

trimming machines, driven by a fifty-five 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 department. The same exact methods and system are observed in the working of this branch of the establishment as in every other. The bindery is located in the rear building or annex. Here the pamphlets, almanacs, etc., are stitched and covered, giving employment to a large number of young women, whose skill and swiftness in their work are admirable to witness.

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, plain, 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, and mounted, and then are passed to the packing department, where they are boxed, an abbreviated description being stenciled upon the package. Thence they go to the shipping department for address and shipment.

It might appear upon cursory thought that a business of so much detail, and separated 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 same. Fig. 4 shows the latch used in connection 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 to correspond in general design with the fence to which it is applied.

The gate is supported at the top by a bracket, A, attached to the stile and apertured to receive the pintle of the bar, B, the latter having a heart-shaped opening for receiving the pintle of the bracket, C. The bar, 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 in a bracket secured to the bottom of the post, and carries a horizontal stud upon which rests the portion of the hinge attached to the lower part of the gate. This part of the hinge is forked 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 inclines. This combination assists 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 as to length to compensate for any accidental change in the position of the trip rod.

This gate is readily operated by a light carriage containing one person,

and its action is quick and sure. The operation of the gate is as follows: The vehicle wheels operate, through the trip rods, E, and the connecting rods to turn the vertical rod, D, in the usual manner of such gates. It is well understood by those familiar with such devices that the vehicle

on its pivot, so that the pivot occupies one of the sides of the heart-shaped orifice instead of its apex, and the bar is thus made to move rearwardly a sufficient distance so that its point will engage with the catch formed on the bracket, C, and is thereby held in position until the gate swings into position, when it draws the bar forward and the pivot resumes its place in the apex of the heart-shaped opening.

The horizontal stud in the rod, D, turns around under the inclined portion of the lower 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 when tilted to a less angle than would otherwise be necessary.

The gate latch is lifted out of its notch when the free 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 Muncie, Indiana.

MISCELLANEOUS INVENTIONS.

Mr. William Dewart, of Fencelon Falls, Ontario, Canada, has patented an improvement in ventilating houses, by which purer outside air than that immediately contiguous to buildings is supplied to interiors. He passes the air through a conservatory, in which the plants purify the air, using a pipe with an outside flaring end for introducing the air to the plants, and pumping the air so purified into the building to be ventilated.

Mr. Harrison Owens, of Fort Worth, 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. The coffee is roasted in a revolving cylinder provided with a hollow trunnion and a semi-tubular tester introduced through the trunnion, which tester serves as a handle for revolving the cylinder, and can be withdrawn with sample to determine the progress of the roasting.

Mr. Francis A. Dupuy, of Ironton, Ohio, has patented a leather blacking frame, which enables the flesh 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 crosspieces by a taking-up device. Mr. Charles F. Stillman, of Plainfield, N. J., has patented a trotting sulky in which the frame, axle, and shafts are so constructed and arranged as to afford more room for the rear part of the horse and permit the animal to be hitched nearer to the axis of the wheels than has heretofore been possible, thus avoiding interference with his gait and obtaining greater ease of draught.

Mr. William B. Runyan, of Pensacola, Fla., has patented a timber crib designed to prevent loss from the breaking asunder of timber rafts. It is a rectangular 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 hinged, so that it may be opened for loading and unloading, the hinged end being provided with a roller to facilitate the moving of the timber. Both ends of the crib may be hinged when three lengths of lumber are desired to be loaded.

Mr. James A. McCaffrey, of Philadelphia, Pa., has patented an ice sandal. The sole is of wood, leather, or rubber, etc., perforated with numerous small holes. The objection to metal spikes is thus avoided. The sandal can be worn over other foot gear.

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

