

(No Model.)

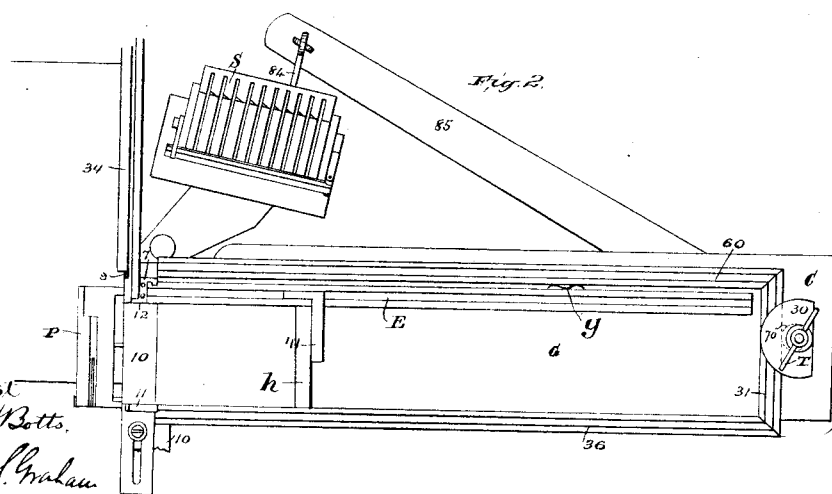
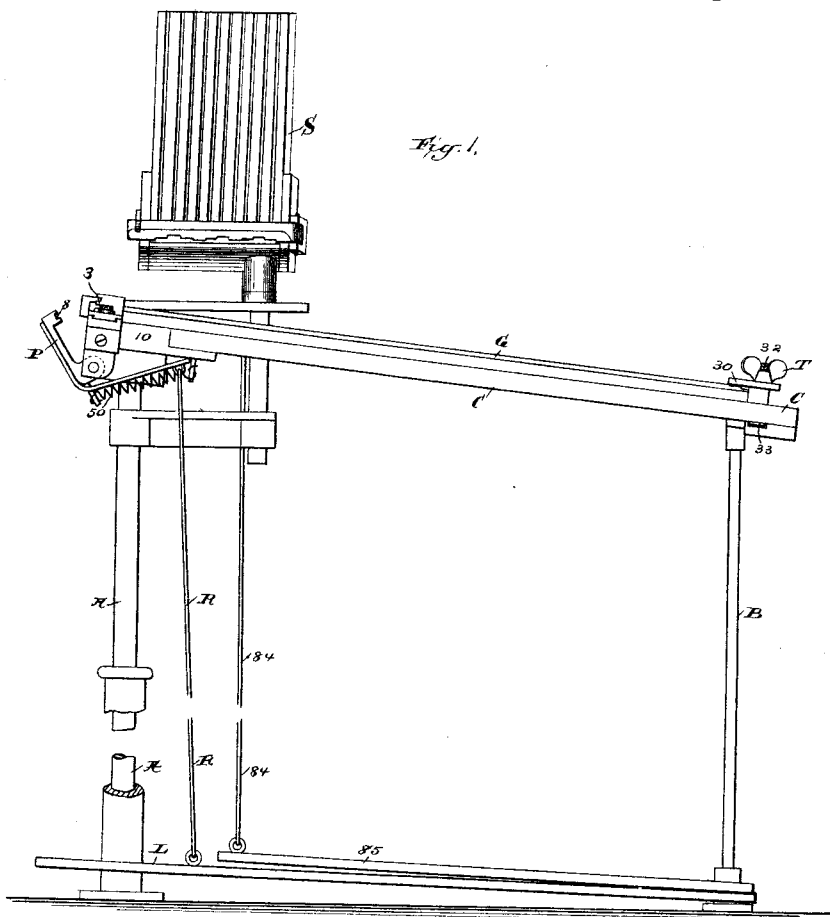
2 Sheets—Sheet 1.

J. THORNE.

JUSTIFYING APPARATUS.

No. 387,546.

Patented Aug. 7, 1888.



Attest
 Geo. H. Batts.
 Geo. N. Graham

Inventor:
 Joseph Thorne
 by
 Messrs. Rieff

Attys

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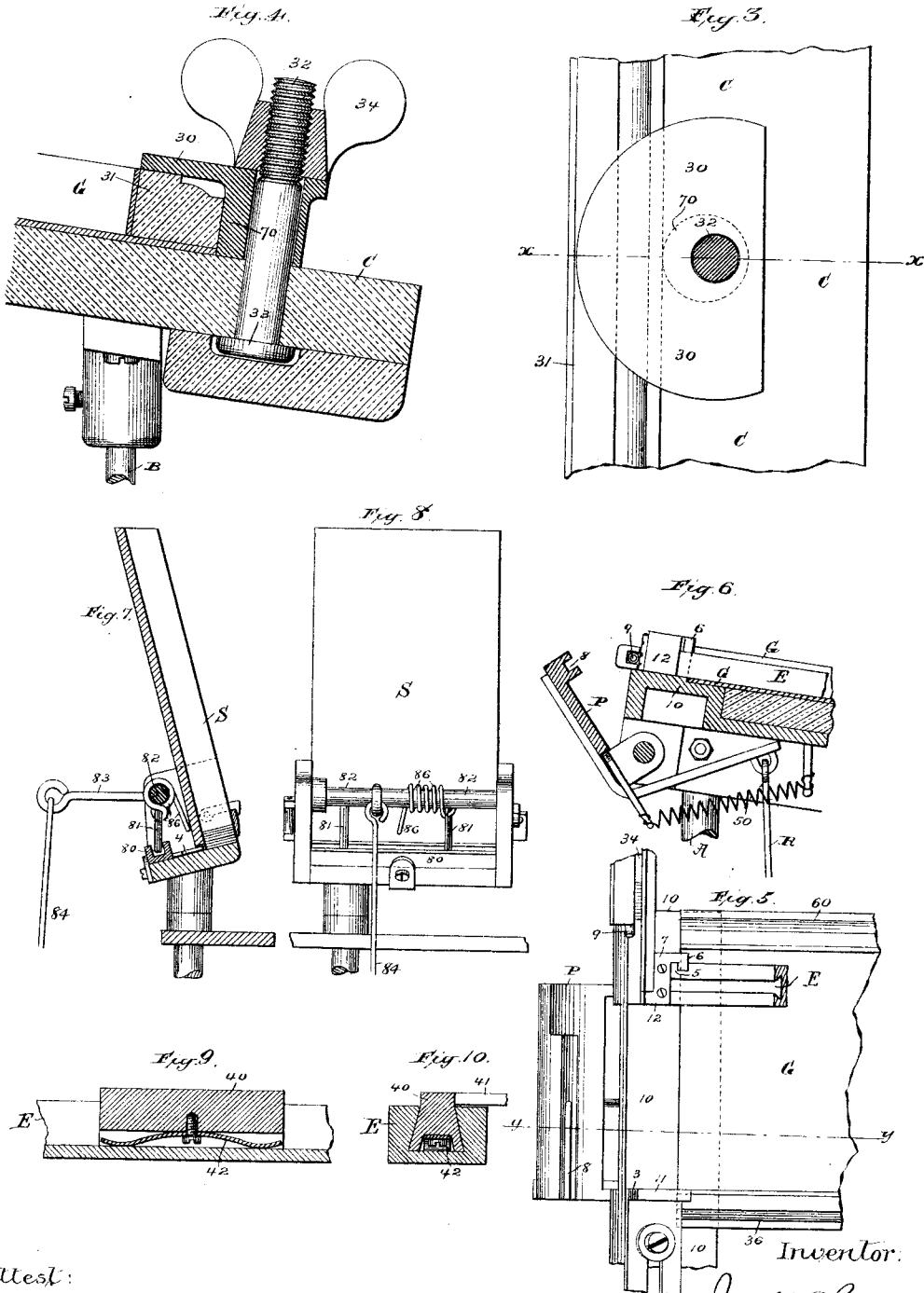
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UNITED STATES PATENT OFFICE.

JOSEPH THORNE, OF PORT RICHMOND, NEW YORK, ASSIGNOR TO THE
THORNE MACHINE COMPANY, OF NEW YORK.

JUSTIFYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 387,546, dated August 7, 1888.

Application filed June 4, 1885. Serial No. 167,600. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH THORNE, a citizen of the United States, residing at Port Richmond, county of Richmond, and State of New York, have invented certain new and useful Improvements in Justifying Apparatus for Type-Setting Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

These improvements are especially designed for use in connection with type-setting machines from which the matter is received in the condition of an extended line set in a long setting-stick, and from which extended line short lengths are removed into a galley and there justified in short lines suiting the width of the column or page to be composed.

A type-setting machine of the character described is shown in United States Letters Patent No. 232,157, dated September 14, 1880, and No. 283,934, dated August 28, 1883. In the latter-named patent and in the present case the setting-stick receiving the types from the setting mechanisms and conveying the line of types to the composing-galley is designated 34.

In the drawings illustrating the present improvements, Figure 1 is an elevation illustrating a justifying apparatus adapted for use in connection with type-setting machines. Fig. 2 is a plan view thereof. Fig. 3 is a plan view of a means for securing the galley to the table. Fig. 4 is a sectional elevation of the same on the line *x* of Fig. 3. Fig. 5 is an enlarged plan view of the end of the galley, showing its relation to the packer. Fig. 6 is a sectional elevation of the same, taken on the line *y* of Fig. 5. Fig. 7 is a sectional elevation taken through one of the channels of the space-case. Fig. 8 is a rear view of said case, and Figs. 9 and 10 are respectively longitudinal and cross-sectional elevations of the sliding block with which the galley is provided.

The principal parts of the apparatus are: standards A B, supporting the opposite ends of a table, C, upon which the galley G is secured, and with the head of which the setting-stick 34 connects; a vibrating packer, P, for forcing the line into the galley, and a case, S,

for containing spaces with which to justify the said line of types.

The present improvements relate more particularly to the means for securing the galley upon the table and the structure of its side-stick and its frictional column-rest; to the mechanism for protruding the spaces from their case into convenient position for use, and in a structure of the mouth of the setting-stick, all of which will more fully hereinafter appear.

The head 10 of the table C constitutes a bed upon which the line of type rests as it is drawn or slid from the stick 34, said line first abutting against a gage, 11, and next being pushed down said table between said gage 11 and the block 12 by the packer P, which is vibrated for this purpose by a foot-lever, L, that is connected to said packer by a rod, R, said packer being drawn in the opposite direction by means of a spring, 50. The head 10 of the table constitutes a prolongation of the bottom plate of the setting-stick 34, and is long enough to accommodate the galley G in suitable position for composing a page or column of the greatest width which the galley is adapted to receive. This head 10 is depressed (see Fig. 6) to provide a seat for the bottom plate of the galley and form a smooth bed for the column of matter to slide upon in passing from said head to the galley. The galley is placed in position on the table C, its mouth end forced against the head 10, and is there secured by a clamp at the outer end, which clamp consists of a clamp, 30, that laps on the rail 31 of the galley, (see Fig. 4,) and is pressed to duty by means of a screw-bolt, 32, that passes through the table C with its head 33 bearing on the under side thereof, which screw-bolt has a thumb-nut, T, that binds the clamp 30 onto the galley, thus holding it most securely, and, in connection with the bearing had against the head 10, preventing any lateral or longitudinal displacement. The shank of this clamp may be provided with a cam, 70, by which, as the clamp is turned into position to lap on the rail of the galley, it will bear against said end rail and securely hold the mouth end of the galley against the head 10. When the galley is thus secured with its side rail, 36, at a point suit-

ably distant from the block 12 to suit the width of column, the gage 11 is adjusted, and then the side-stick E is put into place.

The side-stick consists of a long bar provided at its forward end with a slot, 5, that engages a lip, 6, projecting from a piece, 7, secured to the head 10 of the table C. Said side-stick is provided with a dovetailed slot in which travels a frictionally-held sliding block, 10 40, carrying a bearing-arm, 41. The sides of this block nicely fit the dovetail slot, and it is pressed forcibly against them by means of a spring, 42, secured to its under side, so as to press said block upward. When the side-stick 15 is engaged with the lip 6, its inner face is coincident with the face of the block 12, and its alignment with the ledge 36 of the galley G is secured by a block or slug, *h*, of column width, placed in advance of the arm 41, and suitable 20 furniture or a light spring, *g*, placed between the side-stick and ledge 60 of the galley. As line after line is forced into the galley by the packer P, the arm 41 retires appropriately, its frictional resistance being sufficient to hold 25 the composed matter snugly together and yet yield to pressure exerted by said packer.

One side wall and the bottom of the setting-stick are connected with the head 10 of the table; but the outer side wall of said stick is removed 30 for a short distance, so that while the short line or section removed from the extended line of type on the setting-stick, while supported on its feet and at one side, may be moved laterally in manipulating it; and in order that the end 35 of said line shall remain firm and stable as it leaves the setting-stick, one side of the latter is provided with a frictional device, composed in this instance of a small rubber tube, 9, preferably extending somewhat beyond the end of 40 said stick.

The packer P is provided with a slot, 8, at its outer end, and a corresponding portion of the gage 11 is removed, as at 3, so that when the packer is in its forward or pushing position a tool may be inserted to hold the line introduced into the galley should the same stick 45 or become disarranged, which operation en-

ables the packer to retire without carrying with it any of the type of the line.

The space-case S consists of a number of 50 channels for containing spaces of differing thickness, each of which channels has an ejector, as 4, playing through the bottom of the channel. These ejectors 4 are attached to a 55 bar, 80, that slides on the bed-plate between the side frames of the case, which bar is reciprocated by means of rock-arms 81, that project from a rock-shaft, 82, and enter a slot in said bar, said shaft 82 being rocked by an arm, 83, rod 84, and foot-lever 85, and recovered to 60 its normal position, in which the ejectors are withdrawn by means of a coiled spring, 86, one arm of which is attached to the shaft, while its outer arm bears against the back of the plate. A depression of the lever 85 throws the eject- 65 ors 4 forward and protrudes a space from each of the channels into convenient position to be taken by the fingers and used in justifying each line of type as it is placed in the galley.

What is claimed is—

1. The combination, with the table C, its head 10, and the galley G, of the combined end and top clamp, 30, substantially as described. 7c
2. The combination, with the galley G and table C, having the head 10, of the block 12, 75 fixed upon the head, and having the lip 6, the side-stick having the slot 5 to engage with said lip, and having a lateral support, *g*, at its lower end, and the movable gage 11, substantially as described. 8o
3. The combination, with the setting-stick having one side removed at its delivery end, of a frictional bearing, as the rubber 9, substantially as described.
4. The combination, with the table C, its head 10, and the galley G, of the clamp 30 and cam 70, substantially as described. 85

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOSEPH THORNE.

Witnesses:

T. H. PALMER,
GEO. H. GRAHAM.