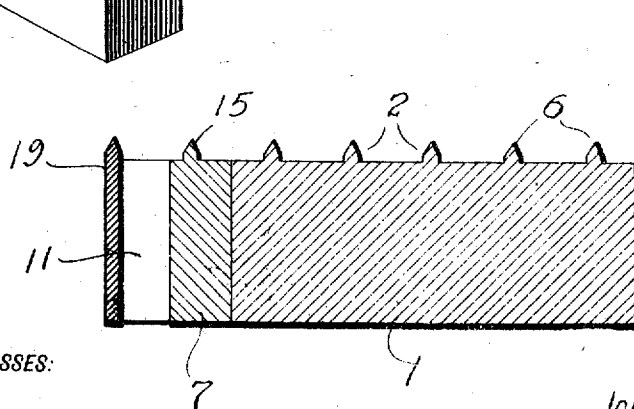
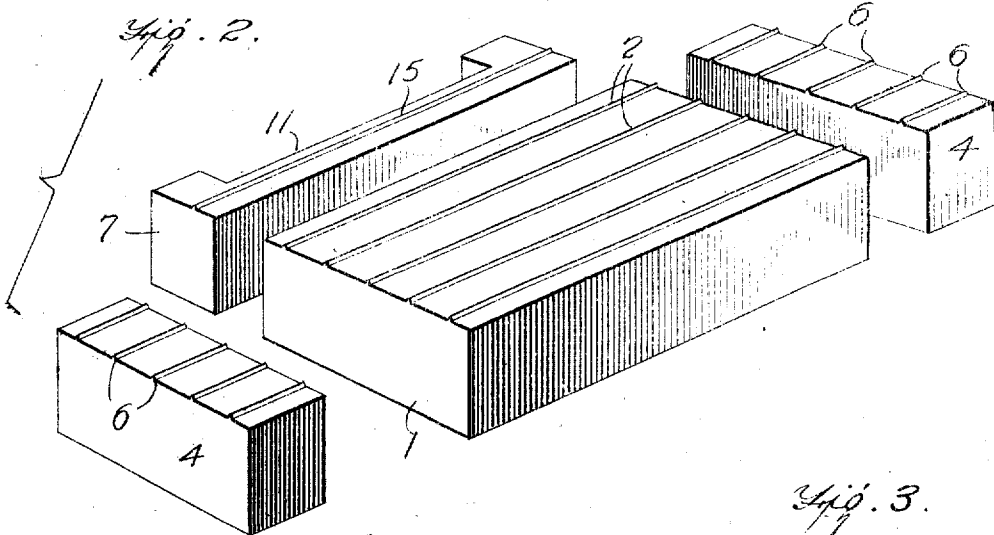
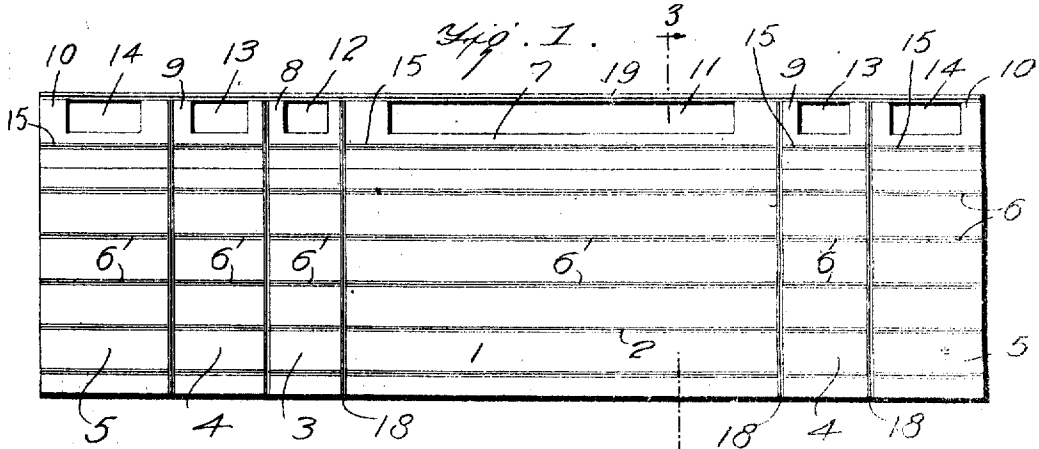


J. J. McCARTHY.
SYSTEM OF RULING.
APPLICATION FILED FEB. 15, 1916.

1.238,795.

Patented Sept. 4, 1917.
2 SHEETS—SHEET 1.



WITNESSES:

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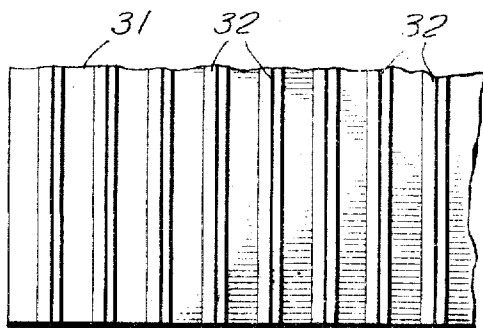
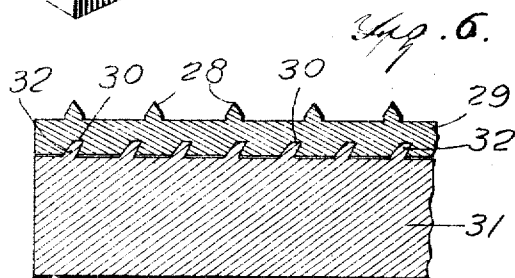
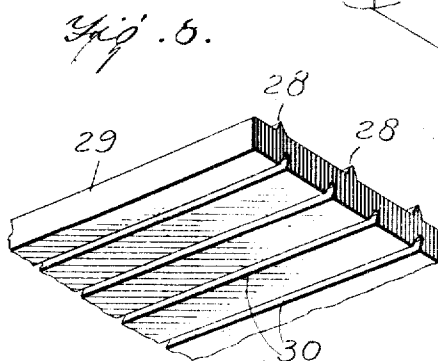
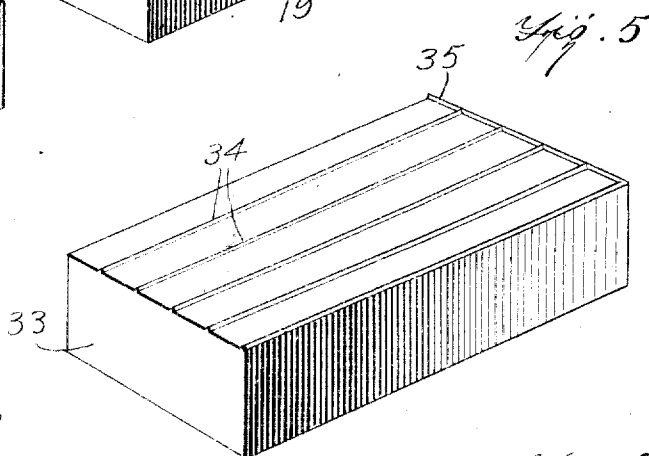
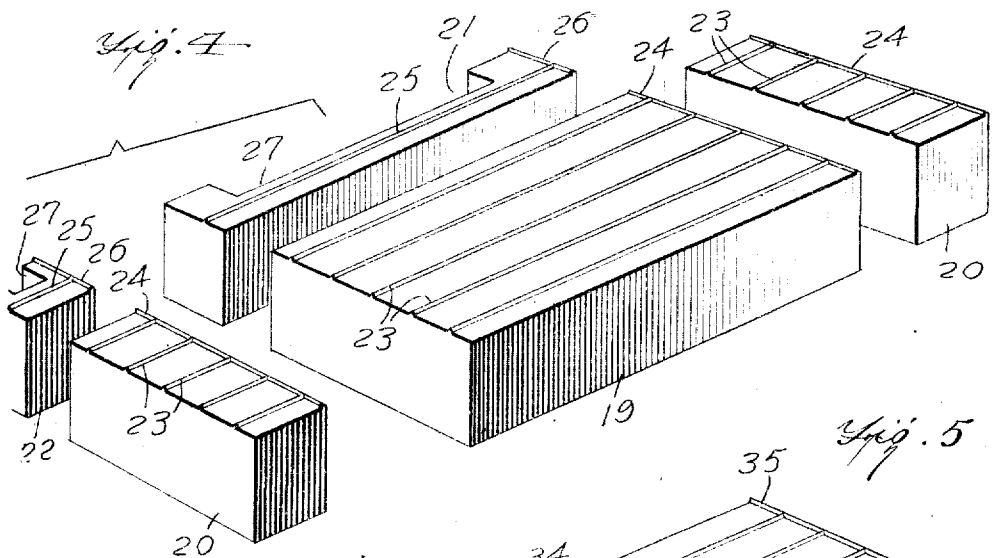
BY *Mumford & Co.*

ATTORNEYS

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UNITED STATES PATENT OFFICE.

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SYSTEM OF RULING.

1,238,795.

Specification of Letters Patent.

Patented Sept. 4, 1917.

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To all whom it may concern:

Be it known that I, JOHN J. MCCARTHY, a citizen of the United States, and a resident of Ouray, in the county of Ouray and State of Colorado, have invented a new and useful Improvement in Systems of Ruling, of which the following is a specification.

My invention is an improvement in systems of ruling, and the invention has for its object to provide a series or set of electro-type units with metal bases in plate or block form, and provided on their upper faces with means for impressing ruled lines.

In the drawings:—

Figure 1 is a top plan view showing the system set up ready for printing.

Fig. 2 is a perspective view of several units separated.

Fig. 3 is a section on the line 3—3 of Fig. 1 looking in the direction of the arrow adjacent to the line.

Fig. 4 is a view similar to Fig. 2 showing a modified arrangement.

Fig. 5 is a perspective view of a unit showing a modified arrangement of printing ribs.

Fig. 6 is a transverse vertical section of another embodiment of the invention.

Fig. 7 is a partial top plan view of one of the base blocks, and

Fig. 8 is a perspective view of the said printing plate looking from below.

As is known, in job printing there is frequent need for different forms, requiring cross lines and down lines spaced apart from each other at varying distances and in the usual arrangement these lines are provided for by brass rules or leaders.

In the present instance, however, series or sets of plates or blocks are provided of varying shape and size, and arranged to be combined into a form such as that shown in Fig. 1. These blocks or plates may be solid or they may be cut away on the under side to form supporting ribs for the sake of lightness or they may consist of printing plates and supporting or base blocks united during the printing in a manner to be presently described.

In the construction shown in Figs. 1 to 3, a central block or plate 1 is provided of suitable length or width, and on the upper face of the said plate or block there is provided a series of ribs 2, extending the full length of the block and spaced apart from each

other at equal distances. In the present instance, the upper face of the block has five ribs, and these ribs are beveled at their tops to form a printing edge. Units of the different widths will be made in sets of 1, 2, 3, 4, 5 and 10 lines each.

The ribs are spaced apart at equal distances and they are so arranged that the outermost rib at each side is spaced apart from the adjacent side of the block a distance corresponding to half the distance between the adjacent ribs. Other plates or units 3, 4 and 5 are provided, each having the transverse ribs 6 corresponding to the ribs 2 of the plate 1, and the blocks 3, 4 and 5 are of different widths as shown more particularly in Fig. 1.

In addition other blocks or plates 7, 8, 9 and 10 are provided, each having one side face cut away intermediate the ends of the plate as indicated at 11, 12, 13 and 14, respectively. Each of the blocks or plates 7, 8, 9 and 10 is provided with a rib 15, on its upper face, arranged with respect to the inner wall of the plate or block, that is, the side wall remote from the cut away portions 11, 12, 13 and 14, in the same manner as the outermost ribs 2 of the block 1 are arranged with respect to the adjacent side faces of the block or plate. Thus when the block 7 for instance, is abutted against the side edge of the block or plate 1 as shown in Fig. 1, the rib 2 of the block adjacent to the block 7 will be spaced apart from the rib 15 of the said block at the same distance that the ribs 2 of the block 1 are spaced apart from each other, and the same applies to the blocks 8, 9 and 10. It will be understood that the ribs 2, 6 and 15 may be continuous so far as concerns their printing edge or they may consist of separated points to form a continuous or a dotted line.

The down lines which in the construction of Figs. 1 to 3 are provided by the rules 18 may be provided in connection with the blocks or units. As shown in Figs. 4 and 5 a set or series is provided comprising a block 19, corresponding to the block or unit 1 of Figs. 1 and 2, and other units 20 corresponding to the units 3, 4 and 5 of Figs. 1 and 2. In addition units 21 and 22 are provided, corresponding to the units 7, 8, 9 and 10 of Fig. 1. Each of the units 19 and 20 is provided on its upper face with the printing ribs 22, corresponding to the ribs 6 of

Fig. 1, and in addition each unit 19 and 20 is provided with a rib 24 at right angles to the ribs 23 and at one end of the unit as shown.

5 The units 21 and 22 have the ribs 25 corresponding to the ribs 15 of Figs. 1 and 2, and each unit 21 and 22 has a rib 26 perpendicular to the rib 25 at one end of the unit and at that end adjacent to the rib 24 of the adjacent units 19 or 20, as the case may be. These ribs 24 and 26 take the place of the rules 18 in the construction shown in Fig. 1, and it will be obvious that any or all of the units may have other ribs parallel with the ribs 25 or 26 if desired. The units 15 21 and 22 have the recesses 27, corresponding to the recesses 11, 12, 13 and 14 of the construction shown in Fig. 1.

In Figs. 6 to 8 inclusive, the printing ribs 20 28 corresponding to the ribs 6, 15, 23, 24, 25 and 26 are arranged on plates 29, the said plates being of suitable thickness, and each of the plates 29 is provided on its under surface with a series of grooves 30, the 25 grooves being parallel and spaced apart from each other at regular intervals, and the said grooves incline from the lower face of the printing plate to the bottom of the grooves as shown at an angle to the plane of the plate. Base blocks 31 are provided for supporting the printing plates and the said 30 blocks 31 are provided on their upper face with ribs 32, shaped to fit and fill the grooves 30.

5 With this construction the plates 29 carry the form lines, and they are spaced above the supporting surface for the form by the base blocks 31 in such manner that the ribs 28 are type high. It is obvious that a single 40 base block might be used for a number of printing units in this construction or each unit might have its own base block. When the units or printing plates are combined on a single base block it will be obvious that 45 they will be held in proper position by the inter-engaging ribs and grooves 32—30.

In use, the blocks or plates will be provided in sets or series, distinguished by the spacing of the lines or ribs 2, 6, 15 as for instance, commencing with the spacing of 6 50 points and increasing 6 points more or less as may be desired for each additional column until 600 points have been reached. The units of a series or set will commence 55 with a width of 6 points for instance, and will increase in width one point for each unit until the largest unit will have a distance of 36 points between the printing surface lines.

60 In use, the units are arranged as shown in Fig. 1, the units 1 occupying the center of the built up whole. At each end of the unit 1 an ordinary brass rule 18 is arranged to separate the said unit at its ends from the 65 adjacent units, the units 3 and 4 in the pres-

ent instance. Other units are added, a rule 18 being placed between each adjacent pair of units.

It will be obvious that the ribs 2 and 6 will form horizontal lines while the rules 18 will 70 form the vertical lines. The plates or blocks 7, 8, 9 and 10 are designed to permit headings to be printed at the same time with the printing of the lines. The headings built up with type in the ordinary manner are 75 placed in the recesses 11, 12, 13 and 14, and a rule 19 of ordinary construction is arranged at the top of the built up form.

It will be understood from the description that to provide a larger number of horizon- 80 tal ruled lines built up in the same manner as Fig. 1 other units 1, 3, 4 and 5 would be placed below the units shown in Fig. 1, all of the corresponding units being in register from the top to the bottom of the form. 85

It is obvious that columns of various widths may be provided by placing the blocks or plates, that is, the units end to end without the rules 18. For instance were a body column desired of greater width than 90 the length of the block or unit 1 two units 1 might be placed end to end or a combination of units 1, 3, 4 and 5 without the rules 18. Thus with the units ruled forms of any desired character may be made. 95

It will be obvious that the arrangement of the printing ribs 6—15—23—24—25 and 26 is a matter of convenience. For instance, in Fig. 5 a unit 33 is shown, wherein the cross ribs 34 are spaced from that side of the unit 100 adjacent to the unit 21. The rib 35 corresponding to the rib 24 of Fig. 4 is at one end of the block and the rib 34 at the side of the block remote from the unit 21 is flush with the side of the unit. The spacing between 105 the ribs is the same as shown in Fig. 4 but the ribs are differently arranged with respect to the unit. Any desired spacing may be used, and the ribs may be arranged as shown in Fig. 4 or as shown in Fig. 5. 110

The object of the arrangement shown in Fig. 5 is to leave sufficient blank space at the top to equalize the space between the top rule and the first unit system rib or line. In setting job printing it is frequently the 115 case that type lines are used in connection with the rule lines. For printing of this character an office having say, sets of the system with cross lines 16 points apart and 22 points apart may turn around one-line units 120 of the former and use with six point type lines, using the 22 point (separate) line for all other columns in the job. This, of course, would necessitate the placing of ordinary slugs, leads, and other spacing material at 125 the top of the first line, in addition to the type lines composed of type set in words or figures, or both, to obtain proper alinement with adjoining cross lines. In this case it would also be necessary to use an ordinary 130

printing office brass rule to obtain the last line in that particular column or columns. Thus the six-point type lines can come down practically against the rule in the smaller one-line unit with an average customary distance above such cross lines in the column.

I claim:—

1. A printing system for ruled forms, comprising a series of body units and a series of heading units, all of the units being of the same height and all of the body units having one dimension equal and the said units having printing ribs on their upper faces extending transverse to the equal axes and spaced apart at equal distances from each other and adapted to align on all of the units when the said units are arranged end to end with their equal axes parallel, each of the heading units being of the same length as one of the body units and adapted to fit against the said body unit at one side edge thereof, and having a printing rib spaced at the same distance from the adjacent rib of the adjacent unit as the spacing of the ribs from each other on the unit, each of the heading units having a recess or cutaway portion in the side edge remote from the first-named unit for receiving a heading, and rules between the units for printing lines transverse to the ribs.

2. A printing system for ruled forms, comprising a series of body units of equal height and having one dimension equal, and varying in the other dimensions by certain predetermined values, said units having elevated printing ribs on their upper faces extending transverse to the equal axes and spaced at equal distances from each other and adapted to align on all the units when the said units are in register with their equal axes parallel, and a series of heading units, one heading unit being provided for each width of body unit and being of the same width as the body unit, and having an elevated printing rib spaced apart at the same distance as the ribs of the body unit when the heading unit is in place, each heading unit having a cut away portion for receiving a heading.

3. In a printing system for ruled forms, a series of heading units of the same height and of equal width and each having in one side edge a recess for receiving a set up heading, each of the said units bearing on its upper face an elevated longitudinally extending printing rib and the ribs aligning when the units are placed end to end in register.

4. A printing system for ruled forms,

comprising a series of body units and a series of heading units, all of the units being of the same height and each of the body units having one dimension equal and varying in the other dimension by certain predetermined values, said units having elevated spaced printing ribs on their upper faces aligning when the units are placed in register, the heading units having recesses for receiving set-up headings.

5. A printing system for ruled forms, comprising body units and heading units of equal height and having elevated printing ribs on their upper faces aligning when the units are arranged in a certain definite relation to form printed lines, said units being of various size and bearing certain predetermined relations with respect to each other, the heading units having recesses for receiving set-up headings.

6. In a printing system for ruled forms, a series of heading units of the same height and of equal width and each having in one side edge a recess for receiving a set up heading, each of the said units bearing on its upper face an elevated longitudinally extending printing rib and the ribs aligning when the units are placed end to end in register, and having a rib at one end transverse to the first-named ribs.

7. A printing system for ruled forms, comprising a series of body units and a series of heading units, all of the units being of the same height and all of the body units having one dimension equal and varying in the other dimension by certain predetermined values, said units having elevated spaced printing ribs on their upper faces aligning when the units are placed in register, the heading units having recesses for receiving set-up headings, and the units having other ribs transverse to the first-named ribs.

8. A printing system for ruled forms, comprising a series of body units and a series of heading units, all of the units being of the same height and all of the body units having one dimension equal and varying in the other dimension by certain predetermined values, said units having elevated spaced printing ribs on their upper faces aligning when the units are placed in register, the heading units having recesses for receiving set up headings.

JOHN JUSTIN MCCARTHY.

Witnesses:

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E. A. KRISTIER.