

THE CAMERA BOOK.

BY EMILE GUARINI.

The "Photographic Book," invented by M. Leon Block, of Paris, is one of those apparatus in which an endeavor is made, through a descriptive form, to conceal the nature thereof from the sharpest eyes—a thing that is often necessary if it be desired to take a snap shot of someone. All amateur photographers, no matter how little artistic sense they may have, have been annoyed and shocked at the pose of the soldier at present-arms, and baffled by the position that is immediately assumed by a person when he sees a camera leveled at him. The new apparatus is designed to prevent such drawbacks

and to permit of photographing a person secretly while off his guard. The victim may consider the process presumptuous and not very delicate, but in photography no attention is paid to trifles like that.

The photographic book, even when it is ready for operation, preserves the aspect of an ordinary pocket dictionary. The operator opens it at the first page, and while apparently reading, has really under his eyes the ground glass of the finder, and, at the side, a water-level to show whether or not the apparatus is horizontal. The finder is provided with a prism so arranged that the operator, while apparently looking in front of him, can actually see upon the ground glass an image of the objects situated at the side. The image that is depicted upon the finder is that of the persons who are located to the left of the instrument, and it is toward them that are turned the two objectives concealed in the back of the binding. The apparatus is stereoscopic and gives 1.5 x 2-inch images upon 1.75 x 4-inch plates, which are contained in small metallic plate holders, the number of which is limited only by the capacity of the operator's pockets. The plate holder is slid into one of two grooves formed in the edge of the book, and it is by the selection of one or the other of these grooves that the focusing is done. The one farther away from the lens serves for objects situated at a distance of one or two yards, and the other for objects situated beyond such a distance. The shutter is capable of making the exposure instantaneous, and for such a purpose the apparatus is placed upon a table. The handle that serves to set the shutter, as well as the device for freeing it, is within easy reach of the hand, and both are so well concealed that the book loses nothing of its harmless aspect.

HYDRAULIC PRESS FOR EMBOSSEING SILVERWARE AT THE ST. LOUIS FAIR.

BY THE ST. LOUIS CORRESPONDENT OF THE SCIENTIFIC AMERICAN.

When we remember the magnificent exhibit made by the great Krupp firm at the Chicago World's Fair, it is surprising to find that there is no separate and distinctive Krupp exhibit to be found at the St. Louis Exposition. Here and there may be found specimens of their forgings and finished work embodied in various machines and appliances, but with one single exception the famous German firm is not represented.

The single exception, however, is a notable one. It consists of a massive hydraulic press, weighing in the aggregate 121 tons, which is located in the Machinery Building. The press is a fine piece of work, but its attraction is the fact that it employs a hydraulic pressure that is altogether unprecedented, namely, 85,000 pounds to the square inch. The purpose of the press is to produce by a quick and cheap method the finest forms of embossed silverware, chiefly in the way of flagons, vases, urns, etc.; and this it does at a speed, and with an accuracy of reproduction of the desired pattern, that render the product exceeding-

ly cheap, the actual process of embossing taking only the few seconds' time during which the hydraulic pressure is acting upon the metal.

While the machine itself will be of interest, it can never be regarded with any very kindly feeling by the

upon some soft and more or less yielding substance, that allows the stroke of the hammer to produce the desired impression.

In the present case, the vase or bowl is rolled out approximately into its final form, and is then placed

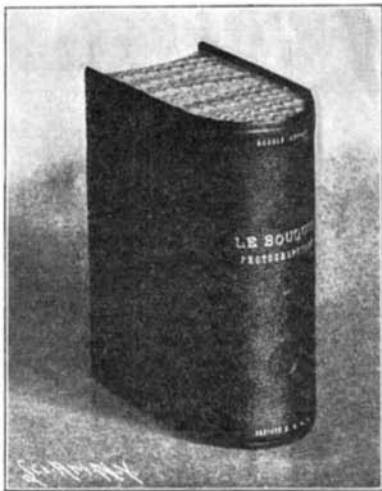
within a hollow steel die formed in four sections, in which the pattern has been cut by hand, the outside of the silver cup or vase lying in snug contact with the inside of the sectional hard-steel mold. Inside the silver form is inserted a rubber cup, and to the inside of the cup is attached the hose of an air pump, the end of the hose being screwed into a nozzle, that passes through the rubber cup to its outer surface. After the rubber cup is in-

serted, the air is exhausted from between its outer surface and the inner surface of the metal form, so as to place the two surfaces in snug contact. After several pieces have been thus prepared, they are placed in a metal basket and lowered into the water within the cylinder of the hydraulic press, which in the case of the one herewith shown, is 17 inches in diameter. The cylinder stands on a platen located within a series of eight massive steel yokes, and at the top of the

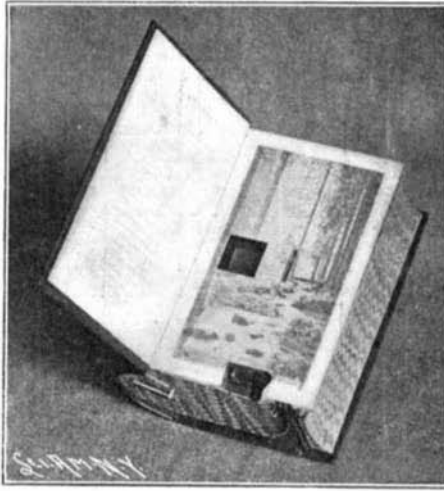
yoke is carried a hydraulic plunger. The platen rises, carrying the cylinder with it, and as the plunger enters the hydraulic pressure is raised until it reaches 85,000 pounds to the square inch. Now, since the silver forms in their molds are immersed in the water, it will be seen that there is a hydraulic pressure of 85,000 pounds on the outside of the sectional steel die, and on the inside of the rubber cup, the result being that the silver metal is squeezed into the recessed embossing cut in the dies, and practically flows into the very finest interstices and hair lines of the pattern, producing a very perfect impression. At first thought, one would suppose that the rubber would be disintegrated under a pressure which is two and one-half times as great as the powder pressure in the powder chamber of the modern gun at the moment of firing, but in spite of its elastic character, rubber has extraordinary tenacity, and it seems to suffer no damage from being subjected to this enormous load.

The press is 21 feet in height, and the frame is made up of eight Siemens-Martin open-hearth steel yokes, the legs of which are 3 inches in thickness by 12 inches in width, each yoke weighing 4 tons. The pump is run by a 70-horse-power motor, which is belted to two three-plunger pumps. The press is controlled from the upper platform, shown in our engraving, and the handling of the pieces is done by means of a hydraulic crane, shown to the right of the platform. When the press is working on small pieces, it is claimed that the loveliest specimens of embossed silverware can be turned out at the rate of so many a minute. While we cannot but admire the mechanical ingenuity and daring with which this remarkable press has been designed, we must be pardoned for a feeling of regret that herein we see one more of the fine arts cheapened by the substitution of mechanical for hand labor. Such, however, is the tendency of the age, and it is certain that the end is not yet.

The torpedo-boat flotilla of the Austrian navy is to be reconstructed, and in view of the discussions which have taken place as to the speed required for destroyers, the fact that the Austrians have fixed on 28 knots is interesting. This speed is to be attained when the vessels are carrying a load of 100 tons representing fuel and ammunition. The 25½-knot boats of the British navy are required to carry 120 tons, and it is matter for serious consideration whether this justifies the decrease in speed of the vessels.



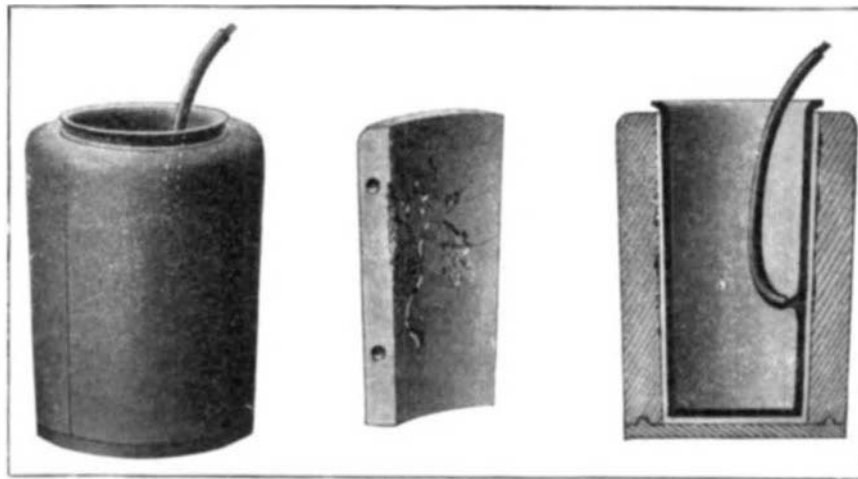
THE CAMERA-BOOK CLOSED.



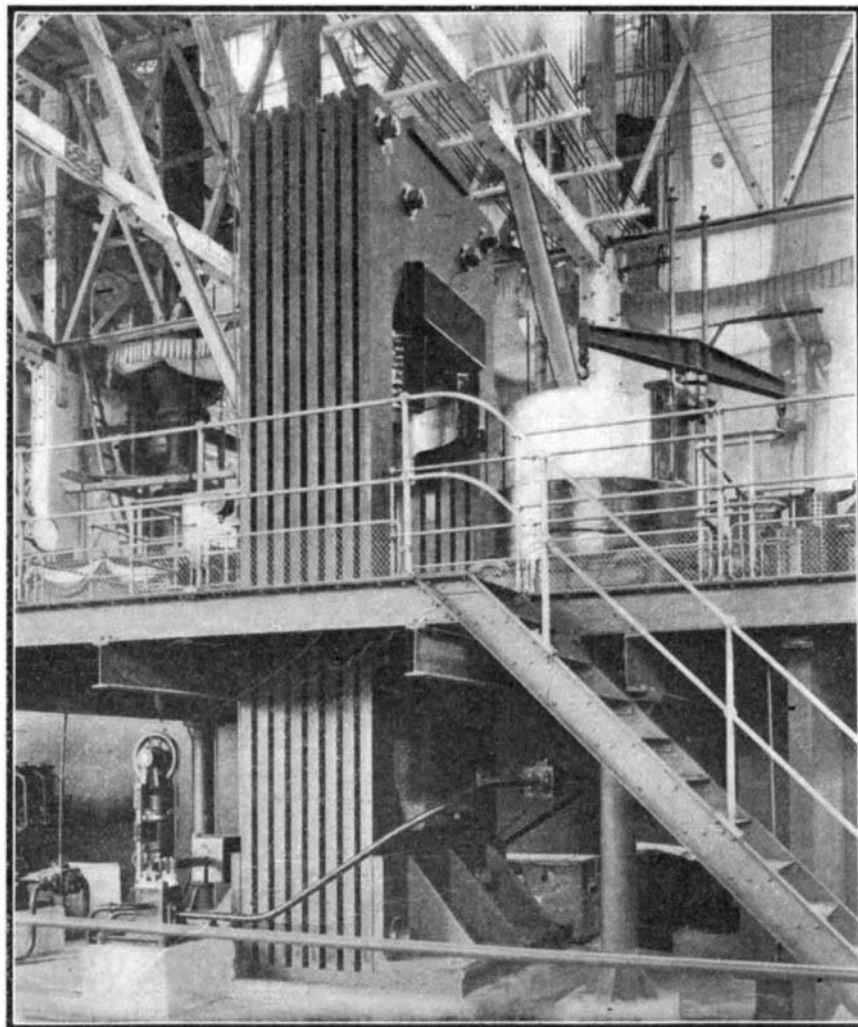
THE CAMERA-BOOK OPEN.



PHOTOGRAPHING WITH THE CAMERA-BOOK.



The Die, Form, and Interior Rubber Cup Used in the 85,000-Pound Press. Machinery Building, St. Louis Exposition.



GENERAL VIEW OF THE 85,000-POUND HYDRAULIC PRESS FOR EMBOSSEING SILVERWARE. MACHINERY BUILDING, ST. LOUIS EXPOSITION.