

L. B. BENTON.

A PART from the natural gratification which arises from an opportunity such as the present affords to testify to the high estimation in which Mr. Benton is held by those who know him, there is to us an added pleasure in that this is the first time that his portrait and biographical sketch with a description of his chief invention—the Benton punch cutter has been published.



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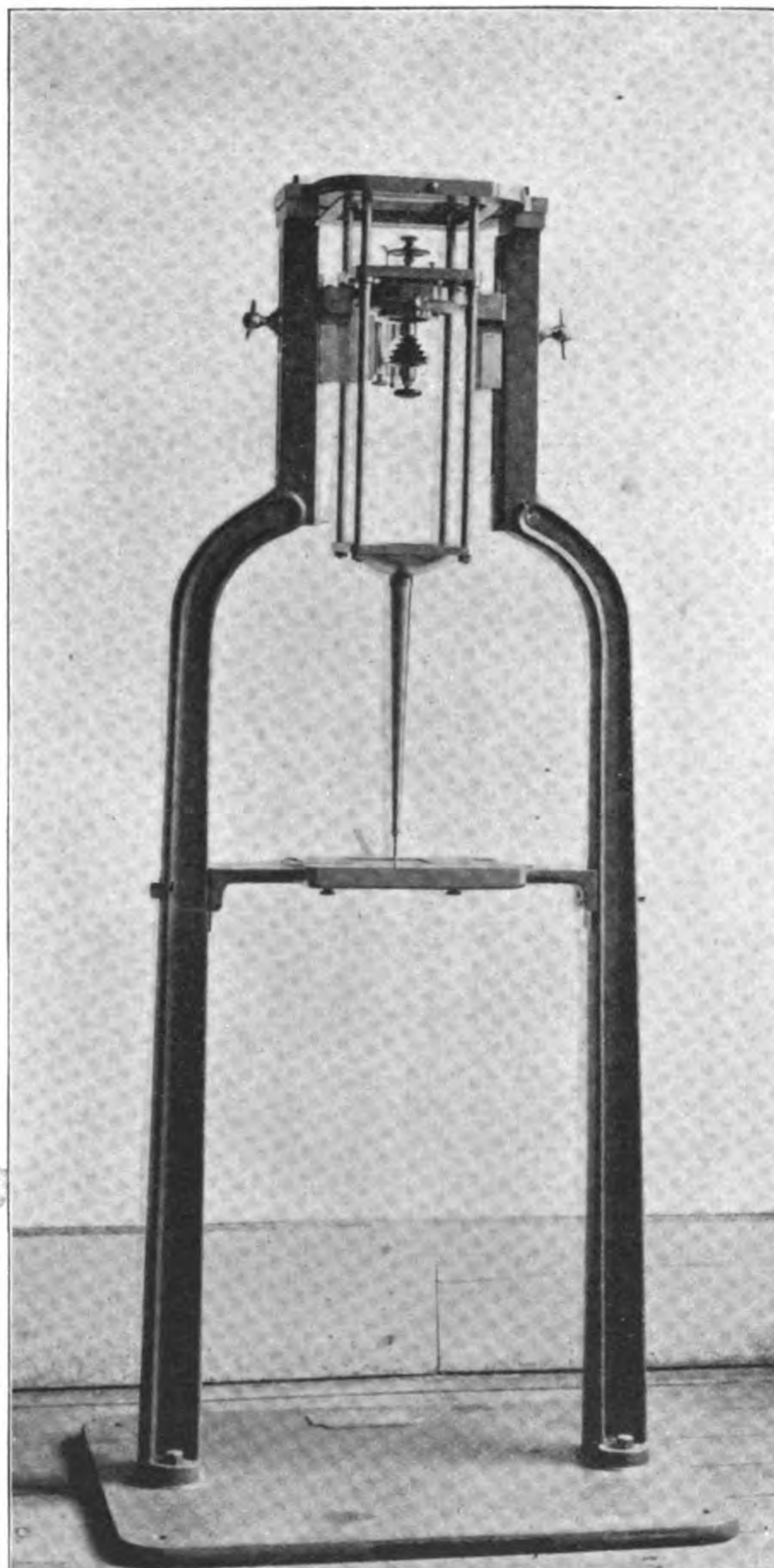
As the senior member of the typefounding firm of Benton, Waldo & Co., of Milwaukee, Wisconsin, Mr. Benton has sought to make his works speak for him. They have spoken so loudly that it was fitting—so many of our readers said, and we agreed with them—that Mr. Benton's native modesty should be prevailed upon to permit the appearance of his picture in these pages.

Linn Boyd Benton was born in Little Falls, New York, in 1844. In 1854 his father went to Milwaukee, and about two years later the family moved to the same city, but shortly after left Milwaukee for La Crosse, where for ten years young Benton remained, at first attending school and pursuing his studies with characteristic perseverance. His strong taste for the higher mechanics diverted his mind from the professional career mapped out for him by his father and the result was an agreement for the division of each day—the morning hours to be given to study and the post meridian to a gratification of his tastes in mechanics, and to these latter studies Mr. Benton traces much of the results that have been reached by him.

The printing business then threw its fascination over him and he entered the office of the *La Crosse Republican*, Charley Seymour's paper, and as a "devil" rolled the forms in the well-known style of the offices of those days. His inventiveness, ever alert, caused him to adopt a method of handling the sheets which assisted the pressman to a degree which appreciably shortened the time at press, young Benton's award being his freedom at an earlier hour. His advance through all the departments of printing was rapid, and as foreman of the office his success was pronounced.

Leaving La Crosse Mr. Benton went to Milwaukee as bookkeeper for Mr. J. A. Noonan, who conducted a typefoundry and paper house. Mr. Benton soon left the business office and took a position in the paper stock store, where he remained eight years, ending as a buyer.

About this time Mr. Noonan failed in business, and at the bankrupt sale Mr. Benton and Edward Cramer purchased the typefoundry, and the former, with his usual energy, began to learn the business, and when the intricacies of that business are appreciated the task before him may be understood. He patiently and persistently labored to perfect matrices and molds, cast leads and slugs, and studied and wrought almost without cessation—whenever he saw an opportunity to economize time and labor his inventiveness was immediately at work, and almost never has he sought to solve a problem in labor-saving machinery without success.



BENTON PUNCH CUTTING MACHINE.
Height, 5 feet 4 inches. Floor space, 22 by 28 inches.

Mr. Cramer sold his interest in the business in about a year to Mr. Frank Gove, and the firm of Benton, Gove & Co. continued for eight years, when Mr. Gove died. Mr. Benton purchased from Mrs. Gove the share her husband had held, and in 1882 sold an interest to Mr. Waldo, and the firm of Benton,

Waldo & Co. still continues, though the foundry has been taken over by the American Typefounders' Company. The firm conduct a large and profitable business in punch cutting in Germany, England and Canada.

One of Mr. Benton's inventions—the well-known self-spacing type—is a labor saver of the simplest and most perfect character. It enables the compositor to accomplish twenty-five to thirty per cent more in the same time than by the ordinary type, and for such justifications as are exemplified in railway tariffs, pedigree charts, etc., it is invaluable. Among skilled mechanics Mr. Benton's masterpiece is the automatic punch cutter, a description of which we attempt.

For the production of steel punches by machinery a sheet of calendered book paper is clamped on a table which is provided with a metal top, and on this paper is drawn in outline with a lead pencil the lower-case "m" and "o" and the cap "H" and "O" (which are known among typefounders as characteristic letters). The shape, heft, etc., of these first letters so drawn determines the general style of all the balance of the letters in the font. These outline drawings, still fastened to the drawing table, are by the use of the pantograph process, reproduced (somewhat diminished in size) on a wax-covered plate, and an electrotype taken from this wax tracing constitutes the pattern which is used in the engraving machine proper.

The lead pencil drawing is about sixteen thousand times larger than brevier, while the electrotype taken from the wax tracing is about one thousand times larger than brevier. The size of the punch produced in an engraving machine from an electrotype pattern is varied by changing the leverage of the machine. The limits in size of punches cut by the changing of leverages vary from a character which is so small as to be imperceptible without the aid of a magnifying glass, up to a size of an inch square. From a typefounder's standpoint the advantages derived by the use of this machine are :

1. It produces punches at a minimum cost.
2. Punches made by the machine are very much more perfect in form, and the cutting is more accurate than it is possible to produce in hand cutting.
3. The "picking" on type cast from matrices made from these punches is much less than on type which is cast from matrices made from hand-cut punches.
4. The machine cuts a bevel at any angle, and a counter to any depth.
5. A letter can be cut in position so that by the use of guides a strike can be made nearly in position, thereby saving much time in fitting and justifying matrices.

The most perceptible advantage derived by the type consumer is that, as all punches cut on this machine present an absolutely perfect and uniform inside and outside angle, it follows that the type will of necessity produce a very much more perfect stereotype or electrotype matrix.

This perfection of angles or bevels insures a uniform wear on the type, and prevents the distortion which is always apparent in partly worn type which is made from hand-cut punches. To demonstrate this advantage, type made from machine-cut punches has been taken and filed or rubbed down an amount equal to a ten years' wear, the result being that the face would still retain its exact contour throughout. We understand this remarkable machine will be on exhibition at the Columbian Exposition. Type made from these punches and worn down so that it was $\frac{1}{1000}$ too low to paper has still presented a fair printing surface.

The exquisite minuteness and exactitude with which this marvelous device can perform its work was illustrated not long since when a facsimile of a signature consisting of two initials and six lower-case letters was cut absolutely perfect in a script so small that it could not be distinguished without the aid of a powerful magnifying glass. The total length of the signature did not exceed the thickness of two sheets of writing paper.

Mr. Benton is reported the best practical typefounder in the country, and is a valued director in the American Typefounders'

Company. He is also the mechanical expert in the same association, sharing the exacting duties in that regard with Mr. Henry Barth. He is at present in charge of the exhibit of the association at the World's Fair, and his energy and ability will, without doubt, make the display one of the most attractive to the printers of the country and to the public in general.

Mr. Benton is, like most men who have accomplished much, modest in discussing his achievements. Genial and accessible, he is an entertaining companion, and a compendium of facts on the technique of typefounding.

Written for THE INLAND PRINTER.

PATENTS OF INTEREST TO PRINTERS.

BY FRANKLIN H. HOUGH.

AMONG the patents relating to the printing interests granted by the government during the month just passed, three were granted to Samuel G. Goss, of Chicago, Illinois, all being assigned to the Goss Printing Press Company, of Chicago. Two of these patents are illustrated in the accompanying cuts.

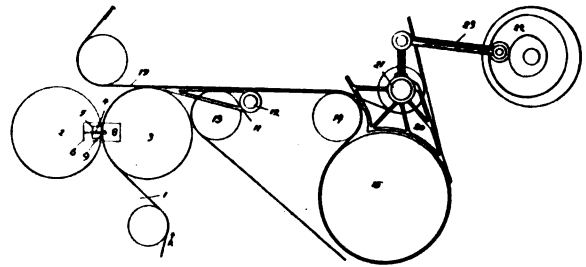


FIG. 1.

Fig. 1 illustrates a delivery apparatus constructed to cut the web into sheets and deliver the several sheets to the associating mechanism. By adjusting the mechanism which operates the switch 20, any desired number of sheets may be associated before they pass to the rollers 15.

Fig. 2 shows a cross sectional view through an apparatus designed to deliver the printed sheet with a single transverse fold. The remaining patent to Mr. Goss covers a different kind of delivery apparatus for delivering sheets after they have been cut and folded. A shaft carries a series of rollers, and

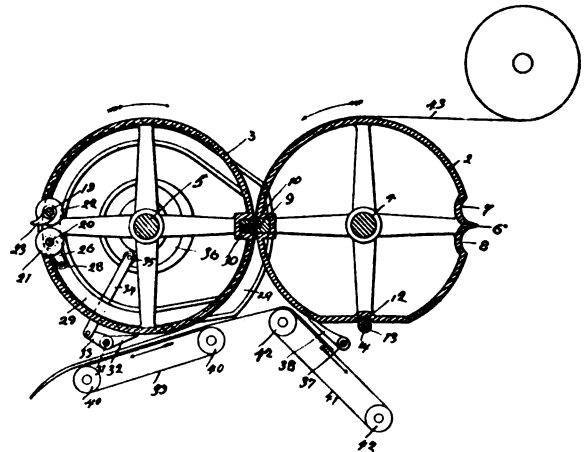


FIG. 2.

mounted in the rollers is a second shaft having gripping fingers which are located between and out of contact with the rollers, so that when the grippers are turned in they will not project beyond the surface of the rollers. Releasing mechanism causes the grippers to drop the paper at the proper time.

Fig. 3 shows a perspective view of an addressing attachment for printing presses invented by Ira W. Newman, of Toledo, Ohio. The addressing attachment is detachably secured to and caused to print at any point upon the table upon which the