United States Patent [19]

Sonia

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[54] **PRINTING PLATE SADDLE**

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[21] Appl. No.: **23,565**

[52] **U.S. Cl.** **101/415.1,** 101/378

[51] **Int. Cl.** **B41f 27/06,** B41f 27/12

[58] **Field of Search** 101/415.1, 378

[56] **References Cited**

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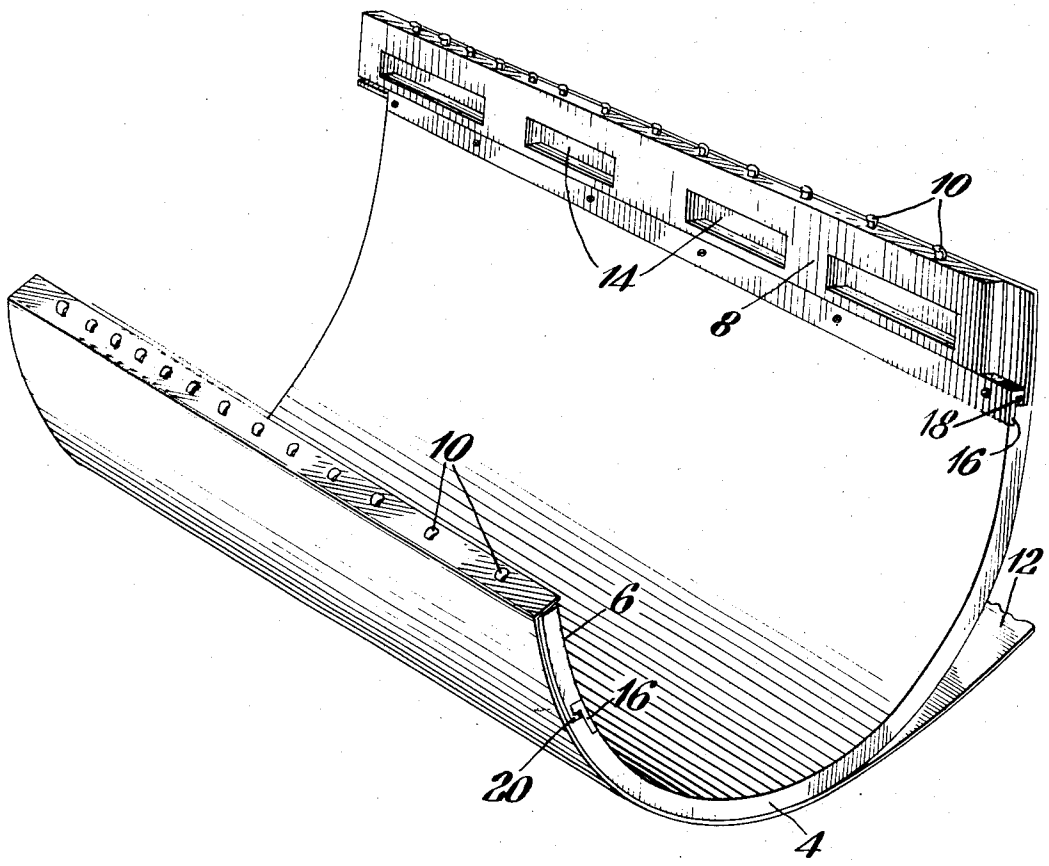
[57] **ABSTRACT**

A saddle for mounting thin printing plates on conventional printing cylinders by means of tension forces applied to the printing plate.

3 Claims, 1 Drawing Figure



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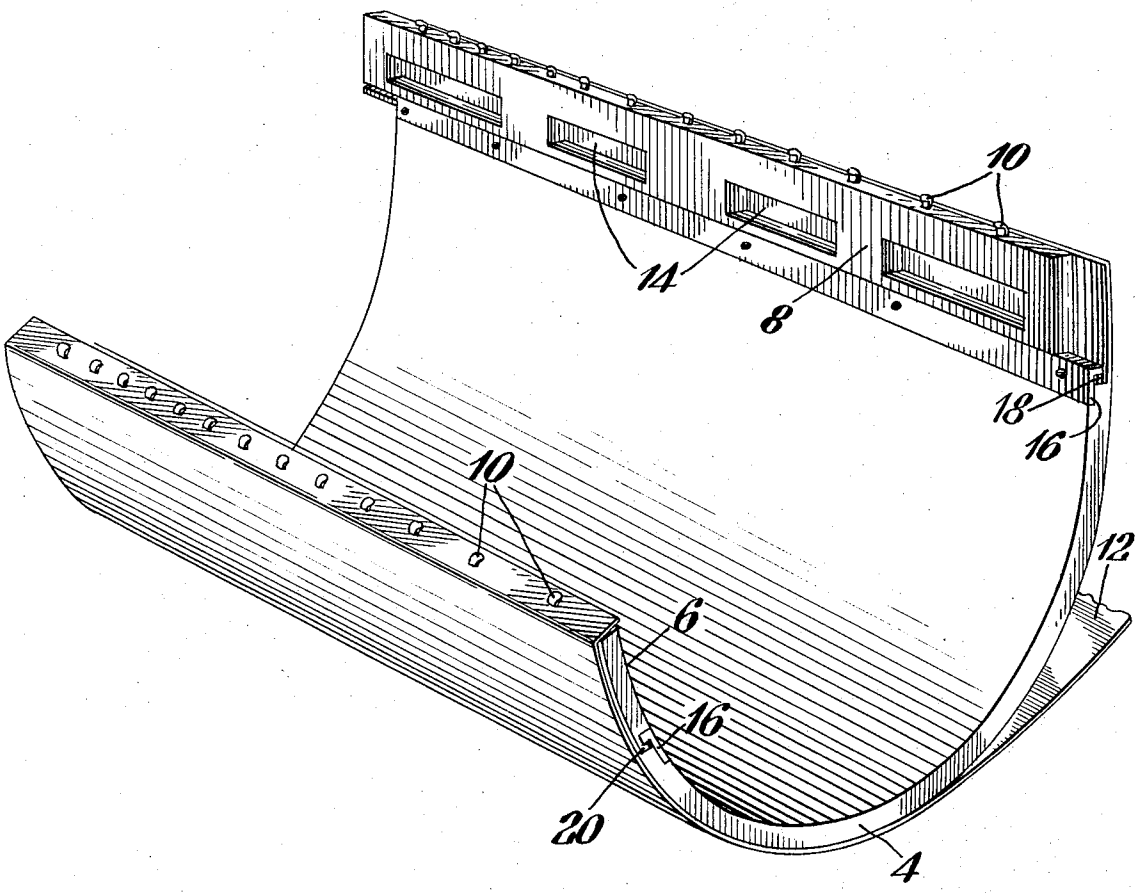

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PRINTING PLATE SADDLE

FIELD OF INVENTION

This invention relates to a saddle for printing plates. More particularly, this invention relates to a saddle for relatively thin printing plates, especially plastic printing plates, which can be employed with printing cylinders adapted to use conventional relatively thick lead stereo printing plates.

THE PRIOR ART

The successful development and introduction of plastic printing plates into the high speed printing field has made necessary an adaptor or saddle to permit mounting of the extremely thin plastic plates on conventional press cylinders. One purpose of such an adaptor or saddle is to act as a shim or filler piece to make up the difference between presently employed thick lead stereotype printing plates which are usually about 7/16 inch in thickness and plastic printing plates which have a usual thickness of about 1/16 inch.

The saddle of this invention, although simple in construction, permits rapid mounting of one or more thin plastic printing plates on the saddle. The saddle is easily mounted upon conventional press cylinders using existing tension lock-up systems which lock the printing plate to the press cylinder.

An important advantage of this system derives from its lighter weight and the resultant reduction in danger and likelihood of damage in the case of a plate failure during high speed operation. It will be seen also that only a small proportion of the mass of the saddle is under tension in the printing cycle thus greatly reducing the probability of failure due to stress fatigue. Such failures in the case of conventional stereo printing plates while not frequent are sufficiently common as to constitute a severe hazard to life and property.

SUMMARY

In accordance with the present invention, a saddle for plastic printing plates is provided employing a semi-cylindrical curved member, the concave surface of which is adapted for engagement against the convex surface of a press cylinder, while the convex surface is adapted to have printing plates mounted thereon and two end members slideably mounted at the ends of the curved member. The end members are provided with engaging means to engage a plurality of apertures in the printing plate and securely fasten the printing plates over the convex surface of the curved member. The end members also include slots for engaging the tension hooks of a conventional press cylinder in order to mount the saddle and printing plate combination on the press.

Reference is made to the drawing wherein:

The FIGURE is a prospective view of a preferred saddle of the present invention.

DESCRIPTION

In the FIGURE of the drawings, a saddle is shown employing a curved member **4** which is the main saddle assembly and two end members **6,8.** The end members **6,8** have lugs **10** for engaging corresponding apertures in a plastic printing plate **12.** The number of lugs is not critical and can vary widely. Normally from **2** to about **20** lugs are sufficient depending upon the size of the saddle and the physical properties of the printing plates. Slots **14** are provided in the end members **6,8** for engaging tension hooks of a conventional press cylinder (not shown).

The engaging surface of slots **14** is preferably beveled to provide compensation for misalignment of the engaging slots **14** and the tension hooks of a press cylinder.

Curved member **4** is provided with "L" shaped projecting jaws **16** and at both ends, parallel to the axis of rotation and which are adapted to engage corresponding jaws **16** provided on end members **6** and **8.** Member **4** is preferably undercut on its inner or concave surface to receive end members **6** and **8,** leaving an uninterrupted surface on the convex surface to avoid distortions in the printing surface. A loose fit is provided in the engaging jaws by making the radial extension of the jaws narrower than the length of the circumferential extension of the jaws to facilitate assembly and disassembly. This tolerance is preferably from about 1/32 to about 1/2 inch, which approximates the amount of travel in the locking movement of the tension hoods of a conventional press cylinder. This causes member **4,** end members **6** and **8** and printing plate **12** to be held together rigidly on the press cylinder, after locking, primarily by tension forces acting on printing plate **12.**

In the drawing jaws **16** are shown as separate elements fastened onto member **4** as a convenience in manufacture. It will be appreciated that jaws **16** and mumber **4** can be of unitary construction, if it is so desired.

It will be appreciated also that any of the conventional metals can be used for manufacture of the saddle. In addition a wide variety of relatively light weight plastics can be used for member **4.** It is preferable however that end members **6** and **8** and jaws **16** be of metal for strength and wear resistance in use. The ability to use light weight plastic materials for a large porportion of the saddle is an important safety feature of this invention. The significantly lighter weight of the saddle of this invention results in much smaller force gradients in case of a failure during the printing cycle at high rotational speeds. When light weight materials are used, the plastic printing plate is sometimes able to contain broken pieces of the saddle which would otherwise fly off the cylinder at very high velocities.

It will also be apparent that the undersurface of member **4** can be hollowed out as for example in a honeycomb or grid manner to achieve further weight reduction.

It must be understood that the scope of the present invention should not in any manner be limited by the materials employed in making the saddle whether such material be metal or plastic.

What is claimed is:

1. A re-usable saddle for mounting thin printing plates on press cylinders which comprises a generally semi-cylindrical curved member having a concave surface adapted to be mounted on the convex surface of a press cylinder; a smooth uninterrupted convex surface adapted to have one or more printing plates mounted thereon, two slideable end members mounted on the concave surface at the ends of said curved member which are generally parallel to the cylindrical axis, a plurality of lugs on said end members adapted to engage apertures in a printing plate and slots in said end members adapted to engage the tension hooks of a

press cylinder whereby said printing plate, end members and curved member may be placed in tension and securely mounted on a press cylinder.

2. A saddle in accordance with claim 1 wherein the engaging surfaces of said slots are beveled.

3. A saddle in accordance with claim 1 wherein a circumferential tolerance of from about 1/32 to about 1/2 inch is provided between the engaging portions of each of said end members and said semi-cylindrical curved member.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,805,701 Dated April 23, 1974

Inventor(s) J. Sonia

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 22 "hoods" should read --hooks--

Column 2, line 31 "mumber" should read --member--

Signed and sealed this 8th day of October 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents