

**2,512,940**

# DEVICE FOR ATTACHING MASTER SHEETS ON DRUMS

Filed March 17, 1945

2 Sheets-Sheet 1

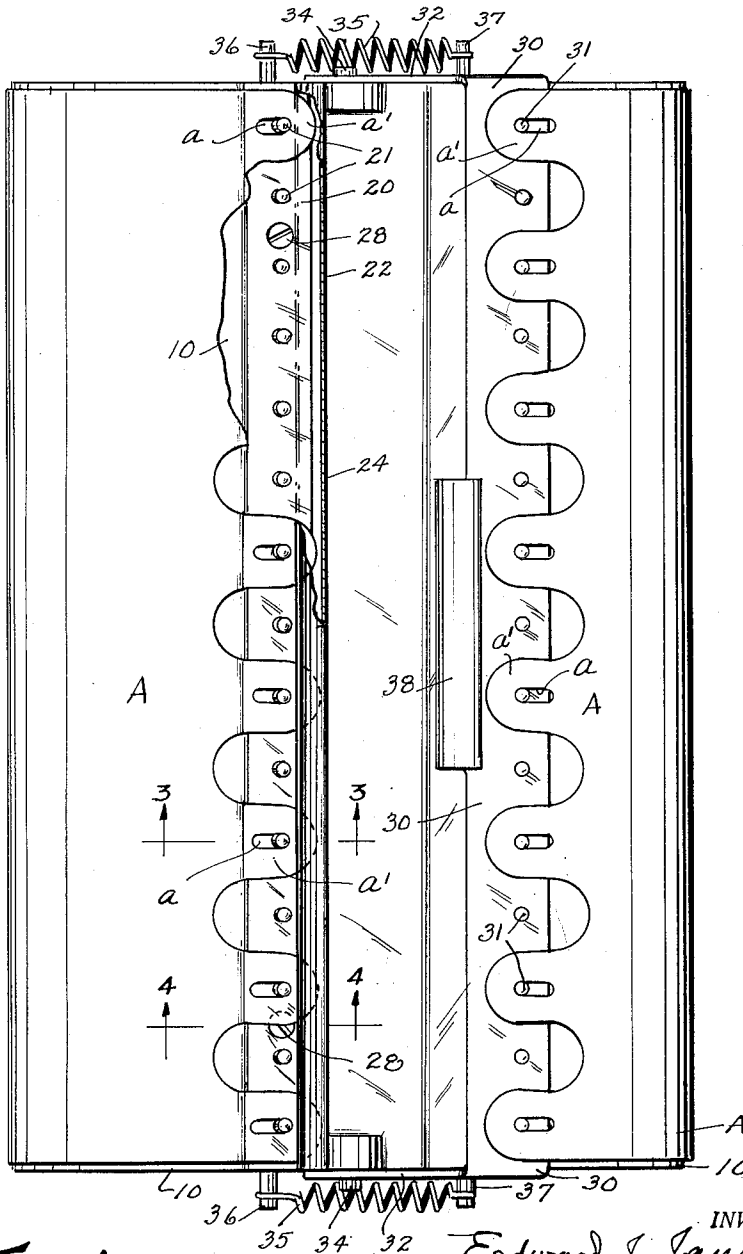


**FIG. 1**

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DEVICE FOR ATTACHING MASTER SHEETS ON DRUMS

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2 Sheets-Sheet 2

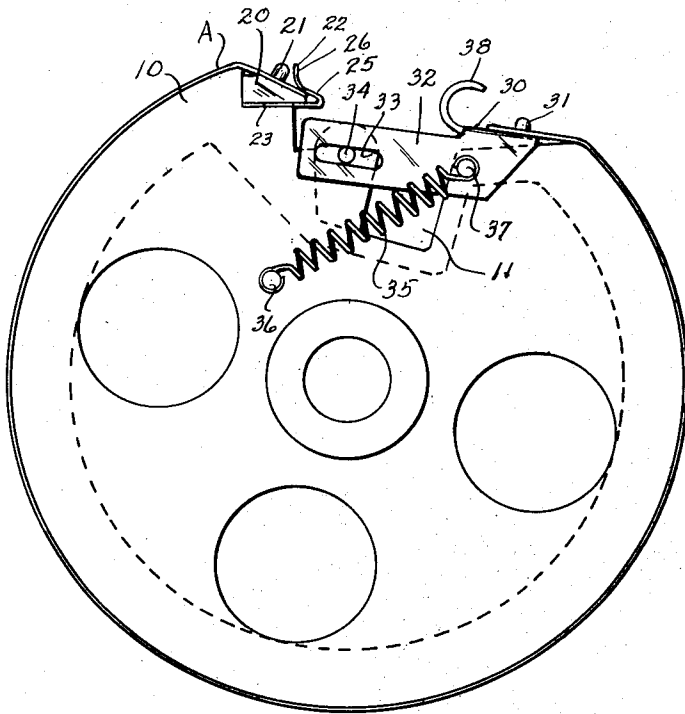


**FIG. 2**

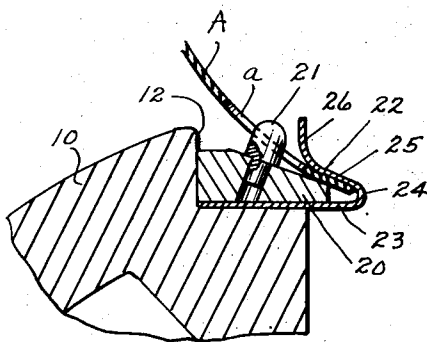
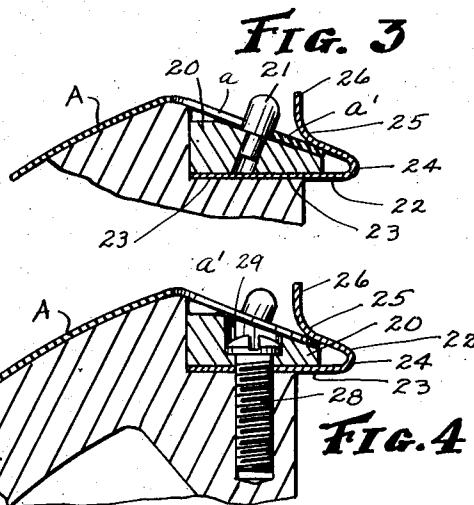


**FIG. 5**



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## UNITED STATES PATENT OFFICE

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DEVICE FOR ATTACHING MASTER SHEETS  
ON DRUMSEdward J. Janke, Cleveland, Ohio, assignor to  
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9 Claims. (Cl. 101—415.1)

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The general object of this invention is to provide a very simple and at the same time effective means for holding a master sheet on a printing drum, the invention being particularly concerned with the holding of the leading end of the sheet. Master sheets are frequently provided with a row of perforations across the ends designed to be placed over rows of pins suitably carried by the drum, the pins at the trailing end being frequently mounted on a tensioned bar to maintain the master sheet taut about the drum. In mounting such a sheet it is customary to place the leading end of the sheet over the pins and then manually maintain tension on the sheet while the drum is given a partial rotation, after which the trailing end is mounted on the tensioned clamp holder for that end. Such operation requires time and some skill and there is danger of finger printing the master sheet while manually tensioning it, which is detrimental in planographic printing.

To avoid the difficulties mentioned, I have provided a leading end holder on the drum having a row of outwardly projecting pins and combined with it a retaining strip behind the pins and spaced therefrom and having also a space beneath itself, such spaces communicating and being adapted to form a ready passageway for the end portion of the master sheet. The end portion of the sheet is merely shoved into place in an inclined direction over the pins and beneath the retainer and then swung inwardly to seat the sheet about the pins, with the result that that end of the master sheet is effectively anchored to the drum without applying manual tension to the sheet.

Thus, in mounting a master sheet on the drum, the leading end may be very quickly attached and then the drum quickly turned without requiring tension being maintained on the sheet so that the trailing end may also be quickly attached. Beside forming a retainer for the leading end of the sheet the retaining strip provides a ready guide and positioner for mounting the sheet.

My invention comprises the means above-outlined for effectively anchoring the leading end of the sheet and also the more specific embodiment thereof illustrated in the drawings and hereinafter described.

In the drawings, Fig. 1 is a plan of a drum equipped with my attaching devices and showing a master sheet on the drum, part of the sheet and part of the anchorage clip being broken away to reveal the parts beneath them; Fig. 2 is

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an end view of the drum so equipped; Figs. 3 and 4 are details in fragmentary cross section, in planes indicated by the lines 3—3 and 4—4 on Fig. 1; Fig. 5 is a view similar to Fig. 3 but showing the master sheet in the act of being positioned.

In the drawings, 10 indicates a suitable rotary drum having a gap 11. At one edge of the gap is formed a rabbet 12 in which my attaching device is seated. The attaching device comprises a bar 20 carrying a row of outwardly projecting pins 21 and a retainer 22 overhanging the outer face of the bar and spaced from it and from the pins. The retainer is preferably a single piece of sheet metal and has a flat portion 23 adapted to be mounted in the rabbet beneath the bar 20 and then beyond the inner edge of such bar is a return bend 24 and then a substantially straight inclined portion 25 gradually curving outward as at 26 to a region directly behind the pins 21 and comparatively close to them and extending at least as far as the pins or slightly farther. The portion 25 of this retaining strip is spaced outwardly of the bar 20 a distance somewhat greater than the thickness of the master sheet to be mounted while the portion 26 is a similar distance back of the pins.

The bar 20 and the retainer 22 may both be secured to the drum by the same screws passing through them into the drum. Such screws are indicated at 28 in Figs. 1 and 4, and are shown as having heads seated in wells 29 in the bar 20.

The master sheet is indicated at A in different views and is provided with a row of openings *a* therein. The particular plate A, as shown, has spaced ears *a'* on its ends and the openings *a* are slots in these ears. This is a form of plate in use, but the attaching device is equally applicable to a master sheet having its end straight across, at right angles to the side edges, and having openings of other shape than those shown.

In mounting the master sheet, its end is simply shoved into the space between the retainer and the pins and then the sheet is swung toward the drum which causes the openings to pass over the pins. This anchors the end of the plate, and then the drum may be readily given a partial rotation with the anchored plate thereon until the holder for the trailing end is in position in front of the operator, whereupon the trailing end is attached.

To hold the trailing end and at the same time apply tension thereto, I may provide the device shown in Figs. 1 and 2, which comprises a longitudinal bar 30 carrying a row of outwardly projecting pins 31, the bar having end arms 32 by

which it is movably mounted on the drum. As shown, these end arms are integral parts of the bar 30, bent at right angles thereto. Each end arm is provided with a slot 33 which is occupied by a pin 34 carried by the drum. Springs 35 on each end of the drum are anchored at one end by pins 36 projecting from the drum and at the other end by pins 37 projecting from the arms 32. At its central region the part 30 is curled upwardly as at 38 to make an operating handle.

In attaching the trailing end of the plate on the tensioning device just described, the device is drawn outwardly by an operator grasping the handle 38 with his fingers, and the openings in the end of the sheet are passed inwardly over the pins 31; then the handle is released and the tension provided by the springs 35 draws the plate taut and retains it in that position.

It will be seen that the plate may be attached to the drum with great ease and speed by my simple attaching devices, and that in effecting such attachment the sheet need not be touched by the operator except at the margins beyond the region of the image. The retainer entirely overcomes the difficulty that has heretofore existed in the leading end of the plate occasionally becoming free from the pins before the trailing end is attached. With scalloped plates, such as shown in Fig. 1, if care is not taken, some of the ears may spring up from the pins while the others are being attached, and even with a plate with a straight end the difficulty is always present to a more or less extent.

Sometimes it is desirable to mask a portion of the master sheet to eliminate a part of the image on some of the copies while preserving the master sheet unaltered, for subsequent use. At other times it is desirable to substitute different matter for a portion of the image on the master sheet. My attaching device provides for either of these conditions, since it enables a thin supplemental sheet, either a mask or a comparatively short master sheet, to be mounted on the pins of the leading end attacher and held thereon by the retainer during printing rotation of the drum, without requiring any attachment of the trailing end of such supplemental sheet.

There is sufficient clearance between the retainer surface and a standard master sheet mounted therein to provide room for the ready insertion of a suitable mask or supplemental master sheet. Accordingly, with a printing machine equipped with my retainer it is possible not only to mount a full length master sheet very quickly, but whenever desired a mask or a supplement for a portion of the master sheet may also be readily mounted.

My pending application, No. 562,440, filed November 8, 1944, for a Clamp for Master Sheets of Printing Machines which has matured into Patent No. 2,411,881, issued December 3, 1946, shows a drum with a rabbet, similar to the rabbet 12 of this application, at the edge of the gap and shows a clamping bar hingedly carried by the drum and adapted to seat in the rabbet to retain a paper plate bent inwardly into the angle of the rabbet and thence at a right angle along the underface of the hinged bar. If desired to apply such feature to the construction of this application, it may be readily effected by securing the retainer to the pin bar and having them both hinged to the drum rather than rigidly fastened.

Likewise, the holder for the trailing end of the plate may be readily adapted for attaching a paper plate without original perforations by pro-

viding sharp pins on the inner side of the bar 30, as shown in my pending application, above-mentioned, such pins being adapted to make perforations in the paper sheet as the pins pass into recesses in the drum seat beneath the bar.

I claim:

1. In a printing machine, a drum having a gap and a holding device in the gap for the leading end of a master sheet engaging the drum, said holding device mounted on the drum and comprising a longitudinal row of pins and a rigid retaining member spaced from the pins with normally open communicating spaces beneath said member and above the pins, whereby a sheet having a row of openings adjacent the end may be positioned with the openings surrounding the pins and the margin beyond the openings engaged by the retaining member.

2. The combination of a printing drum having a gap, a bar within the gap having a row of outwardly projecting pins and a retaining device overhanging the outer face of the bar and constantly held spaced from such face and from the pins but sufficiently close thereto to retain a plate having openings embracing the pins and an end margin extending into the space between the retainer and bar.

3. The combination of a drum having a gap with a seat therein, a retainer resting on the seat, a bar resting on the retainer secured to the drum, a row of outwardly extending pins carried by the bar, said retainer extending inwardly of the bar and bent backwardly over the bar and constantly spaced therefrom and being spaced also from the pins.

4. The combination with a drum having a gap, of a holding device in the gap for the leading end of a master sheet comprising a pin-bar and a retainer each extending longitudinally of the drum and rigid with each other, said retainer extending inwardly beyond the inner edge of the bar and then bent backwardly over the bar and spaced from it and then curved outwardly into the position adjacent the pins but spaced therefrom.

5. The combination of a drum having a gap and formed with a rabbet adjacent one edge of the gap, a retainer seated in the rabbet, a bar seated against the retainer, a row of pins carried by the bar, screws passing through the bar and retainer and threaded in the drum to hold the bar and retainer in place, said retainer extending inwardly beyond the inner edge of the bar and then bent backwardly over the bar and spaced from it and then curved outwardly into the position adjacent the pins but spaced therefrom.

6. An attaching device for the end of a sheet comprising a bar having a row of projecting pins and a retaining strip rigid with the bar and extending parallel therewith and having portions in circumferential alignment with the successive pins and projecting inwardly beyond a longitudinal edge of the bar and then bent backwardly by a return bend in a direction spaced from the outer face of the bar and then bent further outwardly to stand behind the pins and spaced therefrom.

7. In a printing machine, a drum having a gap and adapted to be embraced by a master sheet, a holding device mounted in the gap and comprising a longitudinal row of outwardly projecting pins and a continuous longitudinal retaining member behind the pins and spaced therefrom and having an open space beneath it

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communicating with the space above the pins, whereby the end portion of a perforated sheet may be inserted beneath the retainer across the top of the pins and thereafter the sheet swung downwardly to cause the perforations to extend around the pins, and means on the drum adapted to engage the other end of the sheet to hold it taut about the drum.

8. The means for attaching a flexible sheet on a drum comprising a row of outwardly extending pins carried by the drum and a retaining device mounted on the drum and extending continuously the direction of the length of said row and passing behind each pin and in circumferential alignment therewith and having a space beneath it in open communication with the space above the pins whereby the end of the sheet may be passed beneath the retainer and openings in the sheet thereafter passed over the pins.

9. The combination of a drum, a bar carried thereby and provided with a row of pins and a

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retainer carried by the drum and comprising an elongated strip extending for substantially the length of the bar and toward the pins having its body out of contact with the face of the bar and its free edge spaced back of the pins, whereby a perforated sheet may be passed into the space between the retainer and pins and then between the retainer and bar, enabling the openings in the sheet to surround the pins.

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