trimming machines, driven by a fifty-horse power engine manufactured expressly for the firm. The boiler is located under the rear pavement, remote from the press room, thus preventing the heat and dust from entering the departments. The same exact methods and systems are observed in the working of this branch of the establishment as in every other.

The show card department occupies two floors of the rear building. Framed chromo-lithographic show cards and other work of a similar nature are turned out here in immense quantities. The moulding is bought in the rough, and then smoothed, polished, and finished, in gilt, or in colors, as ordered. It is then cut into proper lengths by suitable machinery, mitered, and joined, and made ready for the reception of the lithographed cards and other devices for framing. These cards, as received from the printing department and chromo printers, are stretched, sized, varnished or painted, and passed to the packing department, where they are baled, an abbreviated description being stamped upon the package. These go to the shipping department for address and shipment.

It might appear upon cursory thought that a business of so much detail, and conducted by necessity into so many departments, each distinct in its nature and methods from all the others, would unavoidably run into confusion at some points, but such is not the case in this concern. While each department is responsible to its particular head for its running and results, the several heads or chiefs are responsible in return directly to the managing partner of the house, so that, though the operations of the house extend nearly over the whole world, the vast business is carried on with the utmost smoothness and regularity.

NEW SWINGING GATE.

A simple and very effective automatic gate is represented in the annexed engraving. It presents none of the objectionable features found in the class of gates operated from overhead, and has but few parts, all of which are substantial and durable.

Fig. 1 shows the gate in perspective, the horizontal connecting rods being exposed to show the connection of the various parts. Fig. 2 is a side elevation of the upper gate hinge, and Fig. 3 is a plan view of the connection of the side of the bar, and its联动 with the automatic gate. This gate can be made of wood or iron, or of both materials combined, and it may be of any style of a general design with the force to which it is applied. The gate is supported at the top by a bracket, A, attached to the style and operated on the pintle of the bar, B, the latter having a heart-shaped opening for receiving the pintle of the bracket. C. The gate, B, is rigidly attached to the upper end of vertical rod, D, which is offset to bring its lower portion axially in line with the pintle of the bracket. C. The rod, D, is journaled near its lower end on a bracket secured to the bottom of the post, and carries a horizontal stud upon which rests the pintle of the hinge attached to the lower part of the gate. This part of the hinge is forged to embrace the rod, D, and bent downward forming inclined planes, and when the rod is turned the horizontal pin passes under one or the other of the planes. This combination assist in opening or closing the gate, as will presently be described. The trip rods, E, consist of iron or steel rods bent so as to form two cranks at right angles to each other, and one end of each rod has a lever arm connected by a horizontal rod with a T-lever secured to the bottom of the vertical rod, D. The horizontal connecting rods are made adjustable so as to lengthen for any accidental change in the position of the trip rod.

This gate is readily operated by a light carriage containing our patents, on its pivot, so that the pivot occupies one of the sides of the heart-shaped outlines. The rod is then made to move rearwardly a sufficient distance so that its point will engage with the brackets formed on the bracket, G, and is thereby held in position. When the gate is raised, the post revolves in the aperture of the heart-shaped opening.

The horizontal stud in the rod, D, turns around the inclined portion of the hinge, so that its face, which rests upon the stud, has a tendency to slide upon the stud, and thus accelerate the motion of the gate, or enable the same to be operated with theaid of a less angle than would otherwise be necessary.

The pivot is lifted out of its notch when the end of the gate is raised by the tilting mechanism, so that it offers no impediment to the opening of the gate by a passing carriage.

A double gate may be made on this plan by simply adding another arm to the lever at the bottom of the rod, D, and connecting it by a rod to a corresponding arm of a similar mechanism on the second gate.

This gate was recently patented by Mr. Nathan H. Long, of Muske, Indiana.

MISCELLANEOUS INVENTIONS.

Mr. William Dworth, of St. Johns, Canada, has patented an improvement in ventilating houses, by which pure outdoor air is admitted into the house, without increasing the temperature of the air within, or adding to the expense of heating. He passes the air through a conservatory, in which the purity of the air is increased by circulation of the air, and pumping the air so purified into the building to be ventilated.

Mr. Harrison Owen, of Waco, Texas, has patented a coffee roaster, which can be used in the oven of an ordinary stove, and which retains the aroma of the coffee.

Mr. Francis D. Dupuy, of Ironton, Ohio, has patented a leather blocking frame, which enables the fluid side of the leather to be kept clean, and saves the time usually expended in wiping the table commonly used. It is a rectangular frame with cross pieces and longitudinal wires tightened over the cross pieces by a taking-up device.

Mr. Charles E. Fullman, of Plattsfield, N. J., has patented a method of cutting tobacco. The tobacco is cut in a revolving cylinder provided with a hollow turnspit and a semi-tubular bucket lowered through the turnspit, which serves as a handle for revolving the cylinder, and can be withdrawn with sample to determine the progress of the roasting.

Mr. Francis B. Byrnes, of Pensacola, Fla., has patented a timber crib designed to prevent loss from breaking assunder of timber rafts. A vertical crib or cage composed of timbers securely fastened together, and a series of cross-clamps, with screws and nuts for holding the confined timber in place, one end of the crib being closed, so that it may be opened for loading and unloading, the hinged end being provided with a roller to move the raft in and out of the crib. Both ends of the crib may be hinged when three lengths of timber are desired to be hauled.

Mr. James A. McCaffrey, of Philadelphi, Pa., has patented an ice saw. The blade of wood, leather, or rubber, etc., perforated with numerous small holes. The object is to make it easy to saw ice. The sawdust can be worn over other foot gear.

Mr. Frank S. Osborne, of Belvoir, N. Y., has patented a horse pole. An adjustable sectional collar is held in place upon the horse by suitable bands or clamps, and has a forward and upward projecting pivotted bar or stake whose butt rests on a sharp pointed spring, which pierces the horse's breast when the free end of the stake is pressed downward as the horse attempts to get over a fence.