

Description

The invention relates to an ink fountain for offset or letterpress printing machines having an ink-metering device which co-operates with an ink-fountain roller.

Ink fountains, in which the side parts are screwed or pinned to the ink-fountain body, are known.

The reason for and purpose of this measure are to prevent the undesirable outflow of ink in the junction region between the ink blade and the respective ink-fountain side part.

The outflow of ink in the junction region of the side part and ink-fountain roller is prevented in a known way by placing the side part against the end face of the ink-fountain roller.

If, for example, too long an ink blade is used, ink flows out in the region of the ink-fountain roller end face, for the ink-fountain side part, which is attached directly to the end of the ink blade and therefore in direct dependence on this, can no longer prevent the outflow of ink, since the necessary placing against the ink-fountain roller end face, which is necessary for sealing, is no longer guaranteed because the free space between the ink-fountain roller end face and the ink-fountain side part is too large.

Conversely, when the ink blade is too short, an outflow of ink in the region of the ink-fountain roller end is likewise unavoidable, since a gap necessarily occurs between the ink-fountain side part and ink blade. Moreover, there is additionally the circumstance that, because the ink blade is too short, the ink-fountain side part is pressed too hard against the edge of the ink-fountain roller surface and ink-fountain roller end face, thus leading to damage (seizing).

These inadequacies arise in the same way if thermal expansion is not taken into account.

Furthermore, for example DE-B-1,162,852 shows a technical teaching in which the end face of the side part directed to the ink-fountain roller is provided with a recess corresponding to the surface curvature of the ink-fountain roller and this end face is placed against the outer surface of the ink-fountain roller.

To prevent ink from flowing out between the side part and the ink-fountain roller surface, a sealing material is provided. As long as the side part is placed against the roller surface in the actual basic position, an outflow of ink is thereby prevented.

However, in embodiments of this type, it has proved a disadvantage that, when the ink fountain is pivoted away from the ink-fountain roller even over only a very small angle, this leads to the outflow of ink on the contact face between the end face of the ink-fountain side part and the surface of the ink-fountain roller, since the ink-fountain side part, as a result of its rigid connection to the ink fountain, necessarily undergoes the pivoting-away movement of the ink fountain.

There is therefore no possibility of overall adjustment by pivoting away the ink fountain.

The known embodiments therefore require

- a) a high precision in the production of the parts, that is to say very low tolerance settings,
- b) increased outlay in the selection of materials, that is to say, in the construction of the ink fountain, the coefficient of thermal expansion of the materials used has to be taken into account,
- c) increased outlay in the assembly of the ink fountain, that is to say grading of individual ink-fountain components according to combinable tolerance ranges,
- d) concessions to the possibilities of adjustment, that is to say overall ink adjustment by pivoting away the ink fountain is possible only

in the version in which the ink-fountain side parts bear against the end face of the ink-fountain roller.

5 The object of the subject of the application is to achieve optimisation in the sectors of adjustment possibility, sealing and production and assembly costs.

The object is achieved according to the characterising clause of Claim 1.

10 The advantages affordable by the subject of the application are, in addition to the increase in the ink-fountain sealing, primarily that the production outlay for the respective individual components is reduced, and that the time for completing the ink fountain is likewise reduced, without restrictions of sealing capacity occurring thereby. A further advantage emerges from the almost
15 complete negligibility of the heat coefficient, thereby affording new perspectives in the choice of materials. Furthermore, the subject of the application allows the easy dismounting of the ink-fountain side parts, this
20 being important not least also in the cleaning of the ink fountain. A further advantage is to be seen in that, as a result of the placing of the ink-fountain side part brought about by spring force, a slight pivoting away of the ink fountain for adjusting the overall ink profile
25 becomes possible without impairing the function.

In a further embodiment of the subject of the application, the end face of the ink-fountain side part is provided with a recess corresponding to the surface curvature of the ink-fountain roller, so that the entire
30 end face can be placed against the ink-fountain roller, thus preventing the ink from flowing out over the entire vertical region of the ink-fountain side part.

To reduce the friction between the end face of the ink-fountain side part and the outer surface of the
35 ink-fountain roller, in a further embodiment of the subject of the application the end face of the ink-fountain side part is formed from a lubricant-secreting material (plastic).

To maintain contact between the ink-fountain side part, ink blade and ink-fountain roller, in one embodiment of the subject of the application spring elements are provided which exert on the side part, on the one
5 hand, a force directed to the ink-fountain roller and aimed especially at the region below the ink-fountain roller axis and, on the other hand, a force directed to the ink blade and which thus prevent the outflow of ink.

In a further embodiment of the subject of the application, a guide element is provided which has a
10 guide groove extending at right angles to the ink blade. Embedded in the bottom face of the guide groove is a bolt, the spherical head of which is raised in relation to the bottom face. This spherical bolt end forms the
15 only bearing point for the ink-fountain side part, thereby also allowing the side part to tilt about this bearing point.

An exemplary embodiment of the subject of the application is illustrated in the drawing and described
20 in more detail by means of Figure 1 and Figure 2.

The ink-fountain roller 1 illustrated in Figure 1 is assigned an ink fountain 2 which is arranged so as to be pivotable away from the ink-fountain roller 1 via a centre of rotation 3.

25 The ink fountain 2 is limited on each of the two end faces by an ink-fountain side part 4.

The end face 12 of the ink-fountain side part 4 is provided with a recess corresponding to the surface curvature of the ink-fountain roller 1, thereby preventing the ink from flowing out in this region of contact.
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The spring 6, which is connected at one end to the ink fountain 2 by means of the screw 7, exerts on the ink-fountain side part 4 a force effect directed to the region below the ink-fountain roller axis, in such a way that this ink-fountain side part 4 is pressed with its
35 end face 12 against the ink-fountain roller 1; as a result, the sealing between the surface of the ink-fountain roller 1 and the end face 12 of the ink-fountain

side part 4 is maintained.

A slight pivoting away of the ink fountain 2 about the centre of rotation 3 for overall ink adjustment does not impair the sealing in the region of the end face 12 of the side part 4 and of the surface of the ink-fountain roller 1, since the ink-fountain side part 4 follows as a result of the force effect of the spring 6 and remains placed against the ink-fountain roller 1. The movability of the ink-fountain side part 4 necessary for this is achieved in that the ink-fountain side part 4 is arranged movably relative to the ink fountain 2 and to the ink-fountain roller 1. To achieve this movability, a guide groove 13 is provided which is illustrated in Figure 2 and is adjacent to the ink blade 11 and which serves for receiving the ink-fountain side part 4.

The ink-fountain side part 4 bears flatly, on its side directed to the interior of the ink fountain, against the ink blade 11, thereby ensuring the sealing of the ink fountain 2 in this end region of the ink fountain 2.

The guide jaw 5 forms the outer face of the guide groove 13, in that two spring elements 10 are arranged level with the ink blade 11. These spring elements 10 exert a force effect on the ink-fountain side part 4, in such a way that the ink-fountain side part 4 is pressed against the ink blade 11.

The guide groove 13 is wider than the ink-fountain side part 4, so that the ink-fountain side part has a free movement space 15 between the ink blade 11 and guide jaw 5. The free movement space 15 allows a widened tolerance range in the production of the ink blade 11 and ink fountain side part 4 and guarantees the movability of the ink-fountain side part 4 necessary for a follow-up of the ink fountain 4 (sic).

A bolt 8 is embedded in the bottom face of the guide groove 13, the end of the bolt being arranged raised in relation to the bottom face and forming the only bearing point 9 for the ink-fountain side part 4,

thereby guaranteeing a movability or a tilting of the ink-fountain side part 4 about this bearing point 9.

5 A reliable resting of the ink-fountain side part 4 on the bearing point 9 is achieved in that the force generated by the spring element 6 acts on the region below the axis of the ink-fountain roller 1, the force resulting from this being directed to the bearing point 9. Furthermore, the friction occurring between the end face 12 of the ink-fountain side part 4 and the outer
10 surface of the ink-fountain roller 1 brings about a reinforcement of the bearing force at the bearing point 9.

A slight pivoting away of the ink fountain 2 about the centre of rotation 3 at the same time also
15 causes a pivoting away and follow-up of the ink-fountain side part 4 in the opposite direction about the bearing point 9, with the result that the necessary sealing between the end face 12 and the surface of the ink-fountain roller 1 is maintained.

20 The abovementioned exemplary embodiment constitutes only one embodiment, and in particular it is also possible to provide other identically acting types of point bearings. It would also be possible to design the bearing face of the ink-fountain side part 4 locally
25 as a point bearing, so that the ink-fountain side part 4 rests on the bottom of the guide groove 13 in this region only.

Likewise, instead of the springs 6, other placing elements can be used, for example one or two screws
30 acting on the top of the ink-fountain side part 4.



Patent claims

1. Ink fountain (2) for offset or letterpress printing machines having an ink-metering device (11) which co-operates with an ink-fountain roller (1), an
5 ink-fountain side part (4), on the end face (12) directed to the ink-fountain roller (1), being in contact with the outer surface of the ink-fountain roller and, with the side face (16) directed to the interior of the ink fountain, being in contact with the ink blade (11), in
10 order to prevent ink from flowing out, characterised in that the ink-fountain side part (4) is arranged pivotably about the axis of the ink-fountain roller (1) and displaceably both perpendicularly and parallel to the ink-fountain roller (1), and in that devices (10, 6) are
15 provided which exert a force effect on the ink-fountain side part (4) in order to maintain contact.
2. Ink fountain according to Claim 1, characterised in that the end face (12) of the ink-fountain side part (4) directed to the ink-fountain roller (1) has a recess
20 which corresponds to the surface curvature of the ink-fountain roller and which bears against the ink-fountain roller surface.
3. Ink fountain according to Claim 2, characterised in that the end face (12) of the ink-fountain side part (4) is provided with a sliding coating.
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4. Ink fountain according to Claim 1, characterised in that, on the side of the ink fountain (2) located opposite the ink-fountain roller (1), a spring element (6) (leaf spring) is provided, the force of which presses
30 the ink-fountain side part (4) against the surface of the ink-fountain roller.
5. Ink fountain according to Claim 1, characterised
- in that a guide element (5) is arranged in the region of the ink-blade end,
35 - in that the guide element (5) is provided with a groove (13) extending at right angles to the ink blade, and
- in that this groove (13) is provided for receiving and guiding the ink-fountain side part (4).



6. Ink fountain according to Claim 5, characterised in that the side wall of the guide groove (13) directed to the interior of the ink fountain is formed by the ink-blade end.
- 5 7. Ink fountain according to Claim 1, characterised in that there are embedded in the outer face of the guide element (5) spring elements (10), the force effect of which presses the inner face (16) of the ink-fountain side part (4) against the ink blade (11).
- 10 8. Ink fountain according to Claim 1, characterised in that there is embedded in the bottom face (14) of the guide groove (13) a bolt (8), the spherical head (9) of which projects above the bottom face.