UNITED STATES PATENT OFFICE

CARL MUEHLISEN, OF BERLIN, GERMANY, ASSIGNEE TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

INVENTOR MECHANISM OF TYPOGRAPHICAL MACHINES.


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To all whom it may concern:

Be it known that I, CARL MUEHLISEN, a citizen of the United States of America, residing at 28 Chausseestrasse, Berlin, No. 4, in the Empire of Germany, have invented new and useful Improvements in or Relating to Distributor Mechanism of Typographical Machines, of which the following is a specification.

As is already known, the distributors of typographical machines on the Mergenthaler system are provided with devices which automatically stop the said distributor when the channels of the matrix magazine or magazine entrance are blocked by matrices (previously distributed thereinto) taking up an incorrect position in those channels. In such an arrangement either the magazine entrance as a whole, is movable, or each single partition plate thereof, is moveable owing to its resilience, so that when a blocked matrix projects out above the said entrance, with its upper part within reach of the distributor screw, it can be pushed sideways by the said screw. This sidewise movement serves to effect the stoppage of the distributor. This known device has the disadvantage that it comes into operation only when the magazine or magazine entrance is obstructed, and not when the matrices become blocked in any other part of the distributor, such as at what is known as the distributor lift box. Another disadvantage exists in the fact that the above-mentioned partition plates being in themselves weak, of little resisting power, and incapable of being secured at both edges, rapidly become bent.

By the device constructed according to the present invention, the distributor is stopped whether the seat of the obstruction be in the aforementioned channels or in the distributor lift box, and the construction is such as to enable the above-mentioned partition plates to be secured at both edges.

According to this invention one of the distributor screws is itself used for effecting the stoppage of the distributor, it being, for this purpose, longitudinally moveable and arranged so that if a matrix, engaged by that screw, meets with any undue resistance in its forward movement, the said distributor screw will, by its action on the intercepted matrix, itself move lengthwise and thereby will automatically effect the stoppage of the distributor.

In the accompanying drawings which are to be taken as part of this specification and read therewith—Figure 1 is a vertical section through the distributor and adjacent parts of the machine; Fig. 2 is a rear view of part of the distributor, and the driving gear thereof, in its normal working condition; Fig. 3 is a view similar to Fig. 2 but showing more of the driving gear and showing also the said mechanism in its ungeared or released condition; Fig. 4 is an elevation, partly in section, as seen from the left-hand side of Fig. 5, and Fig. 5 is a rear elevation partly in longitudinal vertical section of part of the distributor lift box.

In the arrangement represented in the drawings, it is the lower distributor screw 2 by which the stopping devices are released. On the shaft of an upper distributor screw 6 is a driving pulley e which is capable of being rotated independently of that shaft but which normally is in frictional driving connection with the said shaft through a disk 4 supported in shaft 2 and a pin 9 fast to the arm 12 and capable of being moved into and out of the path of a pin 2 projecting beyond the periphery of the disk 4. The just described friction driving and stopping mechanism is of substantially the same construction as that heretofore generally employed in machines of a like construction.

For convenience of description the two 100 lever arms 5, 51 are hereinafter regarded as a single lever designated by the letter 5, excepting when occasion necessitates them to be referred to individually.

The stop lever 5 is normally retained in its operative position by a movable blade or support 2 secured to the lower arm of a releasing lever 7, 7, which is pivoted on
a fixed stud \(t\), the said support then engaging under a plate \(e\) fast to the lever arm \(d\), as shown in Fig. 2. The upper arm \(f\) of the releasing lever \(j\) has rotate on it a roller \(g\) which is in constant contact with the side of a toothed wheel \(h\) fast on the spindle of the distributing screw \(a\). By means of an adjustable screw or abutment \(i\) the lever \(j, f\) can be adjusted so that the shoulder \(o\) (Fig. 3) of the distributing screw \(a\) will not be pressed against the frame \(k\) by the spring \(\ell\) which retains the said lever \(f\) in its normal position.

Under normal conditions the matrices \(i\) will be distributed freely into the magazine entrance. Should however a magazine channel become blocked and a matrix thereby be caused to project above the magazine entrance, as shown in Fig. 3, the next matrix moved along by the distributor screws, strikes against the said projecting matrix and is stopped by it. As the distributor screw \(a\) continues to turn, it acts upon this stopped matrix as it would upon a fixed abutment or nut and thereby screws itself in a leftward direction out of its normal position, that is to say, in the direction opposite to that in which the matrices are propelled by the distributor screws. Thus the spur wheel \(h\) rocks the lever \(j, f\), from the position in which it is shown in Fig. 2, to that in which it is shown in Fig. 3, so that the arm \(f\) of the said lever, releases the plate \(e\) of the stop lever \(d\), which latter under the action of a spring \(2\) swings back to bring its pin \(g\) into the path of the pin \(r\) and thereby effect the stoppage of the disk \(c\) and distributor screws and allow the pulley \(y\) to commence its rotation independently of the said disk and screws.

The stoppage of the distributor mechanism is also effected by the before described devices when, as shown in Fig. 5, a matrix sticks in the distributor lift box, owing to failure of the matrix lifter \(n\) to raise the said matrix sufficiently for its top lugs to clear the usual stop shoulder \(p\) on the guide rail \(o\). In such a case the partly raised matrix would be arrested by the said shoulder \(p\), and would engage with the distributor screw \(a\), which would thereby, as before described, be displaced longitudinally, and effect stoppage of the distributor mechanism.

The strength of the spring \(l\) is such as to enable it to retain the screw \(a\) in its normal position under ordinary working conditions, and to yield when, as aforesaid, the said screw is moved longitudinally through engagement with a blocked matrix.

By reason of the foregoing arrangement the magazine entrance can be made simpler and stronger than heretofore, as the partition plates can be secured at both edges.

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

1. In mechanism for distributing matrices in typographical machines, the combination of a rotatable screw by which the matrices are propelled, supports for the said screw in which the latter is capable of moving axially, rotating means for the screw, comprising intermeshing gear wheels, one fast on the shaft of that screw and axially movable with it, and another one fast on a second shaft, a driving pulley loose on the second shaft, a disk fast on this shaft and capable of being rotated by friction by the driving pulley, a stop lever normally retained by a releasing lever out of engagement with the disk, the said releasing lever being actuated by the axial movement of the gear wheel so as to free the stop lever and permit it to engage the disk.

2. In mechanism for distributing matrices in typographical machines, the combination of a rotatable screw by which the matrices are propelled, supports for the said screw in which the latter is capable of moving axially, rotating means for the screw, comprising intermeshing gear wheels, one fast on the shaft of that screw and axially movable with it, and another one fast on a second shaft, a driving pulley loose on the second shaft, a disk fast on this shaft and capable of being rotated by friction by the driving pulley, a stop lever normally retained by a releasing lever out of engagement with the disk, the said releasing lever being actuated by the axial movement of the gear wheel so as to free the stop lever and permit it to engage the disk.

3. In mechanism for distributing matrices in typographical machines, the combination of a rotatable screw by which the matrices are propelled, supports for the said screw in which the latter is capable of moving axially, rotating means for the screw, comprising intermeshing gear wheels, one fast on the shaft of that screw and axially movable with it, and another one fast on a second shaft, a driving pulley loose on the second shaft, a disk fast on this shaft and capable of being rotated by friction by the driving pulley, a stop lever normally retained by a releasing lever out of engagement with the disk, the said releasing lever being actuated by the axial movement of the gear wheel so as to free the stop lever and permit it to engage the disk.

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Witnesses:
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