June 10, 1930. G. E. BUZZA 1,763,090

PRINTER'S CHASE AND COMPOSING STICK

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Fig. 1

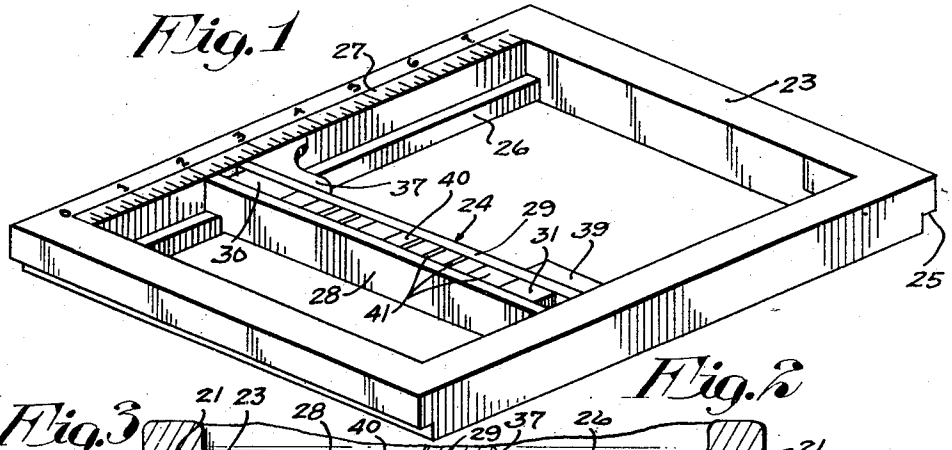


Fig. 2

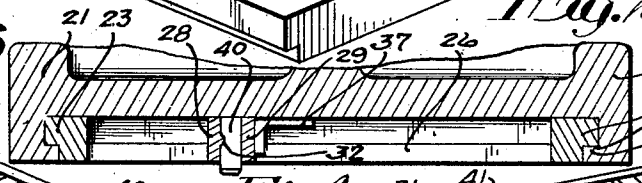


Fig. 3

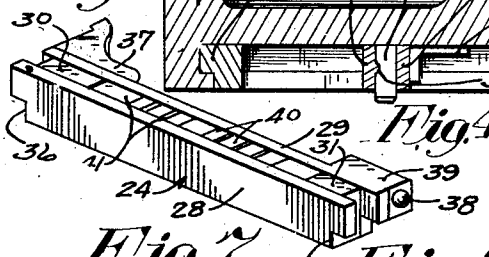


Fig. 4

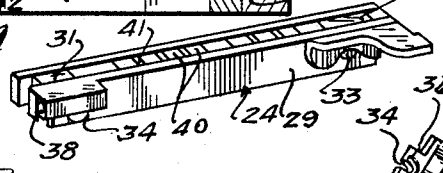


Fig. 7

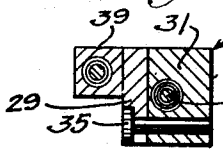


Fig. 8

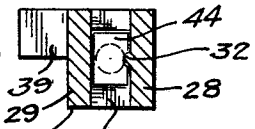


Fig. 5

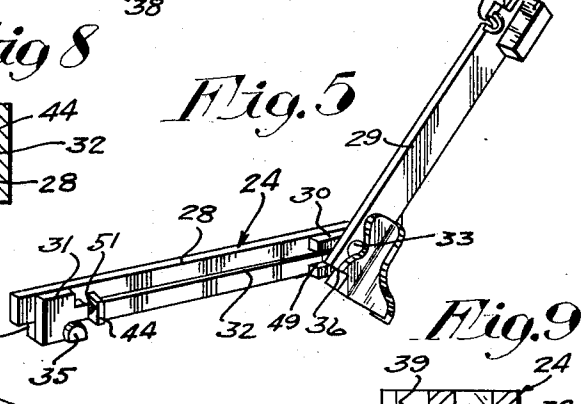


Fig. 6

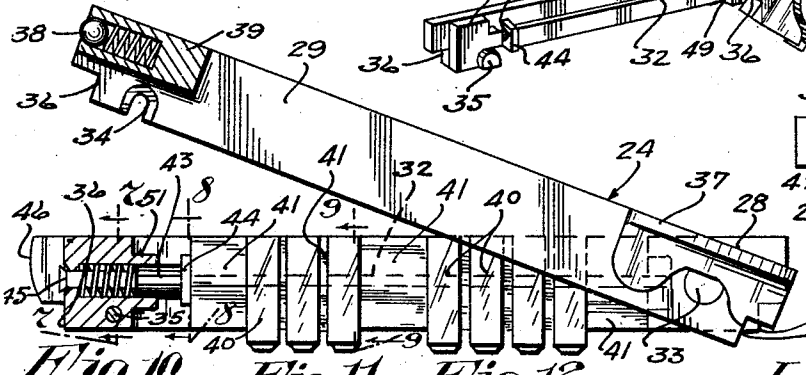


Fig. 9

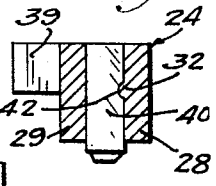


Fig. 10

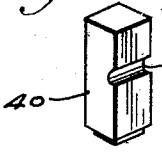
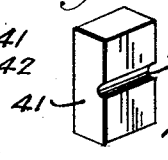


Fig. 11



Fig. 12



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PRINTER'S CHASE AND COMPOSING STICK

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Fig. 13

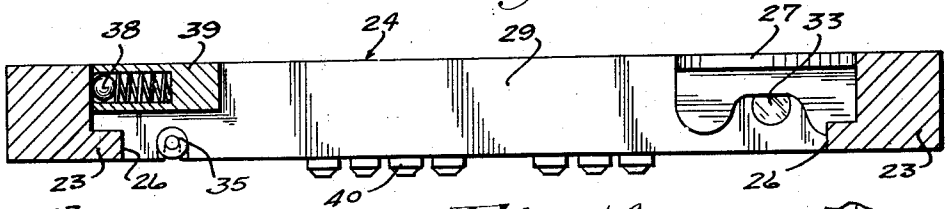


Fig. 14

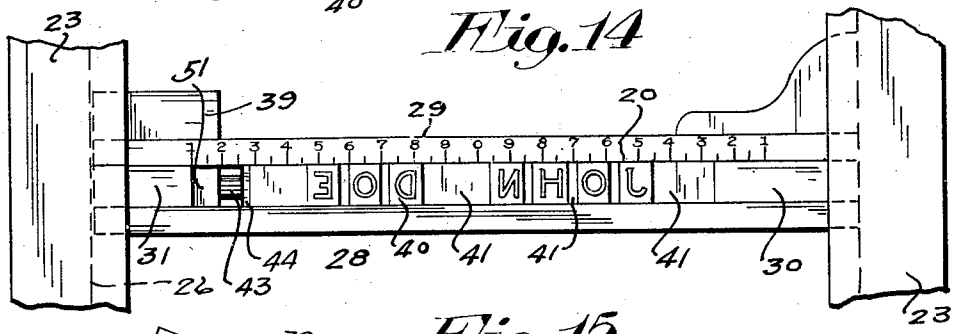


Fig. 15

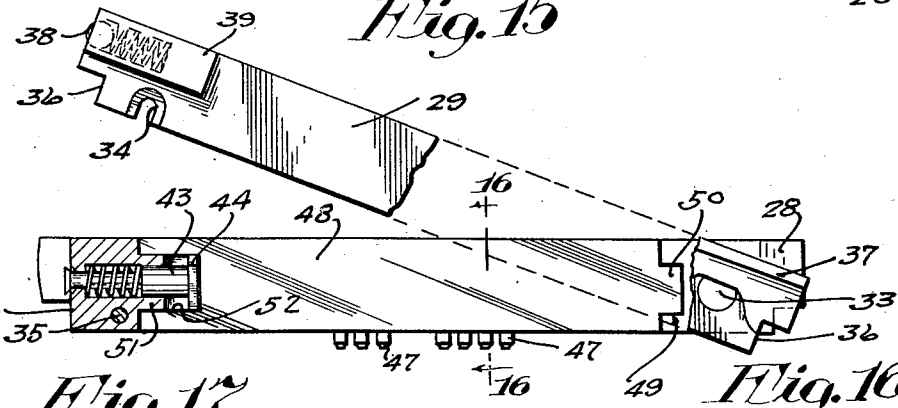


Fig. 17

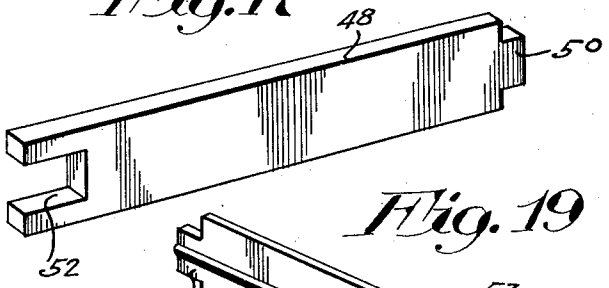


Fig. 16

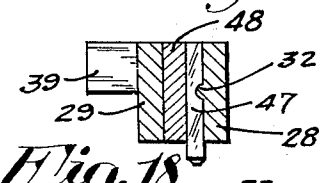


Fig. 18

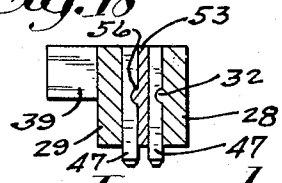
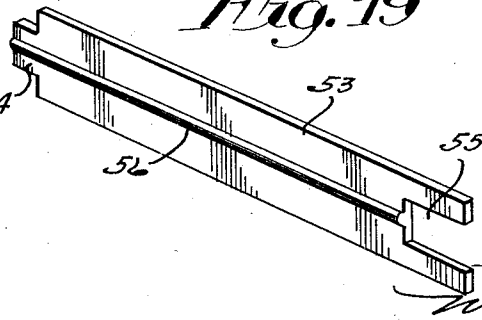


Fig. 19



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Patented June 10, 1930 1,763,090

UNITED STATES PATENT OFFICE

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PRINTER'S CHASE AND COMPOSING STICK

Application filed January 25, 1929. Serial No. 335,044.

My present invention provides (a) an improved composing stick, (b) an improved printer's chase, and (c) a novel co-operative arrangement of the stick and chase, whereby one or more sticks may be adjustably and co-operatively applied to the chase and used therewith in the printing operation.

The connections between the stick and chase are such that adjustments of the former may be quickly and easily accomplished by hand operations, and the arrangement is such that an inexperienced operator may be quickly instructed in the proper use thereof including the setting of the type in the stick, the adjustment of the stick in the chase, and the adjustment of the chase in the press. The invention, while capable of very general use in connection with printing presses has, in the present instance, been designed and especially intended for use in connection with a complete machine or assemblage of mechanisms described and claimed in my companion application entitled "Printing machine", S. N. 370,948, and filed June 14, 1929, and which complete machine is of such character that it will quickly produce, by a continuous operation, printing jobs such as cards, announcements, letterheads, envelopes, and so forth, in a style of printing that closely simulates engraving. More specifically stated, the said complete machine is not only continuous, but automatic in all of its operations and in proper sequence will perform the following operations, to wit: Printing of a card or the like, dusting of a powder on the ink while damp, shaking to throw off the surplus powder from the print and card, heating to set the ink, thereby producing a raised or embossed quality, then drying to complete the job, and finally, delivery of the completed job at or near that point on the machine where the work was delivered to the machine.

To the above end, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a perspective view of the chase and composing stick;

Fig. 2 is a sectional view showing the chase and composing stick mounted in a bed;

Fig. 3 is a perspective view of the composing stick;

Fig. 4 is a view corresponding to Fig. 3 but showing the other side of the stick;

Fig. 5 is a view corresponding to Fig. 4 with the exception that the lock bar of the stick is open;

Fig. 6 is a view principally in side elevation showing the stick, on an enlarged scale, with its lock bar partly open to show the type and spacers in the stick, some parts being sectioned;

Figs. 7, 8 and 9 are detail views principally in transverse section taken, respectively, on the lines 7—7, 8—8 and 9—9 of Fig. 6, with the lock bar closed;

Fig. 10 is a perspective view of one of the type removed from the stick;

Figs. 11 and 12 are perspective views of two of the spacers removed from the stick;

Fig. 13 is a view principally in side elevation showing the stick mounted in the chase;

Fig. 14 is a face view of the chase as shown in Fig. 13;

Fig. 15 is a view corresponding to Fig. 6, but showing a line of smaller sized type mounted in the stick with a filler between the type and lock bar of the stick;

Fig. 16 is a view principally in transverse section taken on the line 16—16 of Fig. 15 with the lock bar closed;

Fig. 17 is a perspective view of the filler removed from the stick;

Fig. 18 is a view corresponding to Fig. 16 with the exception that two lines of type are mounted in the stick with a divider therebetween; and

Fig. 19 is a perspective view of the divider removed from the stick.

The numeral 21 indicates the bed of a printing press having on its face a pair of ways 22 releasably holding a chase 23 in

which a composing stick 24 is removably mounted with freedom for lateral adjustment toward either end of the chase. The end members of the chase 23 are rabbeted at 25 to fit into the ways 22 of the bed 21 and slidably and removably support the chase 23 on said bed with the backs of the chase 23 and stick 24 contacting with the face of said bed as a base of resistance, see Fig. 2. Integrally formed with the inner faces of the side members of the chase 23, at the face of said chase, are longitudinally extended ways 26 in the form of rails or flanges. A type-positioning scale 27 is indicated on the back of one of the side members of the chase 23 for use in positioning the stick 24 in said chase.

The composing stick 24 comprises two parallel flat bars, one of which affords an assembling member 28, and the other of which affords a lock member 29. Spacing heads 30 and 31 are interposed between the bars 28 and 30 for laterally spacing the same, and which heads are rigidly secured to the assembly bar 28 near the ends thereof. Formed on the inner face of the assembly bar 28, at the transverse center thereof, is a type-positioning and aligning lock rib 32. The lock bar 29 is attached to the spacing head 30 by a headed hinged pin 33 for opening and closing movements in a plane parallel to the assembly bar 28. The lock bar 29 at its face is provided with a recessed lock notch 34 arranged to receive a headed lock stud 35 on the spacing head 31, when closed, to limit the closing movement of said lock bar and hold the same against lateral movement away from the assembly bar 28. To assist in centering a line of type in the stick 24, a line-positioning scale 20 is indicated on the face of the lock bar 29 with its zero point at the longitudinal center of said stick, and reading from both ends of the stick toward said zero point.

In actual usage of the chase 23, a plurality of sticks 24 will be provided and certain thereof may contain standardized forms and used from time to time when needed. Other forms for only temporary use may be very quickly composed in other sticks as required and said sticks mounted in the chase 23 either singly or in multiple, and also used in connection with the sticks containing standardized forms. Said sticks may be very quickly and easily adjusted toward and from each other to properly position the forms therein in respect to each other and also adjusted into different positions in the chase 23.

When composing a form in the stick 24 the lock bar 29 may be opened and used as a handle by which the operator can hold the stick 24 in one hand and set type or slugs on the assembly bar 28 with his other hand. An inexperienced operator may be instructed very quickly as to the setting up of a form in the stick 24, locking the same therein, and mounting the stick in the chase 23 and properly adjusting the same in respect thereof. Furthermore, it is impossible for the operator to set up a form in the stick 24 except with the type in proper positions for the reason that the combined lock and aligning rib 32 will determine the position of the type in which they are to be placed into the stick 24 and the tension device 43 will automatically keep the type and spacers tightly pressed together and against longitudinal movement in respect to the stick 24.

The stick 24 is adapted to be placed in the chase 23 transversely thereof from the back of said chase and is rabbeted at its face to form seats 36 arranged to rest on the ways 26 and removably support the stick 24 in the chase 23 for lateral sliding adjustment toward or from either end thereof. It is important to note that the seats 36 are so arranged as to hold the stick 24 with its back flush with the back of the chase 23 and with its face flush with the face of said chase. To increase the bearing surface of the stick 24 at the hinged end of the bar 29 with the chase 23, said stick is provided with a lateral angle extension 37 rigidly secured to said bar. The purpose of this increased bearing surface 37 is to hold the stick perpendicular to the sides of the chase 23.

For holding the stick 24 where set in the chase 23 with freedom for lateral adjustment toward either end of the chase 23, there is provided a friction catch in the form of a spring-pressed ball 38 mounted in a recess in a lateral extension 39 on the outer face of the free end of the lock bar 20, see Fig. 6. This friction catch 38 is arranged to yieldingly engage the respective side member of the chase 23 and impart an endwise thrust to the stick 24 and thereby hold the other end of said stick and its extended bearing surface 37 in frictional contact with the adjacent side of the chase 23. Obviously, this friction device will permit the stick 24 to be snapped into the chase 23 and manually moved laterally on the ways 26 toward either end of the chase 23, and hence permit said stick to be readily removed from the chase 23, inserted therein from the back as previously stated, and adjusted laterally.

The type 40 and spacers 41 used in connection with the stick 24, as shown in Figs. 1 to 14, inclusive, are provided with the transverse lock grooves 42 arranged to receive the lock rib 32 and hold said type and spacers against endwise movement in the stick 24, but with freedom for sliding adjustment longitudinally therein. The lock grooves 42 are so arranged as to hold the

inner ends of the type 40 and spacers 41 in the plane of the back of the stick 24. When the lock bar 29 is closed, the type 40 and spacers 41 mounted in the stick 24 are held thereby in a straight line with the lock rib 32 in their lock grooves 42 which holds said type and spacers against endwise movement with the faces of type in the same plane. To hold the line of type 40 and spacers 41 against longitudinal movement in the stick 24 and in contact with the spacing head 30, as a base of resistance, there is provided a tension device, which as shown is in the form of a spring projecting plunger 43. This plunger 43 is mounted in the spacing head 31 with its headed inner end 44 projecting longitudinally into the stick 24 between the bars 28 and 29, see Fig. 6. The outer end of the plunger 44 is expanded at 45 to limit the projecting movement thereof into the stick 24.

By reference to Fig. 6, it will be noted that the ends of the bars 28 and 29, at the spacing head 31, are slightly rounded as at 46 to facilitate the movement of the stick 24 into and out of the chase 23. The headed end of the plunger 44 is arranged to engage one of the type 40 and yieldingly press the line of type and spacers tightly against each other and the line formed thereby against the spacing head 30 which acts as a base of resistance therefor.

As shown in Figs. 1 to 14, inclusive, the type 40 are of the same width as the distance between the bars 28 and 29 and hence are securely held in a straight line and against movement transversely of the stick 24. In case a smaller type 47 is used, as shown in Figs. 15 and 16, a filler in the form of a flat bar 48 is mounted between the type 47 and lock bar 29. This filler 48 extends longitudinally in the stick 24 the full distance between the spacing heads 30 and 31 and is held at its end detachably interlocked with said head by means of tongue and groove connections. In the connection between the spacing head 30 and filler 48 the groove 49 is formed in said spacing head, and the tongue 50 is formed on said filler and in the connection between said filler and the spacing head 31, the tongue 51 formed on said spacing head 31 and the groove 52 is formed in said filler. It is important to note that the groove 52 is materially deeper than the tongue 51 to afford clearance for the plunger head 44 which works therein. When the lock bar 29 is open, the filler 48 may be freely inserted into the stick 24 and interlocked therewith by the connections 49—50 and 51—52 after the line of type has been placed in said stick.

In case it is desirable to mount two rows of small type 47 in the stick 24 a divider 53 is provided, and which divider is in the form of a flat plate having on one end a tongue 54, corresponding to the tongue 50 on the filler 48, adapted to enter the groove 49, and on its other end a deep groove 55, corresponding to the groove 52 in said filler, to receive the tongue 51 on the spacing head 31. This divider 53 is inserted into the stick 24 in the same manner as the filler 48 after the first line of type has been positioned therein and interlocked therewith. Formed on the outer side of the divider 53 is a longitudinally extended lock rib 56 that corresponds to the lock rib 32 for holding the second line of type 47 when assembled on said divider as shown in Fig. 16. The filler 48 and divider 53 are of the same width as the stick 24 and their longitudinal edges are flush with the back and face of said stick. When two lines of type 47 are thus mounted in the stick 24, the headed end 44 of the plunger 43 engages both of said lines and presses the same against the spacing head 30.

It is, of course, understood that the stick 24 may be of such width as to hold one or more rows of type of any desired size. When the chase 23 is mounted in the bed 21, as shown in Fig. 2, the back of the chase 23 as well as the back of the stick 24 and the respective ends of the type 40 and spacers 41 engage the face of said bed as a base of resistance during printing action. One or more sticks 24 may be mounted in the chase 23 as indicated by full and broken lines in Fig. 1 and these sticks set different distances apart and in different adjustments in respect to the ends of the chase 23. It is, of course, understood that in place of single type in the stick as shown, a form comprising a line or lines may be made up in the stick 24 from slugs or slugs and type.

What I claim is:

1. The combination with a chase having ways, of a composing stick removably and slidably mounted on the ways for lateral adjustment in the chase, and a catch on the composing stick for holding said stick in different adjustments in the chase and adapted to yield by lateral pressure on the stick to permit said stick to be laterally adjusted in the chase.

2. The combination with a chase having ways, of a composing stick removably and slidably mounted on the ways for lateral adjustment in the chase, and a spring projected catch on one end of the stick arranged to frictionally engage the chase and impart an endwise thrust to the stick and hold the same in frictional engagement with the chase.

3. The combination with a chase having ways, of a composing stick removably and slidably mounted on the ways for lateral adjustment in the chase, said stick having a lateral extension to increase its bearing

surface on the chase and hold said stick perpendicular to the sides of the chase.

4. The combination with a chase having ways, of a composing stick removably and slidably mounted on the ways for lateral adjustment in the chase, said chase having a line positioning indicator by which the stick may be set in different predetermined adjustments in the chase, said stick being free for lateral sliding adjustment in respect to the indicator.

5. The combination with a bed, of a chase having ways and being removably mounted in the bed, and a composing stick removably mounted on the ways for slidable adjustment in the chase, said ways being arranged to permit the stick to be mounted thereon by inserting said stick into the chase from the back thereof and hold said stick with its back flush with the back of the chase for contact with the platen.

6. A composing stick comprising an assembly member and a displaceable lock side member in parallel arrangement and spacing heads between said members.

7. The structure defined in claim 6 in which the assembly member is provided with a fixed type positioning part to align the faces thereof.

8. The structure defined in claim 6 in which the assembly member is provided with a fixed type positioning and locking part.

9. The structure defined in claim 6 in which the assembly member is provided with a longitudinally extended fixed type positioning and lock rib.

10. The structure defined in claim 6 in which the lock side member is hinged to one of the spacing heads and has separable interlocking engagement with the other spacing heads.

11. A composing stick comprising an assembly member and a lock member in parallel arrangement, spacing heads between said member, and a tension device for holding a line of type against longitudinal movement in the stick.

12. The structure defined in claim 6 in further combination with a filler removably mounted in the stick.

13. The structure defined in claim 6 in further combination with a spacer removably mounted in the stick and having a type positioning and locking part.

14. The structure defined in claim 6 in which the assembly member is provided with a part with which type as they are set thereon interlock and hold the same against endwise movement and with their faces aligned.

15. The structure defined in claim 6 in which the assembly member is provided with a part with which type as they are set thereon interlock and hold the same against endwise movement and with their faces aligned, and in which the lock member holds the type in the stick interlocking with said part.

16. A composing stick comprising an assembly member, a lock member parallel to the assembly member and spacing heads between said members, said lock member being displaceable to permit type to be set in the stick by laying the same on the assembly member.

In testimony whereof I affix my signature.

GEORGE E. BUZZA.