

US009179019B2

(12) United States Patent Kahle

(54) DIGITAL MICROFORM IMAGING APPARATUS

- (71) Applicant: e-ImageData Corp., Hartford, WI (US)
- (72) Inventor: Todd A Kahle, Hartford, WI (US)
- (73) Assignee: E-IMAGEDATA CORP., Hartford, WI (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: 13/968,080
- (22) Filed: Aug. 15, 2013

(65) **Prior Publication Data**

US 2014/0015958 A1 Jan. 16, 2014

Related U.S. Application Data

- (63) Continuation of application No. 13/560,283, filed on Jul. 27, 2012, now Pat. No. 8,537,279, which is a continuation of application No. 11/748,692, filed on May 15, 2007, now Pat. No. 8,269,890.
- (51) Int. Cl.

G03B 37/04	(2006.01)
H04N 1/00	(2006.01)
G03B 21/11	(2006.01)
G03B 27/34	(2006.01)
G03B 27/53	(2006.01)
H04N 1/024	(2006.01)
	(Continued)

- (52) U.S. Cl.

(10) Patent No.: US 9,179,019 B2 (45) Date of Patent: Nov. 3, 2015

- (2013.01); G03B 17/02 (2013.01); H04N 1/195 (2013.01); H04N 2201/041 (2013.01)

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,836,251	Α	9/1974	Hertel et al.
4,870,294		9/1989	Hasegawa

(Continued)

FOREIGN PATENT DOCUMENTS

JP 2000356800 A 12/2000

OTHER PUBLICATIONS

S-T Imaging, Inc., "Got Film? ST200X" Brochure, circa 2004, 4 pages.

(Continued)

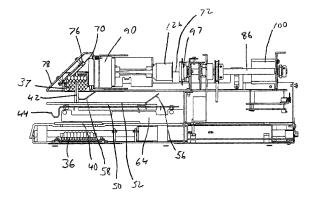
Primary Examiner — Khanh Dinh

(74) Attorney, Agent, or Firm - Quarles & Brady LLP

(57) ABSTRACT

A microform imaging apparatus comprising a chassis including a microform media support structure configured to support a microform media within a plane substantially orthogonal to a first optical axis, a fold mirror supported along the first optical axis to reflect light along a second optical axis that is angled with respect to the first optical axis, a lens supported along one of the first and second optical axis, an area sensor supported along the second optical axis, a first adjuster for moving the area sensor along at least a portion of the second optical axis and a second adjuster for moving the lens along at least a portion of the one of the first and second optical axis.

101 Claims, 15 Drawing Sheets



(51) Int. Cl.

H04N 1/028	(2006.01)
G03B 17/02	(2006.01)
H04N 1/195	(2006.01)

(56) References Cited

U.S. PATENT DOCUMENTS

5,061,955		10/1991	Watanabe
5,133,024	Α	7/1992	Froessl
5,137,347	Α	8/1992	Imai
5,241,659	Α	8/1993	Parulski et al.
5,477,343	Α	12/1995	Nodelman et al.
5,586,196	Α	12/1996	Sussman
5,647,654	Α	7/1997	Krzywdziak et al.
5,726,773	Α	3/1998	Mehlo et al.
6,057,941	Α	5/2000	Furukawa et al.
6,301,398	B1	10/2001	Kimball et al.
6,339,483	B1	1/2002	Hoshino et al.
6,476,979	B1	11/2002	Schaack
7,797,528	B2 *	9/2010	Lapstun et al 713/150
7,880,807	B2 *	2/2011	Gupta 348/373
7,949,868	B2 *	5/2011	Lapstun et al 713/150
7,965,257	B2 *	6/2011	Perkins et al 345/1.3
8,269,890	B2 *	9/2012	Kahle 348/487
8,537,279	B2 *	9/2013	Kahle 348/487
8,684,527	B2 *	4/2014	Warden et al 351/205
2004/0012827	A1	1/2004	Fujinawa et al.
2007/0103739	A1	5/2007	Anderson, Jr. et al.
2008/0284847	A1	11/2008	Kahle
2008/0288888	AI	11/2008	Kahle et al.
2012/0008820	Al	1/2012	Kahle et al.

OTHER PUBLICATIONS

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Complaint for Patent Infringement (W.D. Wisc. Sep. 20, 2012), 5 pages.

E-ImageData Corp. v *Konica Minolta Business Solutions U.S.A., Inc., et al.*, 3:12-cv-686, Konica Minolta Business Solutions U.S.A., Inc.'s Answer to Plaintiff's Complaint (W.D. Wisc. Nov. 16, 2012), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Naviant, Inc.'s Answer to Plaintiff's Complaint (W.D. Wisc. Nov. 6, 2012), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Indus International, Inc.'s Answer to Plaintiff's Complaint (W.D. Wisc. Nov. 16, 2012), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, First Amended Complaint for Patent Infringement (W.D. Wisc. Nov. 29, 2012), 5 pages.

E-ImageData Corp. v *Konica Minolta Business Solutions U.S.A., Inc., et al.*, 3:12-cv-686, Konica Minolta Business Solutions U.S.A., Inc.'s Answer to Plaintiff's First Amended Complaint (W.D. Wisc. Dec. 13, 2012), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Naviant, Inc.'s Answer to Plaintiff's First Amended Complaint (W.D. Wisc. Dec. 13, 2012), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-ev-686, Indus International, Inc.'s Answer to Plaintiff's First Amended Complaint (W.D. Wisc. Dec. 13, 2012), 9 pages. E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-ev-686, Second Amended Complaint for Patent Infringement (W.D. Wisc. Jan. 16, 2013), 5 pages.

E-ImageData Corp. v *Konica Minolta Business Solutions U.S.A., Inc., et al.*, 3:12-cv-686, Konica Minolta Business Solutions U.S.A., Inc.'s Answer to Plaintiff's Second Amended Complaint (W.D. Wisc. Jan. 30, 2013), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Naviant, Inc.'s Answer to Plaintiff's Second Amended Complaint (W.D. Wisc. Jan. 30, 2013), 9 pages.

DOCKET

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Indus International, Inc.'s Answer to Plaintiff's Second Amended Complaint (W.D. Wisc. Jan. 30, 2013), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Third Amended Complaint for Patent Infringement (W.D. Wisc. Nov. 12, 2013), 5 pages.

E-ImageData Corp. v *Konica Minolta Business Solutions U.S.A.*, *Inc.*, et al., 3:12-cv-686, Konica Minolta Business Solutions U.S.A., Inc.'s Answer to Plaintiff's Third Amended Complaint (W.D. Wisc. Dec. 3, 2013), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Naviant, Inc.'s Answer to Plaintiff's Third Amended Complaint (W.D. Wisc. Dec. 3, 2013), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Indus International, Inc.'s Answer to Plaintiff's Third Amended Complaint (W.D. Wisc. Dec. 3, 2013), 9 pages. *E-ImageData Corp.* v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:13-cv-721, Complaint for Patent Infringement (W.D. Wisc. Oct. 16, 2013), 30 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-721, Konica Minolta Business Solutions U.S.A., Inc.'s Answer to Plaintiff's Complaint (W.D. Wisc. Dec. 20, 2013), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-721, Naviant, Inc.'s Answer to Plaintiff's Complaint (W.D. Wisc. Dec. 20, 2013), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-721, Indus International, Inc.'s Answer to Plaintiff's Complaint (W.D. Wisc. Dec. 20, 2013), 9 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686 & 3:12-cv-721, Stipulation of Dismissal With Prejudice (W.D. Wisc. Jan. 5, 2015), 2 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Defendants' Corrected Invalidity/ Unenforceability Contentions (W.D. Wisc. Mar. 13, 2013), 160 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Plaintiff E-ImageData Corp.'s Disclosure of Proposed Claim Constructions (W.D. Wisc. May 22, 2013), 2 pages. *E-ImageData Corp.* v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Defendants' Terms and Proposed Constructions (W.D. Wisc. May 22, 2013), 3 pages.

E-ImageData Corp. v *Konica Minolta Business Solutions U.S.A., Inc., et al.*, 3:12-cv-686, Plaintiff E-ImageData Corp.'s Responses to Defendants' Proposed Constructions (W.D. Wisc. Jun. 19, 2013), 2 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Defendants' Responses to Plaintiff's Proposed Constructions (W.D. Wisc. Jun. 19, 2013), 4 pages.

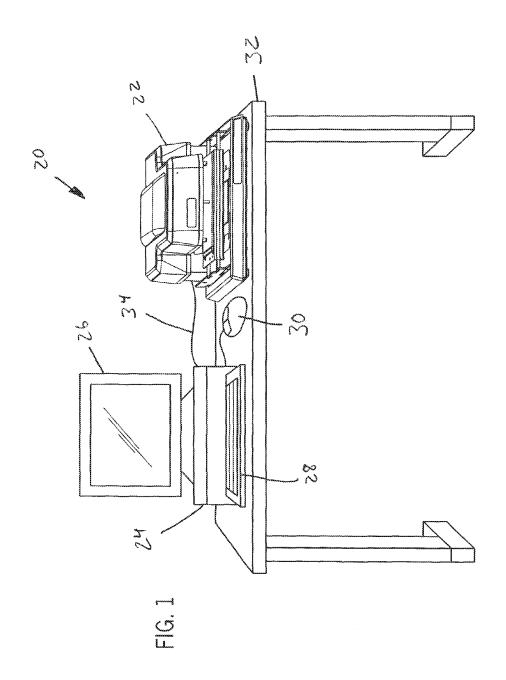
E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686 & 3:12-cv-721, Defendants' Invalidity/ Unenforceability Contentions (W.D. Wisc. Mar. 28, 2014), 18 pages. *E-ImageData Corp.* v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Expert Report of Johnathan Ellis Regarding Infringement of U.S. Pat. No. 8,269,890, with Exhibits 1 & 2 (W.D. Wisc. Aug. 16, 2013), 68 pages.

E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Expert Report of Richard W. Klopp Regarding Invalidity of U.S. Pat. No. 8,269,890, with Exhibits A-L (W.D. Wisc. Aug. 16, 2013), 382 pages.

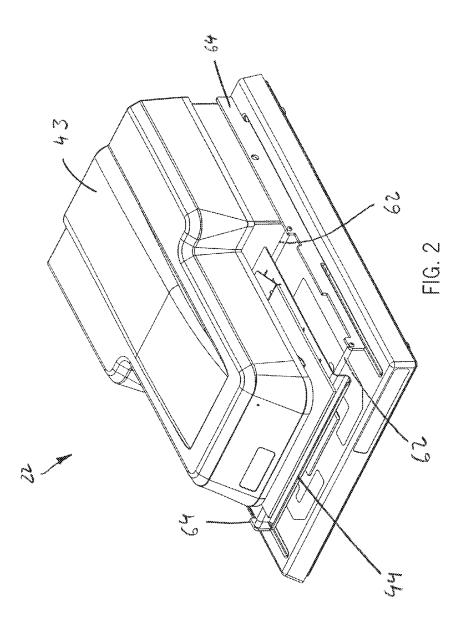
E-ImageData Corp. v Konica Minolta Business Solutions U.S.A., Inc., et al., 3:12-cv-686, Expert Report of Johnathan Ellis Regarding Validity of U.S. Pat. No. 8,269,890, with Exhibits 1 & 2 (W.D. Wisc. Sep. 30, 2013), 65 pages.

E-ImageData Corp. v *Konica Minolta Business Solutions U.S.A., Inc., et al.*, 3:12-cv-686, Expert Report of Richard W. Klopp Regarding Non-Infringement of U.S. Pat. No. 8,269,890, with Exhibits A & B (W.D. Wisc. Sep. 30, 2013), 71 pages.

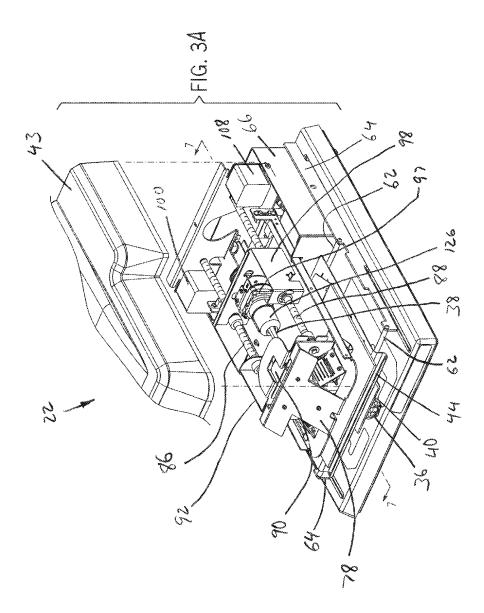
* cited by examiner



DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.



DOCKET ALARM Find authenticated court documents without watermarks at <u>docketalarm.com</u>.



DOCKET **A L A R M** Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET A L A R M



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.