

A FORWARD MOVE

MERGENTHALER LINOTYPE MACHINES AND HOW THEY OPERATE.

THE WONDER OF THE CENTURY

Each Machine Costs Three Thousand Dollars, and is the Combination of the Efforts That Inventors Have Been Making for an Hundred Years to Find Some Way to Set Type More Expeditiously Than by Hand.

In response to inquiries from many readers, we give below an illustration and description of the Linotype machine (three of which have been used

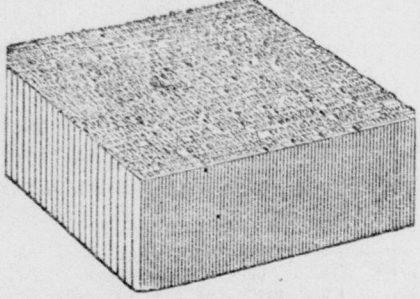


Fig. 2. Machine Type Ready for Form.

in making the type for this edition of our paper) sufficient to give a general understanding of its construction and operation.

These machines cast an assembly, solid slugs of type metal, each having on the upper edge, in relief, type characters to print a line. Referring to the illustration which represents only the leading parts of the machine, A represents a fixed inclined magazine, having channels through it from the upper to the lower end. Each channel contains female letters, or matrix, such as shown in a separate figure. At the foot of each channel an escaping device B prime is located and connected by a rod C with one of the finger keys D in the key-board. These keys represent the various characters

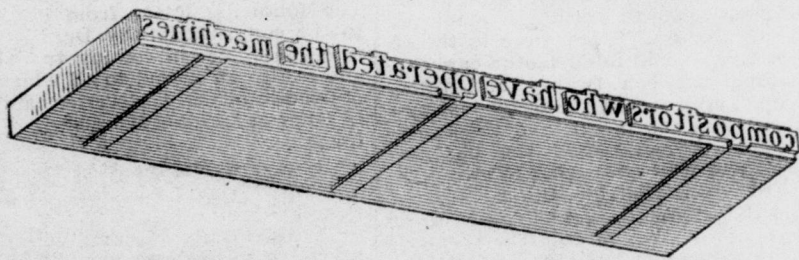


Fig. 1. Slug Showing a Line. A Line of Type as Made by the Machine.

and positive spaces required for tabular work. A small magazine H contains a series of wedge-shaped spaces I of peculiar construction.

The operator manipulates the finger keys representing characters and spaces, in the same manner as a typewriter is operated. As the character keys are depressed, their escapements release the corresponding matrices one at a time from the lower end of the magazine A. These matrices fall through channels upon an inclined traveling belt F, by which they are delivered one after another into the assembling-block G, where they are composed or arranged side by side in

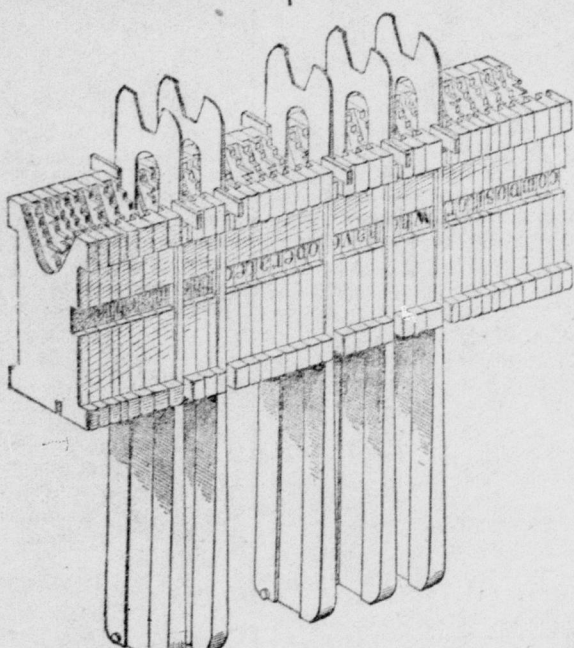


Fig. 3. A Line Matrix. A Line Being Justified.

causes them to travel along a stationary distributor-bar T. This bar is toothed on its under edge to engage and sustain the matrices. The matrix representing each character, has a special arrangement of teeth, and the teeth of the bar are varied in order or arrangement at different points in its length, so that as the matrices travel along the bar they are held in suspension until they arrive over the upper ends of the appropriate magazine channels. At this point the teeth of the bar and the matrix bear such relations that the matrix is released and permitted to fall into the magazine.

When a line of matrices, representing an entire line of printing, is completed, it is transferred as indicated by the arrows from the assembler or stick G to the face of the mould-wheel K. Through this wheel from front to back, there is a slot of the exact size of the required slug or linotype. The female characters of the matrices are presented to the front of this slot. The back of the mold slot is closed by the mouth of the melting-pot M, containing a supply of type-metal, kept in a molten condition by a gasburner thereunder.

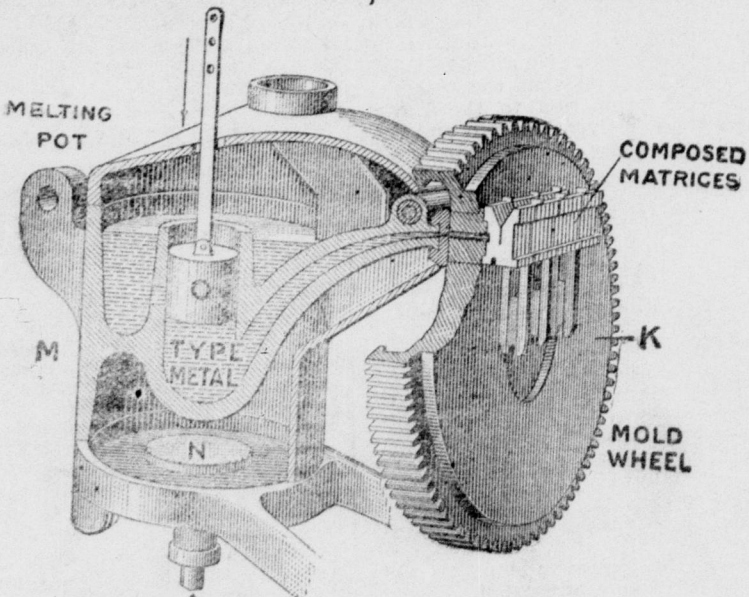


Fig. 5. The Manner of Casting a Line.

A pump plunger operates at the proper time to force metal through the mouth of the pot into the mold slot and against the matrices. This metal solidifying in the mold, forms a slug or linotype, having on the front edge, in relief, the type characters produced by the matrices. The wheel then re-

turns, and an ejector advancing from the rear pushes the completed slug out of the slot into a receiving-galley at the front, not shown. The composed line of matrices and spaces having served its purpose, the mold is lifted as shown in dotted lines and transferred to the right. Teeth in the upper ends of the matrices engage a bar R, which then raises and carries the matrices to the top of the machine, leaving behind the spaces, which are shifted to the right into their magazine H.

After the matrices are lifted to the top of the machine, they are shifted to the right between screws U, which

causes them to travel along a stationary distributor-bar T. This bar is toothed on its under edge to engage and sustain the matrices. The matrix representing each character, has a special arrangement of teeth, and the teeth of the bar are varied in order or arrangement at different points in its length, so that as the matrices travel along the bar they are held in suspension until they arrive over the upper ends of the appropriate magazine channels. At this point the teeth of the bar and the matrix bear such relations that the matrix is released and permitted to fall into the magazine.

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It will be observed that matrices pursue a circulatory course, and that

the operations of composing one line, casting from another, and distributing a third, are carried on concurrently and without reference to one another. The justification of the line is effected while the matrices are in front of the mold by pushing the wedge-shaped spaces upward through the line until it is spread out to the required length. Matrices with faces from agate to small pica are made to run in the same magazine, one font being substituted for another. By using two interchangeable magazines, each containing a font of matrices, the face produced by the machine can be changed in from two to five minutes. The molds are interchangeable and adjustable, so that bodies of any measure

and thickness may be produced at will.

The Linotype is not a type-setting machine. It is a machine controlled by finger-keys like a typewriter, which creates the type-matter, as demanded, ready for the press or stereotyping table to be once used and then melted down. Instead of producing single type of the ordinary character, it casts type-metal bars or slugs such as shown in Figure 1, each complete in one piece and having on the upper edge, properly justified, the type characters to print a line.

These slugs present the appearance of composed lines of type and serve

the same purpose, and for this reason are called "linotypes."

FIG. 2—TYPE READY FOR FORM. The linotypes are produced automatically and assembled side by side in proper order, so that they constitute a "form" such as shown in Figure 2, answering the same purposes and used in the same manner as the ordinary forms consisting of single types.

After being used, however, the linotype forms, instead of being like type distributed at great expense, are simply thrown into the melting pot of the machine to be recast into new forms.

CONSTRUCTION OF THE MACHINE. The machine contains, as its fundamental elements, several hundred single brass matrices, such as shown below.

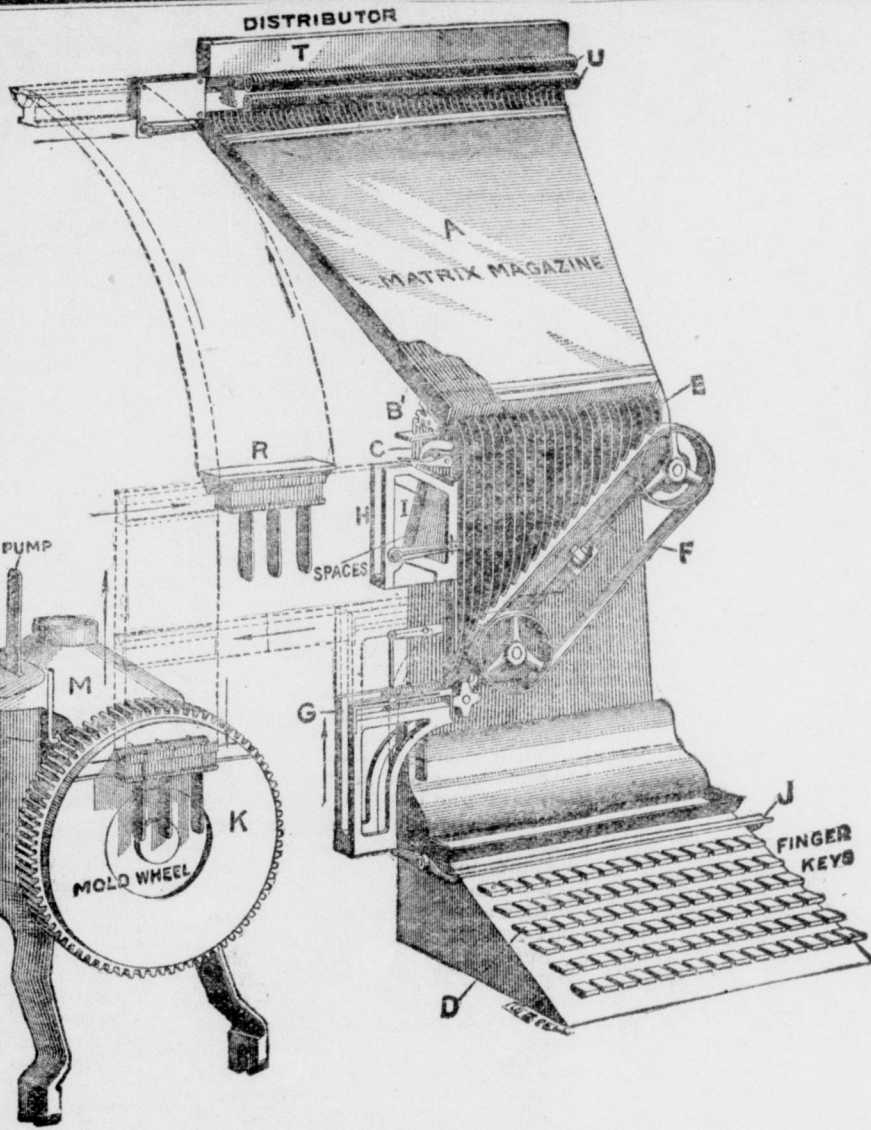


Fig. 4. Showing the Leading Parts. Transferring Line From the Operator to the Distributor.

FIG. 1—SLUG SHOWING A LINE. The Linotype is not a type-setting machine. It is a machine controlled by finger-keys like a typewriter, which creates the type-matter, as demanded, ready for the press or stereotyping table to be once used and then melted down.

FIG. 3—A LINE MATRIX. The machine is so organized that on manipulating the finger-keys, it will select matrices in the order in which their characters are to appear in print and assemble them in line side by side with wedged spaces at suitable points in the line as shown below.

FIG. 5—MANNER OF CASTING. This shows the manner of casting. FIG. 6—ASSEMBLING THE LINES. This shows the assembling of the lines after casting.

FIG. 7—MANNER OF DISTRIBUTION. This shows the manner of distribution, after the matrices have served their purpose in front of the mold.

FIG. 8—THE LINOTYPE COMPLETE. This gives the view of the Linotype as it stands in the office of the News and Observer Publishing Company. It is a thing of beauty, and we hope it will be a "joy forever."

Notice. I want every man and woman in the United States interested in the Opium and Whiskey habits to have one of my books on these diseases. Address B. M. Woolley, Atlanta, Ga., Box 380, and one will be sent you free.

YOUR BUSINESS SOLICITED. F. H. FRIES, President. JAS. A. GRAY, Vice Presd't. H. P. SHAFNER, Sec'y and Treas.

HOUSEHOLD LINENS.

Attention is called to our extensive lines of household linens, which include some things at prices less than usual.

Half-Bleach Table Damask, 54 to 62 inches wide, at 25c, 35c., 40c. and 50c. per yard.

Bleached Table Damask, 62 to 72 inches wide, at 50c., 60c., 75c. and 90c.

Heavy bleached satin damask with napkins to match.

Specials in Huck Towels at 13c., 15c. and 20c. each.

Extra large, tied fringe Damask Towels at 25c. each.

Dinner Napkins, 5-8, at \$1.25, \$1.50 and \$1.75 per dozen.

Satin damask Lunch Cloths 30x30 and 35x35 at 49c. and 59c. each.

Hemstitched Tray Cloths, with fancy open work corners, at 40c. each.

Double-faced Damask hemstitched Tray Cloths, at 50c. each

W.H.&R.S. TUCKER & CO.

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Could Not Be Cured

So They Said and So I Thought But Hood's Sarsaparilla Did Cure. "For 7 long years I was a constant sufferer with indigestion, and I tried prescriptions and remedies until I became so low that I had given up all hopes of recovery, and my friends thought also that I could not be cured. The poison in my blood had set in deeply, and my limbs were a Solid Mass of Sores."

I was confined to the house and to my bed most of the time. I happened to read an advertisement of Hood's Sarsaparilla in

Hood's Sarsaparilla

the paper and I at once prevailed upon my husband to let me try it. I got one bottle and it did me so much good that I kept using it until I had taken twelve bottles and now I am entirely cured. I am a well and hearty woman and can do my work with all ease and comfort." Mrs. LOUISA MATLOCK, Bonita, Texas.

Hood's Pills are purely vegetable, and do not purge, pain or gripe. Sold by all druggists.

WACHOVIA,

Loan and Trust Company,

WINSTON, N. C.

Paid up Capital, \$200,000

Authorized Capital, \$1,000,000

STATEMENT.

At the close of business September 28, 1896

Loans	\$357,359 07
Overdrafts	44 98
Bonds	1,570 00
Building and fixtures	23,225 14
Real estate	9,061 05
Cash on hand and in banks	114,562 83
Total	\$505,123 02
Capital	200,000 00
Surplus	11,095 07
Deposits	284,323 83
Due to banks	9,157 14
Cashier's Checks	629 88
Total	\$505,123 02

DEPOSITS:

June 15, 1893	\$50,718 93
Dec. 15, 1893	39,718 93
June 15, 1894	98,985 00
Dec. 15, 1894	147,933 53
May 15, 1895	201,324 43
Sept. 28, 1896	284,323 83

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