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(54) **MACHINE FOR FITTING AND REMOVING TIRES AND WHEEL RIMS FOR VEHICLES**

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(58) **Field of Classification Search** 157/1.17, 157/1.3, 1.28
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,408,921 B1 * 6/2002 Bonacini 157/1.24
6,443,206 B1 * 9/2002 Bonacini 157/1.24
6,588,478 B1 * 7/2003 Vignoli 157/1.28
6,619,362 B1 * 9/2003 Corghi 157/1.24
6,823,922 B1 * 11/2004 Gonzaga 157/1.3

FOREIGN PATENT DOCUMENTS

EP 1 026 017 8/2000
EP 1 052 120 11/2000
EP 1 314 584 5/2003

* cited by examiner

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(57) **ABSTRACT**

A machine for fitting/removing tires and wheel rims for vehicles, comprising a frame for supporting elements for coupling and turning a rim, onto/from which a tire is to be fitted/removed, about a rotation axis, and a working assembly that is movably supported by the frame and comprises a working head for fitting and removing the rim/tire associated with a first translational actuation, and is provided with a tubular pusher transverse to the rotation axis, and associated with an abutment surface associable with a tire side, and with at least one tire removal tool associated with a second actuation for alternate movement between an inactive configuration at least partially within the pusher, and at least one active configuration, protruding at least partially from the pusher.

19 Claims, 12 Drawing Sheets