United States Patent

Matwey

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[54] PRINT RECEIVING TRAY DESIGN

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[58] **Field of Search** 271/86, 61

[56] **References Cited**

UNITED STATES PATENTS

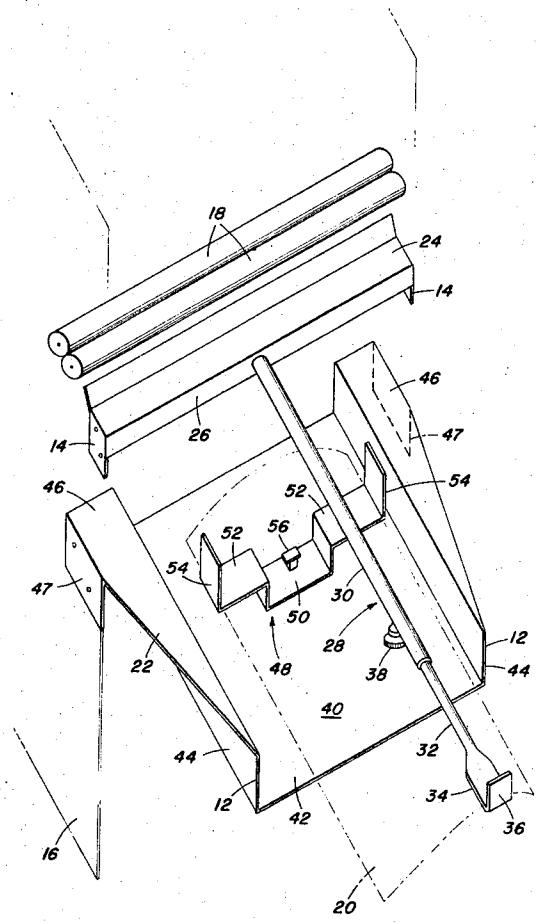
1,210,465	1/1917	Gubelman	271/86 X
2,937,021	5/1960	Keil	271/86
1,245,682	11/1917	Clark et al.	271/86
1,086,353	2/1914	Dick	271/86

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[57] **ABSTRACT**

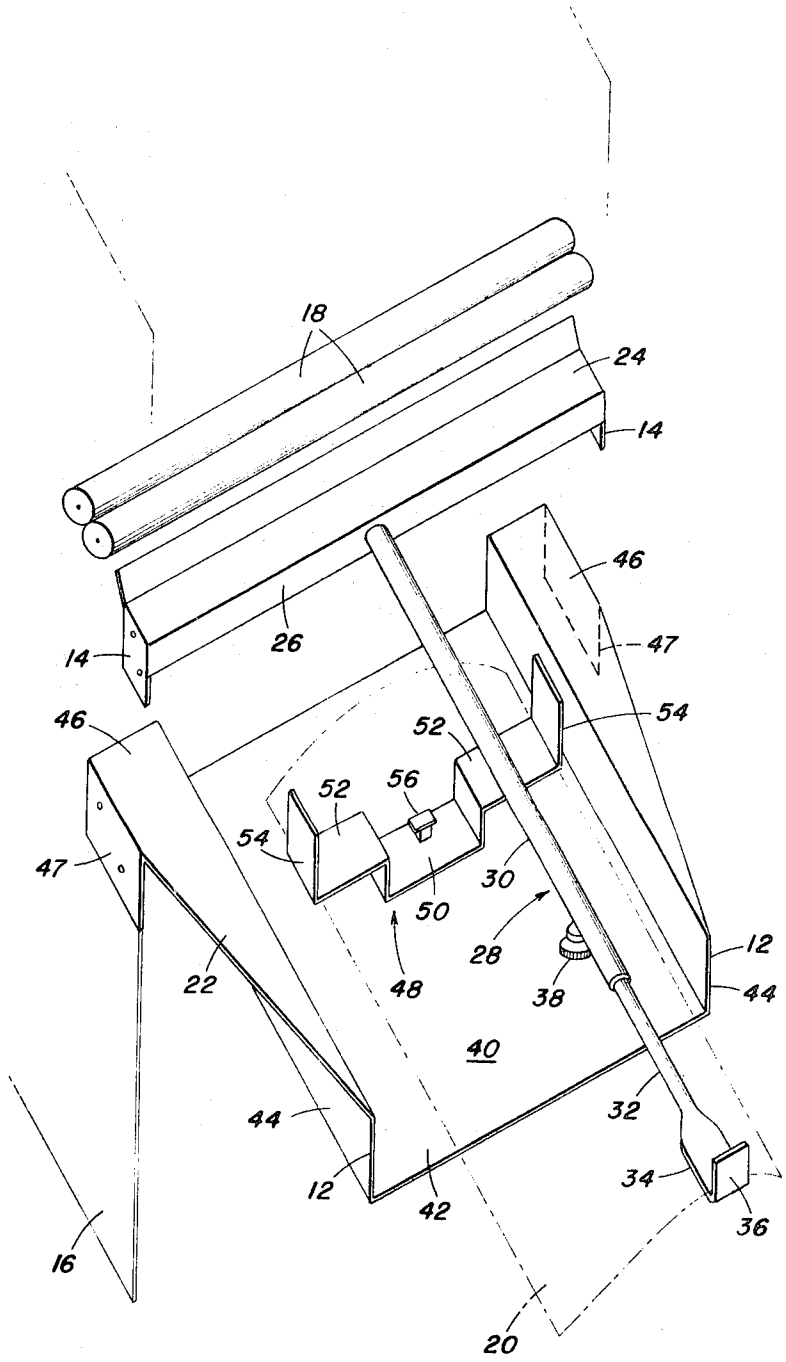
The prints discharged from a reprographic machine are guided by and stacked on a substantially horizontal arm that is located somewhat above the longitudinal center of an inclined print receiving tray. The arm consists of a tubular inner member extending from the center of a box-like base member, and a rod-like outer member telescoped in the tubular member for longitudinal adjustment. The rod-like member is provided with a flattened upstanding stop for the sheets, and is secured in adjusted position by a thumbscrew in the underwall of the tubular member. The outer end of the tray is open, and the tray may be provided with an auxiliary sheet guide member on the floor of the tray, having upstanding end walls that are spaced with respect to each other to accept sheets of different widths less than that of the side walls of the tray itself.

3 Claims, 1 Drawing Figure



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PRINT RECEIVING TRAY DESIGN

This invention relates to reprographic and other paper sheet processing machines, but more particularly to the print or document receiving trays at the print or document exit thereof.

Downwardly tilted print receiving trays located at the print exit of reprographic machines are well known. However, such trays in the past were designed to accept the sheet copies or prints discharged by the machine as if they were flat. As a matter of fact a considerable number of such machines discharge prints that are somewhat curled, or tend to curl. This results in serious stacking as well as handling problems of such prints in the tray due to twisting and rolling of the prints.

The main object of this invention is to solve such problems by providing a novel tray device for guiding and stacking the prints or documents as they exit from a reprographic machine. The so stacked prints, as a result, may be conveniently retrieved by the person operating any type of reprographic or paper print processing machine.

According to the invention an elongated box-like base member compsoed of sheet metal, for example, is mounted on and horizontally between the side walls of the reprographic machines. The base-member is located directly under exit rollers by which the prints are discharged from the body of the machine. An arm extends substantially horizontally from the center of the base member in the direction of exit of the prints. Such arm comprises an upstanding stop at the outer end thereof, the longitudinal limit of which is adjustable with respect to the base for accepting prints of different lengths.

A tray having side walls but no front wall is located under the arm for receiving the lateral edge portions of the prints as they drape themselves in a stack on the arm. Horizontal wings project outwardly from the tray side walls and are provided with downwardly extruding flanges which are secured to the side walls of the machine cabinet. For accepting prints more narrow thant that of the tray per se, the floor of the tray has removably mounted in the central position thereof an auxiliary member having a central base position provided with raised laterally extending floor positions which terminate in upstanding flanges. The latter constitute inner side walls for receiving the side edge portions of relatively narrow prints.

As the documents or prints exit from the machine they are guided thereon by the arm and stack themselves one on top of the other. The resulting stack then is easily removed by the operator of the machine. The device can stack a large quantity of documents or prints, and uniformly stacks them in the same way, one stack after another.

In the drawing:

The single FIGURE is an exploded view in perspective of a tray device illustrative of the invention.

As shown in the drawing, a horizontal box-like base member **10** of sheet metal comprises end walls **12** that are mounted between the side wall panels **14** of a reprographic machine **16**. The base **10** is located under exit roller **18,18** from between which the prints or documents **20** are discharged by the machine **16**. The base **10** has an inclined flange **22** and a top **24** over which the prints **20** pass as they exit from the rollers **18,18**. The base **10** also comprises a vertical wall **26** to the center of which the inner end of a substantially horizontal arm **28** is secured.

The arm **28** consists of a tubular inner member **30** and a rod-like outer member **32** that is telescoped in such tubular member **30**. The rod-like member is provided with a flattened end position **34** having an upturned flange **36** constituting an outer stop for the sheets or documents **20** which drape themselves over the arm **28** in a stack as they exit from the machine **16**. The effective outer position of the stop **36** with respect to the base wall **26** is adjustable by sliding the rod **32** longitudinally in the tube **30**. When such position is obtained in accordance with the length of the sheets **20** being processed, the stop **36** is secured in such position by tightening a thumbscrew **38** threaded to the under-wall of the tube **30**.

Located under the arm **28** is a tray **40** comprising a floor **42** from which side walls **44, 44** extend upwardly. Wings **46, 46** project horizontally from the side walls **44, 44** and have downturned flanges **47, 47** which are secured to the side wall panels **14, 14** of the machine **16**. For narrow sheets **20** the floor **42** of the tray **40** is provided with an optional auxiliary sheet receiving member **48** consisting of a central flat base portion **50** having elevated horizontal floor portions **52, 52** projecting laterally of such central base portion **50**. The elevated floor portions **52, 52** terminate in upstanding flanges **54, 54** constituting side wall portions for receiving narrow sheet lateral edge portions. For wider sheets the tray member **48** may be removed. For even more narrow sheets the effective width of the member **5** may be made adjustable, or a similar but more narrow auxiliary member may be used. In any case the outer end of the tray **40** is open, the outer ends of the sheet being caught and vertically stacked by the stop **36** on the outer end of arm **28**. For efficient and smooth operation of the device, arm **28** as well as tray **40** are tilted downwardly somewhat from the level of the base **26**.

The arm **30** guides the first sheet **20** as it exits from the machine **16** until it reaches the stop **35**, and the lateral edges of such sheet **20** come to rest in tray **40**. The arm **28** is located above the center of tray **40** so that the sheet **20** is allowed to curve about the arm **28**. This prevents the print or document **20** from rolling or twisting as it is discharged from the machine **16**. The vertical side walls **44, 44** of the tray **40** also prevent the print **20** from being dislodges from the tray **40**.

The stop **36** is adjustable to position documents or prints **20** of various lengths on the device. The width of the stop **36** is such that the prints **20** center themselves on the stop **36** as the leading edge strikes such stop **36**. The optional auxiliary tray member **48** may be secured to the floor **42** thereof by a squeeze release latch **56**.

Advantages of the invention include: 1) ability to stack a large number of documents; 2) the documents are easily retrieved by the operator; 3) repeatability of stacking documents uniformly; 4) handles prints that tend to curl without objectionable twisting and/or rolling thereof.

What is claimed is:

1. An improved print receiving device for reprographic machines, including

a tray carried by said machine having side walls and an open outer end, and

an arm extending outwardly from the machine above the center of said tray between said side walls,

said arm having a stop at the outer end thereof for holding prints received by said arm from the machine in a substantially vertical stack with the aid of said tray side walls,

whereby prints tending to curl are prevented from undesirable rolling or twisting by the device

the improvement comprising an elongated member carried by a horizontal elongated box-like base member having end walls adapted to be mounted on and between the side wall panels of the cabinet of the machine, directly under print discharge rolls from which the prints exit from such machine, and said tray comprises horizontal wings extending outwardly from the side walls thereof, which tray side walls are also adapted to be mounted on and between said side wall panels below said arm, and adjacent the inner ends thereof.

2. The invention as defined by claim **1**, in which

said arm consists of an inner tubular member,

a rod-like outer member telescoped in said tubular member and having a flattened upturned flange constituting said stop, and

a thumbscrew threaded to the under wall of said tubular member for securing said rod-like member with said stop in a desired position which depends upon the length of the prints held thereby.

3. The invention as defined by claim **2**, including

an auxiliary tray member removably mounted on the floor of said tray,

said member having elevated substantially horizontal lateral portions provided with upturned flanges constituting side walls for guiding prints that are more narrow in width than that of the side walls of the tray itself.

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