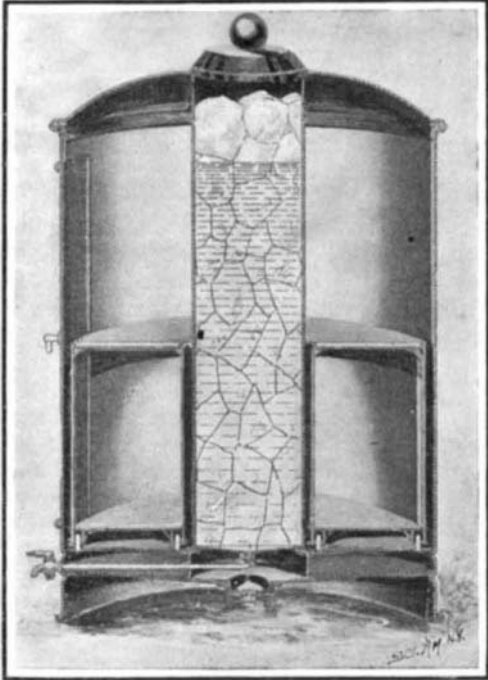




WATER COOLER AND REFRIGERATOR.

A recent invention provides a water cooler formed with a casing, in which various articles may be stored and kept cool by the ice of the water cooler. This combined water cooler and refrigerator occupies com-

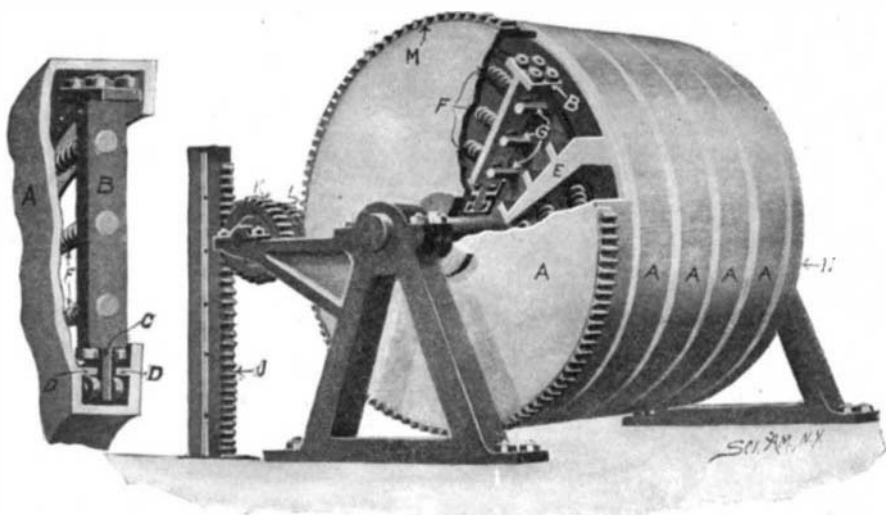


WATER COOLER AND REFRIGERATOR.

paratively little space, and is thus particularly adapted for use in dining cars, restaurants, sample rooms, and the like. The construction of the device is very simple, and is clearly shown in the accompanying section view. The water cooler consists of a vertical cylinder, which is centrally supported in a large drum. The latter serves as the refrigerator, and is provided with a door at one side, through which access may be had to the interior. A pipe leading from the water cooler to the faucet on the outside of the refrigerator passes between the bottom of the drum and a false bottom consisting of a perforated plate. This plate supports a rack, which is designed to rotate around the water cooler. In order to permit easy movements of this rack, it is provided with rollers which fit into channels formed in the false bottom, as shown. The rack consists of two ring-like plates supported by a number of posts. The various articles to be cooled are laid on these plates, and as the rack can be rotated about the cooler, any desired part of it can be brought within easy reach. The water of condensation will pass through the perforated false bottom to the concaved bottom of the drum. At the center of this bottom wall is a large opening normally closed by a cap, in which there is a trap. The trap may be opened to drain out any water which has collected in the drum. When it is desired to clean the water cooler the cap is removed, giving access to the coupling between the water pipe and the cooler. When this coupling is released, the water cooler may be lifted bodily out of the drum casing. The inventor of this combined water cooler and refrigerator is Mr. John W. Brown, of Knoxville, Tenn., P. O. Box 23, Station A.

TRANSMITTING DEVICE.

There are certain sources of power which have a very limited value, chiefly because of their intermittent or irregular character. Windmills, for example,



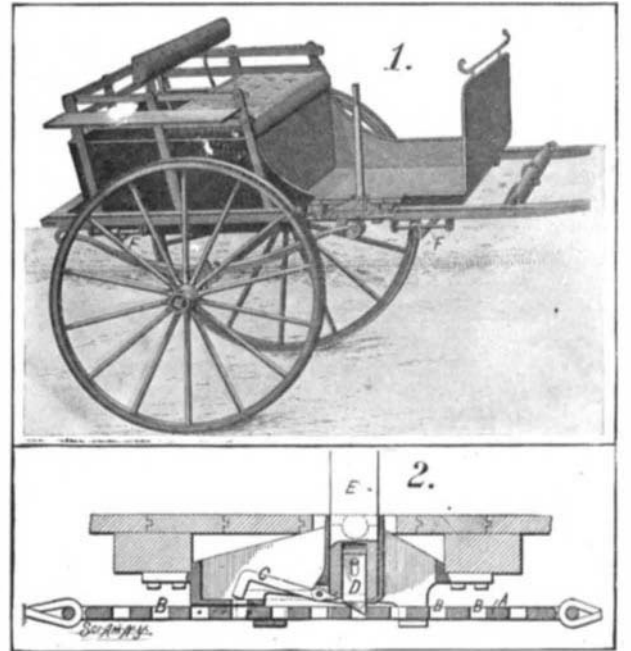
TRANSMITTING DEVICE.

vary with every gust of air, and wave motors must obey the whims of the ocean. The value of the power developed would be greatly increased, were some intermediary mechanism provided between the source of power and the work, which would absorb sudden variations, shocks, etc. This intermediary would also permit the coupling together of a number of these variable prime movers without loss of power. The power of several windmills, for instance, could be combined to operate a single machine. Such an intermediary mechanism has just been invented by Mr. Frederick S. Keyes, of Warren, Mass. As illustrated in the accompanying engraving the device comprises a series of wheels, mounted to turn freely on the driving shaft, and connected by spiral springs. Each wheel consists of a shallow drum, *A*, open at one side, and within which a series of movable abutments, *B*, are mounted. These abutments are radially disposed, and are provided with rollers at each end, adapted to bear against the side walls of the drum. At its inner end the abutment is formed with an extension, *C*, carrying rollers which bear either on the hub of the wheel or on a pair of annular flanges, *D*, projecting inwardly from the side walls. Aside from the movable abutments, each wheel is formed with a relatively stationary abutment, *E*. The movable abutments serve as connecting members between the sections of circularly arranged spiral springs, *F*, which lie concentric to the hub. On the outer face of each wheel a series of lugs, *G*, are formed, which project into the next adjacent wheel. The last movable abutment, or that at the end of the springs, bears against these lugs, as shown in the illustration, so that when one wheel is rotated, it acts upon the next through a cushion of springs, and the second wheel in turn transmits the power through a cushion of springs to the third wheel, and so on through the entire series. The purpose of dividing the springs into short sections by means of the abutments will be apparent. Buckling is entirely prevented, and friction of the springs against the sides of the wheels is thus obviated, while owing to their roller bearings the abutments are given perfect freedom of motion. In our illustration the mechanism is shown as applied to a wave motor. The rack, *J*, which is attached to a float, receives vertical reciprocating motion from the action of the waves, and imparts this to the pinion, *K*. This pinion is connected to pinion, *L*, by a ratchet clutch, which transmits motion in one direction only. The pinion, *L*, meshes with teeth, *M*, on the first wheel, *A*, causing the same to turn intermittently, but in a constant direction. The last wheel of the series engages a set of lugs on the disk, *N*, which is keyed to the main shaft.

BALANCE ADJUSTER FOR VEHICLES.

Two-wheeled vehicles, while very convenient and useful for certain purposes, yet possess the serious fault that they cannot at all times be perfectly balanced over the axle. If the forward end is overweighted an unnecessary load is imposed upon the horse, and if the rear end is overweighted the tendency will be to lift the horse off his feet. To remedy such conditions Mr. Patrick J. McGinn, of Salisbury P. O., Rhodesia, South Africa, has invented a vehicle which may be readily adjusted to the proper balance. The accompanying engraving shows this vehicle with a portion of the body broken away to reveal the adjusting mechanism. It will be noted that the body of the vehicle is not directly supported on the frame, but rests on front and rear straps which are slidably mounted on the side rails of the frame. This permits the body to be moved backward or forward with respect to the axle. Beneath the floor of the vehicle a bar, *A*, is mounted which is held in place by means of two rods anchored respectively to the forward and rear cross bars of the vehicle frame. The bar, *A*, is formed with rectangular openings, *B*, as indicated in the section view, Fig. 2. Directly above the bar, *A*, is a bracket which is bolted to the under side of the floor. A socket piece adapted to receive the lever, *E*, is formed with trunnions, which are mounted in bearings in the side walls of the bracket. A dog, *C*, is hinged to the bottom of the socket piece. The normal position of this dog is indicated by dotted lines in Fig. 2, which shows its outer end projecting through an opening in the bottom wall of the bracket and engaging one of the rectangular openings, *B*. When the lever, *E*, is inserted in the socket piece, it engages a projecting toe of the dog, *C*, lifting the latter to the position illustrated by full lines. Mounted to slide vertically in the end of lever, *E*, is a pinch-block, *D*, which pro-

jects through the socket piece and engages one of the openings, *B*. It will be observed that the lower face of the block, *D*, is inclined. Now, when it is desired to adjust the body of the vehicle, the lever, *E*, is inserted as illustrated, lifting the dog, *C*, and then when the lever is swung to the rear the pinch-block, *D*, serves as a fulcrum, so that the body of the car is moved rearwardly. When the lever is swung forward, the block, *D*, owing to its inclined face, is lifted out of engagement with the opening, *B*, and falls into the next opening to the rear. The lever, *E*, may then be operated to slide the vehicle body still further back. If it is desired to move the body forward the lever is placed in the socket in re-

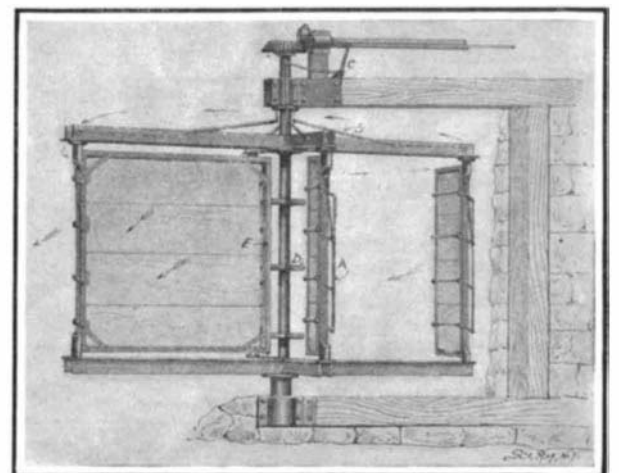


BALANCE ADJUSTER FOR VEHICLES.

verse position, so that the lower face of the block, *D*, inclines toward the rear. Then on moving the lever forward the body will be moved forward on the frame.

AN IMPROVED WATER-CURRENT MOTOR.

A water-current motor of simple construction has recently been invented, which is provided with an efficient means for governing the speed or power developed. The motor is designed to be submerged well below the surface of a stream, so that it will not be in the path of driftwood or rubbish coming down with the current and will not be affected by the rise and fall of the current at different seasons of the year. The construction of the motor is clearly illustrated in the accompanying engraving. A pier of masonry is built out from the bank of the stream and supports an upper horizontal beam and a lower sill. A shaft is mounted to turn in bearings in the sill and beam. Rigidly secured to the shaft near its opposite bearings are a pair of blocks from each of which four arms or spokes radiate. Mounted between the upper and lower sets of spokes are four frames which, with the vanes they carry, serve as wings against which the current acts. The wings, which are indicated at *E* in the engraving, are hinged to the outer extremities of the spokes. On the main shaft of the current motor are a number of collars, *D*, formed with teeth adapted to stop the inner ends of the wings as they are swung against them by the current. It will be evident that the wings on one side of the main shaft will be forced against these stops by the weight of the current, while those on the other side will swing free from the shaft, assuming a position parallel with the direction of the current, and thus offering no appreciable resistance to the flow of the stream. The motor is thus caused to rotate, and the motion is transmitted by means of suitable gearing to any point desired. It will be noted that the vanes of the wings, *E*, are formed with trunnions which extend into the vertical posts of the frames. The trunnions at the outer ends carry cranks which are attached to connecting rods, *A*, so that when these rods are raised



AN IMPROVED WATER-CURRENT MOTOR.

the vanes will be swung open. Levers, *B*, are fulcrumed in the upper spokes and to their outer ends the connecting rods, *A*, are attached by means of links. Loosely mounted on the main shaft is a collar to which the inner ends of the levers, *B*, are connected in such manner that they can be raised and lowered by shifting the collar on its shaft and yet are free to revolve about the collar, which is kept from turning. A rod connects the collar with a bell crank, *C*, which, in turn, is connected to a ball governor not shown in the illustration. This governor, which is of the usual centrifugal type, is geared to the power shaft of the motor and operates to automatically raise or lower the rods, *A*, thus controlling the inclination of the vanes, and regulating the speed of the motor by varying the surface area on which the current can act. In this way uniform action of the motor is secured regardless of the speed of the current. The machine may be used as well at the mouth of a harbor, for the wings are self-reversing and will adjust themselves to the ebb and flow of the tide. Mr. H. H. Granger, of Davenport, Wash., is the inventor of this improved current motor.

Brief Notes Concerning Patents.

Ever since the present sewing machine was brought to perfection, efforts have been made to devise a system whereby sewing may be carried out direct from two reels of thread, thereby dispensing with the winding of spools and threading of shuttles, but with indifferent success. The problem, however, has now been solved by Mr. Dennis Flanagan, a Lancashire mechanic, after some fourteen years' continuous experiments. The feature of this invention is the distinct simplifica-

tion of the sewing machine, there being a small number of parts. There are no vibratory or eccentric motions, every movement being positive in its action. As there are no spools to wind, the loose balance wheel is dispensed with. As a reel of cotton is regularly wound a uniform stitch is obtained, while the double take-up gives an elasticity to the tension. The machine sews perfectly on both fine and heavy materials.

The horse suffers from many ills, the direct result of his unbecoming and unnecessary haste in eating. Confronted by a generous display of oats in the feed-box, he cannot resist the inclination to bolt one mouthful, so that he may take another at the expense of his health. A style of feed-box has been recently worked out by Samuel Cunningham, chief of the Lockport, N. Y., fire department, by which this unwarranted haste on the part of the animal is checked. In this new invention the feed is delivered to the animal through a cone-shaped device with a hole in the bottom. The horse secures a mouthful of food by pushing his nose into the cone, and the oats are forced up within reach of his mouth through the hole, but the secret of the operation of the invention is that the animal cannot push his nose into the cone until he has disposed of the previous mouthful. In this manner he is compelled to eat his meal in a more deliberate and wholesome manner.

Oil for the purpose of quieting the sea has been in use for many years, but an extremely novel means of applying the oil has been recently devised by Vice-Admiral Guimares of the Brazilian navy, who has made a gun for the special function of doing this work. The gun is called a "bottle gun," and in use occupies a place on deck in the forward part of the boat. In

case of a very turbulent sea, the gun is loaded with a bottle containing sawdust which has been soaked with oil. The discharge of the weapon breaks the bottle into innumerable pieces, and the contents are scattered over the surface of the sea for some considerable distance, and the effect on the troubled water is at once noticeable. If this operation is followed at intervals of five minutes, and the missile shot ahead of the boat, a peaceful path is prepared for the craft, and if she is at anchor or lying-to, one round every twenty minutes is said to be ample. The gun is of special construction to meet the demands of the peculiar missile, and it is said that an ordinary wine bottle may be utilized to contain the charge of sawdust.

Almost anyone who thoughtfully contemplates the construction of a baseball cannot but help admire the ingenuity of the man who designed the cover. This consists of two parts, each of which is a complete geometrical design, and when applied to the exterior of the sphere, covers the same in a very thorough manner. The man who originally worked this design out died a few weeks ago. He was Elias Drake, and he lived at Middleboro, Mass., and during his lifetime he invented a number of other useful devices, and enjoyed the reputation of a rather prolific inventor. He thought out the idea of the baseball cover in 1855, and it was adopted two years later by George and Harry Wright and has been in use ever since. Mr. Drake neglected to take out a patent on this cover, for the reason that he thought it too trivial; but when the game became more popular, and the business of making the balls developed into a big industry, he regretted that he had overlooked the formality of protecting himself.

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

ELECTRIC LOCK.—N. W. WEBB, New York, N. Y. The invention relates to electric door-locks connected with an electric alarm at a distant point. The object is to provide a new and improved electric lock arranged to give an alarm when tampered with by unauthorized persons before such persons can open the door sufficiently to effect an entrance into the house.

ELECTRIC BELL-RINGER.—I. W. HALL, Brownwood, Texas. In this case the invention relates to electric bell-ringers, the more particular object being to provide a simple, reliable, and efficient bell-ringer which may be operated either by electric wires from a distance or by merely pressing a push-button.

PROTECTED RAIL.—L. STEINBERGER, New York, N. Y. In the present patent Mr. Steinberger's invention has reference to railways, the more particular object in view in his improvement being the production of a protected rail which may be employed in various relations for supplying current to electric railways.

Of Interest to Farmers.

SEED-PLANTER AND FERTILIZER-DISTRIBUTER.—J. A. BOUCHILLON, Pelzer, S. C. Separate hoppers are employed in this planter and distributor, each being provided with means for agitating its contents and feeding the same to discharge-orifices, the machine being supported upon a bearing-wheel from which the agitators are operated. By the means used the labor of guiding and supporting the machine vertically is reduced to a minimum.

HUSKING-MACHINE.—O. C. MOORE, Morrow, Ohio. Mr. Moore's invention relates to corn-huskers, it being more particularly directed to the feed mechanism for the snapping-rolls. To obviate the many difficulties that occur in operating husking-machines and to provide a mechanism which will allow the applying of the proper pressure to the snapping-rolls and at the same time secure automatic feed is the principal object of the inventor.

DEHORNER FOR CATTLE.—C. E. BINNINGS, Stamford, Texas. This inventor's improvement relates to instruments for dehorning cattle. His improved dehorner admits of general use, but is of special value in removing the embryo of partially-developed horns of exceedingly young cattle. After the removal, it is impossible for a horn to grow out.

Of General Interest.

PORTABLE GARMENT-HANGER.—A. M. TAYLOR, Port Ewen, N. Y. The aim of this inventor is to provide a hanger which is simple and durable in construction, cheap to manufacture, readily set up for use and easily folded for convenient storing in a traveling-bag, valise, and the like, and arranged to conveniently support a number of articles, such as a coat, vest, overcoat, trousers, and hat.

PRICKING-PUNCH.—C. E. TRAXEL, Rome, N. Y. In the present patent the invention has reference to improvements in tools for pricking metal for the starting of drills or the like. The object in view of the inventor being the provision of a tool of this character that will be practically automatic in its operation.

VALVE.—E. F. RIDDLE, Wellsville, Ohio. This automatic gas-cut-off valve acts by gravity to close when the gas supply and pressure is shut off or fails, and when once closed the

valve stays closed until opened by hand. The object of the invention is to produce a valve quick and certain in operation, and which will not leak in either open or closed position. When open the valve does not reduce or obstruct the gas passage or pressure, and it is simple in construction and neat in appearance.

CABLE-GRIP.—A. J. NEFF, Houston, Texas. The grip is to be used in connection with cableways. The object of the improvement is to produce a grip of simple construction which will operate to grasp the moving cable firmly and which will operate automatically to apply its grasping force when a load upon the grip is applied.

WATCH-PROTECTOR.—J. MIDDLEBROOK, Barre, Vt. In this instance the invention pertains to improvements in devices designed to be placed in a person's pocket to prevent the accidental or fraudulent removal of a watch, the object being to provide a watch-protector of simple and novel construction that may be detachably secured in a pocket and that will be inexpensive.

WRIST-SUPPORTED BLOTTER.—B. MONIS, New York, N. Y. The inventor's more particular purpose in this case is to adapt the blotter for use upon the wrist of the operator, so that it may be used when desired without materially interfering with the use of the pen. The invention relates to blotters, such as used by bookkeepers and writers of various kinds.

PIPE-BAND FASTENING.—A. W. NIGHT, Ballard, Wash. The aim of the invention is to provide an absolutely secure connection with which the ends of the band may be engaged and tightened to any desired tension. To attain this a "shoe" formed of an integral metal plate with an opening therein, is employed. This plate is bent around a head on one end of the band, forming the shoe in essentially U-shaped-cross-sectional form, and the other end of the band being fitted in the shoe and having a nut thereon engaged with one end of the shoe, so that by tightening up the nut any tension may be exerted on the band.

DRYING AND ROASTING FURNACE.—C. E. BALLOW and E. STEIN, Guanacavi, Durango, Mexico. The invention resides particularly in a peculiar combination of a drying and roasting furnace, so that the two may be collectively operated, producing better results than heretofore. Its peculiar devices agitate the ore as it passes through the furnaces, these devices consisting of the combination of shelves and rollers which thoroughly work the ore and retard its downward movement sufficiently to enable the necessary drying and roasting operations.

UMBRELLA.—J. V. SYBRANDT, Springdale, Col. The invention pertains to umbrellas and similar articles, and is capable of application to canopies, tents, and the like. The chief object of the inventor is to provide means whereby an article of the class mentioned can be made of any desired form without interfering with its capacity of being folded.

Heating and Lighting.

CARBURETED-AIR MACHINE.—F. PICARD, Montreal, Canada. The invention relates to the class of carbureters in which rotating fabric is caused to be immersed in the hydrocarbon liquid such as gasoline. The patentee provides a duplicate arrangement of fabric-supporting devices of special form. A fan delivers the air against both the fabrics. The fan and the fabric supports are rotated by a small hydraulic or other motor, and a special automatic

mechanism is provided for controlling the supply of air and the motive fluid through the movements of the gasometer bell.

Household Utilities.

ATTACHMENT FOR BEDSTEADS.—H. E. HENWOOD, New York, N. Y. This improvement refers to attachments for bedsteads, and particularly to those adapted for the raising of invalids from the mattress or other supporting-surface. Its principal object is to provide such an attachment which may be applied to an ordinary bedstead without rendering it necessary to alter the bed structure itself, this application being capable of accomplishment without the use of tools.

CHAIR.—J. B. LAWRENCE, New York, N. Y. In this patent the invention relates to improvements in chairs of that class adapted to be converted into a bed or couch and to be used either as a rocker or fixed chair, the object being to provide a chair of this character that may be easily and quickly adjusted as to its various positions and rigidly held as adjusted.

CLOTHES-CLOSET.—M. L. HENRIQUO, Pueblo, Col. The object of the invention is to provide a closet which is adapted to be set up and attached conveniently to the wall in an apartment or living-room. A specific object is to enable closet-space to be produced in rooms not having closets under such circumstances as may arise when rooms are occupied temporarily as sleeping-rooms. It affords means for increasing the ordinary closet-space of the room when found insufficient.

AWNING.—W. H. BROWN and H. M. BRADBURY, New York, N. Y. The improvement made by these inventors relates to a ventilated awning; and the principal objects thereof are to provide means for permitting a circulation of air, and especially for allowing the air which ordinarily collects near the top of an awning and in the upper part of a room to be discharged through the awning itself.

Machines and Mechanical Devices.

CLAMP FOR PRINTING FILM FRAMES.—B. DAY, West Hoboken, N. J. Mr. Day's present invention relates to frames of the general type described in his former Patent No. 666,087. It covers a device analogous to a hinge, and suitable for use upon printing-film frames of the kind made by the inventor. The frame is of wood, and the clamp grips the frame detachably. The clamp consists of two parts, movable relatively to each other by means of a cam, so as to press firmly upon opposite edges of the frame. One of these parts has two resting places or contact faces, the other having only one. Pressure upon the frame is therefore applied at three separate points, thus insuring exactness in fit. All of the contact faces are milled with ribs parallel with the grain of the wood.

CHANGE-MACHINE.—T. I. PORTER, San Francisco, Cal. The purpose of this invention is to provide a machine adapted to any cash-drawer and from which change may be quickly and accurately made in predetermined amounts by simply pressing one or more of a series of keys, each designating a certain amount, and to provide a series of storage-chambers for the coins from which the change is to be made.

MOLDING-MACHINE.—B. F. POTTER, Ash-tabula, Ohio. Mr. Potter's invention relates to a molding-machine which is capable of molding articles of many characters and can be used with plastic materials of various kinds. It is especially applicable, however, to the

molding of hollow building-blocks of concrete and the like. One of the principal objects of the invention is to generally increase the efficiency without complicating the structure of machines of this character.

DITCHING-MACHINE.—C. P. GABLE, Ruston, La. In this case the improvement is in the nature of a ditching-machine designed to dig new ditches or clean out old ones; and it consists in the novel construction and arrangement of parts of a portable machine designed to take up the dirt and deposit it on one side or the other of the ditch.

DOUGHNUT-MACHINE.—W. W. GRAY and P. C. VAN FLEET, Riverside, Cal. This apparatus forms dough into rings to produce doughnuts. As these are ordinarily cut out from a sheet in the presence of free flour to prevent sticking, the dough between the cut rings is rolled over and again cut, resulting in a product becoming more and more tough as this operation continues. Moreover, the loose flour collects in the frying-fat and soon burns, thickening it so that it must be frequently strained, and often completely spoiled. To obviate such difficulties are the principal objects of the invention.

MIXING-MACHINE.—J. B. CROSS, Oneonta, N. Y. This invention refers to mechanical means for mixing together the ingredients used in the production of bread, cakes, or pastry-dough, and has for its object to provide novel features of construction for the mixing-machine that are very simple and inexpensive, convenient to operate, readily taken apart for cleaning, and are strong and durable.

SAFETY DEVICE FOR ELEVATORS.—C. W. HOFFMAN, New York, N. Y. The object of the invention is to provide a device for elevators arranged to insure quick application of the brake-shoes in case of accident, to prevent the cage from acquiring too much momentum by falling a great distance, and then powerfully apply the brake-shoes to hold the cage in the initial position.

YARN-PRINTING MACHINE.—W. K. HAWK, Falls of Schuylkill, Pa. The object of the invention is to provide a new and improved yarn-printing machine arranged to permit printing yarns of any desired length, and more especially such as are required in the weaving of large rugs known as "art-squares," the arrangement being such that the same printing-drum will answer in printing long or short yarn.

BUTTER CUTTER AND MEASURER.—G. ERICSON, Brooklyn, N. Y. In the present instance the invention of Mr. Ericson has reference to the provision of a novel means for cutting out from a larger mass of butter a print or regularly-formed block of butter and for the simultaneous weighing or measuring of the print or block.

SHINGLE-MACHINE.—A. Z. BOUREAUX, Berwick, La. This invention relates particularly to attachments to shingle-sawing machines in which the saw rotates in a horizontal plane, the object being to provide a simple device for ejecting the splints from the machine instead of manually removing the same, as in the usual practice, thus obviating the possibility of cutting the attendant's hands or fingers by the saw.

Prime Movers and Their Accessories.

TURBINE-ENGINE.—M. D. KALBACH, Lebanon, Pa. The rotary member of the engine consists of a disk formed with two radial rows of vanes projecting from the periphery. Be-