No. 808,715. PATENTED JAN. 2, 1906.

F. M. BARKER.

PRINTER'S COMPOSING STICK.

APPLICATION FILED JULY 19, 1904.

Fig. 1

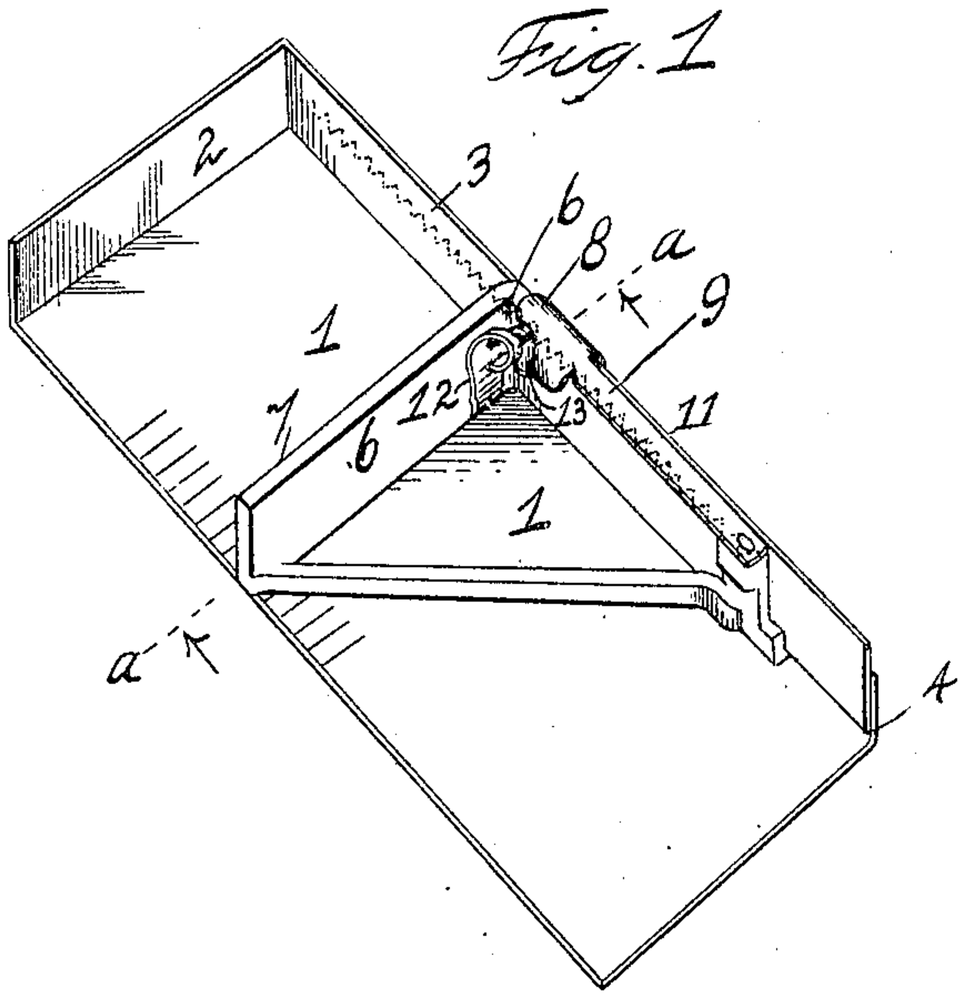


Fig. 5.

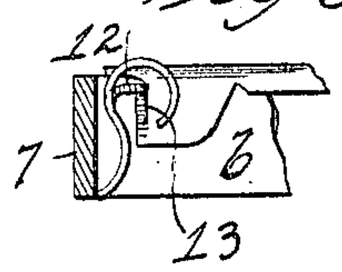


Fig. 2

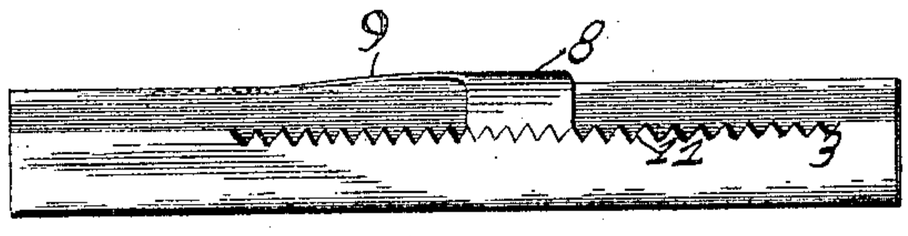


Fig. 3.

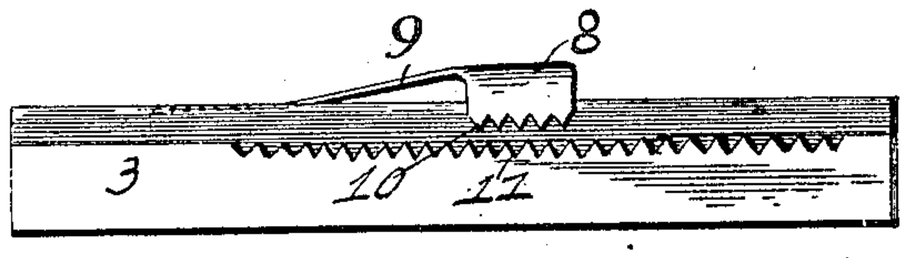
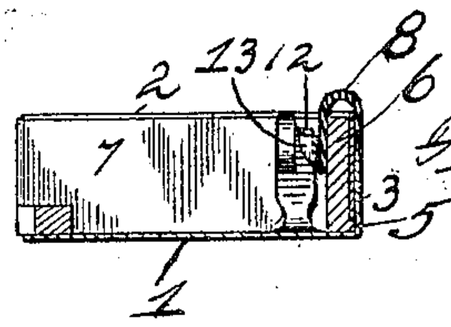


Fig 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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PRINTER'S COMPOSING-STICK.

No. 808,715. Specification of Letters Patent. Patented Jan. 2, 1906.

Application filed July 19, 1904. Serial No 217,201.

To all whom it may concern:

Be it known that I, FRANK M. BARKER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Printers' Composing-Sticks, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to printers' composing-sticks, and has for its object the provision of an improved construction of such sticks, whereby the knees may be approximately set in place by the hand and most accurately adjusted in position from this approximate adjustment by the operation of the attachment that I provide upon the stick.

The invention has for another object the provision of interlocking means between the knee and the rear margin of the stick, which interlocking means when released will permit the type by expansion to move the knee sufficiently to permit the release of the type. To this end I have provided a construction wherein the knee is provided with a cam element, preferably fixed with respect to a clamp, that coöperates with a corresponding element upon the rear wall of the composing-stick, which cam elements are so relatively proportioned and shaped that when engaged with each other a slight forward motion is imparted to the knee and when released a slight rearward motion is permitted by the before-described action of the type. The base-plate of the stick is provided with the usual scale-marks denoting picas. Other scale-marks may be provided, if desired. These scale-marks are so disposed with respect to the cam element provided upon the rear wall of the composing-stick that when the transverse limb of the knee is placed just to the rear of one of the scale-marks the movement of the cam upon the knee will effect exact registration between the knee and the selected scale-mark.

In the preferred embodiment of the invention the cam upon the knee is movably mounted with respect to the knee, desirably having a spring extension that constitutes the anchorage for the cam, this spring anchorage permitting relative movement between the cam and the knee. The cam upon the composing-stick that coöperates with the cam upon the knee is desirably in the form of a plurality of saw-teeth whose forward edges incline downwardly toward the front wall of the stick, so as to permit of the desired movement of the knee with respect to the stick that has been described. The cam upon the knee obviously may reside in one or more teeth, preferably shaped to correspond with the teeth upon the stick. A plurality of teeth for the cam is preferably provided to reduce wear.

To facilitate adjustment and to secure thorough interlocking engagement between the cam elements, the structural part of my invention that carries the movable cam also is preferably a clamp that exerts an interlocking engagement or frictional engagement between the knee and the stick that supplements the interlocking engagement between the aforesaid cams.

As the cam upon the knee is preferably provided with a spring anchorage, I preferably provide a catch for holding the clamp, cam, or toothed element upon the knee in locking engagement with the corresponding element upon the stick. This catch is adapted to be released by the user, whereupon the spring anchorage due to its resiliency effects disengagement between the clamp, cam, or toothed element from the corresponding element upon the stick. The catch employed is preferably a spring-catch, serving in its normal position to lock the parts together.

I do not in all embodiments of the invention wish to be limited to the spring-catch nor to the spring anchorage that has been specified.

I will explain my invention more fully by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the entire structure, showing the knee locked in position. Fig. 2 is a side elevation of the structure shown in Fig. 1. Fig. 3 is a view similar to Fig. 2, showing the cam or toothed elements disengaged. Fig. 4 is a cross-sectional view on line *a a* of Fig. 1. Fig. 5 is a detail view showing the catch.

Like parts are indicated by similar characters of reference throughout the different figures.

The composing-stick comprises the base-plate 1, provided with an end wall 2 and a back wall 3. A slight groove 4 extends lon-

gitudinally of the stick into which a flange 5, carried by the knee 6, fits, so as to prevent the knee from being lifted from the base-plate, this flange being provided upon the longitudinal branch of said knee. The type is set longitudinally of the stick between the end wall 2 and the transverse branch 7 of the knee. The element 8 is preferably a U-shaped clamp that straddles the longitudinal branch of the knee and the back wall of the stick, so as to prevent the knee from rocking, whereby the branch 7 may be maintained always at right angles to the back wall. The element 8, preferably, is formed out of a single stamping and has a rearward extension 9, that is of spring metal and which is preferably riveted to the knee near its rear end, the flexure of the spring extension being such that when the element 8 is relieved of the action of the catch, to be specified, it will assume an inclined position. The element 8 is a cam or toothed element, which preferably has a plurality of teeth 10 formed along the lower edge of the outer wall of said element to engage with corresponding teeth 11, carried upon the outside surface of the back wall 3. The rear edges of the teeth 10 coöperate with the front edges of the teeth 11, so that when the branch 7 of the knee is placed in an approximately correct position it will be brought to the exact position by the centering cam-like or registering action of the teeth 10 in being depressed into engagement with the teeth 11. The clamp does not necessarily need to have decided pinching action, its main function in the organization herein disclosed being to prevent the branch 7 of the knee from being shifted from its position at right angles to the back wall. It will be seen that the rear edge or edges of the tooth or teeth 10 are inclined upwardly away from the end wall 2 while the coöperating front edges of the teeth 11 are inclined downwardly toward the end wall 2. The remaining edges of the engaging teeth serve to reduce wear by their engagement, though I do not wish to be limited to the engagement of these remaining edges of the teeth.

An inspection of the drawings will show with what nicety the knee is moved forward when the teeth are brought into engagement and how readily a slight rearward movement of the knee may be effected by the expanding type when the teeth are disengaged. It will be seen that the knee may be repeatedly reset after each time the stick is relieved of the type without moving the knee, except as it is moved by the clamp 8 when depressed into engagement with the teeth 11. I preferably provide some sort of a catch, as the spring-catch 12, for holding the clamp 8 in a depressed position, for which purpose the clamp 8 is provided with a lug 13, that may be integrally formed therewith and which interlocks with the catch 12 when the clamp 8 is depressed by the thumb and which is freed from interlocking engagement when the catch 12 moved away from the lug 13 by the thumb.

It is obvious that changes may be made without departing from the spirit of my invention, and I do not, therefore, wish to be limited to the precise construction shown; but,

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A composing-stick including a knee carrying a tooth and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, substantially as described.

2. A composing-stick including a knee carrying a tooth and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, substantially as described.

3. A composing-stick including a knee carrying a tooth movably mounted with respect to the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, substantially as described.

4. A composing-stick including a knee carrying a tooth movably mounted with respect to the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, substantially as described.

5. A composing-stick including a knee carrying a tooth having spring anchorage upon the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, substantially as described.

6. A composing-stick including a knee carrying a tooth having spring anchorage upon the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from

the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, substantially as described.

7. A composing-stick including a knee carrying a tooth movably mounted with respect to the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, and locking mechanism for maintaining engagement between the teeth, substantially as described.

8. A composing-stick including a knee carrying a tooth movably mounted with respect to the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, and locking mechanism for maintaining engagement between said tooth and any of said teeth, substantially as described.

9. A composing-stick including a knee carrying a tooth having spring anchorage upon the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, and locking mechanism for maintaining engagement between the teeth, substantially as described.

10. A composing-stick including a knee carrying a tooth having spring anchorage upon the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, and locking mechanism for maintaining engagement between the teeth, substantially as described.

11. A composing-stick including a clamp carried by and movable with respect to the knee and provided with a cam formation fixed with respect to the clamp, and a coöperating cam provided upon the back wall of the stick with which the aforesaid cam formation may engage, substantially as described.

12. A composing-stick including a clamp carried by and movable with respect to the knee and provided with a toothed formation fixed with respect to the clamp, and coöperating teeth provided upon the back wall of the stick with which the aforesaid toothed formation may engage, substantially as described.

In witness wherof I hereunto subscribe my name this 16th day of July, A. D. 1904.

FRANK M. BARKER.

Witnesses:

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T. F. MCDERMOTT.