RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

DEVICE FOR GATHERING FRUIT.—John H. Crumb, Osage City, Kan. By means of this device the labor of carrying heavy baskets or bags around over the fruit-treet is saved ; and the work is thus lightened and expedited. The device comprises a sheet of flexible material having a central opening and provided below the opening with a number of loops of flexible material, crossing one another. The fruit is cast upon the sheet and passes through the opening to the first loop, and thence to the next loop below, and so on until the ground or a receptacle is reached. The fruit can in this manner be gathered without being bruised.

PLOW.—William B. Gray, Ashland, Ore. This plow is especially adapted for hillside-work, and is so constructed that either one of two plows may be raised or lowered independently, and the line of draft directed to accord with the draft-line of the plow brought into operation. The plow comprises a frame mounted upon wheels independently adjustable. Two plows are pivotally mounted in the frame and can be swung into and out of operative position. At the rear of the frame a trail-wheel is mounted on a swinging support, whereby the wheel can be brought into alinement with either plow.

SELF-FEEDER FOR THRESHING-MACHINES.—Henry Kister, Morrison Mo. The bundles are thrown on a vibrating bed on each side of a straightening-blade, and are fed forward by the joint action of the vibrating bed with teeth and stationary toothed arms, being straightened as they move forward by the broad longitudinal blade. When the bundles reach a certain portion of the feeder, they pass into a vibrating hopper provided with forwardly-inclined teeth, which feed the bundles down to the threshing-cylinder, the bundles being cut as they descend through the hopper by the shearing action of the cutting blade above. The bundles are thus rapidly and evenly fed to the threshing-cylinder without choking the working parts.

Electrical Apparatus.

TELEPHONE-TRANSMITTER.—James H. Spencer. Manhattan, New York city. The transmitter has a diaphragm composed of two thin disks, with layers of tissue between the disks, the layers being secured together only at the center. The double diaphragm rigidly held in place is vibrated only by the sound-waves, and can vibrate only in sympathy with this influence. The transmitter, as a result, varies the electrical current in harmony with the sound-waves on account of the accuracy of its vibrations. The sound is, therefore, entirely transmitted and reproduced in the natural tone.

Engineering-Improvements.

STEAM-ENGINE.—Alejandro Stephens, Guadalajara, Mexico. In this engine a high-pressure piston is provided, which is surrounded by an annular low-pressure piston, the two pistons being rigidly secured together. The high-pressure piston has a passage leading from one face to the other face, and controlled by a cut-off valve. The pistons move in a cylinder having two chambers. A receiver has a valve-controlled connection with the working chamber of the high-pressure cylinder; and the low-pressure cylinder has a channel leading to the receiver and to the exhaust. A valve opens this channel to the receiver when the high-pressure piston is at the end of its working stroke and connects the channel with the exhaust when the high-pressure piston is at the end of its inactive stroke.

PUMP-GOVERNOR.—Thomas P. Ford, Brooklyn, New York city. The pump-governor comprises a casing in which a diaphragm is held. A tube extends through the diaphragm and communicates with the liquid to be pumped and with the valve controlling the steam-supply pipe of the pump, which valve carries a weighted lever. When the liquid to be pumped rises, it passes into the tube and ascends until the weight of the column of liquid is sufficient for the weighted lever to overbalance the weight of the stationary column on top of the diaphragm, so that the tube moves up and the valve is opened to permit steam to pass to the pump. When the level of the liquid falls, the reverse operation takes place.

Mechanical Devices.

PUMP-ROD-OPERATING DEVICE FOR WINDMILLS. — William E. Vernon, San Angelo, Tex. The windmill has an oblong plunger-head provided with internal teeth forming a rack. The windmill operates a gearing, a portion of which is arranged for alternate engagement with the teeth at the sides of the plunger-head, being adapted to elevate the head and permit a more rapid descent than ascent of the head. A plunger-shaft is connected with the plunger-head and is connected with a retarding device, which regulates the speed of the downward movement.

WEDGE-CUTTING MACHINE.—George M. Clubb, Mullan, Idaho. This machine comprises a saw, a saw-table, and an endless belt traveling over the saw-table with one side close to and parallel with the saw. The belt has combined feeding and spacing blocks adapted to engage and present rectangular blocks to the saw, so that they will be diagonally ripped. By means of this machine a large number of wedges may be made in a short time; and all the wedges will be of exactly the same size and bevel. The machine will thus reduce the cost of wedges when large numbers are to be used.

Designs.

OAR-LOCK.—Marcus P. Nichols, St. Paul, Minn. The oar-lock-shank is provided with two spring-members formed with shoulders at their lower extremities. The shoulders firmly hold the shank in the gunwale-socket; but the oar-lock may be readily removed by pressing the two spring-members together so as to unseat the shoulders.

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Notes & Queries

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

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(7664) F. W. D. writes: Can you inform me through the Scientific American how to get rid of small black or brown ants which have nearly spoiled the grass on my lawn? They make their runs near the stem of a blade of grass, and the whole lawn is covered with them. This is the second year of their appearance, and a handsome grassplot promises to be ruined. Answer by Prof. C. L. Marlatt, Acting Entomologist, Department of Agriculture. The best means of ridding lawns of ants is in the use of bisulphide of carbon, perhaps the most valuable insecticide for subterranean insects. A number of holes should be made in or about the ant nest with a stick or iron rod, and an ounce or two of the bisulphide poured into each hole. The holes should be closed immediately by pressing the earth over them. The chemical evaporates and penetrates throughout the soil, quickly destroying the ants. Three or four ounces should be sufficient for a large nest. Very small nests or beginnings of colonies can be exterminated by making one or two holes only. If used in large quantities it is apt to kill grass, and should not be used in large amount within one foot of the roots of any valued plant. It must also be borne in mind that bisulphide of carbon is an extremely volatile liquid and very inflammable, and in its storage it should be kept carefully bottled up and away from fire, even lighted cigars. In using it, the precautions in the matter of fire must be constantly observed.

(7665) G. T. asks for details of construction of an induction coil of a specified size. A. If this coil is intended to produce an induced current of high E. M. F., you are on the wrong track. It is too large to be wound in two sections, etc. The simplest way for you to obtain correct data is to send us ten cents for Supplement, No. 1124, which describes a coil of the same size as you wish, giving a spark 6 inches long. You can easily make the primary coil removable, but it contains so few turns that it will be cheaper to make a second coil for your other use than to make this one removable.

NEW BOOKS ETC.

MECHANICAL MOVEMENTS, POWERS, DEVICES AND APPLIANCES. By Gardner D. Hiscox, M.E. New York: Munn & Company, office of the Scientific American. 1899. Sixteen hundred and forty-nine engravings. 8vo. Pp. 402. Price $3.

This volume is the work of a well-known engineer who has had an extended experience in mechanical matters. He has gathered together and classified sixteen hundred and forty-nine illustrations of early and modern mechanism, and has appended a concise description to each. The engravings are all new, having been made especially for this work. The first chapter of the book is devoted to Mechanical Powers, Levers, Gears, Pulleys, etc.; then follows a chapter on the Transmission of Power by Pulleys, Belts and Ropes; also Sprocket Wheels and Chains; Gearing and Friction Wheels, including Belt Lacings of various kinds. Liberal space is devoted to the Measurement of Power and Speed; Steam Power, including boilers and various types of engines, receives due attention. A large number of rotary engines is presented in this chapter. Under the head of Steam Appliances are found many different Injectors, Condensers, Boiler Feeders, Boiler Cleaners, Reducing Valves, Expansion Joints, etc. Gas and Gasoline Engines and the parts thereof take the greater portion of a chapter. Hydraulics occupies a considerable space and includes a large number of modern devices. Air Power Appliances, including Windmills, Bellows, Blowers, Air Compressors, and various devices used in connection with air as a motive power, receive the attention they deserve at this time, when the use of compressed air as a motive power is coming to the front. Electric Generators, Motors, Wiring, Controlling and Measuring Apparatus, as well as Electric Lighting, Furnaces, Fans, etc., fill a considerable space. In a chapter on Navigation and Roads various forms of sails and rigging are described, also numerous propellers; Road Rollers and Automobile vehicles are shown and described. Under the head of Gearing and Mechanical Movements is given a great variety of mechanical devices both new and old. The chapter on Horology describes the principal movements used in clocks and watches. Mining apparatus is illustrated with a series of engravings, and the pages describing Mill and Factory Appliances contain many new devices. The various apparatus used in Drawing occupy a number of pages, and the book closes with a chapter on Miscellaneous Devices, which, as the name indicates, includes mechanism which could not be readily classified. The book is printed in large clear type on fine heavy paper, and handsomely bound. Engineers, mechanics, inventors and amateurs will find this volume a magazine of useful information.

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