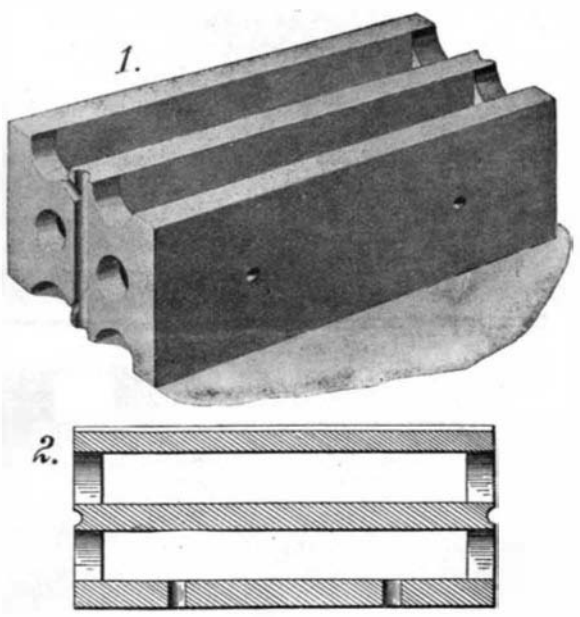
# Patent Department

### IMPROVED CONCRETE BUILDING BLOCK.

With a view to expediting building operations, Dr. J. A. Douglass, of Alliance, Ohio, has invented a new form of residence building block, so designed that it can be made in large sizes to take the place of large stones or several bricks without unduly increasing the weight. The blocks are either molded with a stone face, or they may be scored to imitate courses of brick. Very evidently these blocks can be laid more readily than blocks of stone, and more quickly than an equivalent area of bricks. Another feature of the invention, which is hardly less important, is the peculiar arrangement of the air spaces to provide ventilation both vertically and longitudinally. Furthermore, separate inside and outside air spaces are provided, which are completely insulated from each other, to prevent radiation and thus secure greater warmth. The form of the block is clearly illustrated in the accompanying engraving. It will be seen to be of hollow form, open at the top and bottom. The forward and rear air spaces are separated by a central longitudinal wall. There is no communication between these air spaces, but by means of holes in the end walls of each block communication is had between corresponding air spaces of adjacent blocks. A vertical groove is formed in the end of each block, and a pair of diagonal grooves connect each vertical groove with the posterior air space. In the engraving the face of the block is shown to reveal a pair of openings, which

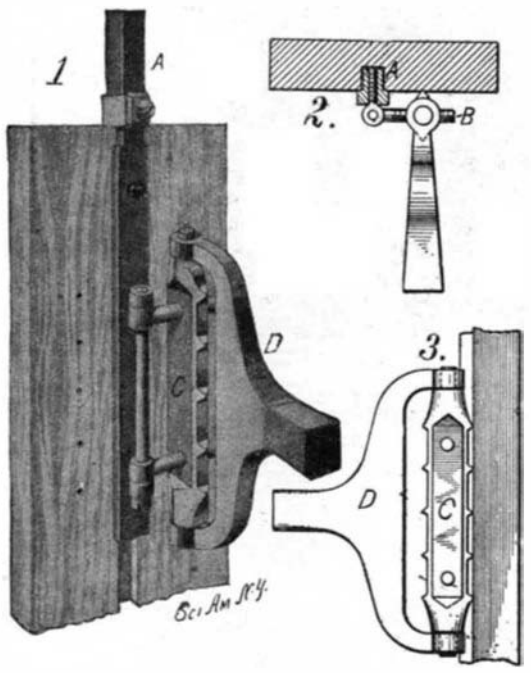



IMPROVED CONCRETE BUILDING BLOCK.

are formed in certain of the blocks. Oil-soaked wooden plugs are driven into these holes, and they provide means for attaching doors, windows, or various ornaments. It is the purpose of the inventor to do away with studding and lathing, thus affording a great saving in the cost, and adding to the fireproof nature of the construction. To this end the rear face of the block may be furrowed to allow for a coat of finishing plaster, or it may be left smooth for the application of calcimine.

### GAGE FOR MARKING WINDOW CASEMENTS.

Pictured in the accompanying engraving is a gage of simple construction, which can be used by carpenters for marking window casements so as to indicate the points at which the sash pulleys are to be attached. The gage is shown in use on the stile of a window.

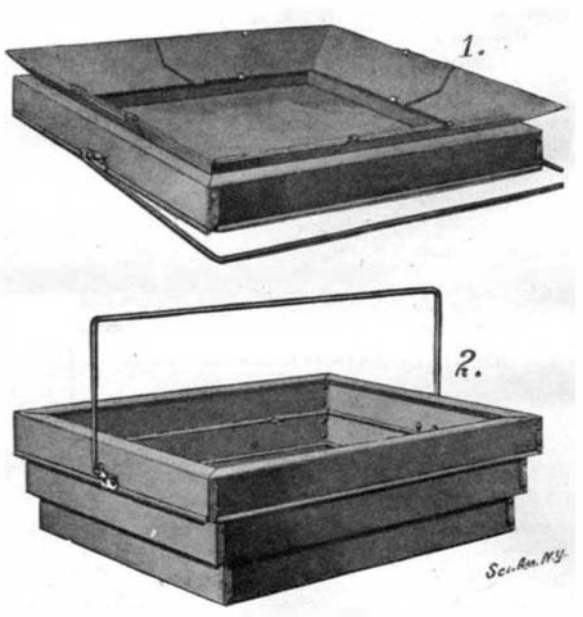



GAGE FOR MARKING WINDOW CASEMENTS.

In the stile is a centrally-disposed groove, which is to receive the parting strip. One of the elements of the gage is a T-bar *A*, the body of which fits into this groove. At the upper end of the bar the flanges are cut away, and on the reduced stem thus formed an adjustable clamp is secured. Mounted on a vertical bolt secured to the bar are a pair of arms *B*, which are threaded into a gage block *C*. This block is formed with spurs or teeth on opposite sides. At the extremities the block is provided with gudgeons, which afford means for the attachment of a yoke formed with a handle *D*. In use the clamp is adjusted to locate the gage block at a suitable distance from the end of the stile, while the block is adjusted to the proper position on the arms *B* before the latter are mounted on the bolt. The bar *A* is seated in the groove, and the handle *D* is then operated to press the spurs into the stile, marking the points where an auger should be applied for drilling the holes. After the seat for the pulley block has been cut out with a chisel, the gage block may be swung over to score the opposite side of the stile. The outer end of the handle *D* is of such form as to permit of its being struck with a hammer, if desired, for making an impression in the face of the stile. The inventor of this novel gage is Mr. Walton L. Chase, of Banning, Cal.

### A COLLAPSIBLE ASH-PAN.

The removal of ashes from a stove or furnace is a most annoying detail of household work. The ash-pan is usually overfilled and cannot be removed without spilling. Furthermore, a large quantity of ashes is sure to collect in the ash-box around the pan, and this it is difficult to remove without raising clouds of ash dust. As a remedy for these evils, Mr. E. A. Bagby, of Louisville, Ky. (care of Waverly Hotel), has invented a collapsible pan, so arranged that when lifted out from under the grate it opens up into a deep bucket quite large enough to contain the entire charge of ashes. In addition to this, the pan is provided with a hopper, which catches all the dust falling from the grate and directs it into the pan proper. As may be seen in the engraving, the pan consists of three sections, the bottom one being in the form of an open box or tray, the middle one an open frame embracing the tray, and the upper one an open frame embracing the middle frame. Each of the frames is formed with inwardly-projecting flanges at the top and bottom adapted to engage an outwardly-extending flange on the section it embraces. A bail is pivoted to the upper frame, and when this bail is lifted, the pan sections will assume the positions shown in Fig. 2. In Fig. 1 the sections are shown in their telescoped position with the hopper in place. This hopper is extensible, being formed of sections slidable one upon another. This permits of adjusting the hopper to various sizes of grates. With the hopper in position, the capacity of the pan is doubled. The hopper may be folded small enough to be nested into the collapsed pan, thus making a very small and compact package for storage or shipment.



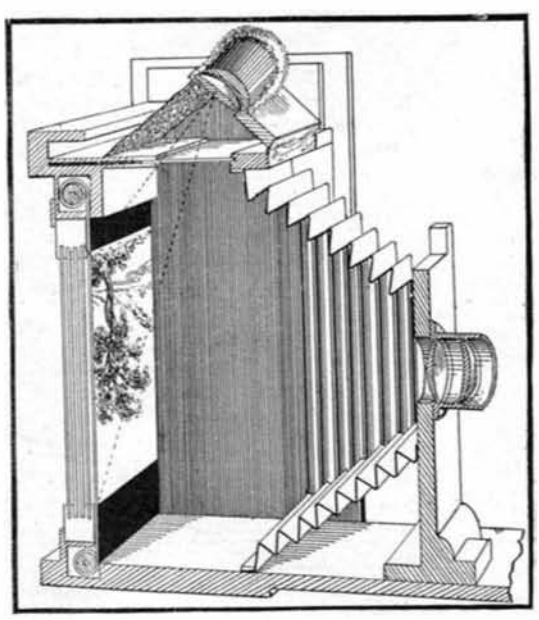

A COLLAPSIBLE ASH-PAN AND HOPPER.

### AN IMPROVED HAND CAMERA.

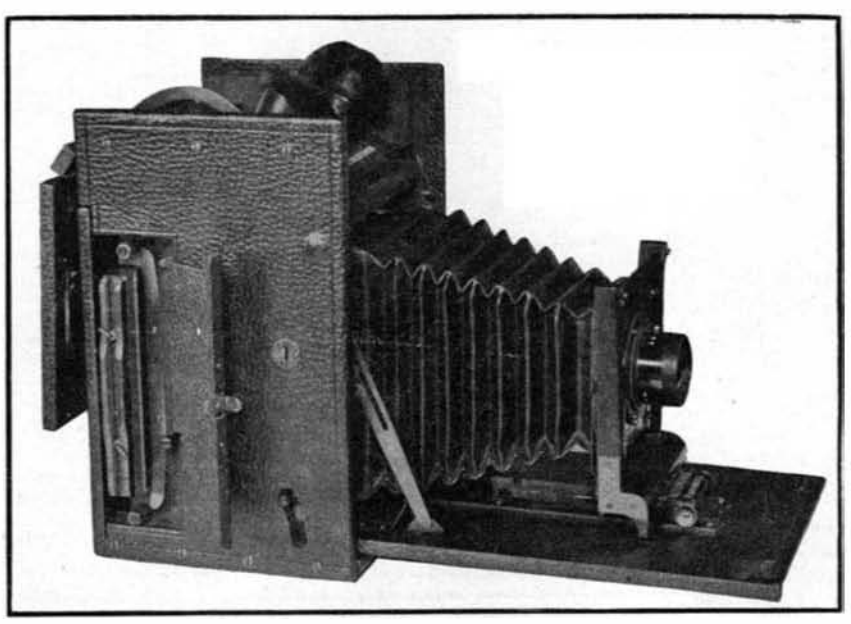
In many hand cameras using a focal plane curtain shutter it is customary to employ a pivoted mirror for reflecting the lens picture image upward to the underside of a horizontal focusing ground glass. Over the ground glass is a collapsible hood through which the operator observes the image and obtains the correct focus in the usual way; then on the movement of a release lever, the mirror flies upward out of the line of the picture image from the lens and at once releases the curtain shutter when an instantaneous exposure is made. The advantage of this form of construction is that the operator sees the size and position of the image to be photographed up to the time of exposure.

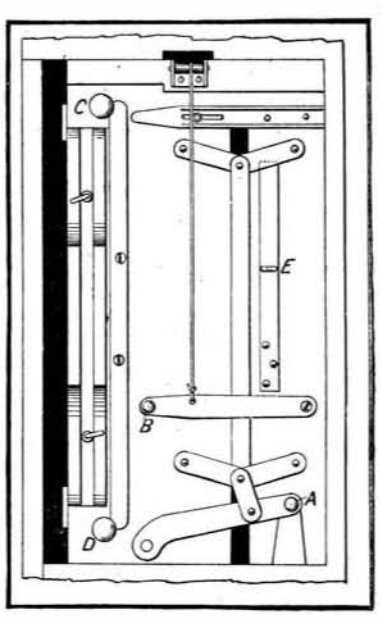
The modern anastigmat lenses now made are of such fine optical quality that ordinary cameras fail to show the extreme or microscopic sharpness of the image and do not bring out the fine results that such lenses are capable of producing.

In such cameras the so-called "grain" of the ground glass interferes with the fineness of the image, and the refraction of the glass also affects its sharpness. In cameras where a mirror reflects the image the picture is subject to distortion by any slight inequality of the mirror, and because of the distance the rays



The Shutter Focusing Screen.






The Shutter Release Mechanism.

THE HALES FOCUSING CURTAIN SHUTTER CAMERA.

have to travel this defect is sometimes greatly intensified.

The camera shown in the accompanying illustrations, the invention of Henry W. Hales and manufactured under American and foreign patents by the Hales Camera Company, of Ridgewood, N. J., is designed to be more simple in operation than the mirror form of camera, and to be especially useful in enabling the operator to obtain and observe an accurately sharp, brilliant image projected directly upon a white focusing ground and in an apparent proper position on account of the way it is looked at.

The general appearance of the camera opened for operation will be seen in the perspective view and its novel features in the diagram views. The side forming the front and base of the camera is dropped down in the usual way and the lens portion drawn out on to a plate provided with a rack and pinion focusing adjustment. The top of the box folds backward over the rear of the camera and as it does so allows the eye observing apertures to be elevated into position by means of a light spring below. A curved arm shown at one side of the top is actuated downward when the top is closed, thereby automatically folding the eye-piece into place, when the camera is not in use. A convenient handle is on the outside of this top piece for carrying the camera. In appearance it is like an ordinary square shaped box.

The back portion of the camera as shown in the right diagram is made in two parts, one of which is rigid and the other movable. The latter part carries the focal plane curtain shutter and the plate holder. The shutter is of the ordinary simple form with a single horizontal slot of uniform width, but a part of its outer surface opposite the lens is whitened with a smooth, fine surface and forms, when the shutter is wound up, a perfect focusing screen, the full size of the plate, shown plainly in the left diagram.

Directly under the eye observing portion is a horizontal light cut-off slide which is kept closed by a spring and is only opened when the image is observed, by pressing down the handle *B*. This is connected by a thread passing over a roller to the lever operating the slide. In focusing the forehead rests against the eye apertures, in which spectacle lenses are located to partly magnify the image, and the operator looks backward at the image. The view is indicated by the dotted lines in the diagram. Inasmuch as the head is downwardly inclined the inverted image on the screen looks in the right position. The foreground appears at the top of the screen and the sky below. *A* is the shutter release lever. Its function is, as soon as the focus is obtained and the image located in position on the screen, to first advance the movable back and the plate holder forward until the plane of the plate occupies the same focal plane as the former focusing surface of the curtain shutter did; then a trip at the top of the fixed back throws out the spring holding the shutter at *C*, releases the latter, causing the exposure to be made in the usual way. It will be seen that the shutter release *A* operates, in its downward movement, a vertical toggle bar which carries the movable back forward and closes it against the stationary back. After the exposure is made the curtain is wound up for another exposure by the knob *C*, and at *D* is another knob or shaft for increasing the tension of the actuating shutter spring. On the opposite end of this shaft is an indicator (not shown) for indicating the speed of the shutter. By the movement of the shutter lever *A* upward the movable part of the camera is pushed backward and the curtain shutter is placed in position for focusing.

*E* is a lock for the shutter lever. In the general view it is a small button, which on being pulled outward by the fingers brings a spring stop under the toggle connection and holds it from operating. On releasing *E* it springs inward out of the way of the toggle bar.

By placing the lever *A* in a half-way position the curtain shutter may be entirely rolled up, leaving the camera open in the back for ordinary time exposures with the use of the usual ground glass if so desired. The ordinary plate holder is used. In a trial of the camera we found it exceedingly easy to obtain an accurate focus on account of the brilliancy of the image on the white shutter. The camera presents a neat and attractive appearance. All portions of the metal work are blackened to prevent reflections, while the mechanism is simple, easily operated, and so far as can be made is what is called "foolproof." As the camera contains no ground glass or mirrors its weight is somewhat lighter than others.

Air at 82 deg. Fah., with moisture at 90 per cent of saturation, has its absorption power more than doubled when it is heated to 110 deg., since the saturation is reduced to about 42 per cent by the elevation of temperature.

### The Irish International Exhibition.

The forthcoming International Exhibition at Dublin, Ireland, which will be open from May to October, 1907, will be the biggest undertaking of its kind ever organized by Irishmen, completely dwarfing any of the expositions previously held. So favorably has the enterprise been received that more than 1,000 guarantors have subscribed to the guarantee fund, which now exceeds $900,000, and is constantly growing. Work on the exhibit buildings has gone on so rapidly that they will be finished some months before the day set for opening, May 1, 1907. Machinery Hall is already completed. It is believed that 3,000,000 people will attend the exposition during the time it is open.

Foreign countries, recognizing the opportunities which the exposition will afford, are making active preparations to send exhibits. France is preparing a French section which will equal that at the exposition at Liege; Russia has appointed an agent to make necessary arrangements for a large exhibit; Italy, Canada, and Australia and other countries will be well represented.

Exhibits will be classified in nineteen sections as follows: Irish industries; history and education; fine arts, including photography, engraving, etc.; arts and crafts; liberal arts; manufactures, textiles; engineering and shipbuilding; civil engineering and transportation; electricity; motors; gas lighting, heating and cooking; agricultural implements and chemical industries; horticulture and arboriculture; sport and fishing; mining and metallurgy; hygiene; women's section; agriculture and food products; cottage industries.

Opposite the main entrance will be the principal building, consisting of a central octagonal court, 215 feet in diameter, surrounded by a corridor capable of accommodating 7,000 people. The corridor will open into four radial wings each 164 feet long and 80 feet wide with a combined area of 52,000 square feet. The total area of the central building will exceed 100,000 feet. Around this will be grouped the pavilions for the British, foreign, and colonial exhibits. The machinery building will be 900 by 100 feet, giving a floor area of 90,000 square feet. The fine arts gallery, one of the features of the exposition, will have 30,000 square feet, and several other buildings ranging from 10,000 to 50,000 square feet are in course of erection. Altogether, the exposition will cover fifty-two acres of ground.

## RECENTLY PATENTED INVENTIONS.

### Pertaining to Apparel.

METALLIC BUTTONING DEVICE.—E. I. RAINS, New York, N. Y. This buttoning device yieldingly connects two garments or two parts of a garment with each other—for instance, connecting boys' pants with their shirt-waists and blouses—the device being arranged to readily compensate for strains in almost every direction and without danger of breaking or tearing the connected parts, especially when the wearer is bending in a forward position.

### Electrical Devices.

ELECTRIC ALARM.—E. S. MOORER, Anderson, S. C. In this case the invention relates to electric alarms and admits of general use, but is of peculiar value in instances where it is desired for the alarm to be automatic in its action, so as to indicate the change in condition of an electric circuit due to the movements of a burglar, the presence of a fire, or the like.

### Of Interest to Farmers.

COLTER AND STUBBLE-TURNER.—C. S. UPTON, Walla Walla, Wash. In this agricultural implement a disk-colter is journaled in a fork supported at the cranked lower end of a vertically adjustable colter standard secured to the plow beam; and in connection with the disk-colter a novel stubble turner is employed which is supported on the forward end of the colter fork and is adjusted to assume the proper position in the front of the disk.

### Of General Interest.

CONVEYER.—I. PEABODY, St. Marys, New Brunswick, Canada. The objects of this invention are to provide certain improvements over the conveyer disclosed and claimed in the United States patent formerly granted to Mr. Peabody, whereby the conveyer-belt may be more economically manufactured and rendered more efficient in use. In the use of the improved strap-and-link connection there is no liability of the chain becoming detached or lost.

FURNACE.—W. F. CARR and J. P. MCLIMANS, Coatesville, Pa. The object of this invention is to provide a means for removing slag and foreign substances while the furnace is under operation, thus permitting the furnace to finish its run, obviating the cooling off to remove deposits of slag and the like, which is the usual practice, and which is detrimental to the life and run of the furnace, also injurious to the brickwork, as the brickwork is often drawn out when removing slag in the ordinary way, resulting in the stopping of the run.

FIREARM.—W. W. SMITH, Trenton, N. J. The purpose of the inventor is to provide a single or a double barrel gun with extension-barrels, said barrels being provided with removable interchangeable muzzle-sections, which may be made in various lengths and bored to suit all field purposes, and to provide readily-operated means for attaching the sections of the barrels and rendering them gas-tight where they connect.

MAGAZINE-FIREARM. — W. SONNENBERG, Winona, Minn. One purpose of this invention is to provide a form of breech-bolt and means for accurately guiding the same in the frame, together with means for automatically locking the breech-bolt when in firing position, which locking means are rendered inactive only when the hammer is in an uncocked position or through the medium of a push-button operated at the exterior of the frame.

GUN-SIGHT.—R. W. HENNESSY, Burntranch, Cal. The invention refers to a front sight for rifles adapted to be used with any character of peep-sight. The purpose is to provide a construction of front sight which will afford the person aiming a clear, concentrated, and practically-unobstructed view of the object at which the gun is aimed, and which will enable the marksman to see clearly both above and below and along the bead.

TABLE.—S. HALL, Chicago, Ill. The table is especially adapted for use in smoking-cars, and adapted to be removably attached to the sides of a car and to extend horizontally between the chairs in such manner as not to interfere with the comfortable use of the latter. The invention provides individual tables supported at one side of the chairs and held in front of them, which tables are adapted to receive glasses, ash-trays, or other articles used in such a car.

BOTTLE.—W. L. VANDERGOOT and N. P. J. FOLEN, Portland, Ore. In the present patent the invention relates to bottles and more especially to those of the non-refillable type. The improvement has for its principal objects the provision of simple means for preventing the surreptitious filling of the bottle while not materially interfering with the freedom of delivery.

SAFETY DEVICE FOR WATCHES.—F. D. ELY, Salt Lake City, Utah. One of the principal objects of this invention is to provide a device that when mounted upon the rim of a watch case will prevent the easy abstraction of the watch from a pocket in which it may be placed and which will also prevent a watch having a device thereon from falling out from a pocket and by striking on its edge or side "bank" the works of the watch, so that repairs are required for restoring the same to normal operative use.

SILVERSMITH'S STOCK.—M. T. GOLDSMITH, New York, N. Y. The inventor's object is to provide a stock designed for use in the manufacture of purses and like articles, and arranged to present smooth inner and outer surfaces to prevent handkerchiefs and other fabrics from being caught on undesirable projections, as is so frequently the case with fish-scale purses and like articles as now constructed.

FIRE-BUCKET.—J. W. BOWERBANK, Jersey City, N. J. The bucket or pail permits a fireman or other person to send with one charge successive powerful streams of the fire-extinguishing liquid accurately to the seat of the fire with a view to extinguish the same, to prevent the use of the bucket for other than extinguishing purposes, to allow the discharge of all the extinguishing liquid contained in the bucket without becoming air-bound, and to allow of directing the liquid to places not readily accessible to streams dashed out of ordinary buckets.

### Heating and Lighting.

THIMBLE.—J. J. LE SAUVAGE, New York, N. Y. This invention refers to the thimbles employed in chimney-openings to adapt them to receive the smoke-pipes of heating apparatus. Its principal objects are to provide means for securing a capability for a movement of the smoke-pipe laterally of the thimble while still furnishing a proper closure between the pipe and thimble under normal conditions.

TIME GAS-LIGHTING MECHANISM.—N. F. ENGLUND, Ashland, Wis. The clock is set at the hour desired to extinguish the lamp. As the alarm rings a drum will turn and wind the cord, thus exerting a swinging force on an arm and turning the stem to shut off gas-supply. The arrangement may be reversed in connection with a gas-lamp using a pilot-flame, so as to automatically light the lamp at any stated hour or to control other lamps than those using a gaseous fuel.

### Machines and Mechanical Devices.

SWAGE FOR INSERTED SAW-TEETH.—W. L. NEWELL, Buckeye, Wash. The invention is especially useful for swaging saw-teeth when removed from the body of the saw. The object is to provide means for holding the teeth against the anvil and swage during the swaging operation. It is an improvement on the invention described in application formerly made to Mr. U. Staley and Mr. Newell.

POWER-TRANSMITTING MECHANISM. — J. L. NELSON, Colona, Col. In this case the invention has reference to mechanisms for transmitting power, its principal object being to provide means for overcoming dead-centers. The power transmitted to and developed by the weight is taken off the pivot-pins, thus securing the maximum leverage of the weight and making two strokes for each stroke of the connecting-rod.

GOLD WASHER AND AMALGAMATOR.—J. J. SOUTHWICK, Great Falls, Mont. The improvement pertains to means for saving fine gold that is in flakes, and which in washing pay dirt is ordinarily floated and carried away with the water used to separate values from the dirt. It consists in the peculiar construction and in the novel method for amalgamating gold that is washed from waste matter as the rich dirt is passed through the machine.

ROAD LEVELER AND SCRAPER.—C. W. KAUFFMAN, Dale Township, McLean County, Ill. Mr. Kauffman's invention is an improved machine for leveling and scraping roads, streets, or farm land and the like. It contemplates the production of a device of this character which shall be of simple construction, and an effective means to level a road or other land, combined with a detachable drag-plate to adapt the machine to be used in the capacity of a scraper, when desired. In the operation of the machine the leveler-beam is used solely with the leveler-blade or in connection with the drag-plate, according to the nature of the work which is to be performed.

CLAM-SHELL BUCKET.—V. E. LANE, 325 Vine Street, Berwick, Pa. The main objects of the improvement are to provide a bucket which shall be self-filling and which will be capable of being emptied by a very simple operation. A further object is to provide automatic closing mechanism for a bucket of this character, thus doing away with the necessity of the auxiliary drum or hoist commonly used.

SAWMILL-DOG.—G. S. SERGEANT, Greensboro, N. C. In carrying out the present invention Mr. Sergeant provides a lower dog, means for forcing the dog upwardly into the under side of the log and for forcibly releasing it from engagement with the log, and arrange the said means and devices for convenient operation.

NAIL-COATING MACHINE.—C. WAGGONER, Akron, Ohio. Briefly stated, the invention has reference to certain improvements in nail-coating machines whereby the operation of machines of this character may be rendered more economical and more easily controlled, such results being due to the oscillatory rather than to the rotary movement of the device.