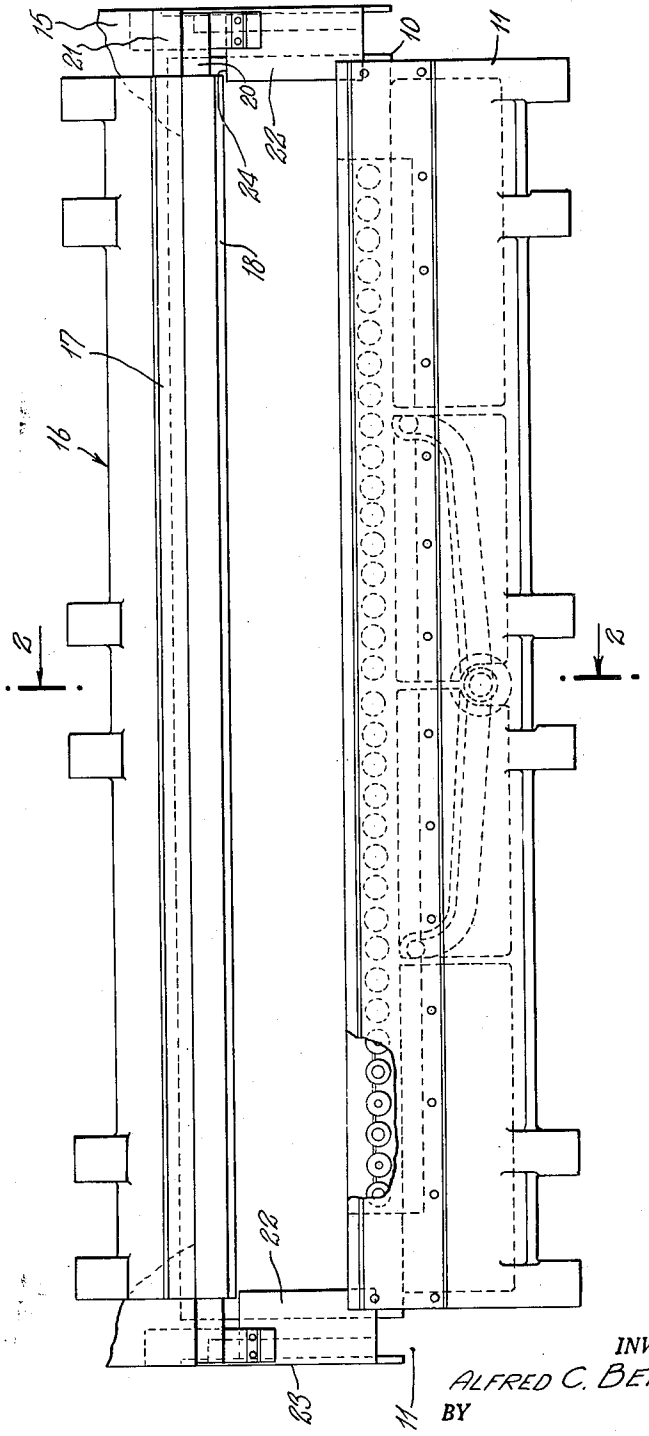
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END SEAL FOR ROTARY INTAGLIO FOUNTAIN

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Fig. 1.



INVENTOR.
ALFRED C. BEHRINGER
BY
Campbell, Brumbaugh, Free & Graves
HIS ATTORNEYS

Sept. 13, 1955 A. C. BEHRINGER 2,717,550

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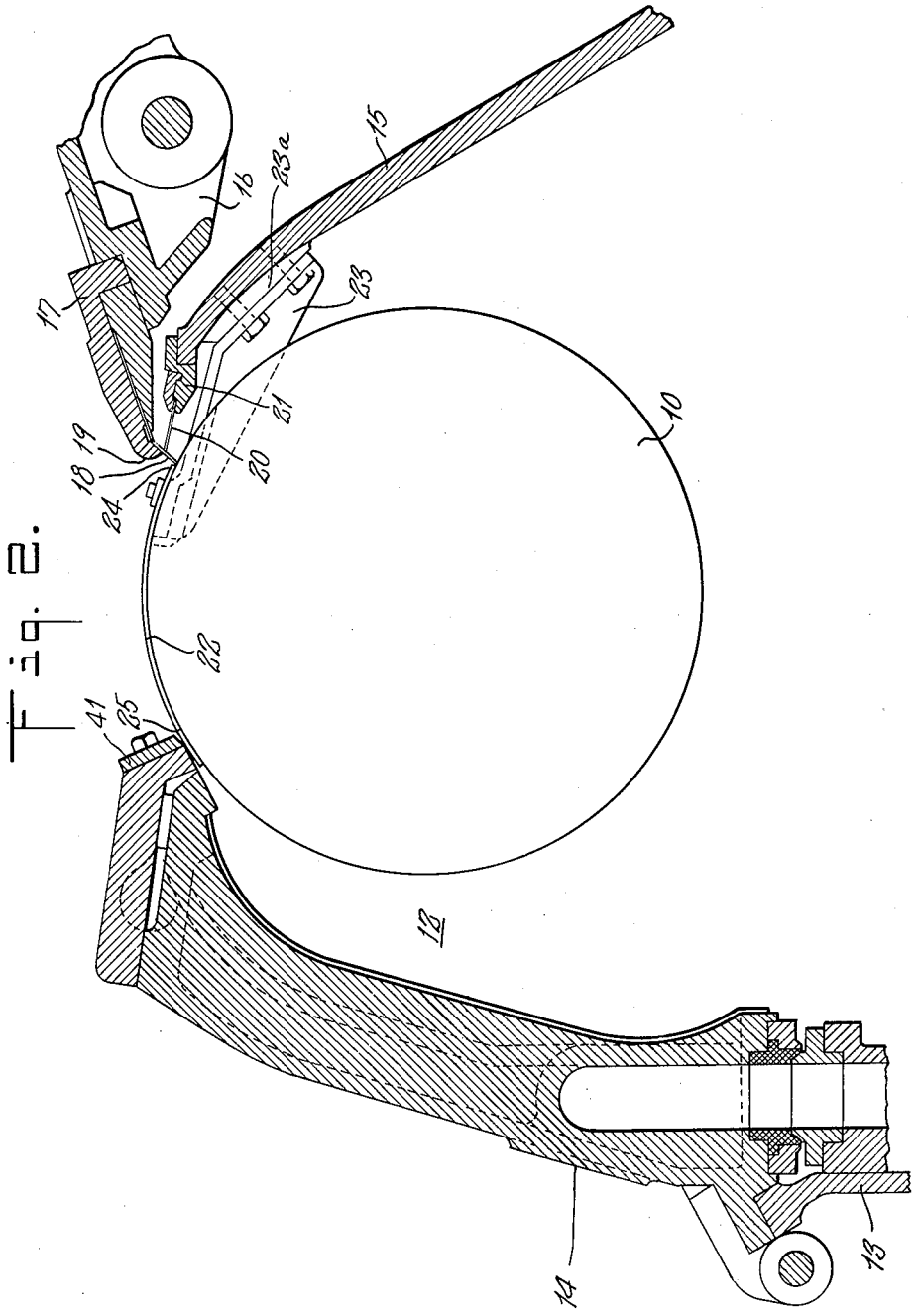


Fig. 2.

INVENTOR.
ALFRED C. BEHRINGER
BY
Campbell, Brumbaugh, Free & Graves
HIS ATTORNEYS

Sept. 13, 1955 A. C. BEHRINGER 2,717,550

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Fig. 3

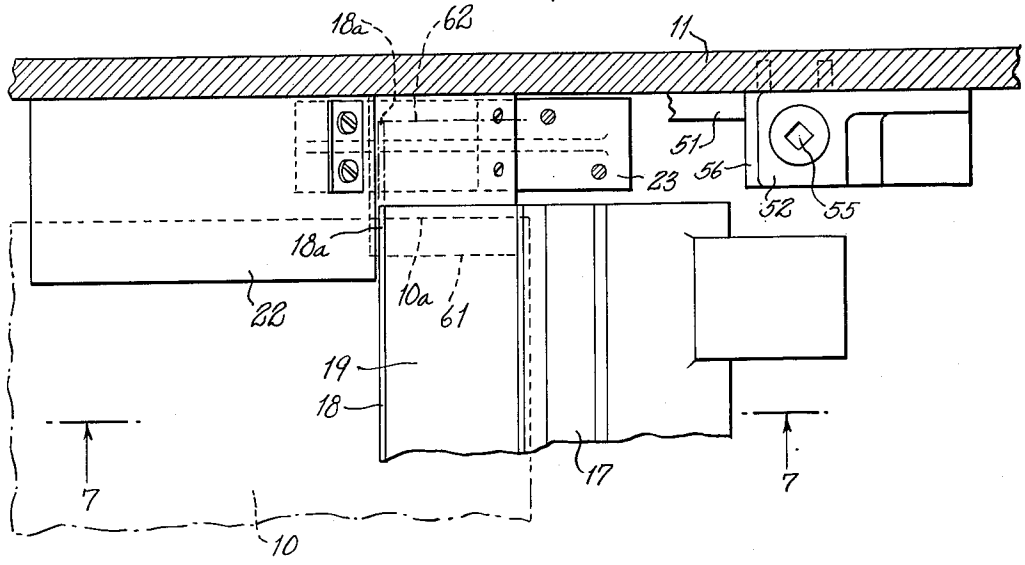
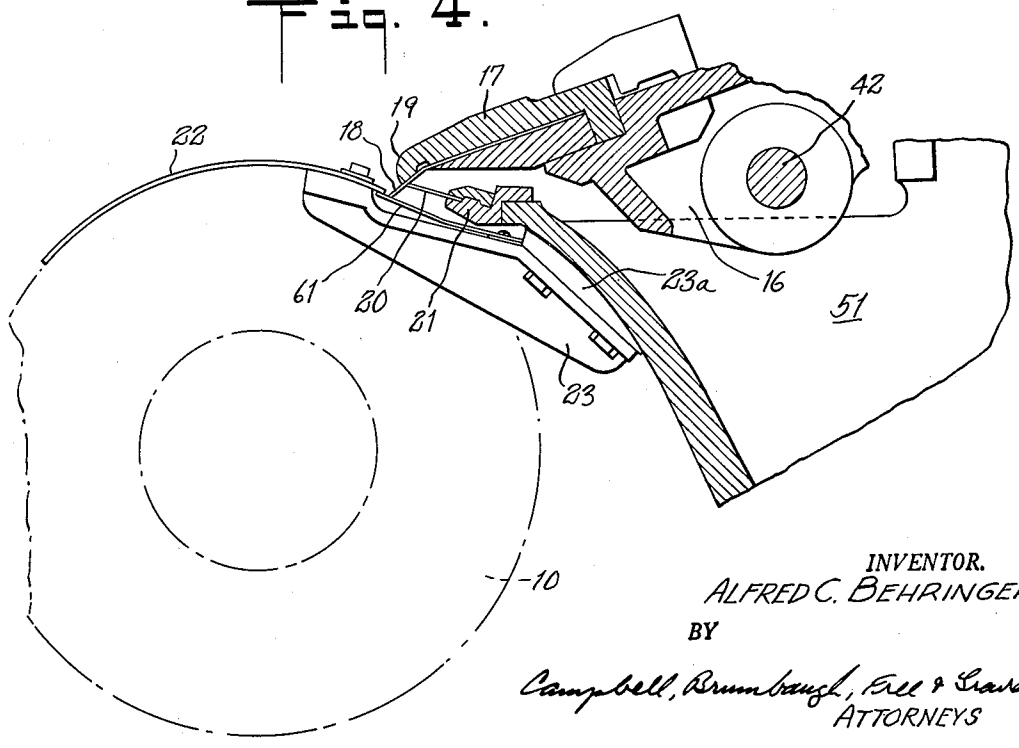


Fig. 4.



INVENTOR.
ALFRED C. BEHRINGER
BY
Campbell, Brumbaugh, Free & Graves
ATTORNEYS

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2,717,550

END SEAL FOR ROTARY INTAGLIO FOUNTAIN

Alfred C. Behringer, Cupsaw Lake, Wanaque, N. J., assignor to Publication Corporation, New York, N. Y., a corporation of New York

Application November 29, 1951, Serial No. 258,894

2 Claims. (Cl. 101—157)

The present invention relates to rotary intaglio printing presses and more specifically to ink fountain structures for such presses.

This application is a continuation-in-part of application Serial No. 160,374 filed May 5, 1950, now Patent No. 2,676,539, which issued on April 27, 1954.

In recent years closed ink fountains have been widely used in commercial production and at high speeds, such fountains being illustrated by patents to Weiss No. Re. 21,212 and 2,055,272. In the operation of these presses, difficulty has been experienced in insuring a uniform and continuous flow of ink from the fountain sump onto the printing cylinder and across the entire length of the latter. These ink circulating systems utilize one or more pumps, and the distribution of the ink from one or a few sources into a band or ribbon of ink uniformly applied to the cylinder across its entire printing length has given rise to difficulties because of the caking or hardening of the ink during operation, and also because of the occasional presence of foreign bodies in the ink which have escaped entrapment by the straining mechanisms that are generally used.

An object of the present invention, accordingly, is to provide an ink distribution system by means of which uniformity of inking is accomplished at all times across the printing length of the cylinder.

A further object of the invention is to provide a system of the above character wherein means is provided to enable uniform ink distribution to be maintained at all times and to facilitate the maintenance of such distribution by mechanism that may be easily inspected, cleaned and variably adjusted to accomplish certain desired conditions of non-uniformity. These last mentioned conditions are illustrated, for example, by situations where certain portions of the cylinder require much more ink than other portions and, accordingly, it is desirable to apply more ink to such portions during the printing operation.

A further object of the invention resides in providing an enclosure for an ink fountain of the above character wherein a reciprocating doctor knife is utilized as a closure element while preserving all of its functions as a flexible wiping element for wiping excess ink from the surface of the printing cylinder.

These and other objects of the invention will be apparent as it is described in greater detail in connection with the accompanying drawings, wherein:

Figure 1 is a plan view of an ink fountain constructed in accordance with the present invention;

Figure 2 is a view in transverse section, taken on the line 2—2 of Figure 1, and looking in the direction of the arrows;

Figure 3 is a partial view similar to Figure 1, showing a modified form of end seal; and

Figure 4 is a partial view in transverse section, taken on the line 7—7 of Figure 3 and looking in the direction of the arrows.

Referring to the above drawings, a rotary intaglio printing cylinder is indicated generally at **10**. This cylinder is journaled in end walls **11**, to be received within an enclosure indicated generally at **12**, this enclosure being formed by an ink fountain having a bottom portion **13**, the aforementioned end walls **11**, a hinged wall portion **14** for the inking side of the fountain, and an adjustable wall portion **15** for the doctor side of the fountain. The wall portion **15** is also provided with a doctor knife assembly comprising one or more brackets **16** upon which a doctor knife holder **17** is secured, the doctor knife holder supporting a doctor knife **18**, as will be seen in Figure 2. The outer extremity of the holder **17** is provided with a nose **19** that is shaped to bend the doctor knife into a suitable wiping position, as illustrated.

The adjustable wall portion **15** is also provided with a sealing blade **20** secured in a clamp **21** and adapted to engage frictionally against the doctor blade **18**. The sealing blade **20** is stationary, but as will be understood by those skilled in the art, the doctor knife assembly, including the bracket **16**, reciprocates back and forth during operation of the printing press. At each end of the fountain, an end seal **22** is provided, this end seal being curved to conform to the curvature of the cylinder **10** and being carried by a bracket **23** that is secured to a land **23***a* on the adjustable wall section **15**. The end seal **22** terminates in an edge **24** that lies closely adjacent the plane of the wiping edge of the doctor knife **18**, as illustrated in Figure 1, while the other circumferential edge **25** of the end seal **22** lies closely adjacent the inking head structure which will be described presently. It will be understood, of course, that the sealing blade **20** extends across the entire distance between the fountain end walls in order to effect a more complete enclosure of the fountain.

In order that the space between the printing cylinder **10** and the adjacent portion of the hinged wall **14** may be closed, a sealing strip **41** is removably secured to the wall, being formed of any suitable material such as Bakelite, this strip being interchangeable with others of varying size to accommodate cylinders of different sizes.

Referring now particularly to Figures 3 and 4, wherein the adjustable wall portion **15**, the land **23***a*, the sealing blade **20** and the clamp **21** are omitted for clarity in Figure 3, a thin flexible splash plate **61**, formed of any suitable material such as steel, is provided to seal the area between the end seal **22** and the base of the bracket **23** and between the end wall **11** and the adjacent end of the reciprocating doctor knife holder **17**. The splash plate **61** is secured to bracket **23** adjacent the base thereof and extends forwardly to just under the secured end of the end seal **22**. One edge of the splash plate **61** abuts the end wall **11**. The opposite edge overlaps the end of the cylinder **10**. The end **18***a* of the doctor knife **18** rides on the splash plate **61**. One extreme position of the doctor knife **18** and associated holding mechanism is shown in solid lines in Figure 3 and the other extreme position thereof is indicated approximately by the dotted line **62**. This structure, in association with the end seal **22**, forms a substantially complete seal between the reciprocating doctor knife and the end wall **11** and the secured end of the end seal **22**.

While the invention has been described with specific reference to the accompanying drawings, it is not to be limited save as defined in the appended claims.

I claim:

1. In a rotary intaglio printing press having a cylinder, an ink fountain comprising end and side walls, and a reciprocating doctor mechanism, an end sealing mechanism comprising a bracket having a base portion secured to a fountain side wall and extending therefrom in a direction at right angles to the axis of the cylinder, and an elongated thin flexible sealing blade secured at one end only to the bracket and extending flexibly therefrom

toward the opposite side wall and engaging and conforming itself, by virtue of its inherent flexibility, to a portion of the peripheral surface of the cylinder to close the space between the end of the cylinder and the adjacent fountain end wall.

2. In a rotary intaglio printing press having a cylinder, an ink fountain comprising end and side walls, and a reciprocating doctor mechanism, an end sealing mechanism comprising a bracket having a base portion secured to a fountain side wall and extending therefrom in a direction at right angles to the axis of the cylinder, an elongated thin flexible sealing blade secured at one end only to the bracket and extending flexibly therefrom toward the opposite side wall and engaging and conforming itself, by virtue of its inherent flexibility, to a portion

of the peripheral surface of the cylinder to close the space between the end of the cylinder and the adjacent fountain end wall, and a thin splash plate extending from the sealing blade to the base portion of the bracket to close the gap between the end of the cylinder and the adjacent fountain end wall extending from the sealing blade to the base of the bracket.

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