# THE OMAHA DAILY BEE: SUNDAY, JULY 17, 1898.

THE BEE'S NEW PRESS Its Editions Now Printed on the Most Modern Machinery

MECHANISM MARVELOUS TO BEHOLD

Product of the World's Greatest Printing Press Manufacturers.

ELECTRICITY SERVES AS MOTIVE POWER

Every Minute Detail Carefully Foreseen and Provided For.

COMPLETE NEW STEREOTYPING PLANT

Finest Equipment in The Bee Building Possessed by Any Newspaper Published in This Section. of the Country.

The Bee is now for the first time printed on a new Hoe double-supplement press of the latest, perfecting, pattern. The preliminary trial of the mammoth new press has been eminently successful, and the transition from the old press plant to the new is today an accomplished fact. The change marks an important epoch in the history of The Bee, which has always been at the front in the use of the most improved mechanical and electrical machinery for the production of its many editions.

The order for the new big press wa placed with R. Hoe & Co. of New York and London some months ago. The firm began building the press in January of the present year, but it takes time to build so intricate and ponderous a machine.

The press is the most modern from every standpoint. It is equipped with all of the

latest improvements of the Hoe company, and will turn out papers from four to twelve pages in size at the rate of 24,000 an hour, and deliver papers ranging in size from sixteen to twenty-four pages at half as great a rate of speed. It takes the fresh, white paper from a big roll seventy inches in width, three feet in diameter, weighing one ton, at one end of the press, and turns it out at the other end in almost any sized paper that may be desired, and delivered in bunches of fifty as fast as the carriers can receive them. Twenty-five feet of paper is printed by the press before reaching final delivery.

The new press was built by R. Hoe and Co., at New York, where 2,500 men are employed in building the most improved edition both the single and the double presses used today. In order to secure the test workmanship among the employes the apprentices are trained in theoretical, as off on the single press, both coming together well as practical, knowledge of press build- in the folding machine, and being thrown ing, and are graduated skilled constructors out together as one paper. Different from The Bee's press was put in the use of the paper while printing the tenof presses. page paper the full width of the paper is used on both the single and the double place and its trial made under the direction of W. Gorges, one of the expert constructors of the Hoe company. In this work he was presses; that is, the paper on the single associated with Fred M. Youngs, the press is thirty-five inches wide and the efficient foreman of The Bee's press room. paper on the double press is seventy inches

While the Hoe company was busy conwide as now used. Duplicate plates are structing the new press for The Bee there were numerous changes and alterations going on about The Bee building, for a new at the rate of 24,000 an hour. home had to be arranged to house the press. After the various parts of the new machinery had been shipped to Omaha it required two weeks to put it together and get it into working order. It had been expected to start the new press simultaneously with the opening of the exposition, but the immensity

of the affair delayed the event.

V



THE BEE'S NEW \$25,000 HOE DOUBLE SUPPLEMENT PERFECTING PRESS.

its kind printed in Nebraska. For a paper new press in that it can fold either the practical use, but the construction is such department there is a powerful electric motor of this size the entire press is used, both quarter-page fold or the half-page fold, as that it is self-ventilating, and gives off that furnishes the power for running the the single and the double presses being em- desired, and further the method of folding enough air to cool it. When running the entire plant of the stercotype department, ployed. Eight pages are printed from the can be changed without stopping the press double press and two pages, the inserted or even slackening its speed. sheet, are printed by the single press. Both An idea of the size and power of the new papers are led into the folding machine press may be gleaned from a look at the big and properly folded as one paper. On the composition rollers. The even and thorough single press only half the width of the distribution of the ink by these rollers, of paper is used, and on the double press the which there are thirty, is one of the most full width of the paper is used. As in perfect devices of the new press. Many of printing the four and the eight-page papers, the rollers weigh 206 pounds. They are luplicate plates are cast for use in printing machine-cast rollers, made by the Gatling the paper of ten pages. This form of paper gun process by Samuel Bingham & Son of s also run off at the rate of 24,000 an hour. Chicago, the oldest roller makers in the The standard size of the morning edition United States. On the old style presses the of The Bee is twelve pages. To print this rollers had from six to seven pounds of composition of glue and glycerine, covering the

presses are again used. On the double press iron cores. The largest of the new rollers eight pages are printed, while four are run have no less than eighty pounds of improved composition on them. ELECTRICITY AND THE PRESS

Improvement in Methods Used to Drive a Newspaper Plant's Massive Machinery. The march of improvement in the ma-

again employed, and the paper is thrown out all ready for the carriers and mailers most strikingly shown by the increasing or any part of it gets out of order, a sec modern newspaper. In perfecting its me-Perhaps some morning a sixteen-page paper may be required to contain the chanical department The Bee has taken full brings the press to a quick stop. This dematter that is to be printed. To print a advantage of the inventions of electrical vice will protect the press from almost any paper of this size the single press is again apparatus designed for newspaper work. As a result the new Hoe press on which disconnected from the double, and the sixteen pages are run out on the double press The Bee is now printed is the first big alone, while the single press is allowed to press in the United States to be supplied to do guard duty after it has stopped the For this no dublicate plates are with power from an electric motor that is press on a danger signal. It will not let needed, the sixteen plates, one for each on the same shaft as the press liself. A the press be started until the obstruction has been removed, or the part of the ma-

press at a high rate of speed it is as cool and in addition gives the power for operatas the motors in the main electric room of ing the twelve large typesetting machines in The Bee, which are exposed to the air.

proved safety devices, and press may be stopped instantaneously, shift of the machine operators leaves and There are four little buttons situated on different sides of the big press, press in an instant. Should any one of the continuous task to perform. essmen see anything that requires the mmediate stopping of the big machine, he would not have to run around to the other partment would not be thrown out of service. de, or call to any one else to turn off the though their work would be momentarily space, irrent; this he could do himself by merely interrupted, as there is a twenty-five horseouching one of the four buttons that are conveniently located.

The switch board for the motor is built service, but such an event is not very likely of fire Tennessee marble, against the south to happen. Since this motor was started wall of the press room. On the switch board is mounted an indicator that shines as bright as gold. It always shows the exact burned out,

amount of power consumed at that time by the press. But better than this it also indicates if there is the least part of the machinery that is working badly. If any

chinery of a newspaper plant is, perhaps, extraneous matter gets into the machinery, uses of electricity in the production of a ond safety device on the marble switch board automatically shuts off the power and possible injury. It will not only absolutely stop the press, when any part of the machinery is out of order, but it will continue

into power to run the new presses is fur-

nished by the generators in The Bee's own

electrical department. These generators are

The new press room was formerly used as a boiler room for The Bee building. The boilers have been removed to the new brick building especially constructed for them across the alley, directly north of The Bee the composing room As there is only one building. In addition to building this new The motor is supplied with im- hour in the afternoon and about four hours plant it was necessary to reconstruct enthe in the morning between the time when one tirely the room formerly occupied by the boilers and fit it up for the presses. The another comes on duty, it will be readily engine room remains in the basement of seen that the motor that furnishes the power The Bee building proper, adjoining the press and any of these will completely stop the for the typesetting machines has nearly a room on the south, but notable improvements and alterations have been made there

Should anything happen to this motor the to keep pace with the improvements in the typesetting machines and the stereotype depress room. Most of these alterations have been made with the view of economizing

### power engine at hand ready for the emer-NEW STEREOTYPING PLANT gency. The engine can readily be placed in

implete Machinery for Making All in February, 1894, it has been out of service Sorts of Plates-How the only a few minutes one day, when a fuse Work is Performed.

The installation of a great new press ha been accompanied by noteworthy improve-NEW PRESS ROOM OF THE BEE ments in co-ordinate departments of The Bee. One of the marked changes is found commodious Quarters Specially Conin the stereotyping department, considerastructed for Convenience and ble new machinery having been placed in Finest Press Work.

the rooms devoted to this department in order to stereotype new forms of plates for FORMER PRESSES OF THE BEE For its size there is no finer or better use on the big press. equipped press room in the United States The stereotyping department of The Bee

than the new press room of The Bee. It is now fitted with two complete sets of is located on the basement floor of The Bee stereotyping machinery. The old set is rebuilding and opens on the street in the rear tained for the making of the matrices and of the building. The room is just forty feet

casting of plates for the Potter press, which square and the ceiling is twenty feet high. is to be used as an auxiliary press, and the The light and ventilation of the room are The light and ventilation of the room are its best features, no artificial light being perform similar work for the new Hoe press

and there is a full set of signal electric bells so that the one may advise the other of the coming of the plates. Visitors in The Bee building have always

found the stereotyping department one is the most interesting. The alacrity of the workmen there, the case with which they handle the heavy plates, the quickness with which the molten metal is converted into plates ready for the press, have proved fascinating to large numbers of visitors. and since the introduction of the improved machinery there this department is likely to be more popular than ever.

For the benefit of those not familiar with the details involved in the printing of a great newspaper, it may be worth while to briefly review the work of the stereotypers. When a form of type, representing a page of the paper, is rolled into the stereotyping room from the composing room. It is taken in charge by expert stereotypers. The type is brushed clean, and is then planed down. A brush molst with oil is rubbed over the face of the form, and a film of oil is spread upon the type to prevent adhesion to the matrix which is to be laid upon it. The base of the matrix is especially prepared paper known as "matrix paper," almost as thin as tissue paper before its preparation. The matrix is prepared in advance of its use by using paste to get enough of the paper united to make the correct degree of thickness. It is then stored away for seasoning. When placed on the type it is about as heavy and as thick as pasteboard. The paper is pounded down upon the form by two men with brushes, and in a moment they have the exact impression of the type transferred to the matrix. The Bee also has a patent molding machine for doing this work, but the brushes are preferred by the stereotypers. The form of type with its matrix cover is next put into a steam chest, known as a steaming table, and allowed to bake for from five to ten minutes, until the matrix is thoroughly dried. A heavy steel cover is screwed down over the form and the steam heated box scon cooks the moist papier mache to a firm reproduction of a page of the paper, the exact reverse of the type. The matrix is placed in a castingbox, and against it is poured a ladleful of molten metal heated to 600 degrees. From this box is taken the metal plate from which a page of the paper will be printed. But first must the plate be cut and smoothed to fit the cylinder of the press. All the rough edges are trimmed off first by machinery especially adapted for this work. On the chiseling block all spaces and protrusions that might make black spots on the paper are chiseled out. From the chiseling block the plate is placed face downwards on a planer, where it is shaved off to the proper thickness and evenness. Now the plate is ready for the press, after it has been given cold bath in its own bath-tub to cool it The plate is put on the elevator and

dropped down to the press room in just thirty seconds, while the signal of its coming is given to the foreman of the press 'oom. An important part of The Bee's stereotyp-

ng department is a complete job plant. With this the cuts for advertisers are stereotyped. The pictures of men whose lives have been saved by six bottles of omething, and other cuts that find their way through the business office of the paper are stercotyped. These and other cuts are also mounted for use in this plant. The Bee's stereotyping plant will therefore compare with that of any paper in the country.

### Always a Pioneer in First Introducing the Most Modern Mechanical Improvements.

The press on which the first copy of The Bee was printed was a Cincinnati hand cylinder, purchased by Redfield Brothers

## HOW THE NEW PRESS WORKS

Detailed Description of the Operations of This Latest Marvel of Modern Mechanism.

The Bee's new press is practically a combination of a single press and a double press. The two parts can be used together, or either can be used alone. The double, or main press, is the larger part of the big machine, but the single, or supplement press, alone is much larger than a great many presses in use today. An old press that weighed 300 pounds was considered quite a heavy press, but there are single parts of the new press that weigh three tons, and the whole machine would if it could be placed on a scale tip the beam at about fifty tons. Some of the shafts are no less than five inches in diameter, in order to withstand the high speed and vibration of the press. The press is twenty feet long, fifteen feet wide and stands ten teet high.

As large and heavy as are the rolls from which the paper is printed the work of setting them in position to feed into the cylin- lected and the paper comes out with twentyders is not a difficult task. There are new devices for handling the big rolls of paper, and all that two men have to do is to stand at the ends of the press and guide the paper as it rolls into its position. The roll is part of the country. set across what is considered the rear end of the press. The paper is seventy inches wide, or, to better explain the width, it is the width of four pages of The Bee with a considerable margin beteen each page. When the press is started the roll of paper revolves, and the blank paper rushes forward at the rate of 750 feet per minute into the jaws of the impression cylinders, where it receives the impressions from the sterotyped plates, each of which represents a page of the paper. Both sides of the paper are printed at once. After receiving these impressions, or after being printed, the paper of four pages in Bee is now printed with the half-page fold. width is cut into paper of two pages in The edition that is printed for the mail is width, and is led into the folding machine folded as copies of The Bee formerly wereof the press. Together with the printed that is, with the quarter-page fold. paper from the main press there is led into the folding machine a sheet of paper, two pages in width, also printed, which comes

from the supplement press. The ability to combine the printed sheets that come from the main press and from the supplement press makes it possible to print a paper of any number of pages that may be deemed advisable. Combinations of the product of the main press and the supplement press may be made so us to print a paper of four, six, eight, ten, twelve sixteen or twenty-four pages.

Suppose the managing editor gives instructions to run off a four-page paper for an extra that is wanted in a hurry. The main, or double press, will be disconnected from the supplement, or single press. The double press will be allowed to stand still, and only the single press will be run. From the stereotyping room there will come down eight stereotype plates, two plates of every one of the four pages. As the paper is to have four pages, there will be four duplicate plates, and two papers will be printed at the same time. The plates are put in position on the cylinder of the ringle press the electricity is turned on, the wheels revolve, and papers are soon being printed at the rate of 24,000 copies an hour.

When this edition is run off, an eight-page paper may be ordered. To print this sized paper the foreman of the press room disconnects the single press from the double press, and the double press alone is usei. Sixteen stereotyped plates are sent dowa from the sixth floor, there being a set of fuplicate plates, or two plates for each page. Two papers are printed at once, and the edition is run off at the rate of 24,000 copies an hour.

On Friday evening last a paper of ten pages was printed, pages 3 and 4 appears ing on an insert sheet, the first 10

page papers, except that on the last fold the rectly with the motors driving them. But folding machine takes the two parts and the experiment of connecting a big press folds them together into one paper. This directly with an electric motor, doing enact supersedes the old method of stuffing one part of the paper within the other, other means of transferring power, has been which was so laborious and occupied con- successfully tried for the first time in the siderable time and space in the mailing new press room of The Bee. room. As the sixteen-page paper is not printed from duplicate plates, but one paper is printed at a time, and the rate of turn- ern Electric company of Madison, Wis. It

ing out the papers is reduced to 12,000 an The printing of a twenty-page paper is similar to that seen in the printing of a ten- horse power and is capable of delivering page paper, with the exception that on the any amount of power that the press may last fold of the folding machine the two require. The other evening in a trial test tens are collected together into one paper; also, no duplicate plates are used in print- sixty horse power. ing the twenty-page paper. The rate of

printing this paper is 12,000 an hour. The twenty-four page paper is printed like at remarkably low speed. It and the double presses are used, but there are no dublicate plates. On the last fold the two sets of twelve pages each are col-

four pages at the rate of 12,000 copies an hour. This is the paper printed today, the adjust the sterotyped plates on the first twenty-four page paper to be printed at one time and on the same press in this reasons.

The city readers of The Bee have noticed been delivered at their homes folded larger than formerly. The fold in the papers intended for local circulation is now made merely across the width of the paper, the paper being doubled in half as to its length. This manner of folding the paper insures its being presented to the reader much cleaner and neater than when folded twice. once each way. Moreover, the delivery boys can now carry nearly twice as many papers as they could when the papers had the two folds. All of the city circulation of The

straight ahead, cut and folded as two eight- and several small presses are connected di- paired; it does this by breaking the curof the double press. The paper is run receive their power from an electric motor power to the press.

tirely away with the use of belting and most improved winding, the armature, or anything happen to one of these bars it can be replaced without disturbing any The electric motor that drives the big of the other bars, or other part of the press was built for The Bee by the Northmotor. All parts of the motor are thoroughly ventilated, and every precaution has been is of the multiplier type and combines all taken to insure its protection and free the latest improvements in motors of this

working. It is supplied with self-oiling ball class. It has a normal rating of forty bearings. An electric motor is now being put in

position to furnish power for the auxiliary press that will stand alongside of the big of the motor and press the former showed Hoe press. This motor has also been built

by the same company especially for The Another distinctive feature of Bee. It is a standard Northern, slow speed, new motor is that it may be run steel motor. It will also be placed in a pit will built for it, and will have direct connectwo twelve-page papers. Both the single drive the press from ten to 200 tion with the press by an underground shaft revolutions per minute, and at any speed It will have a normal power of ten horseintermediate between these two points that power, which may be largely increased when may be desired. The advantage of running necessary. The work of installing the new the press at a low rate of speed is especially noticeable when it is necessary to motors is in charge of Frederick M. Conlce of Madison, Wis., an expert electrician.

cylinders, or turn the press slowly for other This feature of the press is peculiar to one that is driven by an electric motor. The press may be advanced an inch during the last week that their papers have at a time if desired, and this fact does away with the very laborious system of of the press room. Improvements and ex-

of speed is desired. Many plants that have adopted electricity tinue to use belting to convey the power

press room of The Bee the motor is located directly alongside of the rear end of the lights are turned on all night the demand press, and there is just one main shaft for power is very heavy. under the floor connecting them. Both are

absolutely controlled by one lever. The a modern newspaper is again evidenced on with the other departments of The Bee by a motor is built in a pit five feet deep from the sixth floor, where another electric motor private telephone system, of which there the level of the floor. Ordinarily an electric is run by electricity furnished from The will be eight stations. The foreman of the



A feature of the folding machine of the this is, would become too heated for the composing room and the stereotyping department without leaving his own room,

needed in the day time at all. The room is chinery that is out of order has been relighted and ventilated by means of a number of large windows that open directly on rent and shutting off the only source of the street, and the walls are painted white.

Artificial light is supplied by two arc lamps, The motor is wound with the latest and one on each side of the big press, and a number of incandescent lamps, arranged moving part of the motor, being wound in neat fixtures about the sides of the with solid bars of copper. Should room.

The new press is located near the cente of the room, accessible from all sides. It rests on a foundation built of heavy brick and Portland cement, with stone coping. Below the press there is a pit five feet deep, with walls of brick and stone, and in this is ample room for taking care of the underground machinery. There is no belting or connecting shafts in sight. Just north of the new press there is another pit and foundation similar to that on which the press is built. On these will be placed the Potter press that has been used by The Bee up to date. This will be used as an auxiliary press until another perfecting Hoe press, the counterpart of the one just installed, is at some later day built and placed in position. Then the two big presses will run side by side, and there will still be ample room for the pressman and his assistants to attend to their work without inconvenience. The electricity which these motors convert

On the east and west sides of the new press room are located the paper storag rooms of The Bee. These rooms, separated from the press room by heavy wire partilocated in the basement in a room just south tions, have a capacity for accommodating six carloads of paper at one time. An turning the press slowly by means of bars | tensions will shortly be made in this branch | automatic elevator, newly constructed, conhandled by the pressman when a low rate of the electrical department, as a largely nects the press room directly with the increased demand for electricity is the re- stereotyping room on the sixth floor, and

sult of running the new presses by the new it takes about a half a minute to send the o displace other forms of power still con- form of power. In addition to furnishing plates from the top floor down to the baseelectricity for several motors. The Bee's ment on the new elevator. A new flooring from the motor to the press. In the new electrical department lights the entire build- has also been put in the press room, and in a larger semi-circle, the cylinders of ing, and as a great number of the electric no dining room in Omaha has a finer hardwood floor than that found here. It is of quarter-sawed white oak, as durable as it is

The use of electricity in the production of handsome. The press room is connected on the plates for the new press. motor housed up between walls of brick as Bee's generators. In the hallway between press room may communicate with any other

press. When papers of four, six, eight, ten edition of about 500 or 600 copies. This is by the stereotypers daily.

the stereotyping room, including new steam press it would have taken him fully thirty chests, new planers, new chisel blocks and days of ten hours' hard labor each day. new casting boxes, there have been provided composing room to the stereotyping room. the lower Farnam street office Mr. Rose-There are twenty-four of these altogether water invested in a second three-revolution and when the boys are a little late they Hoe press, with a capacity of 2,500 to 3,000 run the "turtles" along with their heavy four-page impressions an hour. This Hoe loads almost as fast as a freight train moves. oak, and have heavy brass tops.

the sixth floor of The Bee building, over press brought into Nebraska. To it was in the extreme northwest corner of the added in course of time a Cottrell & Babbuilding. Those who have passed near the on metal type have readily located the de- bought a new two-revolution Cottrell & partment by the sound. It adjoins the large Babcock press, which was considered to be not enjoyed by many newspapers. After printing the paper and also in job work. the type is set by the machines, and the forms for the various pages are made up chine was put on the market by Chambers, they are placed on rolling stands, or "turties," and run directly into the stereotyping rooms. As the forms do not have to be removed to another floor there is less danger of accident, and much time is saved. Hoe press with a capacity of 2,000 eight-After the stereotyped plates have been cast | page papers an hour was purchased, and in these rooms they are loaded onto an elevator used exclusively for this purpose and folder, which was followed by another, both hurried down to the new press room in the being attached to the double cylinder press. basement. The foreman of the stereotyp- A new double cylinder press was added ing room communicates with the foreman about 1883. It had a capacity of 3,500 eightof the press room by a private telephone. page papers an hour, and was equipped with

for the new Hoe press. somewhere in the '60s, a cut of which is One difference between the plates used given. The capacity of this press was about on the Hoe press and those used on the 700 impressions an hour, or about 350 com-



THE BEE'S FIRST PRESS-HAND POWER.

old presses is that the former are curved plete four-page sheets per hour. The power first employed in turning out The the Hoe press being larger, and the curve Bee was an able-bodied and intelligent conis across the columns. With the plates traband by the name of Archie Richmond, used on the old presses the curve was with who was for a long term of years employed the length of the column instead of across in The Bee building, and who died a few This difference makes it possible to years ago at a ripe old age. At his best he add one, two or three columns to a page was capable of running off 375 complete papers an hour, so that beginning about 1 The work in the stereotyping department o'clock in the afternoon he kept on grindis increased by the installation of the new ing until he managed to get out the entire

or twelve pages are to be printed two in striking contrast with the new Hoe press stereotyped plates for each page are cast of The Bee today, which will turn out in and two papers printed at once. On this one hour 24,000 twelve-page papers, cut, account there are more plates to be cast folded and counted. Had Archie Richmond been compelled to run off today's twenty-In addition to new machinery throughout four-page edition on the old Cincinnati

The old Cincinnati press belonging to the a number of new "turtles," the tables on Redfields was used by The Bec until after which the forms of type are run from the the fire in June, 1872. After moving into press was about twelve or fifteen years old The new ones are built of hard wood, mostly then and was in use in The Bee office for ten years. When taken out it was still a The stercotyping department is located on first-class machine. It was the first Hoe cock large cylinder second-hand press. This uilding in the afternoon or early morning printed about 1,400 papers an hour. Then hours and heard the pounding of brushes Mr. Rosewater made another venture, and composing room on the west, an advantage a marvel in this section. It was used in About 1881, soon after the first folding maof Philadelphia, one of these machines was purchased. This was the first folding machine brought into the state.

Then a double cylinder second-handed shortly afterwards a Dexter automatic

