J. G. HOLBOURNS.

TYPOGRAPHICAL COMPOSING MACHINE.

APPLICATION FILED JULY 13, 1912.

1,067,519. Patented July 15, 1913.

Fig. 3.

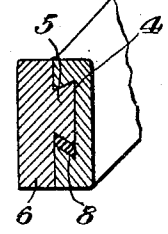


Fig. 4.

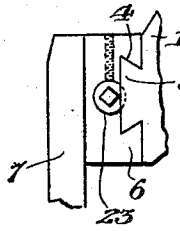


Fig. 2.

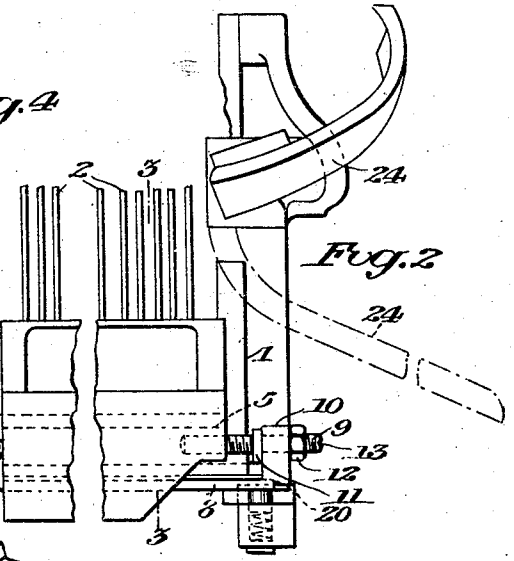


Fig. 1.

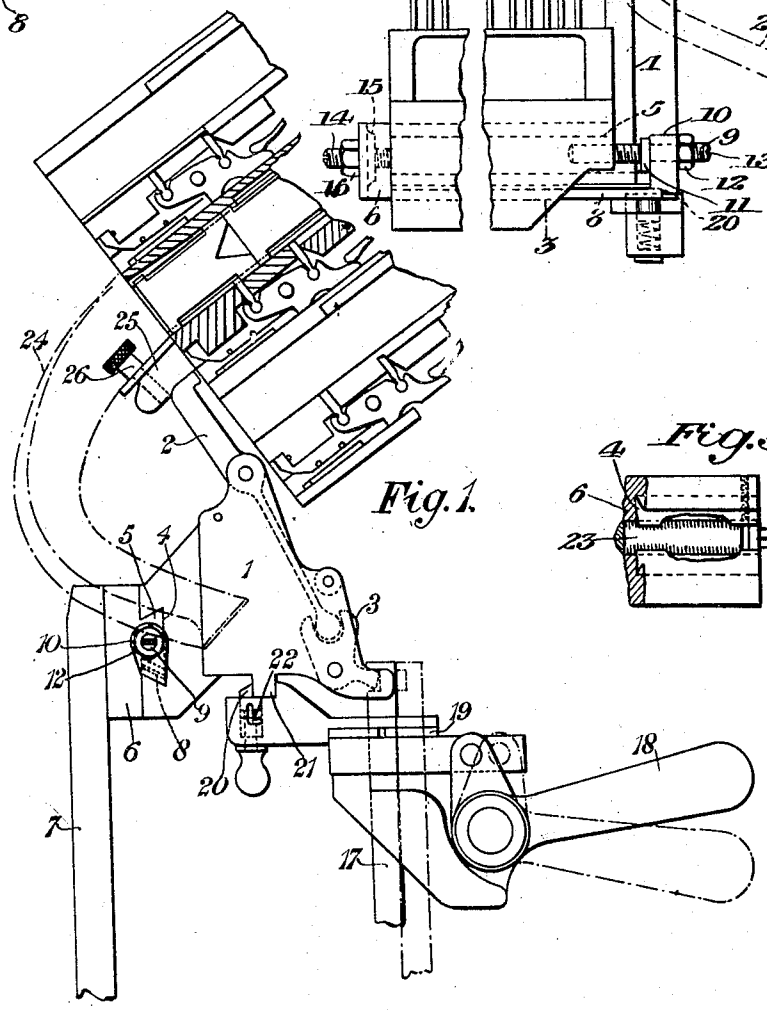


Fig. 5.

Witnesses

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TYPOGRAPHICAL COMPOSING-MACHINE.

BEST AVAILABLE COPY

1,067,519. Specification of Letters Patent. Patented July 15, 1913.

Application filed July 13, 1912. Serial No. 709,235.

To all whom it may concern:

Be it known that I, JOHN GLENNIE HOLBOURNS, a subject of the King of the United Kingdom of Great Britain and Ireland, and residing at 188 and 189 Fleet street, London, England, have invented new and useful Improvements in Typographical Composing-Machines, of which the following is a specification.

This invention relates to typographical composing machines and in particular is an improvement upon the escapement mechanism described and illustrated in the specification of application for Letters Patent Serial Number 445631, filed July 27th 1908.

In that specification there is described an arrangement comprising a series of so-called pushers one in operative engagement with each of the escapement levers and each itself operated in one direction by a lever (since known as a "striker") and in the other direction by a spring. The strikers of that arrangement are themselves actuated by bell-crank levers or tumblers which are engaged with the escapement rods in the ordinary way, and the said strikers and bell-crank levers are pivoted on rods supported in cheeks or brackets attached to the back plate of the assembler guide, in such manner that they cannot readily be detached therefrom.

The strikers and bell-crank levers, when in position on the machine, are difficult of access, and in the event of any of them sustaining damage, the repairing of them or substitution of other strikers or levers for the damaged ones involves the removal of the whole assembler guide and otherwise the expenditure of considerable labor and time before the seat of the damage is reached.

The object of the present invention is to overcome the just-named difficulty by attaching the aforesaid cheeks or brackets to the back of the assembler guide in such manner that they, together with the entire bank of strikers, can, as a whole, be readily detached therefrom and removed from the machine without in any way disturbing the assembler guide.

In the accompanying drawings which are to be taken as part of this specification and read therewith: Figure 1 is a right-hand side elevation partly in vertical section of part of a machine provided with the present improvements; Fig. 2 is a front elevation of the extreme right and left-hand ends of the relatively detachable bar and bracket hereinafter described. Fig. 3 is a vertical section on the line 3—3 of Fig. 2; Fig. 4 is a right-hand elevation showing alternative means for locking the parts in position, and Fig. 5 is an elevation taken from the right-hand side of Fig. 4, but with a part of this latter figure removed.

In one arrangement according to this invention, as shown in Figs. 1 and 2, the cheeks or brackets 1 are formed as a complete entity or frame hereinafter referred to by the numeral 1, extending throughout the bank of strikers 2 and bell-crank levers 3. This frame 1 is provided with one or more dovetail or equivalent grooves 4 (it has only one in the example illustrated) extending throughout its length and adapted to be slid endwise on to the corresponding dovetail rib or ribs 5 of a bar or bracket 6 rigidly secured to the back of the assembler guide 7.

The frame 1 may be secured in normal position by any suitable device, thus, in the arrangement shown in Figs. 1, 2 and 3, the dovetail rib 5 is of less width than is the dovetail groove 4 which receives it, and it is moreover tapered in a longitudinal direction, the wider end being toward the left-hand side of the machine. The dovetail groove 4, throughout its length, may be either of uniform width, or of gradually reducing width toward the left-hand side of the machine; in either case the space intervening between the adjacent sides of the rib 5 and groove 4, receives a longitudinally tapered gib 8 the right-hand or thicker end of which is provided with a device for forcing the gib leftward for locking the frame 1 to the bar 6, or for drawing it slightly toward the right so as to release the frame 1 from the bar 6 to allow the former and the devices mounted thereon, to be withdrawn from the machine as a single entity.

The device for adjusting the gib 8 may, as shown in Figs. 1 and 2, take the form of a screw 9 passing freely through an upstanding lug 10 fast to the right-hand end of the said gib and engaging in a screw-threaded hole in the adjacent end of the dovetail rib 5, the said screw having a collar 11 fast thereon, at one side of the lug 10, and adjustable at the other side of the lug

a lock nut 12 which, when tightened against the said lug prevents the screw from being rotated and when loosened, permits of the screw being turned as by means of a screw-driver inserted in a nick 13 in its outer end.

To admit of the longitudinal position of the frame 1 being slightly varied from time to time, relatively to the assembler guide 7 for enabling the strikers 2 to be adjusted so as to cause them to act on new parts of the pushers in the event of the other parts having become worn, there may be provided a set screw 14 threaded through a lug 15 fast to the bar 6, and having a lock nut 16 thereon; by adjusting this set screw in the lug 15, the terminal position to which the frame 1 can be moved in a leftward direction relatively to the bar 6 can be varied according to requirements, the gib 8 serving to lock the frame 1 in any of such positions.

The usual means may be provided for disengaging the escapement rods 17 from the bell-crank levers 3 before the bank of strikers is withdrawn from the machine and for reëngaging these parts after the bank of strikers has been replaced in the machine; thus, as shown in Fig. 1, the well-known hand lever 18 may be provided for the purpose, this serving to move backward and forward the plates 19 which guide the upper ends of the escapement rods. A spring catch 20 engaging with a lug 21 on the adjacent end of the frame 1 serves to prevent accidental disengagement of the escapement rods 17 from the tumblers 3, and when this disengagement is desired to be effected, the said spring catch is lowered, given a partial turn to temporarily lock it in its depressed position by a bayonet joint 22 and the lever 18 is then depressed to move it from the position in which it is shown in full lines in Fig. 1, to that in which it is shown in dotted lines in that figure. For reëngaging the escapement rods 17 with the tumblers 3 the last-named operation is carried out in the reverse manner.

Instead of securing the frame 1 in position by a gib 8 as before described, this may be effected by a mutilated screw 23 such as that represented in Figs. 4 and 5, in which arrangement a partial rotation of the screw in one direction will suffice to disengage it from the frame 1 to allow the latter to be withdrawn from the machine, and a partial rotation in the reverse direction will suffice to press the frame 1 home into its leftmost position against the before described set screw 14 or other stop provided for the purpose, and to lock it in that position; the screw 23 can be rotated by a spanner or other suitable tool, without itself moving axially independently of the bar 6.

The aforesaid body or frame 1, instead of being in one piece extending throughout the entire bank of strikers 2, may be formed in two or more shorter sections each of which would be provided with its own dovetail groove or grooves for engaging with the common dovetail rib or ribs on the bar 6, and if desired, instead of the arrangement of dovetail ribs and grooves previously described, the reverse of this arrangement may obtain, the rib or ribs being on the frame 1 and the groove or grooves in the bar 6 as shown for example in Fig. 4.

In the arrangement illustrated, the known pi-chute would, unless provision were made to prevent it, obstruct the withdrawal and replacement of the frame 1 and for that reason must be capable of being moved out of the way of the said frame. For that purpose the pi-chute can be pivoted to the front guide plate 25 by means of a screw 26 which, when tightened, serves to secure the said pi-chute in operative position as indicated in dotted lines in Figs. 1 and 2, and when loosened allows this chute to be turned into the position in which it is represented in full lines in Fig. 2, wherein it is out of the inward and outward path of the frame 1.

Having described my invention I declare that what I claim and desire to secure by Letters Patent is:—

1. In a typographical composing machine, the combination of a plurality of strikers each adapted to operate an escapement device, a striker frame or bracket in which the said strikers are mounted, an assembler guide at the back of which the frame or bracket is detachably supported, and a supporting device connected to the guide and formed with longitudinally extending means to receive the said frame or bracket in a longitudinal direction.

2. In a typographical composing machine, the combination with an assembler guide, a striker frame or bracket detachably secured to the back of such guide, and a horizontally sliding connection connecting the bracket to the guide with a capacity for longitudinal movement on and detachment from the guide, of locking means adjustable for securing the bracket against longitudinal movement on the guide and for releasing the said bracket so that it can be slid longitudinally independently of the guide.

3. In a typographical composing machine, the combination with a plurality of pivoted strikers each adapted to operate an escapement device, a striker frame or bracket in which the said strikers are coaxially pivoted, and an assembler guide to the back of which the bracket is attached of a longitudinally sliding connection between the said bracket and guide extending longitudinally of the bracket and parallel with the pivotal axis of the strikers.

4. In a typographical composing ma-

chine, the combination with a plurality of pivoted strikers each adapted to operate an escapement device, a striker frame or bracket in which the said strikers are coaxially pivoted, and an assembler guide to the back of which the bracket is attached, of a dovetail connection between the said bracket and guide extending longitudinally of the bracket and parallel with the pivotal axis of the strikers.

5. In a typographical composing machine, the combination with a plurality of pivoted strikers each adapted to operate an escapement device, a striker frame or bracket in which the said strikers are pivoted to rock in parallel vertical planes, an assembler guide to the back of which the bracket is attached, and a horizontal sliding connection between the said bracket and guide, of locking means adjustable for securing the bracket against horizontal movement on the guide and for releasing the said bracket so that it can be slid horizontally independently of the guide.

6. In a typographical composing machine, the combination with an assembler guide and a striker frame or bracket detachably secured to the back of such guide, of a dovetail rib and groove connection connecting the said bracket to the guide and extending longitudinally of the bracket and a tapered gib adjustable between the rib and adjacent side of the groove.

7. In a typographical composing machine, the combination with an assembler guide and a striker frame or bracket detachably secured to the back of such guide, of a dovetail rib and groove connection connecting the said bracket to the guide and extending longitudinally of the bracket, a tapered gib adjustable between the rib and adjacent side of the groove, and means manually operative to force the gib longitudinally in opposite directions.

8. In a typographical composing machine, the combination with an assembler guide, a striker frame or bracket detachably secured to the back of such guide, and a horizontally sliding connection connecting the bracket to the guide with a capacity for longitudinal movement on and detachment from the guide, of a stop adjustable on the assembler guide for determining the longitudinal position of the bracket on the said guide.

9. In a typographical composing machine, the combination with an assembler guide, a striker frame or bracket detachably secured to the back of such guide, a horizontally sliding connection connecting the bracket to the guide with a capacity for longitudinal movement on and detachment from the guide, of a pi-chute normally in the longitudinal path of the bracket and a pivot connecting the said chute to the frame of the machine enabling the chute to be turned out of the aforesaid path.

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

JOHN GLENNIE HOLBOURNS.

Witnesses:

WARWICK HENRY WILLIAMS,
THOMAS JAMES BLAKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."