AU9339047

(12) PATENT ABRIDGMENT (11) Document No. AU-B-39047/93
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 664616

(54) Title
IMAGE TRANSFER APPARATUS

International Patent Classification(s)
(51)[5] **B41J 013/22**

(21) Application No. : **39047/93** (22) Application Date : **13.04.93**

(87) PCT Publication Number : **WO93/21017**

(30) Priority Data

(31) Number	(32) Date	(33) Country
4-119674	**13.04.92**	**JP JAPAN**
4-119676	**13.04.92**	**JP JAPAN**

(43) Publication Date : **18.11.93**

(44) Publication Date of Accepted Application : **23.11.95**

(71) Applicant(s)
TOYO INK MANUFACTURING CO., LTD.

(72) Inventor(s)
MASAAKI MATSUO; TAKAYUKI KIMURA

(74) Attorney or Agent
GRIFFITH HACK & CO., GPO Box 4164, SYDNEY NSW 2001

(56) Prior Art Documents
JP 1-83567
JP 63-249676
JP 55-259658

(57) Claim

1. An image transfer apparatus, which comprises a platen to which an image-forming material is to be attached and a transfer cylinder to which an image receptor is to be attached, and which is for transferring an image formed in a photosensitive layer of the image-forming material to the image receptor by feeding the image-forming material and the image receptor into a nip formed between the platen and the transfer cylinder by the rotation of the platen and the transfer cylinder,

the image transfer apparatus having an image receptor attaching device for holding the entire length of the top end side of the image receptor to the surface of the transfer cylinder and an image receptor attaching device for holding the entire length of the bottom end side of the image receptor to the surface of the transfer cylinder,

wherein:

the image receptor attaching device for holding the top end side of the image receptor is provided along an

.../2

axial-length direction of the transfer cylinder and in a cut-off portion provided in the surface of the transfer cylinder, said image receptor attaching device comprising at least two holders separated along the axial direction and at least two seat holders separated along the axial direction, a gap being provided in each interval between the holder seats.

OPI DATE 18/11/93 APPLN. ID 39047/93
AOJP DATE 27/01/94 PCT NUMBER PCT/JP93/00477

AU9339047

(51) 国際特許分類 5
B41J 13/22

A1

(11) 国際公開番号 664616 WO 93/21017

(43) 国際公開日
1993年10月28日 (28.10.1993)
国際調査報告書

(21) 国際出願番号 PCT/JP93/00477 添付公開書類
(22) 国際出願日 1993年4月13日(13. 04. 93)

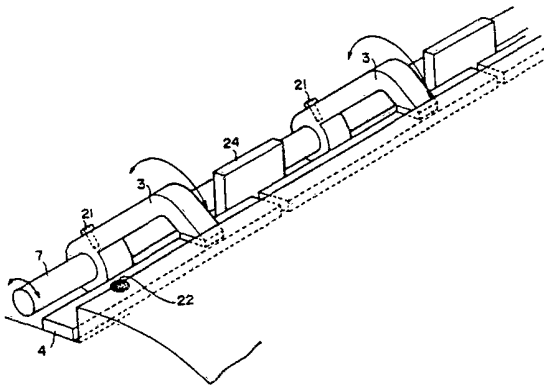
(30) 優先権データ
特願平4/119674 1992年4月13日(13. 04. 92) JP
特願平4/119676 1992年4月13日(13. 04. 92) JP

(71) 出願人(米国を除くすべての指定国について)
東洋インキ製造株式会社
(TOYO INK MANUFACTURING CO., LTD.)〔JP/JP〕
〒104 東京都中央区京橋2丁目3番13号 Tokyo, (JP)
(72) 発明者;および
(75) 発明者/出願人(米国についてのみ)
松尾正明(MATSUO, Masaaki)〔JP/JP〕
木村隆幸(KIMURA, Takayuki)〔JP/JP〕
〒104 東京都中央区京橋2丁目3番13号 東洋インキ製造株式会社内
Tokyo, (JP)
(74) 代理人
弁理士 小林正明(KOBAYASHI, Masaharu)
〒169 東京都新宿区高田馬場2丁目19番7号
タックイレブンビル1006 Tokyo, (JP)

(81) 指定国
AU, CA, DE(欧州特許), FR(欧州特許), GB(欧州特許),
US.

(54) Title : IMAGE TRANSFER APPARATUS

(54) 発明の名称 画像転写装置



(57) Abstract

An image transfer apparatus includes an impression cylinder (8) having an image forming material attached thereto and a transfer cylinder (1) having an image substrate attached thereto, for transferring an image formed on a photosensitive layer of the image forming material to the image substrate by introducing a nip between the impression cylinder and the transfer cylinder. In this apparatus, a device for attaching the image substrate to the transfer cylinder comprises pawls (3, 5) and pawl seats (4, 6) for holding the upper and lower sides of the image substrate to the surface of the transfer cylinder throughout the full width, and a device for holding the upper side of the image substrate comprises a pawl (3) and a pawl seat (4), disposed in a notch (2) formed at a part of the surface of the transfer cylinder in the axial direction of the transfer cylinder. The pawl and the pawl seat comprise at least two pawls and two pawl seats divided in the axial direction, respectively, and a gap exists between the pawl seats in the axial direction.

(57) 要約

画像形成材料を添着した圧胴（８）と画像受容体を添着した転写胴（１）とを具備し、圧胴および転写胴の回転により画像形成材料および画像受容体を圧胴と転写胴との間のニップに導入して該形成材料の感光性層に形成された画像を画像受容体に転写する画像転写装置において、画像受容体を転写胴に添着する装置が、画像受容体の上辺と下辺をそれぞれ幅方向全域にわたって転写胴表面に保持するための爪（３、５）と爪座（４、６）とからなる装置であり、画像受容体の上辺側添着装置が、転写胴表面の一部に設けた切り欠け部（２）に転写胴の軸長方向に設けられた画像受容体把持用の爪（３）および爪座（４）とからなり、該爪および爪座は、軸長方向に分割された少なくとも２個の爪および爪座からなり、かつ爪座間には軸長方向に間隙が存在することを特徴とする画像転写装置である。

DESCRIPTION

IMAGE TRANSFER APPARATUS

TECHNICAL FIELD

The present invention relates to an image transfer apparatus for transferring an image formed in a photosensitive layer of an image-forming material to an image receptor, the apparatus having an image receptor attaching device capable of holding the image receptor with uniform pressure. Further, it relates to an image transfer apparatus having an image receptor attaching device for easily and quickly attaching an image receptor while a transfer cylinder is heated, without causing nonuniformity of that length of the image receptor which is inserted into an image receptor clamp or nonuniformity of clamp holding power at a time when the image receptor is attached, which nonuniformity occurs due to wrinkling and curling of the image receptor.

TECHNICAL BACKGROUND

A single-colour or multi-colour prepress proof suitable for proof printing has recently been increasingly produced. The prepress proof is produced by exposing an image-forming material comprising a substrate and a photosensitive layer formed on one surface of the substrate to an image to form an image on the photosensitive layer and then transferring the image to an image receptor, such as paper, under heat, generally around 100°C. The image-forming material is formed of a substrate, a photosensitive layer formed on one surface of the substrate and a protective layer. As the substrate and the protective layer, a thin film or sheet formed form a material such as cellulose acetate, polystyrene, polyvinyl chloride or polyethylene terephthalate is used. As the image receptor, a suitable printing sheet such as paper or a film is used.

As an apparatus for preparing the above prepress proof, generally, there has been proposed an image-

transfer apparatus having a platen to which an image-forming material is to be attached and a transfer cylinder to which an image receptor is to be attached. The platen and the transfer cylinder are brought into contact so that a photosensitive layer of the image-forming material and the image receptor are brought into contact with each other under pressure to transfer an image formed on the photosensitive layer to the image receptor in a nip portion formed between the platen and the transfer cylinder. The image receptor, such as paper, is initially heated, and the image formed on the photosensitive layer of the image-forming material is transferred to the paper by bringing the photosensitive layer into contact with the paper under pressure, whereby the transfer of the image proceeds smoothly to give an aesthetically fine printed sheet. Generally, therefore, a means for heating the surface of the transfer cylinder at a proper temperature, e.g., around 100°C, is provided within the transfer cylinder to which the image receptor is to be attached.

As a device for attaching the image receptor, there has been used a device comprising a clamp consisting of one set of a holder and a holder seat, which clamp extends in the length direction of the transfer cylinder axis and is provided in the partial cut-off portion of the transfer cylinder, and the image receptor is held by means of said clamp. This clamp is usually made of a metal to utilise sufficient pressure between the holder and the holder seat. Therefore, the heat of the heated transfer cylinder is transmitted to the clamp, and the holder and the holder seat curve in operation, and it has been therefore difficult in many cases to hold the image receptor under uniform pressure. The image receptor itself is mostly of paper which curls under heat. Therefore, in inserting the image receptor into a narrow gap between the holder and the holder seat, the curving of the holder and the holder seat causes the defective

fixing of the image receptor, e.g., folding of the paper within the clamp in some cases. Because of this, a wrinkle occurs near the holding portion, or the inserted portion of the image receptor within the holder is not uniform in length. Further, a wrinkle occurs in the edge of a produced print, or the holding pressure of the holder is non-uniform.

A need has existed to overcome or at least ameliorate the above problems.

It is therefore an object of the present invention to provide an image transfer apparatus such as an apparatus for producing a prepress proof, the image transfer apparatus having an image receptor attaching device with which a soft sheet-like substance such as the image receptor can be easily attached and detached and the image receptor can be held under uniform pressure in operation. It is a further object of an embodiment of the present invention to provide an image transfer apparatus having an image receptor attaching device, whereby a soft sheet-like substance such as the image receptor can be quickly inserted into a holder such that the length of the inserted portion is constant, and the sheet-like substance can be easily attached and detached.

The present invention provides an image transfer apparatus, which comprises a platen to which an image-forming material is to be attached and a transfer cylinder to which an image receptor is to be attached, and which is for transferring an image formed in a photosensitive layer of the image-forming material to the image receptor by feeding the image-forming material and the image receptor into a nip formed between the platen and the transfer cylinder by the rotation of the platen and the transfer cylinder,

the image transfer apparatus having an image receptor attaching device for holding the entire length

of the top end side of the image receptor to the surface of the transfer cylinder and an image receptor attaching device for holding the entire length of the bottom end side of the image receptor to the surface of the transfer cylinder,

wherein:

the image receptor attaching device for holding the top end side of the image receptor is provided along an axial-length direction of the transfer cylinder and in a cut-off portion provided in the surface of the transfer cylinder, said image receptor attaching device comprising at least two holders separated along the axial direction, and at least two seat holders separated along the axial direction, a gap being provided in each interval between the holder seats.

Preferably, a stopper is provided between the separated holders for positioning the image receptor.

Preferably, the image receptor attaching device for attaching the bottom end side of the image receptor comprises at least two holders and at least two holder seats provided in an axial-length direction of the transfer cylinder and in a partial cut-off portion formed in the transfer cylinder surface and the holder seats are separated by a gap in the axial-length direction.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows the schematic cross section of an image transfer apparatus of the present invention having a platen which includes an image attaching apparatus and to which an image-forming material is to be attached and a transfer cylinder to which an image receptor such as paper is to be attached. Fig. 2 is a partially enlarged view of a device for attaching the top end side of the image receptor.

PREFERRED EMBODIMENTS OF THE INVENTION

The present invention will be described hereinafter with reference to attached drawings. Fig. 1 shows the construction of an image transfer apparatus used in the present invention.

The surface of transfer cylinder 1 is provided with a partial cut-off portion 2, and a first means for attaching the top end side (leading end side) of an image receptor comprising a holder 3 and a holder 4, and a second means for attaching the bottom end side (trailing end side) of the image receptor comprising a holder 5 and a holder seat 6. Both the first and second means are provided within the above partial cut-off portion. The holders 3 and 5 are provided with actuation shafts 7, 7' on which the holders are actuated by a manual or electric actuation means. The holders are allowed to open and close by the rotation of the actuation means.

One embodiment of the construction of platen 8 will be explained with reference to Fig. 1. The platen 8 is provided with a partial cut-off portion 9. The surface of the platen 8 is wrapped with a blanket 10, and the blanket 10 is fixed within the partial cut-off portion with a blanket fixing means 11. The partial cut-off portion 9 has inclined portions 12, 12' extending between the partial cut-off portion and the platen surface (circumferential surface), and an inclined portion is provided with a pin bar 13. The height of the pin bar 13 is chosen such that its top end does not protrude over the circumferential surface of the platen 8. Such an arrangement avoids any damage to the pin bar 13 or the surface of the transfer cylinder 1 during the rotation of the platen 8 and the transfer cylinder 1. A magnet sheet 14 may be tiltably attached within the partial cut-off portion 9 to assist the holding of the image-forming material against the platen surface. An adhesive tape 15 is provided on the platen surface near the inclined

portion 12 where the pin bar 13 is located, and another adhesive tape 15' is also provided on the platen surface near the other inclined portion 12'. The magnet sheet 14 is not wide enough to reach the adhesive tape 15 but is wide enough to cover pin bar 13 when the magnet sheet is tilted towards pin bar 13. The top end side of an image-forming material has holes corresponding to pins of the pin bar 13. These holes fit the pins of the pin bar 13, and the image-forming material is pressed with the magnet sheet 14. Then, the platen 8 is turned in the direction of the arrow shown in Fig. 1, and the top end side and bottom end side of the image-forming material are fixed to the surface of the platen with the adhesive tapes 15 and 15'. A tray 25 is preferably provided above transfer cylinder 1 and platen 8. The tray can tilt about fulcrum 16 as a centre so that end portions 17 and 18 can come close to the transfer cylinder or platen surface. An image-forming material or an image receptor is placed on the tray for facilitating the fixing or removal of the image-forming material or the image receptor. A drawing roller 19 may be provided such that it can be in contact with the surface of the transfer cylinder 1 as required, and a drawing roller 20 may be provided such that it can be in contact with the surface of the platen 8 as required. The drawing roller 19 is effective for bringing the image receptor into close contact with the transfer cylinder surface and removing wrinkling and slackening of the image receptor when the image receptor is attached to the transfer cylinder surface. The drawing roller 20 is similarly effective when the image-forming material is attached to the platen surface.

Fig. 2 is a partially enlarged view of an image receptor attaching device for attaching the top end (leading end) side of an image receptor, which device comprises a plurality of holders 3, 3' and a plurality of holder seats 4, 4'. The holder seats 4, 4' are separated

in the axial-length direction of the transfer cylinder 1, as illustrated by a gap provided in each interval between the holder seats. These gaps prevent the holder seats being deformed, for example when subjected to thermal expansion or shrinkage. Further, the holders 3, 3' are separated in the axial-direction of the transfer cylinder 1 by a gap provided in each interval between the holders. These gaps prevent the holders from being deformed, for example curved, when subjected to thermal expansion or shrinkage. The holders 3, 3' are simultaneously actuated by an actuation shaft 7 communicating with all the holders 3, 3'. Preferably, each of the holders is provided with a bolt 21, 21' for adjusting the holder attachment angle, and each bolt 21, 21' is provided near the actuation shaft 7 for the holders 3, 3'. Each bolt is provided to adjust the attachment angle of its corresponding holder to the actuation shaft 7. The image receptor holding pressure of each holder is independently adjusted. The image receptor attaching device comprising holders 5 and holder seats 6 for attaching the bottom end (trailing end) side of the image receptor may have a structure similar to that of the image receptor attaching device for attaching the top end side of the image receptor. Further, an image receptor sensor 22 for sensing that portion of the image receptor which is inserted into the clamp is provided. Preferably a plurality of such image receptor sensors are provided in the holder seats 4, 4'.

It is preferred to provide a stopper 24 for positioning the image receptor in each interval between the holders separated in the axial-length direction of the transfer cylinder. Further, the surface of each holder which is to come into contact with the image receptor and/or the surface of each holder seat which is to come into contact with the image receptor may be formed of an elastic resin for securing the holding of the image receptor.

The operation of the image transfer apparatus having the above image receptor attaching devices, provided by the present invention, will be explained hereinafter.

The top end portion of an image receptor (not shown) is held by the clamp comprising the holders 3, 3' and the holder seats 4, 4' provided in the partial cut-off portion 2 of the transfer cylinder 1. Then the transfer cylinder 1 is rotated in the direction indicated by the arrow in Fig. 1, and the bottom end portion of the image receptor is held by the clamp comprising holders 5 and seats 6, whereby the image receptor is attached to the transfer cylinder 1. The holders 3, 3' and the holders 5 are actuated with actuation shafts 7, 7'. A heating means 23 for heating the transfer cylinder surface around 100°C for keeping the image receptor warm in advance of the image transfer operation is provided within the transfer cylinder 1. For this reason, the heat-induced curving of the holders and holder seats and the curling and wrinkling of the image receptor at a time of inserting the image receptor are liable to occur, and as a result, the holding pressure of the clamps is liable to be nonuniform, and the attachment of the image receptor is liable to be defective.

For overcoming the above problems, the present invention uses a plurality of the holder seats such as 4, 4' which are separated by intervals in the axial-length direction of the transfer cylinder 1 as shown in Fig. 2. Further, the present invention uses a plurality of the holders such as 3, 3' which are separated by intervals in the axial-length direction of the transfer cylinder 1 as shown in Fig. 2. As a result, deformation such as curving of the holders and holder seats can be prevented, and the image receptor is constantly held under uniform pressure. Further, the defective attaching of the image receptor caused by the holder and holder seats can be prevented. The holders 5 and holder seats 6 may have the

same structures as those of the holders 3, 3' and holder seats 4, 4' shown in Fig. 2. A plurality of the holders 3, 3' separated in the axial direction of the transfer cylinder 1 are simultaneously actuated by the actuation shaft 7 communicating with each holder 3, 3'. As a result, the separated holders can be simultaneously actuated, and the operation for attaching the image receptor is hence easily performed.

A stopper 24 for positioning the image receptor is provided in each interval between the holders 3, 3' separated in the axial-length direction, whereby that portion of the image receptor which is to be held by the holders 3, 3' and holder seats 4, 4' can be quickly made constant when the image receptor is inserted into the gaps between the holders 3, 3' and the holder seats 4, 4'. It is not necessary to provide the image receptor attaching device for attaching the bottom end side of the image receptor with such a stopper for positioning the image receptor, since the image receptor is held under tension.

After the top end side of the image receptor is held by the clamp, the transfer cylinder 1 is preferably rotated in the direction shown by the arrow on transfer cylinder 1 in Fig. 1 while keeping the image receptor in close contact with the transfer cylinder surface by means of the drawing roller 19, and then the image receptor is held by the clamp for the bottom end side. The holder seats 6 may be provided with a sensor for sensing the image receptor.

The image transfer is carried out by introducing the image receptor attached to the transfer cylinder and the image-forming material attached to the platen into a nip formed by the transfer cylinder and the platen to transfer an image formed on the photosensitive layer of the image-forming material to the image receptor under

pressure.

INDUSTRIAL UTILITY

According to the present invention, the image receptor can be easily attached and detached, and the curving of the clamp under heat can be prevented. Therefore, there is provided an image transfer apparatus having an image receptor attaching device with which the power of the holders and holder seats for holding the image receptor can be made uniform and the image receptor is firmly held. Further, according to the present invention, there is provided an image transfer apparatus having an image receptor attaching device with which the image receptor can be attached to the transfer cylinder such that that length of the image receptor which is to be held is constant. As a result, the variability of the holding pressure of the clamp in the axial-length direction of the transfer cylinder or such problems at the time of inserting the image receptor into the clamp such as wrinkling can be prevented.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An image transfer apparatus, which comprises a platen to which an image-forming material is to be attached and a transfer cylinder to which an image receptor is to be attached, and which is for transferring an image formed in a photosensitive layer of the image-forming material to the image receptor by feeding the image-forming material and the image receptor into a nip formed between the platen and the transfer cylinder by the rotation of the platen and the transfer cylinder,

the image transfer apparatus having an image receptor attaching device for holding the entire length of the top end side of the image receptor to the surface of the transfer cylinder and an image receptor attaching device for holding the entire length of the bottom end side of the image receptor to the surface of the transfer cylinder,

wherein:

the image receptor attaching device for holding the top end side of the image receptor is provided along an axial-length direction of the transfer cylinder and in a cut-off portion provided in the surface of the transfer cylinder, said image receptor attaching device comprising at least two holders separated along the axial direction and at least two seat holders separated along the axial direction, a gap being provided in each interval between the holder seats.

2. An image transfer apparatus according to claim 1, wherein the image receptor attaching device for attaching the top end side of an image receptor is provided with a stopper for positioning the image receptor in each interval between the holders.

3. An image transfer apparatus according to claim 1 or claim 2, wherein the separated holders are simultaneously actuated by an actuation shaft communicating with all the holders.

4. An image transfer apparatus according to any one of claims 1 to 3, wherein the image receptor attaching device for attaching the bottom end side of the image receptor comprises at least two holders and at least two holder seats provided in an axial-length direction of the transfer cylinder and in a partial cut-off portion formed in the transfer cylinder surface and the holder seats are separated by a gap in the axial-length direction.

5. An image transfer apparatus incorporating an image receptor attaching device substantially as herein described with reference to Figures 1 and 2 of the accompanying drawings.

Dated this 17th day of August 1995

TOYO INK MANUFACTURING CO., LTD.
By their Patent Attorney
GRIFFITH HACK & CO

ABSTRACT

An image transfer apparatus, which comprises a platen (8) to which an image-forming material is to be attached and a transfer cylinder (1) to which an image receptor is to be attached, and which is for transferring an image formed in a photosensitive layer of an image-forming material to an image receptor by the introduction of the image-forming material and the image receptor into a nip formed by the platen and the transfer cylinder by the rotation of the platen and the transfer cylinder, the image transfer apparatus having an image receptor attaching device comprising holders (3,5) and holder seats (4,6) for holding the entire length of top end side of the image receptor to a surface of the transfer cylinder and for holding the entire length of bottom end side of the image receptor to a surface of the transfer cylinder, wherein: the image receptor attaching device for holding the top end side of the image receptor comprises holders (3) and holder seats (4) provided along an axial-length direction o. the transfer cylinder and in a cut-off portion (2) provided in part of the surface of the transfer cylinder, said holders being at least two holders separated along the axial direction, said holder seats being at least two seat holders separated along the axial direction, and a gap being provided in each interval between the holder seats.

39047/93

FIG. 1

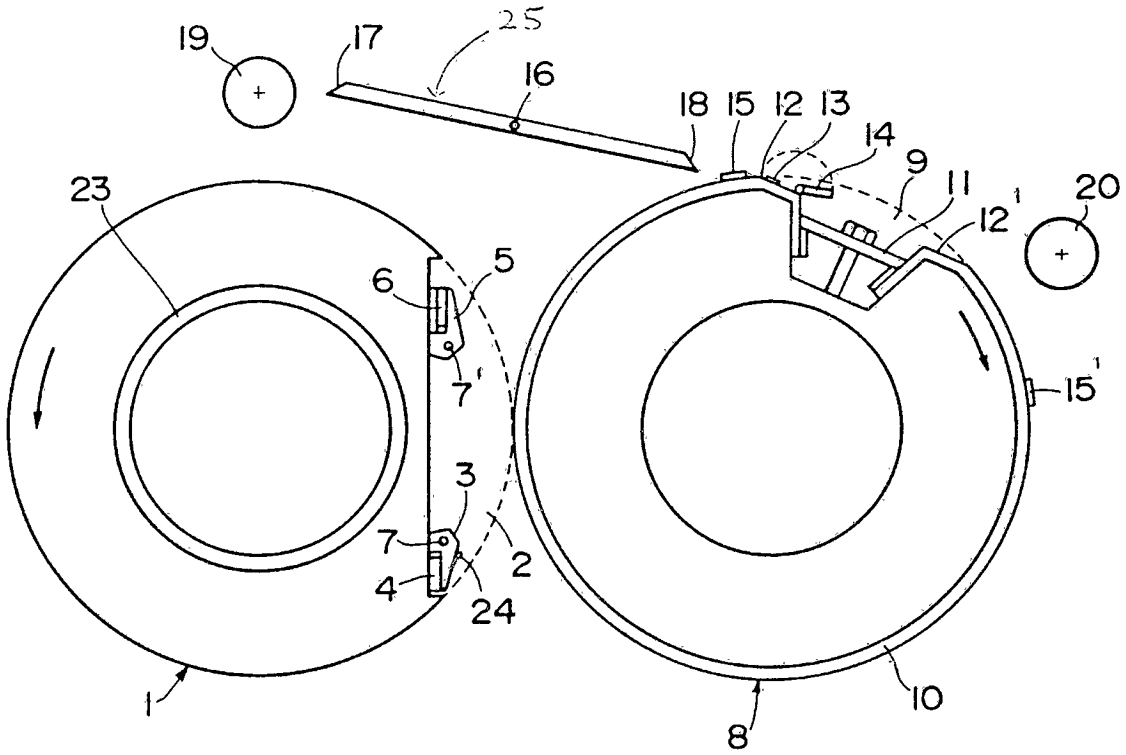
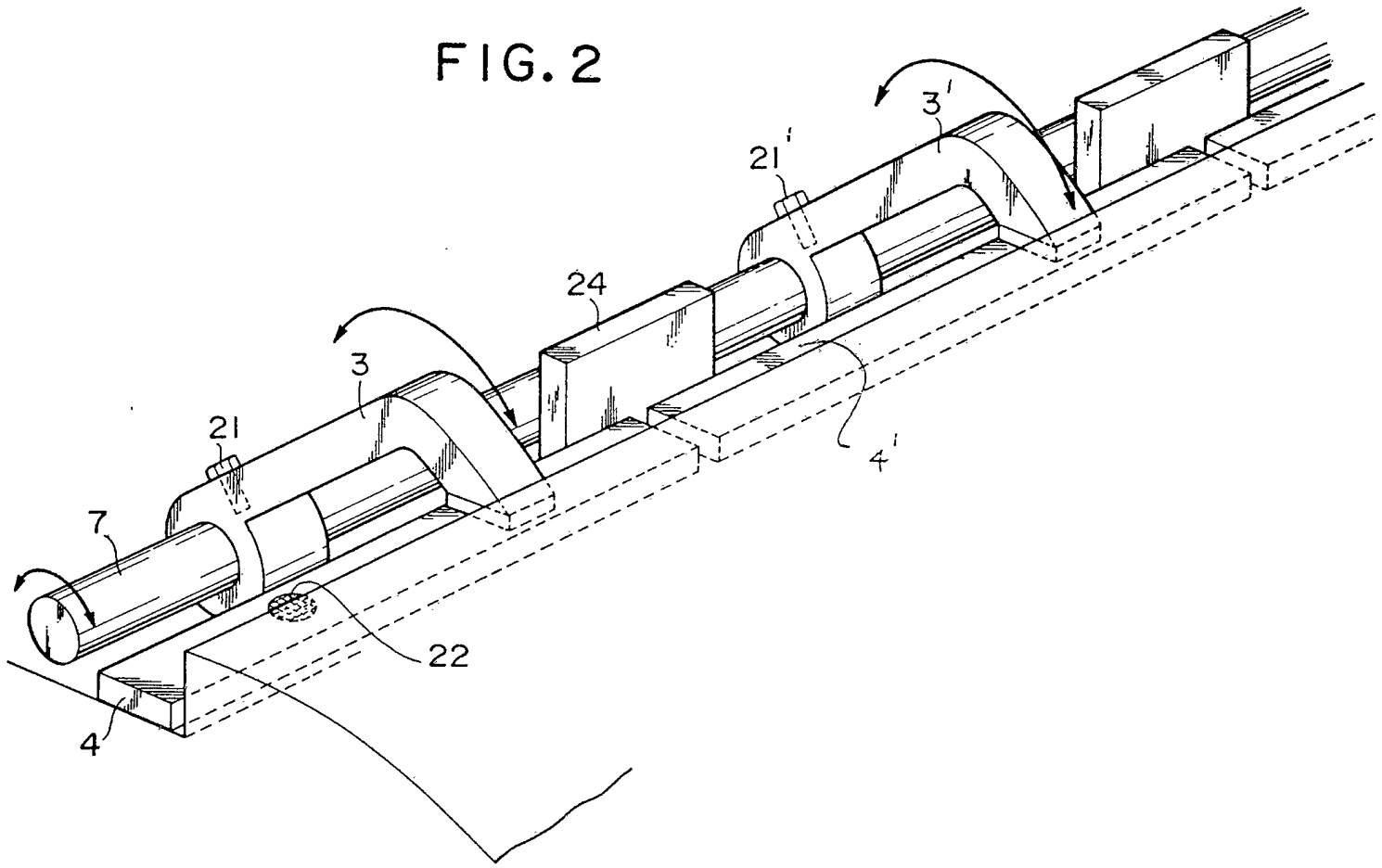


FIG. 2



INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP93/00477

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl^5 B41J13/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int. Cl^5 B41J13/22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1930 - 1993
Kokai Jitsuyo Shinan Koho 1972 - 1993

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP, A, 63-249676 (Toshiba Corp.), October 17, 1988 (17. 10. 88), (Family: none) Line 14, upper left column to line 20, upper right column, page 4, Figs. 1 to 2	1-3
A	JP, U, 1-83563 (Victor Co., of Japan, Ltd.), June 2, 1989 (02. 06. 89), (Family: none) Claim and drawings	1, 3
A	JP, U, 55-159658 (Ricoh Co., Ltd.), November 17, 1980 (17. 11. 80), (Family: none) Claim and drawings	1, 3

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
July 1, 1993 (01. 07. 93)	July 20, 1993 (20. 07. 93)
Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer
Facsimile No.	Telephone No.

Form PCT/ISA/210 (second sheet) (July 1992)

国際調査報告

国際出願番号 PCT/JP 93/00477

A. 発明の属する分野の分類（国際特許分類（IPC））

Int. Cl⁵ B41J13/22

B. 調査を行った分野

調査を行った最小限資料（国際特許分類（IPC））

Int. Cl⁵ B41J13/22

最小限資料以外の資料で調査を行った分野に含まれるもの

日本国実用新案公報 1930－1993年
日本国公開実用新案公報 1972－1993年

国際調査で使用した電子データベース（データベースの名称、調査に使用した用語）

C. 関連すると認められる文献

引用文献のカテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する請求の範囲の番号
A	JP, A, 63－249676（株式会社 東芝） 17. 10月. 1988（17. 10. 88）（ファミリーなし） 第4頁, 左上欄, 第14行－第4頁, 右上欄, 第20行, 第1－2図	1－3
A	JP, U, 1－83563（日本ビクター株式会社） 2. 6月. 1989（02. 06. 89）（ファミリーなし） 登録請求の範囲及び図面	1, 3

☑ C欄の続きにも文献が列挙されている。

☐ パテントファミリーに関する別紙を参照。

* 引用文献のカテゴリー
「A」特に関連のある文献ではなく、一般的技術水準を示すもの
「E」先行文献ではあるが、国際出願日以後に公表されたもの
「L」優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献（理由を付す）
「O」口頭による開示、使用、展示等に言及する文献
「P」国際出願日前で、かつ優先権の主張の基礎となる出願の日の後に公表された文献
「T」国際出願日又は優先日後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの
「X」特に関連のある文献であって、当該文献のみで発明の新規性又は進歩性がないと考えられるもの
「Y」特に関連のある文献であって、当該文献と他の1以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの
「&」同一パテントファミリー文献

国際調査を完了した日
01. 07. 93

国際調査報告の発送日
20.07.93

名称及びあて先
日本国特許庁（ISA/JP）
郵便番号100
東京都千代田区霞が関三丁目4番3号

特許庁審査官（権限のある職員）
吉村 尚 印
2C 9210

電話番号 03－3581－1101 内線 3221

様式PCT/ISA/210（第2ページ）（1992年7月）

国際調査報告	国際出願番号 PCT/JP 93/00477

C（続き）． 関連すると認められる文献

引用文献のカテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する請求の範囲の番号
A	JP, U, 55-159658（株式会社 リコー） 17. 11月. 1980（17. 11. 80）（ファミリーなし） 登録請求の範囲および図面	1, 3