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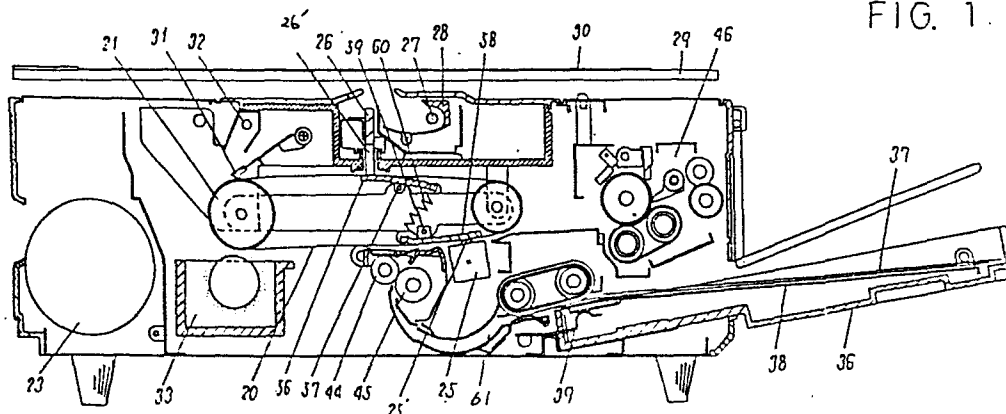
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**54** Electrophotographic copier.

**57** An electrophotographic copier comprises a photosensitive belt supported on a plurality of rollers and driven thereby, a guide plate held in contact with a reverse side of the photosensitive belt to push its face side outwardly, and a

processing unit disposed in confronting relation to the guide means. The guide plate is movable toward the processing unit.



ELECTROPHOTOGRAPHIC COPIER

1. Field of the invention:

The present invention relates to an electrophotographic copier, and more particularly to an electrophotographic copier employing a photosensitive (photoconductive) belt.

2. Description of the Prior Art:

Electrophotographic copiers generally have a photosensitive drum or belt. No matter which photosensitive body may be used, the photosensitive body and each processing means are generally required to be relatively positioned with sufficient accuracy for achieving high quality of copied images.

For example, the density of copied images in a development process is greatly governed by the gap between the photosensitive body and a magnetic roller carrying a developing agent composed of toner and a carrier and also by the gap between the photosensitive body and the wire of a charging or transfer corotron. Furthermore, the distance between an exposure lens and the photosensitive body must accurately be set for producing focused images.

These positional accuracies are more important as the quality of copied images produced by the copier becomes higher.

To meet the above accuracy requirements, photosensitive drums have generally found greater use since

they run stably for higher positional accuracies than photosensitive belts.

However, the photosensitive drums still suffer the drawback in that the accuracy of the parts and the accuracy with which each processing means is attached should be kept at a sufficient level for achieving the desired positional accuracies described above.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an electrophotographic copier in which the gaps between a photosensitive belt and processing means such as development, exposure, and transfer means are established accurately for achieving high image quality.

To achieve the above object, an electrophotographic copier according to the present invention comprises a photosensitive belt supported on a plurality of rollers and drivable in one direction, guide means held in contact with a reverse side of the photosensitive belt for urging the photosensitive belt to push its face side outwardly, and processing means disposed in confronting relation to the guide means and including discharge, exposure, development, transfer, and cleaning means, the guide means being movable toward the processing means.

The above and other objects and features of the present invention will become apparent from the following description taken in connection with the accompanying drawings in which:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a sectional side elevational view of an electrophotographic copier according to an embodiment of the present invention; and

FIG. 2 is a fragmentary perspective view of a portion of the electrophotographic copier shown in FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

An embodiment of the present invention will be described hereinbelow with reference to the drawings.

As shown in FIGS. 1 and 2, an endless photosensitive (photoconductive) belt 20 is trained around first and second rollers 21, 22 and is driven by a drive mechanism (not shown) to travel counterclockwise. The photosensitive belt 20 is uniformly charged by a corotron 25, and then exposed to light reflected from an original document 30 illuminated by an exposure lamp 27 for forming an electrostatic latent image corresponding to image information of the original document 30 on the photosensitive belt 20. More specifically, a beam of light from the exposure lamp 27 is focused by a reflecting mirror 28 onto the original document 30, and the reflected light from the original document 30 is focused by a fiber lens array 26 onto an exposure guide plate 56 (described later). The electrostatic latent image carried on the photosensitive belt 20 is thereafter converted by a development unit 33 into a visible toner image upon deposition of toner. During this time, a cleaning blade 31 (described later) is spaced from the surface of the

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photosensitive belt 20 by a drive mechanism, not shown. Then, the toner image is transferred to a transfer member or a sheet of paper 37 fed by a paper feeder 61. The transfer member 37 carrying the toner image is delivered to a fixing unit 46 in which the toner image is fixed to the transfer member 37. Any residual toner which remains on the photosensitive belt 20 without being transferred to the transfer member 37 is scraped off by the cleaning blade 31 as pressed against the photosensitive belt 20 by the non-illustrated drive mechanism. Subsequently, any residual potential on the photosensitive belt 20 is neutralized by a discharge lamp 32, thereby completing one copying cycle.

The foregoing description is directed to the substantial construction and operation of the electrophotographic copier to which the present invention is applied. The construction of components with which the present invention is particularly concerned will be described hereinbelow.

The exposure guide plate 56 is turnably supported on a shaft 57 and normally urged by a spring 60 to push the photosensitive belt 20, from the reverse side thereof, in a direction toward the fiber lens array 26. The fiber lens array 26 has locating projections 26' which is held in abutment against the exposure guide plate 56 for keeping the fiber lens array 26 spaced a constant distant from the photosensitive belt 20.

A transfer guide plate 58 is also turnably

supported on a shaft 59 and normally urged by the spring 60 to push the photosensitive belt 20, from the reverse side thereof, in a direction toward the corotron 25. The photosensitive belt 20 remains spaced a constant distance from the corotron 25 by being kept in contact with locating projections 25' on the corotron 25.

Since the exposure guide plate 56 and the transfer guide plate 58 are movable against the reverse side of the endless photosensitive belt 20 toward the fiber lens array 26 which is an exposure means and the corotron 25 which is a transfer means, the gaps between the respective processing means and the photosensitive belt 20 can be maintained accurately as desired. As the guide plates 56, 58 are normally urged by the spring 60, the desired accuracy can be kept at all times even if a machine body is twisted when the machine body is moved.

The present invention is not limited to the illustrated arrangement in which the guide plates 56, 58 are urged by the spring 60. The guide plates 56, 58 may be fixed in position after the gaps between the guide plates 56, 58 and the respective processing means have been adjusted.

While the present invention has been shown and described as being associated with the exposure processing means and the transfer processing means, the invention should not be interpreted as limited to these means, but is equally applicable to other processing means required by

the electrophotographic copier, such as a development processing means, a cleaning processing means, and a charge processing means.

## CLAIMS:

1. An electrophotographic copier comprising: a photosensitive belt supported on a plurality of rollers and drivable in one direction;

guide means held in contact with a reverse side of said photosensitive belt for urging the photosensitive belt to push its face side outwardly; and

processing means disposed in confronting relation to said guide means and including discharge, exposure, development, transfer, and cleaning means, said guide means being movable toward said processing means.

2. An electrophotographic copier according to claim 1, wherein said processing means has locating means, said guide means including urging means for urging said guide means to be kept in abutment against said locating means for maintaining gaps between said processing means and said photosensitive belt.

3. An electrophotographic copier according to claim 2, wherein said rollers include a pair of drive and driven rollers, said guide means including an arcuate member held against said photosensitive belt.

4. An electrophotographic copier according to claim 3, wherein said arcuate member has a portion contacting a reverse side of said photosensitive belt and having a radius of curvature greater than the radii of said rollers.

5. An electrophotographic copier according to claim 2, wherein said locating means are disposed on ends of said processing means transversely of said photosensitive belt and independently displaceable for setting the gaps between said processing means and said photosensitive belt.

6. An electrophotographic copier according to claim 5, wherein said guide means has projections extending across transverse edges of said photosensitive belt out of contact therewith and held against said locating means of said processing means.

7. An electrophotographic copier according to claim 2, wherein said guide means has projections extending across transverse edges of said photosensitive belt out of contact therewith and held against said locating means of said processing means.

8. An electrophotographic copier according to claim 1, wherein said guide means has projections extending across transverse edges of said photosensitive belt out of contact therewith and held against said locating means of said processing means.

FIG. 1.

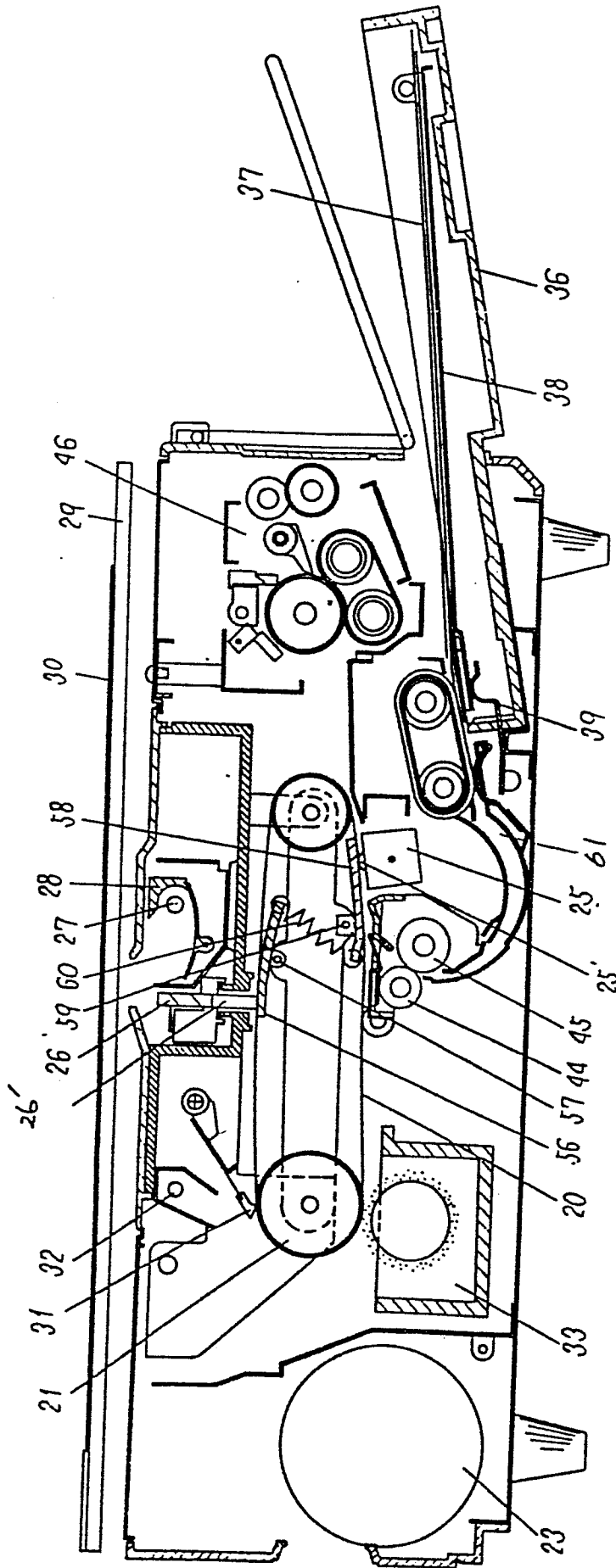


FIG. 2

