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PRICE 5 CENTS.

HOW THE DUPLEX PRESS AND LINOTYPE MACHINES AID IN THE SERVICE OF BULLETIN READERS

DUPLEX WEB PERFECTING PRESS

(Continued from Page 1.) City Pauls may be served without rubbing anyone, and with increasing satisfaction to all concerned.

The Old Press. Less than ten years ago the Evening Bulletin was printed on what was known by the office force as a "grasshopper" press. It was one of those things that beggar description for it was fearfully and wonderfully made and only a blacksmith seemed able to hold it together.

That was the press when the present management combined to make the Bulletin a newspaper. The body-type of the paper was long primer and set by hand; the pages were six columns wide and not the standard size, as the grasshopper press required changes peculiarly its own.

Since that time the Bulletin has added so much to its equipment that the only relic of the old days left is the bed of the old "grasshopper" which now does venerable but nevertheless efficient service as a "stone" for job work forms.

The "grasshopper" gave way to a Babcock Dispatch press. Two Mergenthaler linotype machines for setting the type of the paper were added, and the old battered long primer went to the melting pot.

Job Work. A job work department with its necessary book bindery was also among the new departures to enable the Bulletin to handle all lines of the printing and publishing business. It started in with one old jobber and a few fonts of type.

The job department of the Bulletin is now in a position to handle first class job printing in quantity and quality that may be ordered. It prints everything from a visiting card to a Journal of the Legislature or the Supreme Court Reports, the latter contract having been awarded to the Bulletin for three years past. It makes blank books and does any and all lines of first class work in a first class manner.

In June, 1898, the reportorial and mailing rooms of the Bulletin were in a back yard cottage, the press in a lean-to within the same yard, and the job and composing rooms in the second story of an ancient brick stable. It wasn't like Bill Nye's office where you pulled the mule's tail and took the elevator up, but sometimes it made one think of it.

The present quarters of the Bulletin are compact but not grand, the mechanical equipment occupying two stories of a good-sized brick building with the business office and editorial rooms on the ground floor of the same block. The offices are centrally located on King street, the main avenue for the through traffic of the city and practically in the center of the retail section.

Honolulu Growing. The city of Honolulu is growing "toward Waikiki from Fort street."

The Bulletin is on that side of Fort street. "The Best Newspaper in Town" is printed across the front of the Evening Bulletin building. That is what the people say of the paper.

Come and See It. A description of the new Duplex has been published but a good story never grows old. After the patrons have read of the Duplex we hope that each one of them, but not all at once, will call in at the Bulletin office and see how the press works. It is a beautiful piece of machinery, as delicate as a watch and as strong and powerful as a steam engine.

This is not intended as a boom or illustrated edition of the Bulletin, but merely to show Bulletin readers and the public generally the character and extent of progress and improvement made by this paper in a comparatively few years.

The new press is known as the Cox Duplex Flat Bed Angle-bar Web Perfecting Press and was built especially for the Bulletin by the Duplex Printing Press Company of Battle Creek, Mich., a company that has won unique and undisputed success as builders of a rapid machine printing from type and so enabling dailies in cities of 15,000 to 50,000 population to enjoy metropolitan facilities in the turning out of their papers, without resort to the heavy expense of stereotyping.

As the name implies, the Duplex press combines two flat bed presses built together in one, one story above the other, with two printing cylinders, thus providing for printing both sides of the paper at once, and with folding apparatus built in the front end to complete the operation of turning out the printed paper all ready for handing it over to the reader.

The process of developing the Duplex press to its present high standard has been long and expensive. It is said that the company has expended close to half a million dollars in this development work. In this, however, it has at last been richly rewarded, as the press is now enjoying great popularity and a constantly growing demand with publishers of papers having a circulation anywhere between 2,000 and 19,000 copies.

The company at Battle Creek is now turning out these presses at the rate of one a week. The Duplex is a massive piece of printing machinery, compared to anything ever brought to Hawaii. Alongside this giant printing machine the average press in this city is a tame affair. It weighs over twelve tons and rests on a solid brick and cement foundation. Running full length under the press is a pit four feet deep to permit the pressman to have ready access to all parts of the press from beneath as well as from above.

So much local interest has been manifested in the Duplex press that an effort is here made to explain its mechanism, though the machine needs to be seen in operation to properly appreciate the description.

How It Runs.

Running the end of the paper from a roll through the press under and over the various rollers is accomplished in from five to ten minutes, according to the expertise of the operator, and is called threading the machine. There are two beds on the press, which are stationary, each carrying for an eight-page paper four forms locked in chases, one page to a form or chase, as on all other flat bed presses, except that the arrangement of the forms is different. Four forms are placed side by side on each bed, each bed, by the way, weighs about a ton and reaching crosswise of the press, the lower bed containing pages two, seven, three and six, and the upper bed containing pages one, eight, four and five. The work of putting the eight forms on the press and locking them is ready for printing consumes less than ten minutes and the press is ready to begin work. The power being on, the lever is pulled, the machinery of the press moves, and the paper on the roll continues on its way through the press, coming back to the same end of the press from which it started, printed, cut, counted, folded, with the nicest precision, ready for delivery to the reader, and at the rate of 4500 to 6000 completed newspapers per hour, as required.

The press runs so easily and quietly that the observer does not realize its speed until he approaches the delivery box and sees the swiftness with which the papers are delivered. Every part of the press acts in unison, and no mistake can occur except through carelessness of the operator.

Printing Process. The process of printing takes place altogether at one end of the press. Here are situated the two stationary horizontal beds already mentioned on which the pages of type are placed. Moving backward and forward over these beds are two impression cylinders and carrying rollers to guide the web and linking rollers. One of the cross-heads is clearly shown in the accompanying illustration at the termination of the long driving gear. The press prints a newspaper with every half revolution of this driving wheel, half the pages being printed on the lower bed where the paper is passing to the right, and half on the upper bed as the web passes round towards the folder. There is thus left an interval for the ink to dry between the impression on a given page of the lower cylinder and that of the upper. For the supply of ink there are four ink fountains.

The Great Equalizer. A most ingenious device of the press, which makes it a more remarkable invention than the rotary stereotype presses, is the equalizing mechanism by which a portion of the web is stopped to receive the impressions from the type, while at the same time the paper is continuously entering the machine from the roll at one end and passing steadily into the folder at the other end of its course. This is accomplished by joggling rollers operated by equalizer cams which receive the constantly incoming paper, at the same time delivering the constantly outgoing web, while the paper between these two joggling rolls remains stationary in its path of travel during the time it is being printed upon by the two impression cylinders.

Immediately after the impressions are taken, and the printing is done by the cylinders in their travel in either direction, that portion of the web which has been stopped is moved forward to bring sufficient blank paper for the next impression, or the printing of the next paper.

After the printed web or paper leaves the upper equalizing roller, it is split by a revolving cutter, in two parts, each part containing four pages in the case of an eight page paper. One of these parts passes over a couple of "angle bars," bringing this portion of the web into the direct line elevator of the other part. At this point a thin stream of paste can be supplied to the inner sheet, securely fastening the two parts of the paper together. This paste is not ordinarily used in an eight page paper, but is when a six page paper is printed, which can be done as easily as to print the eight page style. Both parts now travel together over the V-shaped former, which practically makes the second fold.

The printed web, now brought to single page size, passes through the short cutting cylinders which sever each complete paper from the web.

Third Fold. The third-fold tucker blade strikes this on the center of the page, and instantly it has the third fold made in it and is speeding on to the third-fold delivery. But, if, while this is on its way to the third-fold delivery, the operator desires the fourth, or mailing fold, he touches a button, and it is

stopped in its swift course, and the heretofore idle fourth fold tucker blade strikes it at right angles with the third fold, and it drops between a pair of short rolls and comes out at the fourth fold packer ready for delivery. An ingenious little machine automatically counts the papers as they are delivered in the packer.

The press prints from a roll of web of blank paper which is about four miles long when placed in the machine, and of the necessary size to print a four, six or eight-page newspaper, as desired. The roll for an eight-page paper is seventy inches wide and weighs 1000 pounds. That for a six-page paper is 52 1/2 inches wide.

The accuracy of this wonderful piece of mechanism is marvelous. It moves with a precision of a chronometer and the smoothness of a ball-bearing bicycle. When the forms are all in place the pressman steps to the switch-board, while his assistant stands with a hand on the controlling lever and a foot on the friction brake of the press. The electric current is turned on and the man at the lever yells, "All right!" The powerful press gives a few preliminary grunts and groans, and a moment later settles down into an easy, graceful glide like that of a trained trotter, while the ready-to-read papers drop into the hopper at the end like grains of wheat flowing from a threshing machine, and in less than an hour the Bulletin's edition has found its way to post office, newsstands, and the eager hands of carrier boys and newsboys, who have aided in giving the Bulletin its recognized place of selling more newspapers than any journal in Hawaii.

MERGENTHALER LINOTYPES OF THE EVENING BULLETIN

The composition or "typesetting" on the Bulletin is accomplished by use of a battery of two Mergenthaler linotype machines. They are manufactured by the Mergenthaler Company and cost \$2500 each in New York. With extra matrices and parts used by the Bulletin these two machines alone represent an outlay of \$7500, enough money to purchase a business block.

Visitors at the Bulletin office are amazed and mystified at the human-like work of the linotype and well may they be, for but twenty odd years ago the old-time printers frequently remarked, "Well, they will never invent a machine that will take our jobs," but they have.

The machine marks a wide departure from the ordinary method of using a single letter type. It produces and assembles side by side metal bars or slugs, each of the length and width of a line of type and having on the upper edge of the type characters to print an entire line. These bars having the appearance of solid lines of type and answering the same purpose, are called "linotypes." When assembled side by side they constitute jointly a "form" composed of ordinary type, and adapted to be used in the same manner. After being used the linotypes are returned to the melting pot to be recast into other lines, thus doing away with distribution.

The machine contains as its leading members a large number of small brass matrices. The cut of one of the matrices looks like a big letter Y.

The production of the linotype is effected as follows: These matrices consist each of a flat plate, having in its vertical edge a letter or matrix. There are a number of matrices for each letter or character represented in the keyboard.

The machine is organized to select matrices bearing the required characters and set them up in line side by side, with intervening spaces, in the order in which they are to appear in print, and thereafter to present the line to a mold so that linotypes or slugs may be cast against or into the entire line of matrices at one operation.

The operations are effected by mechanism. There is an inclined stationary magazine, or holder, containing channels in which the assorted matrices are stored. The matrices tend to slide downward out of the magazine by their gravity, but they are held in check by escapements, one at the mouth of each channel. From these escapements rods are extended downwards to a series of finger keys. There is a special key for each character or letter. The keys are depressed by the operator in the order in which the corresponding characters are to appear in the print.

Each time a key is actuated it permits a single matrix, bearing the corresponding character to fall out of the rod or social circles found place. Little

was thought, at the time of this one-page written bulletin being the next step in order toward the foundation of the Bulletin, whose enterprise, despite its set-backs, has made this special holiday edition a possibility. Hence, their preservation was neglected, and the correct date is not so easily determined as if the copy could be referred to, but if memory serves me rightly it was in the year 1871, or possibly 1870. Mr. Whitney himself dates it as following his sale of the Commercial Advertiser and printing office to Black & Auld, which occurred in the latter part of September, 1870.

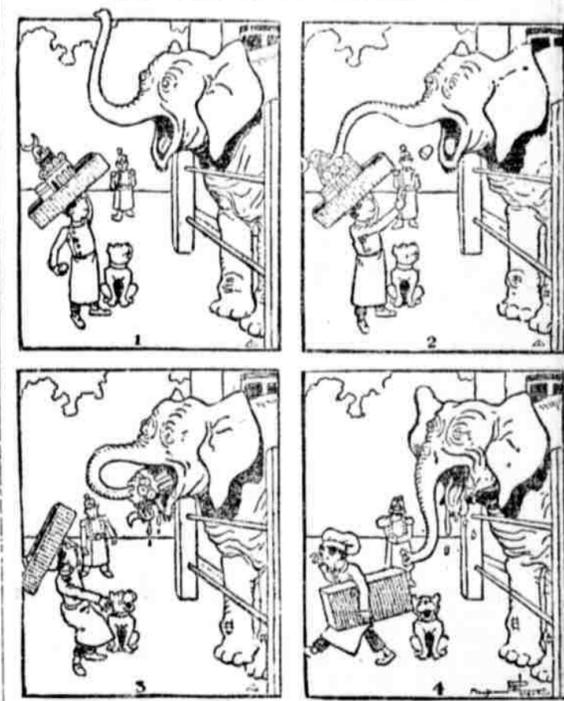
From a wholly written Bulletin, it changed in time to a printed title with headings for its several departments, and enlarging to full sheet cap.

As rivals have developed in the newspaper field today, so there grew in time, a rival news agent's manuscript daily, which bore the euphonic title of "Daily Commercial Bulletin." This began November 11, 1871, and continued in existence two years, covering the interesting periods of Kamehameha Vth and Lunaliilo interregnums.

The successors to Mr. Whitney's stationery and news business, continued the issuance of his "Daily Marine Bulletin," and it was in their time under the name of J. W. Robertson & Co., that the first printed issue of the "Daily Bulletin" appeared, February 1st, 1882. This had gratuitous distribution among the business houses of the city. Like its predecessors it was a one-page affair, four columns in width, and appears very insignificant beside the regular issues of its eight-page successor of today. Toward the close of the month, advertisements were printed on the second or back page, March 1st, it was enlarged to five columns and printed regularly on both sides, but still a single sheet, and distributed gratis till March 29th, when notice of a subscription charge of 25 cents a month appeared. On April 24th, with the announcement of H. L. Sheldon as editor, it issued as a full fledged, four page, six column daily, and subscription price unaltered. One week later on May 1st, 1882, appeared the first issue of the Daily Commercial Advertiser. With the growth of the city and business of the islands, the daily press has kept close pace, for we now have one morning and two evening papers in English, and two dailies in Hawaiian. It is not to be denied that political differences have largely influenced this growth and change, more so perhaps than legitimate business enterprise. But that is not the point of interest with which I purpose to deal, of course it is in the line of our newspaper evolution, but space for the present suffices only for the genesis of our daily papers, which, I trust, will be found appropriate, and of interest.

Professor John H. Gray, of Northwestern University, has accepted an appointment under the National Civic Federation to study conditions in the large cities of this country as respects different quasi-public undertakings.

THE BAKER'S BOY AND THE ELEPHANT.



Advertisement for Building Material. Text: 'YOU CAN BUY BUILDING MATERIAL HERE 20 PER CENT. LESS THAN YOU CAN FROM OTHER DEALERS. HERE ARE PRICES ON SHINGLES THAT Talk For Themselves NO. 1, 5-2 CLEAR SHINGLES... \$3.50 PER M. No. 2, 6-2 STARR SHINGLES... \$3.25 PER M. OTHER MATERIAL JUST AS CHEAP. BIG STOCK OF DOORS (Northwest and Cedar), SCREEN DOORS, SASH AND BUILDERS' HARDWARE. C. B. REYNOLDS. ALAKEA STREET, MAUKA BAILORS' HOME.'

Advertisement for Aloha Company. Text: 'Aloha Company BUILDING and PAINTING CONTRACTORS. House furniture of all kinds repaired and varnished. Yard and lawn work a specialty. Tools furnished. Cooks, Yardboys and Day L. borers supplied on short notice. Office, GREEN HOUSE, 8 King nr. Waikiki road. Tel. White 2401.'

ACCORDING TO CIRCUMSTANCE.



Advertisement for The CREMO Cigar. Text: 'THE CREMO Leads Them All For Perfect Flavor, Conscientious Workmanship and Excellence of Material, The CREMO Cigar Out-distances all Rivals Price 5c. H Hackfeld & Co. Limited. Wholesale Distributors.'