



US007752780B2

(12) **United States Patent**
Johnson et al.

(10) **Patent No.:** **US 7,752,780 B2**
(45) **Date of Patent:** **Jul. 13, 2010**

- (54) **HYDRAULIC BACKHOE SHIFT MECHANISM**
- (75) Inventors: **Larry A. Johnson**, Burlington, IA (US); **Matthew J. Hennemann**, Burlington, IA (US); **Suhas Katdare**, Pune (IN)
- (73) Assignee: **CNH America LLC**, New Holland, PA (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.: **12/268,694**
(22) Filed: **Nov. 11, 2008**

(65) **Prior Publication Data**
US 2010/0115802 A1 May 13, 2010

- (51) **Int. Cl.**
E02F 5/02 (2006.01)
- (52) **U.S. Cl.** **37/443; 414/695**
- (58) **Field of Classification Search** **37/443, 37/403-409, 468, 466; 414/695, 695.7, 667, 414/671; 172/667, 663, 673**
See application file for complete search history.

- (56) **References Cited**
U.S. PATENT DOCUMENTS
1,626,019 A 4/1927 Whitmire
2,684,773 A 7/1954 Boyles

2,738,081 A	3/1956	Lee	
2,910,204 A	10/1959	Wight	
3,025,986 A	3/1962	Arnold et al.	
3,033,380 A	5/1962	Dorkins	
3,047,171 A	7/1962	Long	
3,099,358 A	7/1963	Clark	
3,106,305 A	10/1963	Gehring	
3,255,893 A	6/1966	Hainer et al.	
3,436,099 A *	4/1969	Long	280/456.1
3,494,636 A	2/1970	Magee	
3,967,744 A	7/1976	Goyarts	
4,003,484 A	1/1977	Jones et al.	
4,039,095 A	8/1977	Long	
4,049,139 A	9/1977	Stedman	
4,078,680 A	3/1978	Pilch	
4,373,856 A	2/1983	Taylor	
4,921,392 A *	5/1990	Wagner	414/695
4,941,786 A *	7/1990	Steinbock	414/695.7
5,606,809 A	3/1997	Allen	

* cited by examiner

Primary Examiner—Robert E Pezzuto
(74) *Attorney, Agent, or Firm*—Patrick M. Sheldrake; John William Stader; Michael G. Harms

(57) **ABSTRACT**

An earth-working vehicle, such as a backhoe loader, has an implement, such as a backhoe, mounted in a manner that the implement can be shifted transversely with respect to the vehicle. A hydraulic motor and roller cable or rack are secured to the vehicle main frame and implement supporting plate to position the implement transversely of the vehicle without the jerky movements of prior backhoe loaders.

20 Claims, 5 Drawing Sheets

