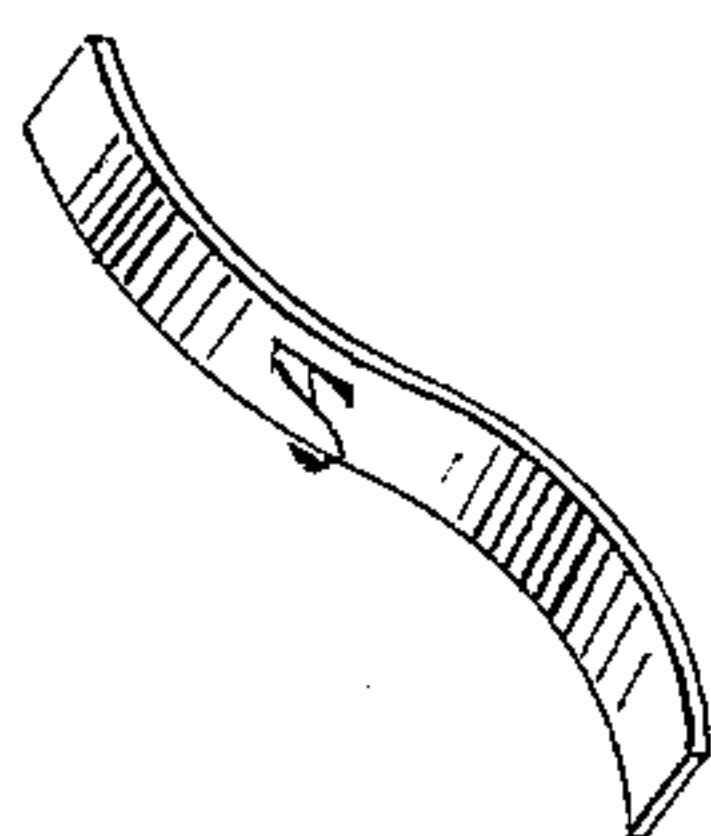
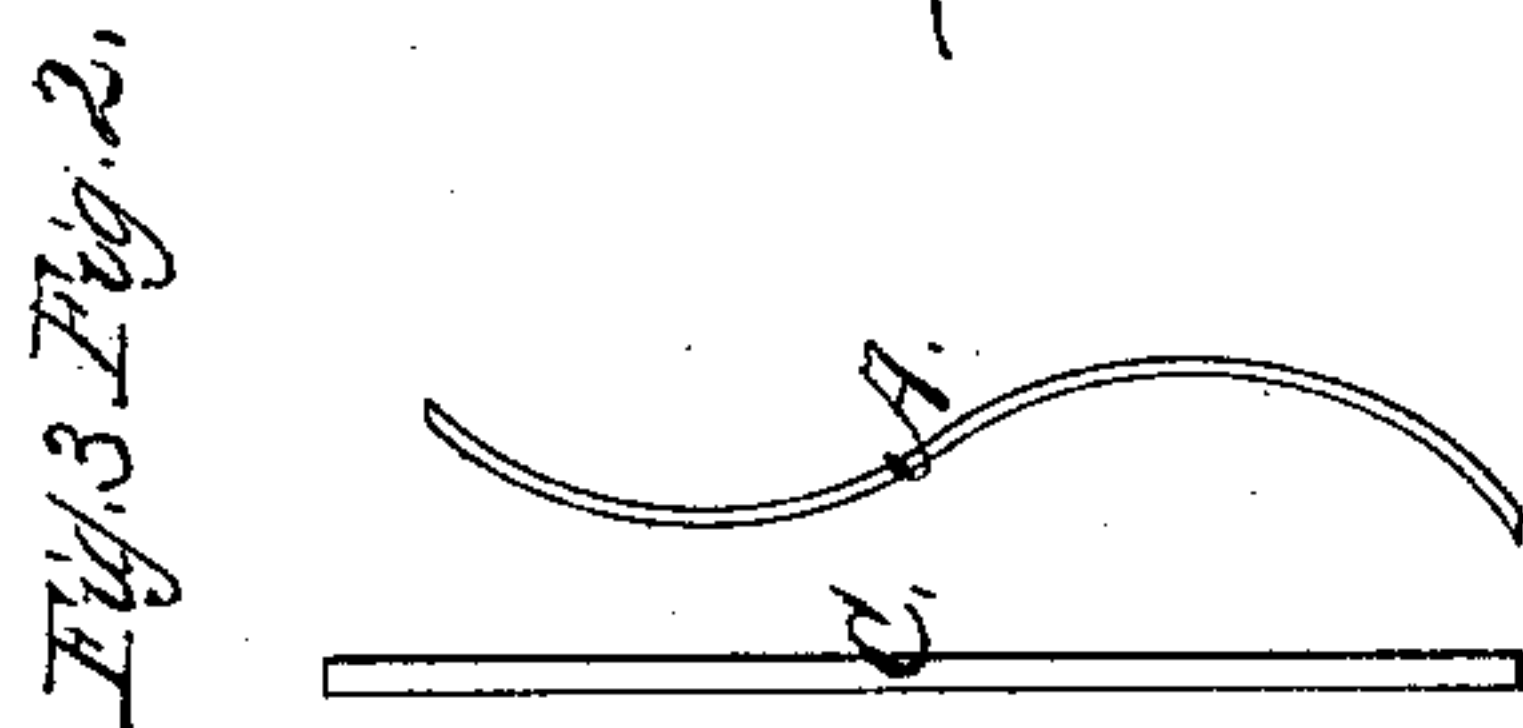
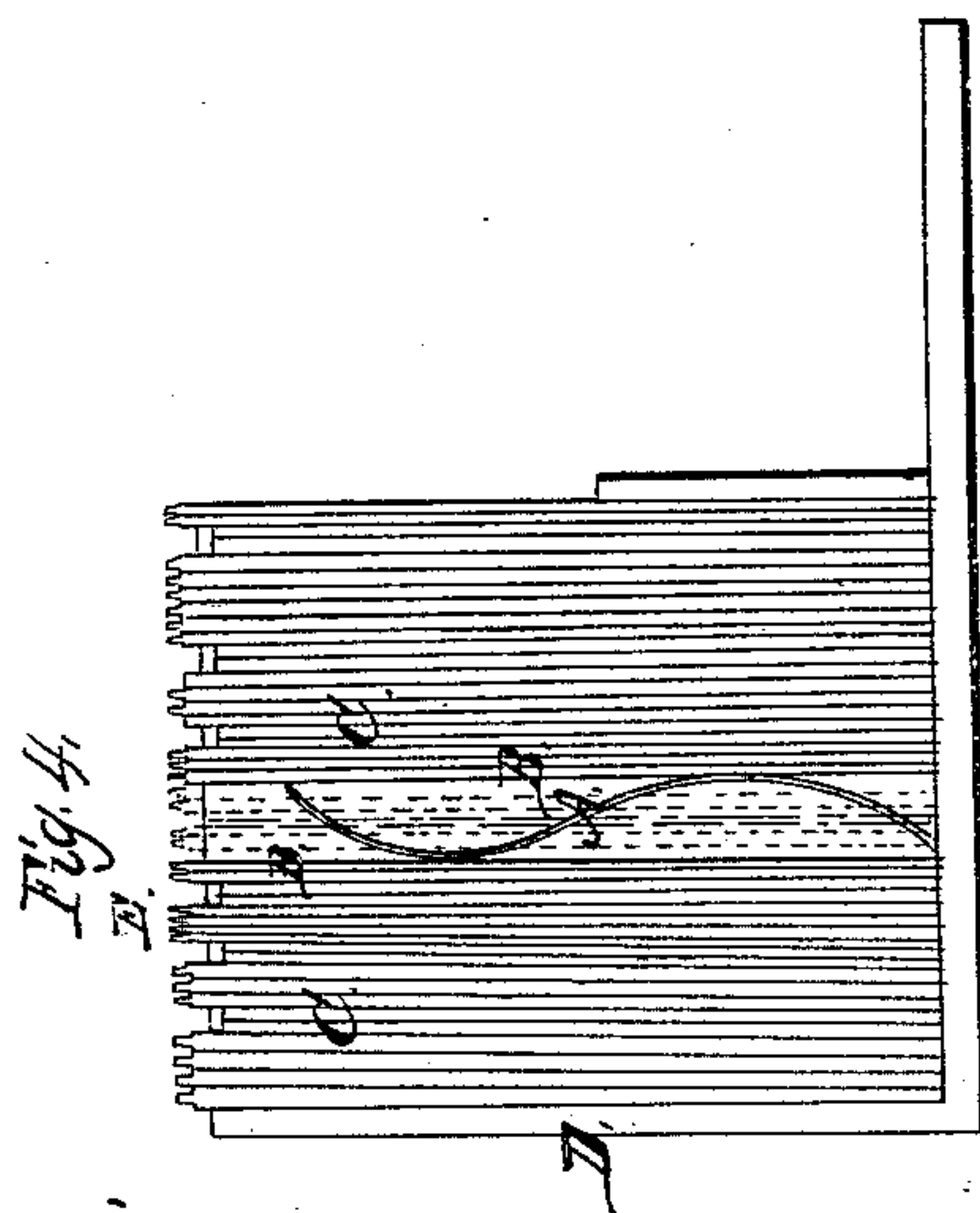


*E. C. Harmon.*  
*Spring Space for Setting Type.*  
*N<sup>o</sup> 9418.      Patented Nov. 23. 1852.*



# UNITED STATES PATENT OFFICE.

E. C. HARMON, OF TROY, OHIO.

## IMPROVEMENT IN SPACES FOR SETTING TYPE.

Specification forming part of Letters Patent No. 9,418, dated November 23, 1852.

*To all whom it may concern:*

Be it known that I, E. C. HARMON, of Troy, in the county of Miami and State of Ohio, have invented a new and useful Spring-Space for Facilitating the Operation of Forming the Vacant Spaces Between Words, and also Spacing Out, Thin Spacing, Even Spacing, and Correcting Proof; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of one of my improved spring-spaces, it being on an enlarged scale. Fig. 2 is a side elevation. Fig. 3 is a side elevation of one of the ordinary flat stiff spaces now employed for forming spaces between words. Fig. 4 is a side elevation of a composing-stick with a line of type set within it. This view shows the application of my spring-space, it being placed in the center of the line of type and shown in black lines expanded and in red lines compressed into a narrower compass.

Similar letters of reference in each of the several figures indicate corresponding parts.

The nature of my invention consists in the employment of an elastic "spring-space" of cyma recta or other suitable shape, the object of said spring-space being to facilitate the art of setting type.

A, Figs. 1, 2, and 4, designates one of my elastic spring-spaces of cyma recta or other suitable shape. This space is placed between the type in the manner represented in Fig. 4 of the drawings, and is designed to serve as a regulator of the lines and to save the labor and time usually expended by compositors in "spacing out," and "thin spacing," &c., which operations I will now proceed to describe and thereby illustrate the use and advantages of my spring-space.

First. Spacing out. This operation is always necessary when a line is not full and when spaces occur or when all the rows or lines do not extend out even with each other in the same column. To space out such a line, the compositor perhaps is obliged to insert two, three, or six additional spaces by the side of those already in. This, it will be seen, requires considerable time and labor. For suppose it is necessary for him to insert

three additional spaces, he is obliged to take up the first of these spaces and put it beside the space between the last two words, or wherever it can be conveniently placed. The second space in like manner he places between the next to the last word and the word preceding it. These two may have been inserted without much difficulty because there was sufficient room; but when he attempts to insert the third space he will perhaps find it a difficult matter to put it between the type and spaces, for it may not be just the size required, and consequently he must, after he has ascertained as near as possible the size of space needed, resort to his space-box containing four different-sized spaces—to wit, "hair," "thin," "medium," and "thick"—and hunt until he finds one of a medium size, and he may pick up a half dozen before he finds one of the right size, the difference in the size of the several spaces hardly being perceptible when a compositor is setting type at a rapid rate, and even if he should readily find a medium-sized space (the size supposed to be necessary) and after trying to insert it he finds that the hole to be filled is, first, a little larger than a medium and not thick enough for a thick space, or, second, too small for a medium and too large for a thin space, or, third, too small for a thin and too large for a hair space, and so on, it will be readily seen that the compositor is obliged to resort to thin spacing and must necessarily lose one-sixth of his time in spacing out, &c. Now, by the employment of my elastic spring-space this trouble and delay is obviated, for by having one or two of my elastic spaces put in each line any sized space of the ordinary kind may be inserted. Even if the hole be of the size of a hair-space a thick space can be inserted, for, instead of having a hole of just such a size to fit, you can make it of any size desired and may insert the first space that you pick up out of the space-box, as my spaces are elastic and consequently yielding in their nature, or capable of expanding, or can be compressed into as small or narrow a compass as that occupied by the finest hair-space.

By referring to Fig. 4 this spring-space will be seen in black lines expanded and in red lines contracted, additional spaces or letters having been inserted to fill out the line, and conse-



quently caused the spring-space to be pressed into a narrower compass, and the type lettered B to occupy the position shown by dotted black lines in Fig. 4. In this view C represents the common flat space, and D the composing-stick, having a line of type E set within it, and one of my improved spring-spaces placed in the center of the line.

In thin spacing a considerable saving in time and labor is effected by the use of spring-spaces, for when a workman got so many letters into the line that it would not admit another syllable or letter, unless the size of the spaces be first changed, and as this syllable or letter must be inserted, and at the same time all the lines be of the same length, so that the type may not "pi" when handled, it becomes necessary to withdraw two or three thick spaces and insert thin ones in their places. Now, it must be obvious that if two of my spaces were inserted in such a line the compositor would only have to compress them and insert any syllable or word that he may wish to include in the same line.

In printing books it is very important that all the words in the same line be equidistant from one another, and by the employment of my spring-space this object is admirably accomplished, for, as my spaces are all made alike and all have about the same elasticity,

they will all yield or expand alike, and thereby cause each and every word to be thrown at about an equal distance from each other, and, lastly, by the employment of my elastic space, correcting proof is facilitated, for if it be necessary to withdraw a letter from a line and to insert one that is not of precisely the same thickness in its place it is necessary, when my space is not employed, to space out that line again, and that, too, under very disadvantageous circumstances; whereas, if one, two, or more of my spaces were employed in each line, they could be compressed so as to admit a thicker letter than the one withdrawn, or they would expand and fill up the line if a thinner one were put in.

What I claim as my invention, and desire to secure by Letters Patent, is—

The cyma recta or other more suitable shaped elastic space A, for facilitating the art of setting type or for saving the time and labor usually expended in spacing out, thin spacing, regulating the distance of words in the same line from one another, and correcting proof, in the manner herein set forth.

E. C. HARMON.

Witnesses:

LELORA EATON,

E. A. EATON.