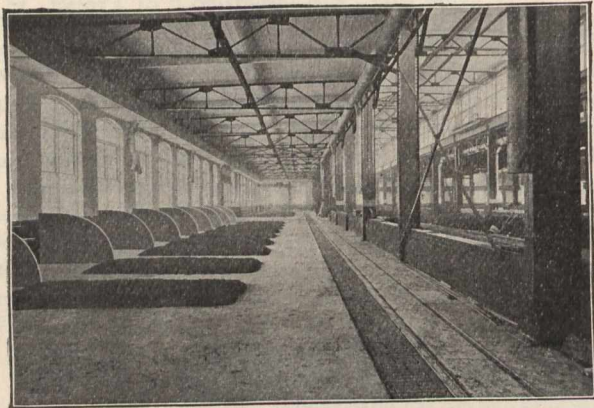


while the fire risk is reduced to a minimum by a double system of fire doors. The moulder's written order to make a specified number of castings is issued by the foundry office, directly to the pattern keeper, who makes a record thereon of the pattern location, attaches it to the pattern and sends both to the foundry. A metal clip placed upon the storage record card indicates that the pattern is out.

The foundry consists essentially of two long craneways each 35 ft. in width with centre bent of the same width and side floors 30 ft. wide. The brass foundry, core room and wash room are located at one end; the charging floor at one side, nearly midway of the length, and the cleaning room at the other end. The craneways are designed for 20-ton electric travelling cranes. Brick division walls three and one-



Bench Moulders' Floor in Foundry.

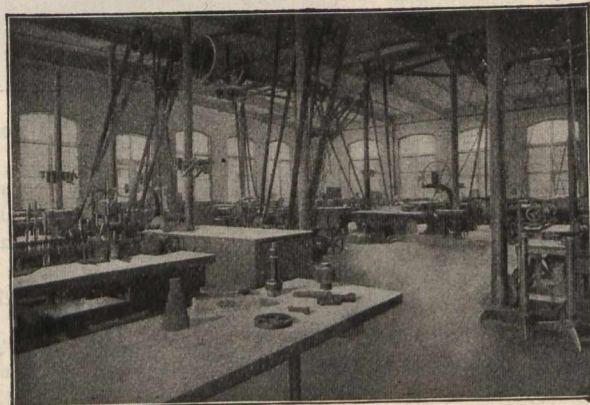
half feet high running lengthwise of the foundry separate the floors on the lines of the columns. Lighting is secured through monitors in both of the craneways and through ample side windows. Each line of monitor transoms is operated in unison by a novel device installed by the G. Drouve Co. The western side of the foundry is given up to bench and small floor moulding, the bench moulders' floors being separated at the bench ends by wooden partitions. The floors throughout this side of the building, as well as those in the storage bins and centre runways, are of concrete. Along side the industrial railway, which serves iron from ladle trucks to the bench floors, is a sunken trench laid with common brick as a suitable place for drippings and for the piling of hot castings. In the centre line of each of the craneways and in the bent between them runs an industrial railway with turn-tables connecting with the cross aisles which provides for the distribution of metal, etc., to all parts of the building. The floor between the craneways is supplied with a series of $1\frac{1}{2}$ ton small travelling cranes of about 10 ft. span equipped with Sturtevant electric hoists built especially for this work.

All materials are received from a track which runs along one side of the foundry and are delivered through wall openings to the bins which fill a portion of the side wing adjacent to the cupolas. For the present the sand storage bins and mixing room are also within this building. An ingenious system of charging has been devised under which the charging cars pass at floor level in front of the bins, are there loaded with the requisite amounts, weighed, and passed to the elevator where they are raised to the charging floor. As each car is unloaded it is pushed forward and started down an incline whence it passes back in a direction opposite to that traversed while being loaded on the floor beneath. A novel apparatus gradually brings it to a standstill while yet upon the incline, and then releases it so that it may, by its own weight, roll on to an elevator which is automatically tripped and descends to the ground floor level. Here it is removed by one of the loading men and the elevator returned to the place above, ready to receive another load. The cupolas are two in number of Whiting make, 56-in. and 72-in. in diameter. The opportunity has been improved to show the eminent adaptability of the Sturtevant pressure blower; a No. 8 and a No. 10 blower driven respectively by a 30 and a 40-h.p. Sturtevant belted motor being supported upon the charging platform through which they discharge directly downward and thence to the cupolas. It is intended

to make this installation the subject of critical experiment for the establishment of important principles.

The entire transportation equipment of the plant, including tracks, cars, trucks, etc., was designed and built by the Sturtevant Co. The tracks in the foundry are imbedded in the concrete runways and all changes of direction are secured by turn-tables, there being no switches in the works, and therefore no radial truck cars, all cars having rigid bases. The turn-tables are designed very heavy to avoid distortion or breakage and consist of a bottom frame with four roller wheels which are carried upon composition turnions, and a cover, which is recessed for crossing tracks at right angles, and provided on the underside with a chilled tread with which the wheels come in contact. A small idler wheel is provided which automatically stops the turn-table on each quarter, but readily releases it. The cover is accurately centred by a chilled conical bearing. The cars are provided with a special type of ball bearings where practically devoid of machine work, but with chilled wearing surfaces. The ordinary flat cars, as well as the charging cars, are built up of structural steel. The geared ladle cars have malleable iron frames and enclosed spur gear mechanism. Similar construction is employed in the case of the transfer cars for geared crane ladles of medium size, while a simple low platform truck is utilized in the case of the largest crane ladles. The dump cars are in the form of inverted cones and so balanced as to be tipped with the utmost ease. The taper of the cone is such that these cars are practically self-dumping.

The brass foundry, located at one corner of the main building, is provided with four crucible furnaces and a special form of reverberatory furnace designed principally for the melting of babbitt or similar soft metals. An overhead traveller with interlocking transfers on the side floors serves the entire area of the room. Blast for the furnaces is furnished by a No. 3 Sturtevant monogram blower and the entire machinery consisting, in addition, of a spruce cutter, a magnetic separator, a tumbling barrel and emery wheels is driven by a 5-h.p. Sturtevant motor attached to the wall. The entire floor is of concrete in which is imbedded a section of the industrial railway communicating with the balance of the foundry. In the middle of the end



Pattern Shop.

of the foundry is the core room. The ovens are six in number, three being 7 ft. in diameter, of the reel type, and three being respectively 4, 5 and 7 ft. in width by 8 ft. 10 inches in length provided with cars. An overhead travelling crane serves these latter ovens and provides for the transfer of heavy cores to the industrial railway which passes through this room. A portion of the room is partitioned off and serves for the women core makers employed in this department. The floor is of concrete. The tops of the ovens are utilized for storage of cores upon a special rack of steel construction. A Blake wire straightener, together with a Hanna automatic shaker are the principal machines in this room.

At the other end of the foundry is the cleaning room, through which run the longitudinal tracks from each main aisle of the foundry. A five-ton three motor electric crane equipped with Sturtevant motors serves the principal portion of the floor in this room. The tumbling barrels, six