INVENTIONS AND DISCOVERIES ABROAD.

Reeling Silk from Cocoons.—As silk manufactories are now beginning to grow and prosper in our country, every improvement relating to such manufactures is of considerable importance to our people. A. Keller, of Zuricb, Switzerland, has taken out a patent for an improved method of reeling silk from cocoons upon bobbins. The apparatus is arranged to reel with six sets of cocoons at the same time. The cocoons are placed in a bath containing water kept warm by steam heat. The desired number of filaments of silk from as many cocoons, are united together by the apparatus as the filaments rise toward a reel, on which they are wound in such a manner as to take some turns on the reel, and at the same time these filaments are also given off from the reel to a cylinder, which is either of less diameter than the reel, or moves more slowly, so as to allow the filaments to shrink before they are wound on the bobbin. The cylinder is placed in a case which is supplied with heated dry air, and the bobbin upon which the silk is wound is in surface contact with the cylinder, and caused to rotate by it, so that the silk is thus run off the cocoon upon the spools dry at one continuous operation.

Transferring Prints, Designs, &c.—A patent has been applied for by J. B. M. A. Bourreiff, of Paris, for transferring designs in colors or otherwise, to other surfaces. The inventor takes sized, unsized, or half-sized paper, and gives it first one or more coats of the following preparation :—Gum arabic dissolved in water, tapioca, sago, starch, or other fecula mixed in hot water, or boiled in water, and the whole well mixed and stirred. The preparation may be varied so long as similar sticking properties are preserved. After the coating it is better to glaze the paper. This aids the transfer of the impression to be made on the coating. The typographic impression is taken in the ordinary manner, but in lieu of ordinary printing ink he uses a mordant or strong varnish, in which it is better, with the view of obtaining more intense color, where color enters into the design, to incorporate or mix a quantity of the desired color with the varnish. The form or block is covered or "inked" by a roller with the varnish, and a print, on the coated paper, is taken directly after the printing ; or before the ink becomes dry, he powders it over with the same color, by means of a puff, soft brush, or other like article. This operation should be performed at every change of color. When all the coloring matter for the print is dry, he cleanses it by a feather or other like soft article drawn over it. When the paper has received all the colors or gold entering into the design, it is as well —though not absolutely necessary—to pass the paper through rolls, to give a glaze, and to impart homogeneity to the colors and the gold. To transfer the impression to the surface for receiving it, he applies, an hour or more before using the impression, both to it and to the surface to which it is to be transferred, a liquid, composed of essence of turpentine, and one-half part of colophony. He then applies the print to the surface, and uses a roller or rubs with the palm of the hand or otherwise to ensure contact of every part of the impression. He afterward wets or moistens the paper, and separates or draws off the paper from the impression, when the design alone will adhere to the surface to which it has been transferred. For articles subjected to firing after the transfer of the design to them, the colors used must be mineral, and not vegetable, and should be such as are employed by painters on porcelain, china, and glass.

Purifying Coal Gas.—A patent has been taken out by Isaac Baggs and William Simpson, London, for purifying coal gas to deprive it of sulphur, &c. The gas is passed through a solution of the sulphate of copper, which decomposes any sulphuretted hydrogen that may be in it, and forms a sulphide of copper which may be used to produce sulphate of copper, and thus perform the same office a great number of times. For this purpose the sulphide of copper is roasted with access to the air, which results in producing the sulphate of copper. To abstract the carbonic acid from coal gas, the latter is made to pass through water containing metallic oxide in suspension ; oxide of zinc, copper, or other metal, will answer the purpose. When the oxide is saturated with gas, the latter is drawn off, and the oxide recovered by exposing the carbonate so produced to a red heat. Another means of effecting depuration of the gases is by exposing the cleansing material above named and referred to, in a state of powder, formed into a porous mass by the addition of pumice stone, the gas being caused to permeate or filter through the mass.

Treatment of Cast iron.—R. Mushet, of Coleford, England, has taken out a patent for mixing and combining with pig iron, intended for castings ,a quantity of semi-steel or malleable iron, obtained by the pneumatic (Bessemer) process, for the purpose of improving the quality of castings, to render them superior for making articles such as shafts, guns, &c., designed to withstand great strains.

Rollers for Spinning Cotton.—In the roller drawing frame employed in spinning cotton, a small fluted metal roller is employed under and in conjunction with another roller covered with leather, and the sliver of cotton is drawn between them. The smooth roller soon becomes indented by the fluted one and imperfect work is executed. To obviate the use of a fluted drawing roller, I. Leach and J. Anderson, of Ashton-under-Lyne, England, have taken out a patent for the use of smooth front bottom rollers. They state that fluted rollers have hitherto been considered indispensable for this purpose, but they find that smooth bottom rollers produce a better quality of yarn, and the leather-top rollers are not injured by them.

Bleaching Jute Fibre.—Jute or Indian hemp, owing to its low price, is being applied to the manufacture of many textile fabrics for which cotton was formerly used. G. Stewart, of Glasgow, Scotland, has taken out a patent for bleaching jute by immersing it several times in solutions of the chloride of soda, then in dilute sulphuric acid, after which it is thoroughly washed and dried. The chloride of potash was employed for bleaching cotton and linen before the chloride of lime—the common bleaching agent—was adopted. The latter took the place of the former simply because it is much cheaper, and it is also cheaper than chloride of soda.

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week. The claims may be found in the official list :—

Water Wheel.—This invention relates to an improved water wheel of that class which are placed in vertical shafts and inclosed within a case. The object of the invention is to obtain a wheel of the class specified which will admit of the water acting upon it both by impact and gravity, and at the same time render the wheel capable of being favorably driven under the disadvantage of back-water and without the employment of flumes or spouts to conduct the water to the wheel, and by which a considerable loss of power is caused by friction. The invention having further for its object the application of a plurality of gates to regulate the introduction of water to the wheel as occasion may require. G. W. White, of Monroeton, Pa., is the inventor of this wheel.

Gun Turrets.—The object of this invention is to dispense with the use of bolts in the gun turrets, pilot houses, and other parts of vessels-of-war or fortifications which are constructed of iron ; and to this end it consists in constructing such turrets of two or more series of plates or slabs united by means of dovetail tongues and grooves, so arranged that the faces of the dovetails and backs of the grooves are presented toward the exterior and interior of the structure, and in such a direction that the impact of projectiles striking full upon the structure is prevented from operating upon the dovetails in a lateral direction and thereby be liable to fracture them with comparative facility. George Snedecor, of 10 Walker street, New York city, is the inventor of this improvement.

Fusible Plug.—The safety plugs in common use are very unreliable after having been in use for some time. When composed of an alloy the particles of the different metals have a galvanic action, which will,in time, infallibly remove the more fusible metal, and when the water in contact with them is not very pure, the metal, thus removed, is replaced by a stony deposit from the water, and the plug is worse than useless because it lulls all suspicion of danger, and moreover the film of oxide, which is formed upon it at first, and is commonly relied on to protect it from further corrosion, is only proof that destruction has begun. The objection to a plug of lead or any single metal which has been sometimes used is that it does not melt at a sufficiently low temperature for safety in most cases. The object of this invention is to obviate all these dangers, and to this end it consists in protecting a fusible safety plug by any known process, with a coating of a metal less fusible and less liable to corrode than the metal or alloy of which the body of the plug is composed, but so thin as to offer no appreciable resistance to pressure when the metal or alloy of which the body is composed, is softened or melted by heat. F. Curtis, of Newburyport, Mass., is the inventor of this improvement.

Expanding Tompion for Ordnance.—This invention relates to the expanding packing of the tompion. This packing has been heretofore made of vulcanized india-rubber or other gum, and the free sulphur which remains in the gum after vulcanization has produced the corrosion of the interior of the muzzle of the piece to which it has been applied. The object of my improvement is to prevent this effect, and it consists in the application to the vulcanized gum packing of a covering of chamois or other leather, cloth, felt, velvet, plush or other suitable material, which is neither sticky nor contains any of the elements by which the corrosion of metal can be produced, and in the interposition between the vulcanized gum and the said covering, of unvulcanized india-rubber or other material possessing a similar quality of being impervious to sulphur. George R. Willmot, of Meriden, Conn., is the inventor of this improvement.

ISSUED FROM THE UNITED STATES PATENT-OFFICE

FOR THE WEEK ENDING NOVEMBER 24, 1863.

Reported Officially for the Scientific American.

*** Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

40,670.—Grain Separator.—Cyrus Bates, Hardin, Iowa :

I claim the adjustable screen, D, with the board or plate, E, attached and placed in the shoe, C, in combination with the screen, F, provided with the trap-door, G, all arranged to operate substantially as and for the purpose herein set forth.

[The object of this invention is to obtain a suitable and efficient device for separating impurities from grain, and also to separate the largest and soundest particles of grain from the inferior portions, as well as to separate one kind of grain from another.]

40,671.—Elevator Bucket.—John S. Brooks, Rochester, N. Y. :

I claim the combination of cast metal ends or heads with sheet metal front and back, in elevator buckets, as and for the purposes shown and described.

40,672.—Mode of protecting Ships' Bottoms.—James Brown, Aldgate, London, England :

I claim the covering of the bottoms and sides of ships or other partially or entirely submerged surfaces with glazed or enameled plates of iron, and applied in the manner and for the purpose above described.

40,673.—Lubricator.—Hugh Campbell, Newtown, Conn. :

I claim a grease or tallow cup fitted with a movable cover and a steam pipe, and constructed and arranged substantially in the manner described for the purpose specified.

40,674.—Corkscrew.—Charles Chinnock, Brooklyn (E.D.), N. Y.:

I claim the case or tube, A, provided with the slots, a b, in connection with the slide, B, provided with a pin, c, fitted in the slot, a, of the case and the corkscrew, C, or other tool attached to the slide by a joint, f, substantially as herein set forth.

[The object of this invention is to construct a corkscrew, gimlet, screwdriver, or other tool which is turned in using it, in such a manner that its handle will serve as a case to receive the tool when not in use, and render the same capable of being carried in the pocket without any inconvenience, and, at the same time, be capable of being manufactured at a small cost and without having any of its parts detachable.]

40,675.—Harvester.—I. H. Coller, Poughkeepsie, N.Y.:

I claim, first, The combination of the rigid finger bar, D E, hinged slide, C, and guides, E K, the whole constructed and operating substantially as herein described.

Second, The slide, C, with its box, B, when the slide is hinged to the finger beam or shoe, by means of links, H, and a bolt, I, substantially as herein described.