

ric emerges. Paper is sometimes embossed in this manner; and the flattening roller may be dispensed with if the cylinders are sufficiently accurate in their diameters for the pattern always to fall on the same place at each successive revolution. Leather embossed in high relief for ornamental purposes is sometimes stamped with dies of type metal or electrically deposited copper, the leather having first been softened in water. Several methods have been invented for embossing wood. Sometimes hot molds are pressed upon the wet wood, which burn in the pattern, the charcoal being afterward removed. In some machines engraved rollers are used instead of stamps, the wood being steamed and passed between the rolls while hot. In another method the wood is pressed and rubbed with a blunt instrument, the surface yields, and a depression of some depth is made; if the wood be now soaked in water, the depressed portion will rise to its original level. Only the surface in those parts that are to be finally in relief is rubbed down. The rest of the surface is planed down even with the depressions and the wood soaked; this causes the compressed parts to swell back to their original level and stand out in relief against the planed surface. Embossing in needlework is effected by embroidering over figures padded with wool felt or other material.

EMBOSSING (Fr. *embosser*, from *en*, in + *bosse*, hump, bump, OHG. *bōzo*, tuft, from *bōzan*, Ger. *bossen*, to beat). The art of producing figures in relief upon various substances, including paper, leather, wood, and metals. This is usually effected by pressing the substances into a die, the kind of die and mode of applying being modified by the nature of the design and of the material to be embossed. (For the stamping of sheet metal, see **DIES AND DIE SINKING**.) Embossing of metal, however, may also be done by hand by beating up the metal from the underside, in which case the process is called *repoussé work*. See **REPOUSSÉ**.

Paper and cardboard are embossed with dies in a similar manner, but the dies are frequently of brass, sometimes of copper electrically deposited and suitably backed. The counterdie is commonly made of soft metal, card, or millboard, pressed into the metal intaglio die until a sharp impression is produced. The paper or card is well damped and a fly press is generally used. The leather or cloth for bookbinding is embossed in this manner, the counterdie being usually made by gluing several pieces of millboard together and gluing them to the upper bed of the press, then stamping these into the lower die until a perfect impression is obtained. The embossing press designated for impressing the medallion upon postage envelopes is a very elaborate and beautiful machine, which inks the die itself, and with the aid of two operatives to place and remove the envelopes embosses 60 envelopes in a minute. When large surfaces of textile fabrics, such as table covers, etc., have to be embossed, the fabric is compressed between rollers, one being of metal upon which the device is sunk like a die; the counter roller or bed cylinder is of paper covered with felt; this yields sufficiently to allow the fabric to be pressed into the die cylinder. A third smooth metal roller is commonly used to press out again the impression made upon the bed cylinder; this acts upon the bed cylinder on the side from which the fab-