

Sept. 5, 1967

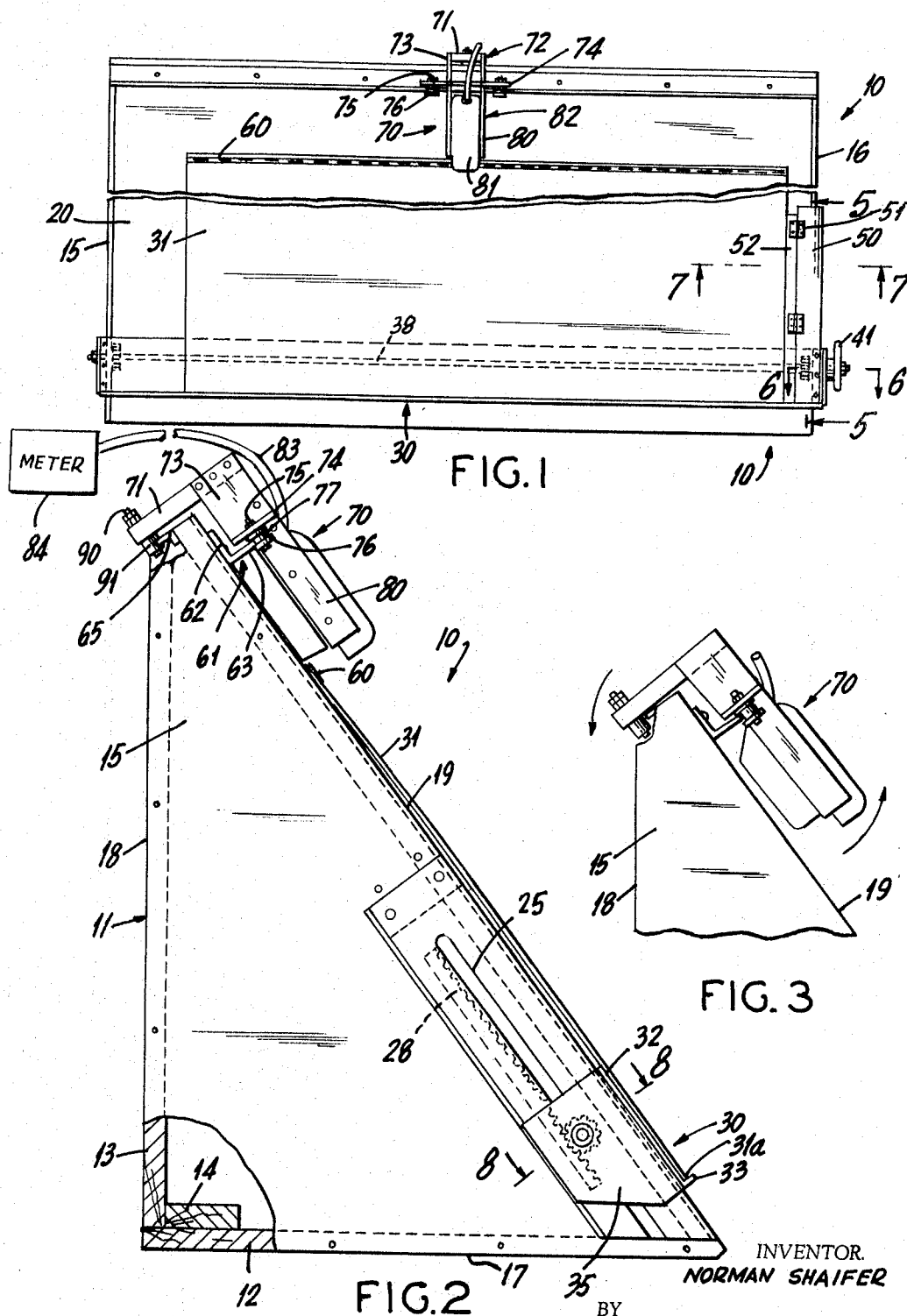
N. SHAFER

3,339,451

APPARATUS TO ENABLE RAPID USE OF A DENSITOMETER

Filed June 11, 1962

2 Sheets-Sheet 1



INVENTOR.
NORMAN SHAFER
BY
J. B. Feldman
ATTORNEY.

Sept. 5, 1967

N. SHAIKER

3,339,451

APPARATUS TO ENABLE RAPID USE OF A DENSITOMETER

Filed June 11, 1962

2 Sheets-Sheet 2

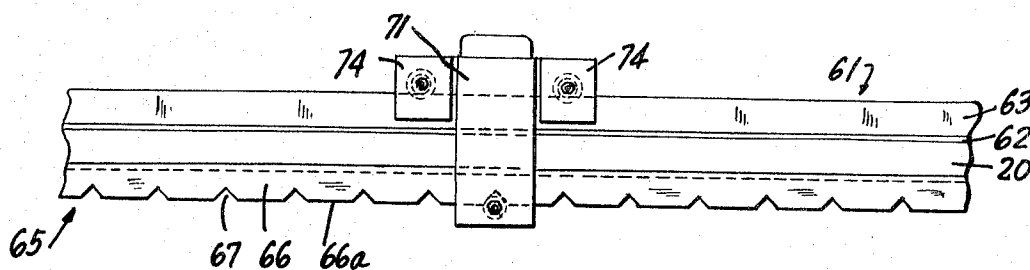


FIG. 4

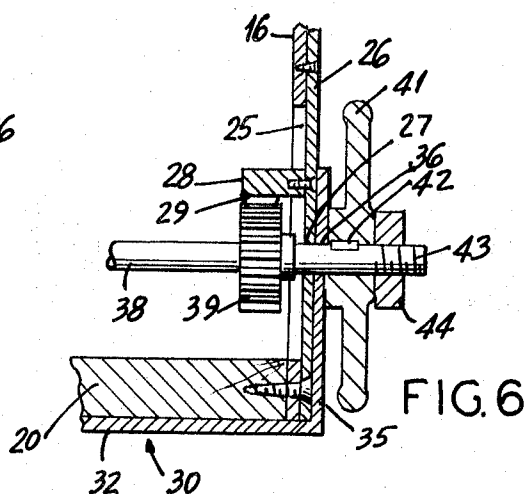
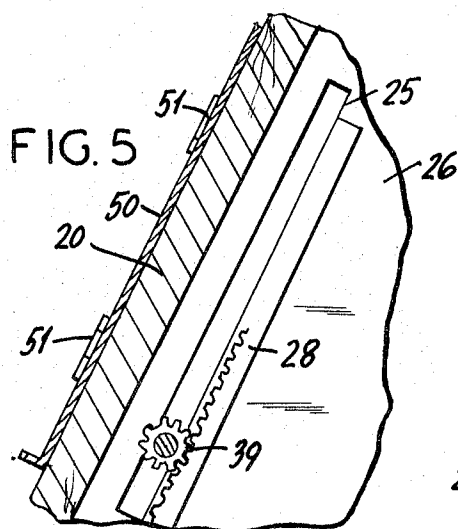


FIG. 6

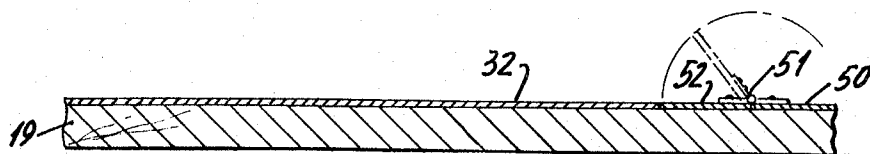


FIG. 7

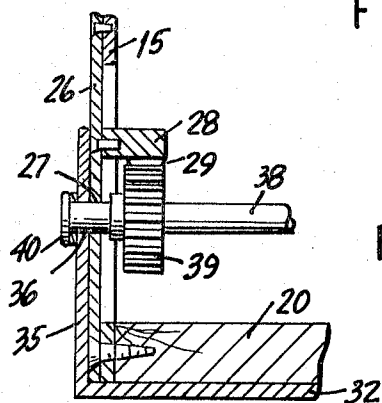


FIG. 8

INVENTOR
NORMAN SHAIKER

BY

J. D. Felsheim
ATTORNEY.

1

3,339,451

APPARATUS TO ENABLE RAPID USE OF A DENSITOMETER

Norman Shaifer, Brooklyn, N.Y., assignor to Color Reproductions Incorporated, South Hackensack, N.J., a corporation of Delaware

Filed June 11, 1962, Ser. No. 201,514

9 Claims. (Cl. 88—14)

ABSTRACT OF THE DISCLOSURE

The apparatus comprises a stand having an inclined platform. A horizontal transverse rail is inclined forwardly and upwardly near the upper end of the platform. Slidably mounted on a rail is a device having a densitometer scanner unit extending forwardly and downwardly and overlying the platform. A counter-balancing member on said device extends rearwardly. Fixed to the upper end of the platform is a transverse bar formed with spaced notches. The counterbalancing member engages in the notches selectively. The weight of the device forwardly of the rail is greater than the weight of the counterbalancing member. As the device is moved sideways, the device engages straight portions between the notches and when a notch is reached, the device tilts to engage within the notch.

This invention relates to apparatus to enable rapid use of a densitometer to read the ink densities printed on press sheets and the like sheets.

An object of this invention is to provide in a device of the character described, a registering device which is keyed to the color bars on a press sheet so that the scanner of the densitometer may be quickly registered with the various color bars or patches on the press sheet, one after the other.

Another object of this invention is to provide apparatus of the character described comprising a bar formed with spaced notches, a rail parallel to said bar, and a device carrying a densitometer scanner slidable on said rail and tiltable to selectively engage in said notches.

Still another object of this invention is to provide in apparatus of the character described, a device carrying a densitometer scanner normally overlying a press sheet lying on an inclined platform, to register with a color bar in said sheet and said device having a roller to engage in a notch in such normal position, and which device is counterbalanced to permit the same to be easily tilted or lifted up, and at the same time to disengage the roller from the notch, to permit sliding said device longitudinally on the rail with the roller contacting a bar between notches, until the roller reaches the next notch to drop therein, and register the densitometer scanner with another color bar.

A further object of this invention is to provide apparatus of the character described comprising a stand having an upwardly inclined platform, a horizontal transverse guide having a ledge to engage the lower edge of a press sheet on said platform, means to raise and lower the guide whereby to adjust the up and down position of the press sheet, and aligning means on said guide to engage a side edge of the press sheet, said aligning means

2

including means to vary the position of the press sheet from side to side, to align the color bars with the densitometer scanner.

A still further object of the invention is to provide in apparatus of the character described, means to slidably and tiltably mount the densitometer scanner at the upper end of the inclined platform, to overlie the upper edge of a press sheet on the platform and engaging the guide ledge at its lower edge, and the aligning means at a side edge thereof.

Yet a further object of this invention is to provide highly improved apparatus of the character described, which shall be relatively inexpensive to manufacture, easy to manipulate and yet practical and efficient to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims.

In the accompanying drawings in which is shown an illustrative embodiment of this invention,

FIG. 1 is a top view of apparatus embodying the invention;

FIG. 2 is a side elevational view thereof, and showing the densitometer in notch engaging, color bar registering position, for reading the densitometer;

FIG. 3 is a partial view of the upper end of the apparatus shown in FIG. 2, but showing the densitometer tilted up away from the platform and with its roller disengaged from the notch;

FIG. 4 is a top plan view of the notched bar showing the densitometer registered with a notch;

FIG. 5 is a partial cross-sectional view taken on line 5—5 of FIG. 1;

FIG. 6 is a cross-sectional view taken on line 6—6 of FIG. 1;

FIG. 7 is a cross-sectional view taken on line 7—7 of FIG. 1; and

FIG. 8 is a cross-sectional view on line 8—8 of FIG. 2.

Referring now in detail to the drawings, 10 designates apparatus embodying the invention. Said apparatus 10 (FIG. 1) comprises a stand 11 (FIG. 2) having horizontal bottom side frame members 12 and rear, vertical, side frame members 13 fixed thereto and a rear, horizontal transverse cross rail frame member 14, fixed at its ends, to members 12, 13. Attached to the ends of the frame are metal triangular side plates 15, 16 having lower horizontal edges 17, rear vertical edges 18 and front, upwardly and rearwardly inclined edges 19, inclined about 60° to the horizontal. Interconnecting the front ends of frame members 12 with the upper ends of rear frame members 13, is a front upwardly and rearwardly inclined transverse platform 20 (FIG. 1). Frame members 12, 13, 14 and platform 20 may be made of wood or plastic.

The top or front surface of platform 20 is in the plane of edges 19 of side members 15, 16. The platform is fixed to side plates 15, 16 in any suitable manner.

Side plates 15, 16 have inclined cut outs 25 (FIG. 2) at their lower front ends. Overlying said cut outs are plates

26 fixed to side plates 15, 16 and formed with upwardly and rearwardly inclined slots 27 (FIG. 8) parallel to edges 19. Fixed to the insides of plates 26, below said slots are upwardly and rearwardly inclined racks 28 having rack teeth 29 on their upper sides. Slidably mounted on said platform 20 is a guide member 30 (FIG. 2) for the lower edge of a press sheet or other flat sheets 31, or other objects placed on the platform.

Guide 30 comprises a flat horizontal transverse plate 32 (FIGS. 2, 8) lying flat on the platform 20. Extending upwardly and forwardly from the lower end of plate 32, is a horizontal ledge 33 which may be contacted by the lower end 31a of the press sheet 31.

Extending down from the ends of plate 32 are parallel ears 35 overlying the plates 26. Ears 35 are formed with bearing openings 36 aligned with slots 27. Extending through the bearings 36 is a horizontal transverse shaft 38 which also passes through the slots 27.

Mounted on the shaft 38 for rotation therewith, are pinions 39 meshing with the teeth 29 of racks 28. At one end of shaft 38 is a collar 40. The other end of shaft 38 carries a wheel 41 (FIG. 6) slidably keyed thereto by key 42. The outer end of the shaft is threaded as at 43, and screwed to said threaded end is a nut 44. Turning of wheel 41 will cause pinions 39 to raise or lower guide 30. Tightening the nut 44 will fix the guide in adjusted position. Thus, the press sheet 31 may be raised or lowered and the guide 30 may be clamped in adjusted position by clamping wheel 41 against ear 35.

Means is provided to hold the press sheet 31 in various adjusted positions, sideways. To this end there is fixed to the right end of plate 32 (looking at FIG. 1) a narrow bar 50 (FIG. 1) lying on platform 20 and extending upwardly from said plate. Hinged to the inner end edge of bar 50, as by hinge 51, is a leaf bar 52 which can be folded either flat onto platform 20, or may be folded over the portion of bar 50 above plate 32. When bar 52 is flat on platform 20, it acts as a stop for the right edge of the press sheet. When said bar 52 is folded over bar 50, then the left edge of bar 50 acts to stop said edge of the press sheet.

Means is provided to read the density of ink on the spaced color bars 60 located at the upper end of the press sheet 31. To this end there is fixed to the upper side of platform 19, a horizontal transverse angle iron 61 (FIG. 2) having a flange 62 contacting the platform, and a rail flange 63 at right angles to said flange 62. Angle iron 61 is located below the upper edge of platform 20, as shown in FIG. 2. The upper edge of platform 20 is in a plane at right angles to the front face of said platform. Fixed to the rear face of said platform, at the upper end thereof, is a strip or bar 65 having a rearwardly and downwardly inclined flange 66 formed in its rear edge, at equally spaced intervals with rearwardly opening V-shaped notches 67 (FIG. 4). Flange 66 is at right angles to the front face of platform 20.

Slidably, tiltably and removably mounted on said angle iron or rail 63 and on bar or strip 65 is a counter-balanced device or member 70 located above the upper edge of platform 20. Said device 70 comprises a weighted or heavy counterbalancing bar 71 (FIGS. 1, 2) of metal to the sides of which are fixed angle members 72 having parallel flanges 73 screwed to the forward end of the bar, and outwardly extending flanges 73. Bar 71 is inclined downwardly and rearwardly above and close to the upper edge of platform 20. Mounted on flanges 74 are shafts 75 extending downwardly therethrough and which carry annularly grooved wheels or rollers 76. The forward edge of rail flange 63 engages in the grooves 77 of rollers 76. Fixed to said flanges 63 are parallel downwardly extending side walls 80 between which is carried the scanner unit 81 of a densitometer 82. The scanning unit 81 overlies the color bars 60 at the upper end of the press sheet 31 mounted on platform 20. Wiring 83 may lead from unit

81 to the meter 84 of the densitometer 82. The meter 84 may be mounted or located in any suitable position. Densitometers are well known, such as the Densicron, manufactured by the Welch Scientific Company of Chicago, Ill., and they include a scanner unit such as unit 81 connected by wiring to a meter such as meter 84.

On the rear end of weighted bar 71 is a shaft 90 extending down at right angles to said bar. On said shaft, and below said bar, is a roller (preferably ball bearing) 91 which engages in a notch 67 of bar or strip 66, when the unit 81 is over a color bar on a press sheet in position to sense density of ink on the color bar.

The weight of the scanner unit 81 and its supporting side walls 80 is such that the device 70 is balanced to normally keep the roller 91 in a notch 67 and the unit 81 close to the platform 20 to scan and sense the color bars. The weight is so balanced, however, due to weighted or heavy bar 71, that the member 70 may be easily tilted counter-clockwise (FIG. 1) about the forward edge of flange rail 63, by lightly lifting unit 81, thereby swinging roller 91 rearwardly and downwardly out of its notch 67, and thereby permitting the device 70 to be slidably moved sideways, with roller 91 contacting the outer rear edge 66a of flange 66, until the roller reaches the next notch, where the greater weight of the forward or scanner end of said device will cause tilting of said device in a clockwise direction, so that roller 91 will drop into said next notch and the scanner unit will drop on the press sheet.

Thus, device 70 may be quickly and easily moved from notch to notch to facilitate using the densitometer. Notches 67 should be spaced correspondingly to the spacing of the color bars 60.

It will thus be seen that there is provided an apparatus in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. A stand having an upwardly and rearwardly inclined platform; a horizontal, transverse rail extending forwardly and upwardly from said platform, and disposed adjacent the upper end of said platform; a device comprising an intermediate portion having means engaging said rail, a densitometer scanner unit fixed to said intermediate portion and extending downwardly and forwardly therefrom; and overlying said platform, a counterbalancing member extending rearwardly of said intermediate portion, a transverse bar fixed to the rear upper end of said platform and being inclined rearwardly and downwardly and formed at its rear edge with spaced rearwardly opening notches and with elongated straight rear edge portions between the notches, and means on said counterbalancing member engageable in said notches, selectively; the weight of the device forwardly of said intermediate portion being somewhat greater than the weight of the counterbalancing member, said device being tiltably about said rail to space the unit up above the platform, and to move said notch engaging means rearwardly and downwardly out of the notch to permit shifting of said device sideways.

2. The combination of claim 1, said rail engaging means comprising grooved rollers receiving the edge of said rail in the grooves of said rollers.

3. The combination of claim 1, said notch engaging means comprising a roller.

4. The combination of claim 3, said rail engaging means comprising rollers having annular grooves receiving an edge of said rail in the grooves of said last mentioned rollers.

5. The combination of claim 4, said notches being of V-shape.

5

6. The combination of claim 1, and guide means slidably mounted on said platform for movement toward and away from said rail, and disposed transversely of said platform, and having means to engage the lower edge of a press sheet on said platform.

7. The combination of claim 6, and manually controlled means to slidably move said guide means up and down on said platform.

8. The combination of claim 7, and stop means on said guide means to engage a side edge of said press sheet.

9. The combination of claim 8, said stop means comprising means to adjust the position at which the side edge of said press sheet will be engaged.

5

10

6

References Cited

UNITED STATES PATENTS

1,615,216	1/1927	Cruger	88—14
2,111,068	3/1938	Huebner	88—14
2,667,109	1/1954	Piety	95—37
2,692,531	10/1954	Waterworth et al.	88—29
2,919,635	1/1960	Levine et al.	88—24
3,019,693	2/1962	Patnode	88—14
3,160,117	12/1964	Willison et al.	248—307 XR

JEWELL H. PEDERSEN, *Primary Examiner*.

T. L. HUDSON, W. A. SKLAR, *Assistant Examiners*.