



#### SURFACTUATED MOTOR.

Pictured in the accompanying engraving is a motor designed to be actuated by the wash of surf. The apparatus comprises a platform, which is laid on a sloping beach with its lower end extending into the water. Standards at the corners of the platform support four sheaves, about which two cables are passed. These cables are secured to the pulley wheels of the motor proper, and are used to adjust the latter into or out of the water, as desired. This adjustment can be secured by turning the crank, which is indicated in the illustration. The motor proper comprises a chain or belt of buckets, which are carried by cables fastened over opposite pulley wheels. The buckets on the lower stretch of the belt are open and catch the water of the surf, which owing to its weight drags them down along the platform. To facilitate this movement the buckets are provided with rollers adapted to bear on the platform. As the buckets pass around to the upper stretch of the belt, they are inverted and emptied of water. A cable conveys the motion of the chain of buckets to a train of gearing mounted in a building or framework on the shore. The cable passes over a pulley at the top of this framework, thence about a pulley supporting a counterweight, and back to a second pulley at the top of the framework, whence it passes around a pulley marked *B* in the detail view. The counterweight serves to take up slack when the motor is drawn in toward shore. The pulley, *B*, is fixed to a shaft, and mounted on this shaft at either side of the pulley are two drums, *A* and *C*. The opposite faces of the pulleys and the adjacent faces of the drum are formed with clutch teeth. About each drum a cable is wound, which carries a weight at its free end. In the illustration, the drum, *C*, is shown in engagement with the clutch pulley, *B*, and is winding up its cable and lifting its weight. As soon as the weight reaches a predetermined position, a stop on the cable strikes the lever *E*, tilting it and causing it to swing the lever, *D*. The latter pushes the pulley shaft to the left, releasing the drum, *C*, and causing the clutch pulley *B* to engage the drum, *A*. Then, as the drum, *C*, unwinds its cable, the drum, *A*, lifts its weight until it in turn operates the pulley shaft to move the clutch pulley to the right. The weights here shown are used merely to illustrate the operation of the motor. It will be evident that the same power can be applied with advantage in other directions. The inventor of this motor is Mr. Tad Danford, 1241 Fourteenth Street, San Diego, Cal.

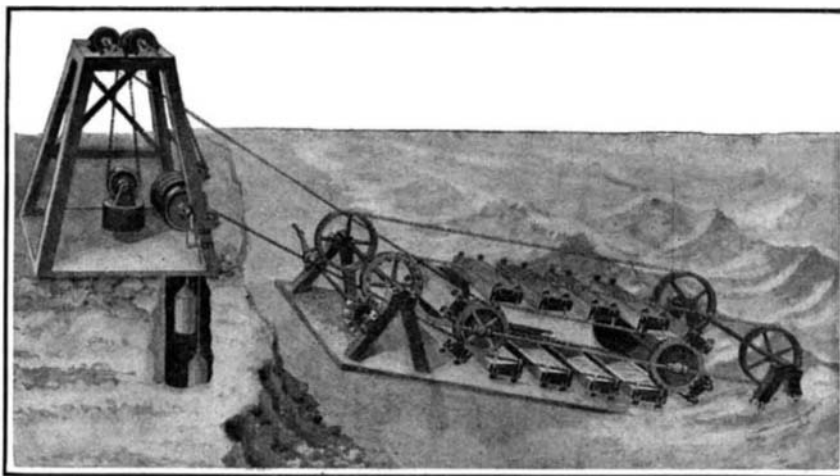
#### A NOVEL REFLECTING LAMP GLOBE.

In the accompanying engraving we picture an improved reflector and globe for lamps. The device is equally applicable to kerosene, gas, and electric lamps,



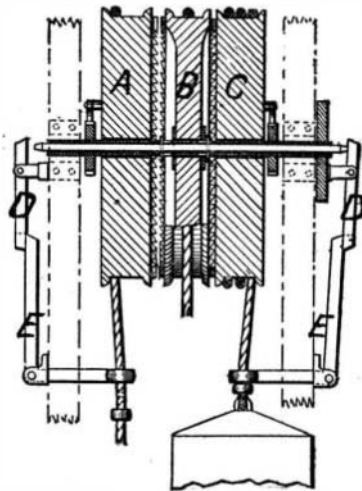
A NOVEL REFLECTING LAMP GLOBE.

and our illustration depicts a combination fixture showing the globe as used both with electric and with a Welsbach light. The globe consists of a glass or porcelain body, preferably spherical in form, though other forms may also be used to suit artistic tastes. The surface of the sphere is provided with a series of cavities of substantially pyramidal form, arranged in horizontal and vertical rows. These cavities are formed on the outer side of the globe so as to produce pyramidal projections on the inner side, as indicated in Fig. 2. At the bottom of each cavity the inclined faces are connected by flat surfaces which may be called windows. The inclined faces are coated with



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a reflecting substance, such as mercury, while the bottom face is left translucent, or transparent, as the case may be. Thus the light of the lamp striking these silvered surfaces is reflected and passes out of the globe through one of the opposite windows. A very artistic and pleasing effect is thereby produced. A modification of this construction consists in in-



DETAILS OF SURFACTUATED MOTOR.

verting the cavities, that is, forming the cavities on the inner side with the windows projecting on the outer side. The inner inclined faces of each cavity are then silvered and serve to concentrate the light that falls on them, reflecting it all through the window. The globe then appears to be made up of a series of beams of light. Mr. Z. Matlowsky, of 47 Chester Street, Brooklyn, New York, has recently been granted a patent on this improved globe.

#### Brief Notes Concerning Inventions.

A motor designed to make a hammock self-swinging has been recently invented by Francis J. McDonnell, an employe of the custom house at New Bedford, Mass. This motor is operated by the weight of the person occupying the hammock or swing, to which it is also adaptable. It is of very compact form, measuring 5 by 7 by 13 inches, and is set by drawing a stout cord, which protrudes from one end. Any weight being placed in the hammock will operate it, so that it works equally well with an infant or a three-hundred-pound person. The period of its operation varies according to the weight of the occupant. The inventor is of the opinion that this device will be of use in the nursery and invalid's room as well as a pleasure for others.

An explosion of mine dust took place some time ago during shot firing in the mines of the Bennett Mining Company near Pittsburg, Pa., and a foreman was killed. As a result of this fatality Superintendent Thomas Oliver is making an experiment with the use of steam in mines to keep down the dust which causes so much trouble. In some dry mines it is the custom to sprinkle the ground with water at regular intervals, but this is not always effective, for the reason that the

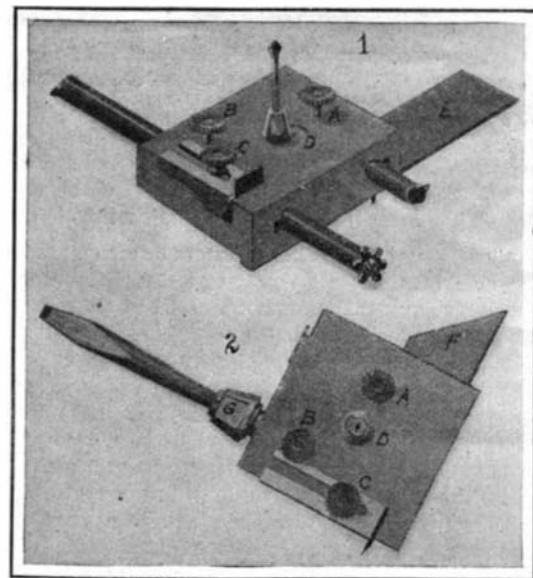
water thus distributed acts only on the ground, while there are great accumulations of the dust on the ledges and walls of the entries of the mines. Steam pipes are being introduced throughout the Bennett mines, and it is expected that the air will be kept constantly moist by the steam, which will escape from the pipes through openings provided at regular intervals.

A western inventor has contrived a device for which he claims a range of usefulness broad enough to include hygienic as well as outline improvements to the body; in fact, a combined body-ventilating and form-shaping apparatus. It comprises a belt fitted to the waist, and having a sack in front and a buckle at the rear. Tubes extend downward from the sack in position to register with the wearer's legs, and to which the tubes are strapped. Tubular straps pass over the shoulders like suspenders and help support the belt, and also serve as air conduits. The belt is hollow and provided at intervals with openings. A check-valve at the front of the sack permits the entrance of air, a valve tube projecting, and passing through say a buttonhole in the clothing. The sack walls are distended by springs. When the wearer inhales, the inner wall is forced outward, compressing the springs and impelling the air in the sack through the belt and tubes communicating with the sack. All tubes are provided with a series of outlets for the discharge of the jets of air from the belt. The breathing thus effects the release of numerous jets of fresh air over

the surface of the person, so that the body is enveloped in a sheet of cool, fresh atmosphere, in excessively hot weather. At this point, care should be taken lest sight of the fact be lost that the refreshment is not all clear gain, since if acquired it must be at the expense of added weight and cumbersomeness of materials at a season when the wearing of articles is rather sought to be reduced to a minimum.

#### TRIPLE GAGE, BUTT GAGE, AND TOOL HOLDER.

A combined gage and tool holder has recently been invented, which will be found particularly useful for carpenters and cabinet makers. As shown in the accompanying engraving, the device is a very simple one, and yet comprises a great variety of tools. It consists of a block bored to receive two rods, which constitute the triple and mortise gage. Each rod is provided with a marking point at one end. The longer rod extends clear through the block, and is provided at its forward end with a toothed wheel, which is adapted to rotate over the wood without digging in too deeply. The shorter rod is held at any desired adjustment by the thumbscrew, *A*, while the thumbscrew, *B*, serves to lock the longer rod in place. The thumbscrew, *C*, holds an angle plate. The latter serves as a butt gage, and can be adjusted toward and from the marking pin at the edge of the block. This plate is bent over the edge of the gage block, and is formed with a flat cutter. A pin in the gage block just below the shorter gage rod serves as a scribing point. At the center of the gage block is a brad-awl holder, *D*, which may be used for holding various tools. A chisel blade, *E*, is fitted into a slot in the block and held in place by a setscrew, or it may be replaced by the blade, *F*, which will convert the gage into a square. If desired, the gage rods can be removed from the block and replaced by a ratchet screw driver, as shown in Fig. 2, or by some other tool. A patent on this device has been secured by Mr. Phillip Gyssler, 3034 Barber Avenue, Cleveland, Ohio.



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