

## RECENTLY PATENTED INVENTIONS.

## Agricultural Implements.

**TREE-FELLING DEVICE.**—ELI BURKE, Tama, Iowa. The object of this invention is to produce a device for felling trees, which may be attached to a portable engine by which the necessary power is supplied. The inventor has mounted a swinging arm upon the engine, and upon this arm he has journaled a saw connected by suitable power transmitting means with the engine and movable in any direction desired.

**HOOD FOR CACTUS-BURNERS.**—LEWIS W. SNOWDEN, Tilden, Tex. The hood is especially adapted for use on a cactus-burner, which concentrates the flame to any point desired and which can be securely held on the vaporizing coil or detached therefrom. The hood thoroughly protects the flame from wind, so that the concentration referred to can be easily effected. The peculiar formation of ribs on the hood, so that they engage the coil throughout its length, causes the hood to extend some distance beyond the lower end of the coil and forms a very hot furnace.

## Mechanical Devices.

**AUTOMATIC TYPESETTING.**—DONALD MURRAY, 28 W. Eighth Street, Manhattan, New York city. This is an attachment for working a linotype, a typesetting machine, a typewriter, or any other keyboard machine automatically by means of a perforated paper tape. The invention's chief merits are that it uses ordinary half-inch telegraphic tape, perforated as for automatic telegraphy, and that it does not interfere with the ordinary operation of such machines by hand. It provides a method of rapidly and cheaply putting into type serial stories, special articles, telegraphic news distributed by syndicates and central news agencies to newspapers, the required number of tapes being perforated at one operation. The perforations being arranged in a straight line, can be transmitted by telegraph. In fact, the inventor has succeeded in perforating the tape by telegraph at a distance of 1,000 miles at the rate of 80 words per minute. A speed of 100 or 120 words over any telegraphic circuit will probably be reached. It will hence be possible to transmit newspaper dispatches and set them up simultaneously in type. This development is rendered practicable by the facility with which corrections and additions can be made as the work of typesetting proceeds.

**RECORDING APPARATUS.**—EDWIN C. HEGAN, Louisville, Ky. The invention provides a completely automatic apparatus arranged to furnish a full record in writing on a tape of all the telegraphic work during a given period, with the date and number of the circuit. The apparatus is especially applicable to district telegraph offices, fire-alarm and police stations. The essential features of the apparatus are found in an actuating device for the numeral wheels, which comprises a lever operated by an electro-magnet and provided with a pin. Hooks on a series of bars are adapted to engage the pin. By means of a cam, the hooks of the bars are allowed to engage the pin, one at a time. The numeral wheels are turned from the bars when the latter are actuated.

**MITER BOX.**—THEODORE BOOTSMA, Arctic, Wash. This invention is an improvement on a similar device patented by the inventor. The box is especially designed for locking saw-guides at different angles and for holding the guides at different elevations. In its essential features the invention comprises a support for the work, and a horizontally-swinging arm carrying saw-guides and held over the support. A vertically-swinging gage bar is arranged for locking engagement with the arm.

## Railway-Appliances.

**CAR-TRUCK.**—ALEXANDER R. GREEN, Houston, Va. The invention seeks to overcome the friction between the car-wheels and the rails in rounding curves, due to the unequal length of the inner and outer rails. A coupling device is provided, the outside of which is attached to the car body and the inside to the frame of the guide truck and sliding freely with it under the car while controlling the rotary motion of the front and rear trucks. The axles are caused to assume the position of the radii being passed, while the wheel-flanges strike the rails on the tangent points of the curves.

## Miscellaneous Inventions.

**TEA-KETTLE.**—WILLIAM McCAUSLAND, Taunton, Mass. The kettle is mounted on trunnion-bearings, open on both sides so that the kettle can be entirely removed, but is yet capable of being locked by a single locking bolt and a single adjustment. For this purpose the front trunnions have an upwardly-projecting and overhanging extension, which, when the bearings are open, allows the kettle to be removed, and yet locks the front bearings whenever the rear ones are locked.

**FASTENING DEVICE FOR NECK WEAR.**—EDWARD McC. WICKERSHAM, Phoenix, Arizona. The invention provides a shield for made-up ties, which shield has means for fastening the made-up tie to a collar-button. The shield has a fastening device which may be employed in connection with a new tie, scarf, or bow after having been detached from the made-up tie to which it was originally secured. The entire device is very light, and when in use is invisible.

**PUZZLE.**—ALEXANDER II. KOPETSHNY, Jersey City, N. J. Blocks bearing the words "knife," "plate," "fork," and "spoon," are indiscriminately shuffled, the object being to arrange them side by side, so that the four articles of tableware will appear to be named in each line, both vertically and crosswise, and the four articles of food pictured beneath the words will appear in each line, both vertically and crosswise.

**BALL-BEARING.**—FREDERICK H. HEATH, Howland, Gerard, Manhattan, New York city. The inventor makes the bearing self-adjusting to any spring of the shaft or permanent bend therein or vibrations from unequal strains, by providing a spherical inner surface which is presented to the balls, so that if the axle or shaft spring or be bent, the balls will still travel in the same circular track, whereby the wedging of the balls is entirely obviated and an equal and even bearing on all the balls always maintained, thus adding greatly to the smooth running and life of the bearings.

**APPARATUS FOR MAKING PHOSPHORUS.**—LOUIS L. BILLAUDOT, Avenue Victoria 16, Paris, France. In order to overcome the objections to the use of water in condensing phosphorus gases, the inventor receives the mixture of vaporous phosphorus and gases in receptacles of sufficient surface for the cooling processes and large enough to give the condensed particles of phosphorus time enough to deposit on the inner walls, the deposition being assisted by the special shape of the receptacles, which have baffle boards to give different speeds to the gaseous current. In order to gather the condensed phosphorus, the dry mixture of phosphorus and foreign materials is then distilled in the same receptacle or other receptacles.

**DRAFT-EQUALIZER.**—FRANK F. THILL, Wheaton, Minn. The draft-equalizer is especially applicable to harvesters or mowing machines, and by its means three horses may be worked at the right-hand side of the pole and a fourth horse at the left-hand or grain side of the pole. On an extension from the right-hand side of the pole an equalizing-bar is pivoted. A fulcrum-bar is pivoted between its center and right-hand end on the tongue or pole; the longer portion of the fulcrum-bar extends beyond the left-hand side of the tongue. Straps connect the shorter end of the fulcrum-bar with the pivot portion of the equalizing-bar. A double-tree is directly connected with the equalizing-bar at its right-hand end; and a second double-tree is located at the left-hand end. Straps connect the left-hand double-tree with the fulcrum-bar and with the equalizing bar. The left-hand ends of the equalizing and fulcrum-bars are also connected.

**COPYING-PRESS.**—WALTER THEXTON, Duluth, Minn. The press comprises a bed-plate circularly formed on its top. A cushion is placed over the bed plate, over which a removable cover is fitted. An apron moves into and out of a water-tank rearward of the bed-plate. A pressing-roller is movable over the bed-plate and is operated by a treadle. The leaves of the copy-book are dampened before the impression is taken and the second leaf is moistened while the first is taking the impression.

**ACETYLENE GENERATOR.**—HENRY P. SCHAEFER, Schulenburg, Tex. The purpose of this invention is to provide a machine, so arranged as to prevent the entrance of air or the escape of gas when the carbide holder is removed for cleaning. The apparatus comprises a gas-generating cylinder connected by a pipe with a receiver. A bucket or carbide-holder is removably connected with the lower end of the cylinder. A chute leads into the cylinder; and a valve controls communication between the chute and the cylinder.

**APPARATUS FOR CRYSTALLIZING SUGAR IN MOTION.**—EDWARD P. EASTWICK, JR., New Orleans, La. An air-valve is provided for the crystallizing cylinder, which valve can be manually or automatically operated. When operated automatically, an excess of pressure or a vacuum is prevented in the crystallizing-cylinder; when operated manually, the opening uncovered can be utilized to take from the cylinder samples of the masse-cuite in process of crystallization. Besides this improvement, a better driving mechanism is provided, likewise a preferred construction for the interior of the cylinder, and a heating device for the cylinder.

**WAREHOUSE-TRUCK.**—JOHN B. DOYLE, Stampley, Miss. This warehouse or railroad-truck has in addition to the usual wheels and axle, wheels of smaller diameter also mounted on the axle, one adjacent to the inner face of each of the main wheels. The inner wheels can be spaced so that the truck can be used on a plank or staging of slightly less width than the distance between the inner faces of the main wheels, and carried up or down the staging, and automatically guided. The outer and larger wheels serve as guide flanges when the smaller wheels are brought into action.

**CARBURETER.**—WILLIAM E. CARY, Springfield, Vt. Within the carbureter-tank is a float carrying an air-pipe having air-inlets and gas-mixture outlets. A nozzle in the pipe opens at its lower end to the liquid and extends at its upper end above the inlets in the pipe. As the pipe carried by the float has an easy sliding fit in an outlet-pipe, the float rises and falls with the liquid in the tank. The float can be forced with more or less power down into the liquid by means of an adjustable, weighted, needle-valve stem. The carbureter is particularly adapted for explosion engines.

**METALLIC PACKING.**—WILLIAM H. PRENDERGAST, Savannah, Ga. The inventor has devised a metallic packing-case for piston-rods, which is used in connection with a packing having a ball-joint or spherical bearing surface whereby it is adapted to rock to compensate for vibration or displacement of the piston-rods.

**COMBINED FIRE-ESCAPE AND ALARM.**—VALENTINE and EDWARD V. SCHIRMER, 300 West 70th Street, Manhattan, New York city. The invention provides a fire-escape employing a flexible ladder, which is hung from a building for the escape of the occupants, and which is strong enough to support forty persons at a time. The ladder can be instantly released and will cover every window on a 25-foot front building. The invention also embodies a simple means for sounding an alarm in any place in the building at the instant the ladder is released, so that all the occupants are warned of their danger. The fire-escape, when not in use, is invisible. The simplicity of the construction renders it impossible for the device to get out of order.

**FIRE-ESCAPE.**—HENRY C. KARPENSTEIN, Brooklyn, New York city. The fire-escape ladder is designed to be placed on the outer side of a building and is provided with a simple means for holding the ladder in its elevated or inoperative position. The holding mechanism can be quickly released, so that the ladder will fall by gravity to the ground or other landing place to permit the safe descent of persons.

## Designs.

**MANDOLIN-BODY.**—WALTER H. SMAW, Brooklyn, New York city. The body is flat and has arms extending from its upper end and flanking the neck. The inventor states that the advantage of this construction lies in the more beautiful tone obtained.

**WALL-PAPER.**—HENRY WEARNE, Rixheim, Alsace, Germany. Six design patents have been granted

to this inventor for wall-paper of various patterns. The designs are noteworthy for a felicitous combination of different kinds of flowers, by means of which a very artistic effect is produced.

**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.

## Key West

ALTHOUGH "many men have many minds," the verdict of the whole civilized world is a unit in the answer that a good cigar is the product of the finest soil of Cuba, known as the Vuelta Abajo, or Valley of the Willow Bough, manufactured by natives (who have grown up in the industry) in the self-same climate where the raw material is grown.

That is to say, that Vuelta tobacco manufactured in the latitude 19° 50' to 23° 9' and in longitude 74° 8' to 84° 55' by experts who may be said to have grown up in the industry, experienced in the most expert treatment from seed-bed to consumer, gives the finest cigar that the world and human skill can produce! That being granted beyond dispute, the most favorable place in the world for making cigars for American smokers is Key West, in the same latitude and longitude as Havana, from which city it is only eighty-eight miles distant. This is because the cigars made in Key West cost the consumer only about one-half what the same identical cigar made in Havana and imported to this country would cost him—the present tariff imposing a duty practically at the rate of one dollar per thousand cigars for every mile of distance between Key West and Cuba. See what an advantage this is for our product, manufactured at Key West—for at a moderate cost the Cortez Cigar Company can supply the consumer with



goods equal in quality, style, and workmanship to those of most celebrated Havana cigar factories. Key West is unique in location, buildings, population, and climate. The coldest month is January, and the temperature is an average of 68 degrees to 72 degrees, while statistics show that it is the only point in this country where snow and frosts are unknown, and this secures the ideal climate for cigar making. This is because it is not necessary to use in the Cortez Cigar Company's factory any artificial moistening or sweating process, thus retaining the full aroma and bouquet (which is so dear to every smoker) to just the same extent as in the Havana factories. This cannot be done in factories further north! And herein lies the great advantage of Key West.

Knowing all these important facts, the Cortez Cigar Company selected this city for the location of their factory, determined to produce only high-grade cigars, equal in every way to those of Havana, at about one-half the cost to the consumer! This product is always the same in quality. Year after year the Cortez Cigar Company use the same grade of tobacco grown on the same plantations, and by skillful blending of the selected leaves from the hill-sides and valleys, secure a uniformity which cannot be surpassed.

There is a reason for everything, and the reason of the Cortez Cigar Company for devoting their energies to the production of a fine cigar is because they believe and insist that the highest civilization demands the lightest and most perfect stimulant, and they believe that their process results in the combination of the highest possible art and science of cigar-making, enabling them to offer the best, mildest, and most uniform smoke to men of brains.

To meet the taste of various smokers, the Cortez Cigar Company make no less than fifty-two sizes of cigars from large to small—for some like a long smoke and some a short one; but the quality is identical in each, and a man does not get a poorer cigar for a lower price, but simply so much less of the one high grade of uniform quality. It must

not, however, be overlooked that the fullest flavor and bouquet can only be reached with a cigar of a medium to a full size. It is like the use of a perfume—a drop will not convey the same fragrance as will the orthodox half-dozen drops, yet it will be the same identical perfume without change. The cigars of the Cortez Cigar Company may always be identified by the reproduction of the cut on the inside back of each box. It is our aim to have our cigars on sale wherever high-grade goods are demanded, and should your local dealer offer you "something just as good," decline it, and write direct to the Cortez Cigar Company, Key West, for samples and particulars.

## Business and Personal.

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(7773) J. H. P. asks: 1. How are the telephones on a metallic circuit connected so that the telephones between the terminal telephones do not short circuit the terminal telephones? A. The intermediate telephones are put across the two wires of the circuit. A telephone does not short circuit the other telephones upon the same line because it is not in circuit except when it is in use, and then it should have the line to itself. 2. Which is the best system, the bridge system or in series? A. The "bridging bell" system is in use for all long-distance work. It allows a large number of telephones to be used upon the same line. 3. Explain wiring of bridge system? A. Both the call bell and the telephone are put across the line. You will find diagrams of the connections in books upon the telephone. We can furnish you Hopkins' "Telephone Lines" for \$1.50 by mail, and Miller's "American Telephone Practice" for \$2 by mail. The call-bell is wound to a high resistance, say 1,000 ohms, and therefore cannot short-circuit the other portions of the line. 4. When speaking of the number of ohms resistance of a telephone what is meant, ringer, generator, or induction coil? A. If the resistance of a telephone is given, it should be that of the telephone, or receiver. That is the telephone. The other parts of the apparatus have their special names. 5. Does the wiring of more wire on the generator increase its power? If it does, how much wire must I put on to ring through 100 more ohms of resistance? A. You may wind more wire on the armature of the magneto-call, and make it ring through a greater resistance. Of course we cannot tell you how much to add to make the bell ring through 100 ohms more resistance, since we know nothing about what is already there, either on the line or the magneto. You would better find out by experiment, if you cannot measure for yourself.

(7774) E. K. A. asks: Is the rate of rotation of the wheel of a Crookes radiometer proportional to the amount of radiant energy impinging upon the surfaces? A. Yes; see Barker's "Physics" or Ganet's "Physics."