

SPELTERINI'S EGYPTIAN PICTURES.

Among the means employed for obtaining bird's-eye views of elevated objects are kites and balloons. Cameras have been sent up on the strings of powerful kites and so arranged that the sensitive plate contained therein could be exposed to the reflection of the picture below. No mean results have been thus obtained, yet this scheme serves only in the absence of the more exhilarating medium, the balloon ascension. What is thus obtained can never approach a view taken where, instead of depending upon a favorable puff of wind, the mind of the operator directs the lens from the basket of a balloon. Such a picture we take pleasure in reproducing here from the *Illustrierte Aeronautische Mitteilungen*. It is one of several views of the vicinity taken by Mr. Ed. Spelterini on February 21, 1904. Our photograph fails to reproduce all the luxuriance of color, all the sensations engendered by this prospect under an African sky.

From the height, which must have reached several thousands of feet, we clearly see the canal of Jusuf, which is at times a dry bed, but just now is apparently filled with the life-giving fluid so bountifully dispensed by Father Nile; again, in the distance, is equally clearly discerned the 8-mile straight-away, tree-bordered drive from the town of Ghizeh to the Mena House situated almost at the very foot of the great Pyramid.

The Living Crystal.

The researches of Dr. Otto von Schrön, Prof. of Pathological Anatomy in the University of Naples, says a writer in *Knowledge and Scientific News*, gave meaning some ten years ago to the expression "the living crystal." He showed that living matter, largely albuminous in character, takes the crystalline form, and, while still living and crystalline, obeys so many of the laws and manifests so many of the prop-

erties of inorganic crystallization, that its crystalline character may be said to be established. From these experiments he drew the inference that crystallization in its terrestrial origin was a manifestation of life—of vital energy; in short, that a crystal grew for the same reasons that a plant grows, or the brain grows, or an ameba grows; that the vital forces stirring the one are no more than a different form of the forces that develop the other. The "living crystal," the "vital crystal" which, for example, he discovered as one of the products evolved by various of the bacilli that he examined, became thus, in his theory, the bridge between what had heretofore been called living matter—animal and vegetable—and dead matter—mineral. The first crystals which set him on the road to this theory were the crystals of the Asiatic cholera bacillus, which he examined as long ago as 1886. They were long, needle-shaped prisms. Other bacilli examined exhib-

ited distinct crystals of different forms. The *bacillus subtilis*, for instance, formed bayonet rhombs; the *bacillus tenuiformis*, hexagonal prisms; the tubercle bacillus develops square rhombs; anthrax, elongated rhombs; any given bacillus being immediately identified by its crystal, which never varies in the shape assumed in its original formation. These objects are perfect crystals in form; yet, as anyone may see, they are alive, and their life, their motion, and their reproduction are as visible and undoubted as their death when it ensues is undoubted. Their death occurs when all the living matter which originally formed part of the crystal has eliminated itself. On death they become the crystals that we know, ordinary mineral crystals.

Scrap leather is the latest substitute for wood in the manufacture of railroad ties. This process has

been worked out by F. W. Dunnell, of West Warren, Mass., who has had occasion to give the subject of paper making some study, and the leather railroad tie is the result. He claims that the tie can be made so hard that it will resist a spike, if this were desirable; but when the tie is made at a proper density for railroad purposes, it will take the spike as nicely as wood, and will hold it much better. The tie is said to resist the action of water and chemicals to a great extent, and the inventor estimates its life at thirty-five years.

Samples of this tie put down some twenty-eight months ago in the yard or the Boston & Albany Railroad at West Springfield have not shown the least wear, although they have been subjected to the hardest usage. The material from which these ties are made represents the waste of the shoe and leather goods factories, of which there are many in New England.



BIRD'S-EYE PHOTOGRAPH OF THE EGYPTIAN PYRAMIDS TAKEN FROM A BALLOON.

RECENTLY PATENTED INVENTIONS.

Of General Interest.

MARINE HULL.—T. H. SMITH, Sturgeon Bay, Wis. In this case the invention consists in an improved manner of constructing metallic hulls, and it lies particularly in the means for fastening the metallic sheathing to the frame, in the manner of joining the sheathing-plates to each other, and in the novel means for stiffening the entire structure.

MEN'S NECKWEAR.—J. H. STARK, New York, N. Y. The invention refers particularly to improvements in neckwear or scarfs of the class having an apron or aprons depending from a collar-engaging device, an object being to so construct the parts that the apron may be readily rotated around a vertical axis relatively to the head or collar engaging device to present new or different surfaces, thus practically providing two scarfs in one.

PACKAGE-CAN.—M. SHALITA and P. SHALITA, New York, N. Y. In this patent the invention has reference to the construction of cans preferably made of metal and adapted especially for liquid contents, the cans being of that type in which a removable cover is employed, held in place by frictional engagement with the mouth-section of the body of the can.

BUILDING-BLOCK.—G. GERARDTS, New York, N. Y. The invention relates to masonry; and its object is the provision of a new and improved block for forming partition-walls and the like, arranged to permit easy and quick setting of the blocks and a firm uniting of adjacent blocks to produce an exceedingly strong, durable, and light wall.

EYEGLASSES.—H. MASTERS, Butte, Mont. Mr. Masters in this instance has invented an improvement in eyeglasses, and particularly in glasses involving double lenses or two pair of lenses. Bow-clamps clamp directly upon the lenses, and are slightly outturned at their free ends, forming rounded surfaces against the lenses, so they can be applied tightly to the lenses without injuring the latter.

TOBACCO-PIPE.—R. S. KOCH, Bethlehem, Pa. The principal object in this improvement is to provide means for absorbing and retaining moisture and preventing it from interfering with the draft. Moisture collecting in the stem is a very disagreeable feature, and many attempts have been made to do away with it, but the inventor is not aware any have been practically successful. The chief aim is to accomplish this object.

DOUBLE RETURN-ENVELOP.—J. Q. DIXON, St. Louis, Mo. Mr. Dixon's invention is an improvement in that class of envelopes known as "double" or "return" envelopes and

which are constructed of a single blank adapted to be folded, one portion being adapted to be folded within the other and serving as the return-envelope proper when the outer portion is detached by the addressee.

EASEL-SUPPORT FOR DISPLAY-BOXES.—C. W. DE LANEY, Hammond, Ind. The object here is to provide details of construction for a device which affords a reliable support for a display-box that may be readily attached thereto, so as to maintain the box in an upwardly and rearwardly inclined position for an exhibition of goods held in the box and also a conspicuous display of advertising matter placed on the box and easel-support.

CLAMP FOR WELDING TIRES.—C. S. BEAKER, Worth, Mo. In this patent the improvement has reference to clamps for use in heating and welding tires; and its principal objects are to provide such a device for holding the ends of tires in their proper relation for making a lap-weld, thus enabling the smith to dispense with a helper's services.

SHOWER-RING.—W. H. LAWRENCE, Worcester, Mass. This invention pertains to bathing apparatus; and its object is the provision of a new and improved shower-ring arranged to permit the bather to readily place the ring in position on the neck and remove it therefrom whenever it is desired to do so.

ATTACHMENT FOR SURVEYING INSTRUMENTS.—E. R. ARMSTRONG, Beaumont, Texas. There are several objects of Mr. Armstrong's invention, which relates to surveying and other instruments of a kindred character in which a telescope is used to aid in measuring distances and angles; but the principal object is to provide for reading all data directly from the instrument, and thus avoid all the ordinary calculations, which usually have to be made at night after fieldwork is rendered impossible by darkness.

Heating and Lighting.

APPARATUS FOR AUTOMATICALLY LIGHTING OR EXTINGUISHING STREET OR OTHER GAS-LAMPS.—J. BERGAN, Granville, New South Wales, Australia. The object of this invention is to provide an apparatus for lighting and extinguishing the street-lamps throughout an entire district or city by means of a device actuated from one central station or from district central stations, and consequently without the necessity of daily attention on the part of a lamplighter.

Machines and Mechanical Devices.

SCENE-SHIFTING MECHANISM.—H. S. THOMAS, New York, N. Y. In this patent the

invention has reference to improvements in mechanism for shifting scenic curtains, an object being to provide a simple mechanism arranged in a comparatively small space, whereby a plurality of screens may be raised and lowered, one independently of another, to produce varying effects or illusions or to display suitable backgrounds.

REVERSIBLE FEED MECHANISM FOR SEWING MACHINES.—W. A. SMITH, New York, N. Y. The invention relates to improvements in reversible feed mechanisms for sewing-machines of the class disclosed in a prior patent granted to Mr. Smith; and one object of the present invention is the provision of a device for releasing and moving endwise the controlling or adjusting bar by a simple turn of the device in one direction or the other. Simple means release the adjusting-bar without moving it endwise, and the inventor provides an improved form of feed-dog, throat-plate, and bridge on the bed-plate.

BAND-SAW.—C. SEYMOUR, Defiance, Ohio. The object of this inventor is to provide a saw arranged to permit convenient and accurate adjustment of the feed-table for making straight and beveled cuts, to allow the feed mechanism to automatically accommodate itself to inequalities in the work, to insure proper guiding of the work past the saw-band, and to take up any slack in the endless saw-band, and to allow the latter to slightly yield under heavy strain, and to permit the operator to stop the feed instantly when desired.

SUPPLY-TANK FOR WATER SERVICE.—P. J. LEITHAUSER, Clarendon, Texas. The water service of an establishment frequently includes a supply-tank at a proper elevation to derive the desired head or fall of water, it being usually pumped into the tank as required. However, the tank may be constructed entirely open at the top so that rainfalls supply the tank without use of a pump, and for reasons of economy and strength it is not uncommon to construct it of wooden staves held together by encircling metal bands. Under certain conditions the sides above the water become so dry as to cause the staves to shrink, warp, and produce leakages. The inventor's principal object is to overcome this objection.

CONTROLLER FOR SPRING-ACTUATED GEAR WHEELS.—A. HILLGREN, New York, N. Y. In this case the object is to provide means for causing the train to evenly deliver the ever-changing power imparted thereto by the uncoiling force of the mainspring to insure a uniform running of the train or gear-wheels driven from the spring-barrel, so that in watches, for instance, the balance-wheel will vibrate uniformly.

SINGLE-TRIGGER FIREARM.—H. E. WILKINS, Poughkeepsie, N. Y. This arm is intended to be a practical and successful device that will fulfill two important requirements—first, freedom from a tendency to discharge both barrels in rapid succession by an involuntary pull on the trigger, and, secondly, the ability of the user to select at will the right or left barrel for service.

METALLIC PACKING.—J. J. REDNER, New York, N. Y. This packing is intended for use on steam-pistons and similar purposes. The packings now on the market answer their purpose in a general way, but those having a lock to prevent them from turning on the piston or other element to which they may be applied, are so constructed that they sometimes become caught on one side or in contracted position, thereby permitting steam to escape. The inventor remedies these defects by providing a lip-lock packing-ring which cannot get caught.

LUBRICATOR.—A. G. PUERNER, Stoughton, Wis. The invention relates to lubricators, particularly those adapted for application to wind-mills and the like. In apparatus of this class on account of its comparative inaccessibility it is of importance to provide them with a device which will from a common reservoir positively deliver the lubricant to the frictional surfaces of the mill in cold and warm weather, this supply being furnished in varying measured quantities to different elements. The objects are to achieve such results.

CAR-BRAKE.—H. HOFFMANN, New Rochelle, N. Y. The purpose in this instance is to provide a construction of brake which will be quick in action, and under perfect control of the motorman or attendant even should the strength of the attendant be below normal. The inventor dispenses with the winding of brake-chains directly on brake-shafts and provides a brake construction which will be economic and readily adapted to any type of rolling-stock.

STUB-SWITCH FOR RAILWAYS.—J. G. MCKEOWN, Phoenix, Canada. This invention has reference more especially to stub-switches; and one of the principal objects thereof is to overcome numerous disadvantages frequently met in the use of many devices of the kind and also to provide a railway-switch which is thoroughly effective and reliable in operation and comparatively inexpensive to manufacture. It comprises few parts, is easily regulated and possesses the capacity for long and repeated service.

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.