ROTARY POWER PRINTING-PRESS.

(See page 56)

The printing-press illustrated herewith is named the "Pearl," but it must not be inferred that it is of "great price." On the contrary, the cost is so reasonable that it cannot be an objection to those fitting up printing-offices and aiming to be economical in their first outlay. Judging by what we observed in one of these presses in operation at the manufactory of the makers, Messrs. Golding and Co., 40 Washington Square, Boston, Mass., we have no hesitation whatever in stating that we consider it a press of beautiful design, compact in its mechanical arrangements, with ingenious and effective movements, and finished with a thoroughness and care that reflect the greatest credit on the manufacturers. Its mechanical construction and compactness may be judged somewhat by the accompanying engraving. It combines everything that can reasonably be expected in a printing-press, being made for hand-inking, self-inking, and self-delivering; for either hand, foot, or steam power; and at prices varying from twenty-five to two hundred and twenty-five dollars.

A very perfect movement to economize time in operating has been accomplished in the construction of this press. A period of rest is given to the platen to allow the workman to feed the sheets correctly for printing. The platen then starts gradually and closes quickly, dwelling on the impression a moment, which is necessary for good printing. It then opens quickly, wasting no time in its movements, which enables the operator to run the press very rapidly. The rotary power is obtained by means of a fly-wheel operated by a foot-treadle, giving a very steady and powerful motion. This improvement makes this press a very superior one for ease and rapidity of operation. With it the press may be run at the rate of 2,000 an hour, or it may be run as slowly as desired. It can be run at the rate of 3,000 an hour with a good workman to feed it.

The following good features are worthy of note:

The self-inking attachment, by which two inking-rollers are carried past the centre of the rotating ink-distributor and twice completely over the type before every impression, inks the type in a superior and thorough manner. The rollers are each independent of the other, and may be used separately if desired. Their pressure on the form is adjustable, and can be lessened or increased as desired. The rotating ink-disc rotates at each impression, thus giving a thorough and equal distribution of ink. One of the advantages of a rotating disc over a lateral moving plate, or cylinder, is that a rotating movement distributes the ink all around thoroughly and evenly over every portion, while a lateral movement feeds in only from the sides, giving a very light distribution in the centre and a heavy distribution at both ends. The impression is obtained by using a single or compound toggle-joint, according to the size of the press, which accumulates power immensely at the point of impression. The impression can be regulated as desired, for a full form or a single letter. The impression is regulated by four screws situated one in each corner of the platen. This is the only way by which a perfect impression can easily be obtained. The impression-screws have positive bearings, which are in view of the operator, and are provided with check-nuts to hold them firmly when set correctly, so there is no possibility of the platen slurring. The bed is finished perfectly true and smooth, and is placed in a perpendicular position, and remains stationary, so that the type rests upon it and cannot drop out; at the same time it is always in view of the operator. The bed in No. 3 size is supported by cross-ribs containing 132 square inches of iron, preventing any possibility of springing in the least. Other sizes are made in the same proportion. The platen swings on a rocker, and is balanced at every point in its movement, therefore requiring but very little power for its operation. This is one of its great advantages for hand or foot power. The register is perfect, as the platen has positive bearings, to which it is firmly held by a draught-screw. The chase is firmly secured to the bed by a strong and simple device, which is very quickly and easily adjusted. They are all squared and carefully fitted to each press. Each press is provided with a pair of gripping fingers, which are self-acting, holding the sheet in place, and removing it from the type as soon as the impression is made. They can be thrown down on the platen for adjustment, and can easily be removed for card-printing, where it is desired to have the cards drop. An adjustable bottom-gauge or guide for the paper is included with every press. It is easily changed to any position, and held firmly by a thumb-screw. The patent card-dropper is a new and simple device which removes cards from the type after receiving the impression, and opens the gauge, causing them to drop into a receiver below. By this arrangement 2,000 cards an hour can easily be printed. By means of the rocker, side-arms, which are continually in the way in feeding and delivering, and prevent sheets with large margins from being printed, are dispensed with. Its convenience for feeding and delivering is one reason why the press can be run rapidly. An inclined delivery-board is attached to every press. It is a great convenience for holding the printed sheets. One of its great merits is its ease of operation, adapting it especially to all offices where steam is not used, as it requires less power to operate it than any other press. The highest speed can be obtained, as it is only limited by the ability of the operator to supply the sheets in place to be printed, and this can be done quicker than on any other press. Each press will print a full form or a single line, in centre or out of centre, as desired, and for fineness of work they have no superior. There being no side-arms, sheets with large margins may be worked. Superior work can be done with this press, as the ink-distribution is thorough, the impression easily arranged, the register perfect, and every part made in a thorough manner. For beauty of design and finish "The Pearl" may be considered a "model of perfection." Every part of the machine that is not finished by machinery is enamelled, giving it a bright black, polished surface, almost as hard and durable as iron itself, rendering it proof against injury by acids, alkalies, or oils. Among the many advantages possessed by the Pearl Press should also be considered its adaptability to the increasing wants of a growing business. The Pearl Press can be changed into a self-inking, the self-inking Pearl Press into a rotary foot-power, and the rotary foot-power press to go by steam-power.—*American Artizan.*

G. BLUNCK'S PATENT PARALLEL RULE.

(See page 56.)

This instrument is designed to facilitate the hatching or shading of drawings by lines, as is required in most mechanical drawings; and also in drawings for engravers, surveyors, maps, etc., which tedious work requires, if done without proper instruments (which up to this time have been very expensive), great skill and steadiness of the hand and the eye to produce an elegant appearance. With the skilful use of this instrument, however, which any ordinarily skilful man may acquire with an hour's practice, absolute parallelism and equidistance of lines at any desired angle are produced, and a clean and elegantly-lined surface will be obtained.

If the shading is intended to proceed from the left to the right hand, as is generally the case, the spiral spring on the right hand is unhooked, the two thumb-screws adjacent to the spiral springs are so adjusted that the desired distance of lines is produced, and the rubber straight-edge set to the required angle; the instrument is then ready for operation. It is set on the drawing, and the elliptic or band-spring, to which a wedge of hard rubber is attached, is pushed downward and released by the left hand. The pressure of the band-spring, when pressed downward, keeps the movable strip stationary on the paper, and the wedge pushes the box, and consequently the frame with the straight-edge, forward; as soon as the pressure on top of the spring is released, the spiral spring on the left hand side will pull the movable strip to the right hand as far as the thumb-screw on the left-hand side will allow. By continuing this operation, the whole instrument is caused to travel in one straight line across the drawing, making equal distance at each pressure on the top of the band-spring. Thus the operator, by drawing lines along the rubber straight-edge with the right hand, and alternately pushing and releasing the band-spring with the left hand, produces the desired shading. For moving in opposite direction, it is only necessary to unhook the spiral spring on the right-hand side, and connect the one on the left, and to readjust the thumb-screws.

The instrument, being of very small compass, may be used with the same readiness on small or large drawings, and without the aid of any other **T**-square or straight-edge. It was patented July 22, 1873.—*American Artizan.*

MR. E. SMITH of Bloomington, Ill., has patented a device which is thus described:—"It consists of a telescopic arrangement of tubes and a valve so arranged that when one tube is pushed within the other the valve is opened and steam admitted from the boiler whereby projectiles are thrown from the tube to drive cattle from the track." We would suggest as an improvement to this that a projecting spar be attached to the front of the locomotive with a torpedo at the end, which might be exploded under the beast by means of electricity in order to accelerate its movements. No patent applied for this improvement.