerful tractive effort of the giant automobile and continued to glide as long as the pull on the rope was maintained—some two or three minutes. As soon as the automobile stopped, however, the motion of the aeroplane became very erratic, and despite

Hamilton's efforts to keep it righted, fell with a crash from a height of approximately 100 feet, hopelessly smashing its framework. To the astonishment of the numerous spectators, Hamilton emerged smiling and uninjured from the wreckage.

Notwithstanding the seeming failure of the experiment, Mr. Ludlow expressed himself as satisfied that the brief flight had demonstrated the practicability of his design, and that within a few weeks he would be ready for further tests with a new and greatly improved machine.

### Vagaries of the Gulf Stream.

The exceptional resistance encountered by transatlantic steamers on their journeys to this country has aroused not a little interest among oceanographers. So great, indeed, has been the resistance offered that some of the vessels fell short of their usual daily runs by 25 to 40 miles when within two days of the United States. Along the southern Atlantic coast the velocity of the Gulf Stream fluctuates between one and onehalf and two knots an hour. As it travels northward the speed gradually reduces until when the stream reaches Nova Scotia it is so far widened and grown so shallow that it is almost imperceptible. It sometimes happens, however, that the speed does not diminish and that it even increases as the current changes its course. At times the northwestern limits of the Gulf Stream approach New England and Nova Scotia more closely than at others.

Naturally, such marked changes are not without their effect on climate. A change is noted in the movement of the air over the ocean. Indeed, it is not improbable that the change in the direction of air motion is the direct cause of the change in the Gulf Stream's motion. And since the winds in turn are controlling factors of our weather, it follows that a change in the Gulf Stream's direction of flow must be accompanied by some modification in our climatic conditions. The present phenomenon is merely a temporary aberration.

### Jupiter's Seventh Satellite.

Harvard Observatory officials have received a telegram from the Lick Observatory at Mount Hamilton, San José, Cal., that a seventh satellite of Jupiter has been observed. On August 8 the satellite was seen at 289.07 deg. distant 54.05 minutes; on August 9 298.05 deg.; on the 10th, 289.04 deg.

### RECENTLY PATENTED INVENTIONS. Electrical Devices.

ELECTRICALLY-ENERGIZED FENCE.—A D. McNair, Dallas, Texas. The invention refers to fences and admits of general use, but is of special value as applied to fences intended to prevent the escape of animals—such as cattle, horses, and hogs-therethrough. It further relates to means for exciting the wires of the fence electrically, so as to give the animals the sensation of pain upon making proper contact with the wires. Also relates to time controlled mechanism for rendering the electric action of the fence intermittent, so as to save the battery-current.

PHOTOPHONE.-R. W. HARTMANN, decease ed; B. Saenger, administrator, Berlin, Germany. The present invention relates to improvements in photophones, whereby the conveyance of speech over greater distances than hitherto is rendered possible and the size and the weight of the photophone are kept within moderate limits, so that the latter can be easily transported, while a greater secrecy of the conversation both at the sending-station and at the receiving-station is insured.

SYNCHRONIZING SYSTEM.—P. RIBBE, Halensee, near Berlin, Germany. In this system the objects are, to provide at each station the rotary operating-disk of the clockwork with one or several radial slits, and a corresponding number of armatures on the periphery; to dispose an electro-magnet for attracting either of these armatures, the former being connected with line of transmission and may be connected at will with ground or local circuit; to dispose at each station on one side of disk a stationary screen with a slit, the latter adapted to register with the one or several radial slits of periodically and consecutively; provide a selenium-cell behind the screen slit and inserted in local circuit; and to provide at each station a source of light on the other side of the disk in line of the screen slit.

RUHMKORFF COIL.-J. MCINTYRE. Jersey City, N. J. The invention relates to coils for use in electro-magnet apparatus—such as shown and described in application for letters patent of the United States, formerly filed by Mr. McIntyre. His object is to provide a coil arranged to allow continuous running of the apparatus without requiring retruing of the contact platinum portions and insuring a proper readingtment and contact between the platinum portions without danger of quickly burning their registering faces.

RECEIVER FOR USE IN WIRELESS TEL-EGRAPHY.—E. Branly, 3 Rue Boursault, Paris, France. This receiver essentially comprises two metallic parts in contact, one polished, one oxidized, contact of the latter with the polished surface preventing the passage of

immediately becoming conductive on emission of electric spark at a distance, and instantly resuming its resistance under action of very slight shock. One of the parts is constituted of metal rods, whose blunt points are oxidized and rest upon polished metal plate, or conversely the plate oxidized and points polished. By means of the device operation of receiver is always insured, as always at least one contact is capable of being rendered conduc' under the influence of electric waves.

# Of Interest to Farmers,

SELF-PROPELLING COMBINATION HAR-VESTING-MACHINE.-J. J. TROEGER, Chicago, Ill. This improvement comprises selfpropelling means, a cutter, a reel, and means for conveying the cut material from the cutter and elevating it from the machine to a thresher, which is to be connected to it, an auxiliary force-feeding device for the conveyer, and other features. The invention relates to each of these features separately, as well as to the combination as a whole.

DITCHING-MACHINE.-H. W. SARGENT. Near Fonda, Iowa. The invention comprises a wheeled-frame mounting a cutting and elevating mechanism, so that these parts may be vertically adjusted, the cutter turning on a vertical axis and being adapted to extend into the ditch and cut away earth, while the elevator takes up the dislodged earth and disposes of it, discharging it either at one side of the ditch or back into the ditch in rear of machine. The depth dug may be regulated by vertical adjustment of cutter and by adjustment of a shoe which follows the plow at base of cutter and may be operated to control the position of the cutting apparatus.

GRAIN-SEPARATOR .- L. T. MANN, Moline, Kan. One purpose of the inventor is to provide a series of lifting-fingers over the chaffer having reciprocating movement in a vertical direction and means for conducting the straw and grain from the concave and cylinder, into the said fingers, the rearmost of which fingers deposit the threshed straw upon the raddle, which in its turn conducts the straw to the delivery end of the thresher.

DEVICE FOR CATCHING AND HOLDING HOGS, ETC .- D. P. FUNK, Monroe, Wash. In this case the invention relates to an improvement in devices for holding hogs, sheep, calves, or other animals while applying rings to their noses and for other purposes. The object is to provide a cheap and efficient device which can be applied to the nose or leg of the animal while the ringing operation is taking place and one which shall be positive in its action.

PNEUMATIC COTTON-HARVESTER.—W. F. HARBOUR, Atlanta, Ga. The object of the which is adapted to be advanced over a field power of the jack, and to prevent backing up of cotton and operated so as to gather the cotton and separate it from the leaves or other foreign objects which may be gathered therewith. The invention contemplates the employment of pneumatic means for effecting both gathering and separating operations. The contruction especially facilitates the manipulation of the gathering member.

## Of General Interest.

PROCESS OF TREATING STONE.—H. RYAN, Seattle, Wash. This invention relates particularly to a process for treating building stone—such as granite, marble, sandstone, etc .- in order to remove stains therefrom and to change and improve the color thereof. It further relates to means for hardening the stone. Also, to a process for removing stains from various objects—such as stone, wood, and other building materials—and from fabrics, and more particularly stains caused by iron-rust.

TABLE.—E. MURRAY-AARON, Chicago, Ill. This invention pertains to improvements in tables of the adjustable and folding type, the object being to provide a table so constructed that by moving the top forward or rearward the height may be adjusted, maintaining the top in horizontal position, thus providing a table desirable for various purposes. It may be tilted and held at any angle to provide a drawing-board, book-rest, or the like.

WATER-TIGHT BUTT-JOINT.-F. C. KEL-SEY, Salt Lake City, Utah. Mr. Kelsey's invention relates to stave-pipes, his more particular object being to produce a type of buttjoint for connecting the ends of the staves together so as to prevent leakage and also to hold the adjacent abutting ends of the staves rigidly in predetermined positions relatively to each other.

STUFFING-BOX FOR HYDRAULIC CYL-INDERS .- T. E. Holmes, 63 Sheldon road, Sheffield. England. The object of the invention is to obviate the necessity of either with- $\mbox{d} \mbox{rawing}$  the ram or dismounting the cylinder in order to allow of the leather being renewed. the construction whereby this end is attained also permitting of the use of leather packing in situations wherein, owing to the impracticability of dismounting the cylinder, or withdrawing the ram, hemp or other readily renewable packing has been heretofore employed in place of leather packing, notwithstanding the fact of the latter being preferable in itself.

SCREW LIFTING-JACK .- E. H. GOODWIN, Olympia, Wash. In the present patent the object of the invention is to provide a new and improved screw lifting-jack arranged to reduce the friction between the members, of the current under normal conditions, but of invention is the production of an implement the head to a minimum, to increase the lifting or simultaneously raised to stand at an angle

of the screw-rod when the jack is under a load.

DEVICE FOR STRETCHING PAPER OR OTHER SUBSTANCES .- RACHEL GAUGUET, 6 Rue de Savoie, Paris, France. The invention relates to improvements in reglets designed to be engaged in connection with a stretcherframe provided with channels or grooves to receive the reglets; and the object is to provide a reglet that will have a lateral springyielding tendency at its ends, the said spreading action being materially assisted by means of springs arranged in the reglets. The frame is designed for stretching sheets of paper, fabric, leather, and similar materials.

SPITTOON .- A. GARFEIN, New York, N. Y. In the present patent the object of the inventor is the provision of a new and improved spittoon which is sanitary, inoffensive to the eye, and arranged to completely conceal the accumulating sputum and to allow convenient cleaning whenever desired.

FRAUD-DETECTING BOTTLE.—S. Bell, Represa, Cal. In this instance the improvement relates to fraud-detecting bottles, the object being to provide a bottle of this class which is simple in construction and adapted to prevent effectually the fraudulent sale of liquors of all kinds. Openings having their outer edges in substantial alinement with the inner side of the cylindrical wall insure that the entire contents of the bottle may be removed. The bottle is constructed in a form so that no waste space occurs in packing.

DRESS-SUIT-CASE COVER .- S. BOTTEESE. Washington, D. C. In his improvement Mr. Botteese seeks to provide a protecting-cover for cases which can be secured snugly upon the case, does not interfere with the opening or closing of the case, and will afford means for carrying magazines, newspapers, or the like on one side and a pair of rubbers or the like on the other side.

CRATE.-H. H. CUMMER, Cadillac, Mich. The present invention refers to crates, and is an improvement on the crate formerly patented by Mr. Cummer. The improvements relate especially to the construction of the crate at the bottom and the cover. While the invention seems to be most applicable in connection with a folding crate or box, the parts may have substantially the same construction in a box which does not fold and so that the cover and bottom will be capable of connection and disconnection in a convenient manner.

BEDSTEAD FOR INVALIDS .- J. C. ANDERson, Victoria, Canada. The purpose of Mr. Anderson's invention is the provision of a mattress attachment to the frame of bedsteads. which mattress is provided with a hinged head and foot section capable of being independently

to the body or central portion of the mattress Ill. This tool is designed to be used as a and lowered to a horizontal alignment with the body may be given any desired inclination.

PROCESS OF REPAIRING PIPE-LINES. J. Welsh, Jersey City, N. J. In remaining water-wine lines it is impossible to close off the water perfectly on either side of the point where the break has occurred, as the valves in the main are apt to have grit or sediment collect on their seats and prevent the valve from closing tightly. Water passing valves in this way progresses to the point where repair is manent joints. This effect is materially increased when joints are made with lead, which is flowed into the collars. This invention affords means for disposing of this water so that it does not interfere with the repairing operatien.

SUPPORT FOR FLOOR CONSTRUCTION. L. Viezzi. New York. N. Y. In this matent the invention pertains to fire-proof floor construction; and its object is to provide a new and improved support for sustaining the filling between the beams while placing the filling in position, the support being very simple and durable in construction, easily set up, and readily taken down after the filling is in place.

Bossuer, 49 Boulevard Haussman, Paris, charging apparatus capable of many uses, but France. This substitute is for use in connect especially designed for blast-furnaces. The tion with corsets, bodices, and other articles of main object of the invention is to insure a betapparel. It comprises small longitudinal strips ter distributon of the materials charged into of cork or cork composition, felt, leather, or a blast-furnace—such as fuel, ores, and fluxes— other like material with intercalated strips of than has hitherto been attained. These inventreal whalebone, imitation whalebone, or other resistant and flexible material, these strips being secured together—for example, by means of a suitable adhesive—so as to constitute blades of pieces having the dimensions of the strips of whalebone usually employed in articles of dress

HOSE-HOLDER .- A. G. BUTTON, Denver, Col. The invention is an improvement in hose bell with a variable diameter, so as to allow a holders, especially designed for holding hose in varied distribution of the charge within certain use for sprinkling lawns and the like. Construction is simple and easily applied. By bending the points of the tripod so they extend RANDALL, Gaffney, S. C. The invention is an parallel to each other and may be forced straight into the ground it is found in practice that but slight pressure is required to force lowered into the water to fill and raised there or street-cars. The object is to provide a the points into the ground and that the holder from to discharge its contents, the same being fender of simple construction which will be will not turn over, no matter how heavy the force of the water.

IEVAPORATOR .- A. P. GEER, New London, Conn. This improvement relates to apparatus used on board marine vessels for evaporating salt water and condensing the vapors for the production of water fit for use in the boilers and for other purposes. The object is to provide an evaporator durable in construction, very effective in operation, and arranged to insure proper evaporation of the salt water without danger of clogging the apparatus or rendering the same ineffective.

SIGNALING APPARATUS FOR THEA-TERS, ETC.-T. E. MILLER, Norman, Oklahoma. This invention is in the nature of a mechanical signaling device for theaters, etc., designed to reduce to a simple, quiet, and well- $\bullet {\operatorname{rganized}}$  system the transmission and execution of the various orders incident to the dropping of curtains, the setting of scenes, orders to the orchestra, dressing-room, head usher, electricians, grippers, etc., instead of having to tely upon verbal orders and the dispatch of to the hood, which saves the metal material messengers. The apparatus comprehends an operator's transmitting-board, and intermediate muchanism whereby the above results are car ried out.

MACHINE FOR MAKING CHEESE.—C. H. SOUTHARD, Smithville Flats, N. Y. The improvement pertains to a means for heating and circulating the material in cheese vats; and it consists, briefly stated, in the novel mechanism for performing this operation, in which mechanism an ejector is provided with a suction-port adapted to draw the whey therethrough, so that the steam passing through the ejector-nozzle will carry with it a quantity of whey, and the two will be admixed and discharged into the vat.

VETERINARY MOUTH-SPECULUM. — M. McNalley, St. Louis, Mo. The principal object in this case is the provision of a speculum so constructed that the jaws of the animal such efficiency of power will be considerably inas a horse, or mule, may be forcibly separated creased over the normal power of the waterand securely held in open position, so as to permit the introduction of instruments into the animal's mouth and the convenient and effective manipulation of the instruments therein. Means are provided for holding the speculum in adjusted position with such security that the accidental release of the parts of the speculum by any movement of the animal is completely obviated.

## Hardware.

WRENCH .- E. ENDERES, Littleport, Iowa. erally known as the "never-slip" horseshoecalks. When the jaws are fitted around the calk and the handle is moved in a certain direction the jaws will grip the calk and hold it until the handle is pulled back in reverse direction, when it will release the calk, so that the handle may be reciprocated to turn the calk one direction or the other, the cupped hook operating to tightly grip the calk and prevent any slipping of the same.

can-opener, tack-puller, and corkscrew, having said body-section, so that either the head or both fixed and movable jaws for opening cans, the feet of the patient or both portions of the pulling tacks, nails, etc., and also for extracting stoppers from bottles, etc. The object of the invention is to provide an efficient device in a single unitary article for performing various functions of different parts of the tool.

#### Machines and Mechanical Devices.

CRUSHING-ROLLS.—R. Pick, Buffale, N. In this case the invention relates particularly to rolls for crushing sugar-cane and extracting the juice, the object being to provide being made and interferes with making of per-crushing-rolls so formed as to crush or break the cane in uniform lengths without shocks and whereby the cane will pass lengthwise between the rolls at right angles to their axes.

> ELEVATOR-ENGINE.—C. W. HOFFMAN, New York, N. Y. The object of this invention, which relates to elevators, is to provide improvements in elevator-engines whereby the engine is stopped in case of accident to the machinery by shutting off the motive agent the car travels and will close at the opposite from the engine and by applying the enginebrake by the same brake-lever which normally centrels the brake en erdinarily stepping and starting the engine.

CHARGING APPARATUS.—T. F. WITHER-BEE and J. G. WITHERBEE, Port Henry, N. Y. SUBSTITUTE FOR WHALEBONE.—E. M.  $_{\parallel}$  In this patent the invention has reference to a charging apparatus capable of many uses, but ors have patented another charging apparatus which relates to a charging device which is capable of many uses, but is especially designed for use in blast-furnaces. The principal object of this invention is the provision of a bell and hopper which can be used in connection with a modern "skip-hoist," as well as with a handfilled furnace. A further object is to provide a limits in the furnace.

> WINDLASS WATER ELEVATOR.—L. Y. improvement in the class of water elevators in which a bucket or receptacle is alternately operated by a windlass or equivalent means and purpose by a swinging spout which is raised as the filled bucket or recentacle reaches the limit of its rise.

> SHOE-SEWING MACHINE.-J. A. RHOULT, ject of the invention, briefly stated, is the provision of a new and improved shoe-sewing matheir natural positions, thus requiring no turning over of the shoe after being sewed.

> TYPEWRITER COVER .- J. L. RAMSAY, Lavaca, Ark. In this case the invention relates to covers for typewriters; and its object is to provide a device for this purpose which is of simple construction and which may be folded into small space. In the improvement, economy and ease of applying the device have been important considerations; for instance, the means for centering the typewriter easily with respect used in  ${\tt censtructien.}$

# Prime Movers and Their Accessories.

LUBRICATOR.-E. A. HENRY and O. A. Sneep, Joplin,  $M \bullet. \quad \mbox{In the present patent the}$ invention has reference to lubricators and admits of general use, but it is of peculiar service upon steam-engines and analogous motors in in playing games or sewing, and when elderly which it is desired that the feed of the lubricant shall have a relation to the flow of steam  $\bullet r$   $\bullet f$  s•me  $\bullet ther$  aerif•rm b•dy.

iston, Idaho. This invention pertains to im- widgeon, teal, etc.-may be readily called, the provements in motors adapted to be operated by device being adjusted, so as to suit the species water-currents for driving pumps, dynamos, or of duck being called and also so as to adapt other machinery, the object being to provide a the device to the peculiarities of the sportscurrent-meter of comparatively simple and in- | man using the call. expensive construction and in which the current.

## Railways and Their Accessories.

BAGGAGE AND FRIEIGHT TRUCK. - L. Barnes, Oxford, Mich. The inventor's purpose is to provide a truck for conveying baggage to a baggage car or to receive it therefrom and which may also be used for freight and to provide the truck with one or more (usually four) elevating-sections, upon which baggage is placed, the sections being so arranged that they may be quickly and independently elevated The wrench is especially designed for the pur- to bring the upper portions of sections either pose of applying and removing what are gen-flush with or above the floor of the car, enabling the baggage to be removed from the truck to the car or from the car to the truck with little exertion and without damage to articles.

SWITCH.-W. S. JACKSON, Hoboken, N. J This invention refers to switches for electrical work, it being particularly applicable to those employed in connection with the trolley-wire of electric-car systems. The device is simple ing or fastening devices of any kind. The prinand convenient. Though Mr. Jackson claims COMPOUND TOOL.—J. W. QUILLING, Ursa, the operation of the switch by a trolley, it is or fastening device which will be automatically finding novelties.

to be understood that this does not necessarily apply to a contact-wheel only, but is intended to designate any portion of the supporting and conducting system which more directly co-operates with the source of current.

RAIL-TIE.-G. W. SCHELLENBACH. Sedalia. Mo. In the present patent the invention pertains to improvements in metal railway-ties, the object being the provision of a metal tie the greater portion of which is incased in cement or concrete in a manner to relieve the strains and shocks, making the concrete subject generally to compression only.

VENTILATOR FOR CARS.-H. KENNELL New York, N. Y. One purpose of the invention to provide means for ventilating cars or  $\bullet ther\ vehicles\ \ \ by\ intr \bullet \ \ \ ducing\ a\ th \bullet \ r \bullet \ \ \ \ cir$ culation of air through the clearstory of the car, thus preventing occupants being subjected to draft, though the air is constantly replaced. The device is adapted for attachment at the ends of the clearstory which will open at the end of the latter facing the point from which end of the clearstory or that end which faces the point in direction of which the car is traveling, the two ventilators being independent in their operation, thus creating a suction to draw foul air out of the body of the car.

DUMPING-CAR.—McKinley Boyle, New York, N. Y. Mr. Boyle's invention refers to  $im {\tt pr} \bullet vements \ in \ {\tt dumping-cars} \ \bullet f \ that \ class$ in which the dumping is from the sides. It is the object of his invention to provide a simple and nevel means to swing the door to a plane of the car-body and possibly above the top of the load, thus providing a wide opening through which the load may quickly discharge.

METAL CROSS-TIE AND RAIL-FASTEN-ING.—C. D. PAXSON, Cleveland, Ohio.—The aim of the inventor is to provide novel details of construction for a metal cross-tie that afford great strength for a tie of minimum weight, adapt the tie to resist strain in every direction, and give it a broad bearing upon the roadballast; and a further object is to provide a novel rail-clamping device which releasably secures track-rails in position on the cross-tie, properly spiked apart.

CAR-FENDER.-E. C. HALL, New York, N. Y. The invention refers to car-fenders, and especially to the class carried by trolley-cars normally disposed in an inoperative position having a valve which serves for inlet and out well beneath the body of the car, but which let of water, it being operated for the latter can be instantly sprung into operative position, so as to catch an object lying upon the track before the car.

RAILROAD-TRACK-RAIL-GAGE HOLDER AND BRACE THEREFOR.—J. H. CROWLEY, Haverhill, Mass. In the present patent the ob- Duluth, Minn.—The object here is to provide a transverse gage-bar of an essentially T-rail form to be clamped near each end thereof upon chine more especially designed for sewing the the base-flanges of two spaced track-rails be-outer sole on to the upper while both are in tween the cross-ties whereon the track-rails are seated, the bar being inverted and the baseflanges thereon secured in contact with the base-flanges on the track-rails on their lower surfaces by novel brace-clamps and abutmentflances secured on the end portions of the bar, whereby the track-rails are held from lateral displacement and properly gaged and the outer sides of the track-rails braced to resist load strain and lateral sway of rolling-stock.

## Pertaining to Recreation.

PORTABLE SWING. — C. U. KRIEG. SR. Nashville, Tenn. The invention is in the nature of an improved portable swing for use on lawns, parks, etc., which is designed for amusement, recreation, and advertising purposes and which shall also be protected as against the sun's rays and rain. Means are provided to lock the swing in many cases, as persons are getting in and out.

DUCK-CALL.—C. H. DITT●, Keithsburg, Ill. With a call of this kind the principal species CURRENT-MOTOR.—F. M. CUMMINGS, Lew- of wild ducks—such as the mallard, mintail,

## Pertaining to Vehicles.

BICYCLE-SUPPORT.-E. H. FOSTER. Baker City. Ore. The device is simple and easily against bility of movement when in use as a support and when the wheel is being ridden is so securely fastened in place that none of the parts can become disengaged and cause accidents.

AUTOMOBILE ATTACHMENT. — H. C. UCKER, Fayetteville, Ark. The improvement refers to an auxiliary propelling means applied to motor-driven vehicles for carrying massengers or freight and adapted to be thrown into operation when the wheels of the vehicle slip or for other reasons fail to exert their proper propelling effect. The propelling device comprises a series of push-bars and means for mounting and driving them. It also comprises certain novel devices for moving the Push-bars in and out of action.

WHIFFLETREE-HOOK .-- W. R. BRUESKE, Wimbledon, N. D. The invention relates to a self-lecking safety whiffletree-hoek, but it is of such a nature that it can be applied to holdcipal objects are the provision of a holding

cally and securely locked when the article to which it is intended to be attached is applied, which may be readily and quickly attached and removed, and which will be absolutely safe.

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Adding, multiplying and dividing machine, all in one. Felt & Tarrant Mfg. Co., Chicago.

Inquiry No. 7182.—For manufacturers of thin steel razor blades of best quality.

Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13. Montpelier, Vt.

Inquiry No. 7183.—For manufacturers of bicycle parts for assembling bicycles; also manufacturers of light from wheels for baby carriages and children's velocipedes.

Marketers of meritorious inventions and specialties throughout the world. Tatem Mfg. Co., Buffalo, N. Y.

Inquiry No. 7184.—Wanted, address of parties selling castings and drawings of water-jacketed gasoline engines for marine and automobile use.

I sell patents. To buy them on anything, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.

Inquiry No. 7185.—For parties selling Turkey boxwood.

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. 7186.—For manufacturers of machinery for fastening tips to shoe strings; also machinery for working button holes.

WANTED. -Information concerning manufacturers of vacuum pans for evaporation of liquids. Sligo Furnace Co., Sligo, Dent County, Mo.

Inquiry No. 7187.—For manufacturers of bending machines and plating apparatus, used in manufacture of gas and electric fixtures; also brass tubing, casing, etc.

Gut strings for Lawn Tennis, Musical Instruments, and other purposes made by P. F. Turner, 46th Street and Packers Avenue, Chicago, Ill.

Inquiry No. 7188.—For dealers in magnetic sand ore containing gold.

FOR SALE.-U. S. Patent No. 659,635. A household article of general necessity, light manufacture. Proven a good seller. Descriptive circular. Address Walter A. Arrowsmith, Urbana, O.

Inquiry No. 7189.—For importers or manufacturers of the "La Luciole" French electric sign, illuminated.

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

Inquiry No. 7190.—For makers of small commu-tators.

Absolute privacy for inventors and experimenting. A well-equipped private laboratory can be rented on moderate terms from the Electrical Testing Laboratories, 548 East 80th St., New York. Write to-day.

Inquiry No. 7191.—For dealers in pure oils and agredients for use in making flavoring extracts.

Manufacturers of all kinds sheet metal goods. Vendng, gum and chocolate, matches, cigars and cigarettes, amusement machines, made of pressed steel. Send samples. N. Y. Die and Model Works, 508 Pearl St., N.Y. Inquiry No. 7192.—Wanted, firms who under-write stocks and bonds.

WHAT HAVE YOU TO SELL?-We are in touch with the best canvassers in Central New York. Act as manufacturers' agents and promoters of companies. Patents bought and sold. Manufacturers' and Inventors' Sales Company, 133 Leroy St., Binghamton, N. Y.

Inquiry No. 7193.—For manufacturers of certain Metropolitan lever handle loco. injector.

PATENTS ON DREDGES AND DREDGING MACHINERY good, valuable patents, having a long term to run, are offered for sale. For terms communicate with

The Albany Trust Company, Executor,

Albany, N. Y.

Inquiry No. 7194 .- For the manufacturers of the ollapsible foil metal tubes.

For SALE.—Canada and all foreign rights. Flynn's Little Giant Controller. The New Theory in driving and a guaranteed conqueror of hard pullers and runaway horses, or your money refunded. Fits all bridles: absolutely humane. Does not interfere with wind or gait. No overdraw or checkbit necessary. Lightest and neatest controller made. Price, \$2.50 each. dress Dr. P. Harvey Flynn, Patentee and Sole Manufacturer, 73 Warren Street, New York City.

Inquiry No. 7195.—For parties in middle west to manufacture and sell, regalty basis, butter blocking machine for hotels, restaurants, etc.

Inquiry No. 7196.—For manufacturers of electri-tal tattooing outfit.

Inquiry No. 7197.—Wanted, address of parties elling lancewood.

Inquiry No. 7198.—For manufacturers of pressure tanks for residence water systems.