Abstract: A combined cultivator and hoe, comprising a hoe blade (6) and cultivator tines (4, 8), the central tine (4) being fixed to a metal plate (9) and having an adjustable scraper (5). The blade (6) and cultivator tines (8) are both pivotally attached to the metal plate (9) which is fitted to a handle, the angles of the blade (6) and cultivator tines (8) relative to the plate (9) being adjustable between two positions, and the cultivator tines (8) being adjustable relative to the central, fixed tine (4).
COMBINED HAND CULTIVATOR AND HOE

For many years a combined cultivator and hoe has consisted of a thin flat metal blade with tines formed on one end usually set at a fixed angle to a long handle. A variety of tool designs for digging and tilling have included a handle with interchangeable heads suitable for performing specific functions.

5 This invention when fitted with a suitable handle allows for five different functions without changing heads.
By changing the angles of a metal blade and tines it can become: a digging hoe; a push-pull hoe; a cultivator; a furrow maker; or a scraper for cleaning the joints in brick paving.

10 A Culti-Hoe in accordance with this invention comprises a metal plate carrying four bearing surfaces allowing two movable sections, i.e.: a tine section and a hoe blade section to each be able to be set at two different angles.
Both the said tine and said blade sections are held at working angles by pressure from spring wires fixed across the said metal plate the ends of said spring wires fit into indents on the movable sections.

The blade section consists of a hoe blade preferably approximately one hundred millimetres wide with wings on either side bent at ninety degrees to the blade and fitted with a pivoting devise utilizing two of the four bearing surfaces.
The tine section consists of a three tined cultivator with the outer two tines able to fold towards the handle on the remaining two bearing surfaces, allowing a single tine to be used for furrow making for seeds. An adjustable scraper fitted behind the said single tine can be used to clean the joints in brick paving.

The invention may be better understood with reference to the accompanying drawings of parts of the invention which:

25 Fig._X shows side A of a metal plate (9) with four bearing surfaces ((2) attached while Fig._2. shows side B of the metal plate (9) with the bearing surfaces (2) two spring wires (3) and a single tine (4) with a scraper (5) fitted to the back of the single tine (4) FigJ5. shows a hoe blade (6) with wings fitted either side to provide attachment to two of the bearing surfaces (2)
Indents (7) allow partial rotation to facilitate two positions for the hoe blade (6). Fig. 4 shows two cultivator tines (8) joined together. Pressure from spring wires (3) in indents (7) holds tines (8) in either of two working positions when attached to the two remaining bearing surfaces (2).

Figs. 5 to 8 show the Culti-Hoe fully assembled and fitted with a suitable handle.

Fig. 5 shows blade (6) in position to be used as a digging hoe while Fig. 6 explains how the blade angle is altered to become a push-pull hoe. Fig. 7 shows tines (8) and (4) in position for cultivator work while in Fig. 8, tines (8) are folded forward allowing use of tine (4) and scraper (5) for suitable work.

Any position change takes only seconds as only light pressure with the user’s foot is required.
CLAIMS

The claims defining the invention are as follows:

1. A hand operated combined cultivator and hoe whereby a plurality of cultivator tines can be rotated to two pre-determined settings on a pivot point and held in these settings by a spring wire giving access to either a single or multiple number of tines.

   The single tine having an adjustable scraper fitted behind the said tine which is fixed to a flat carrier plate carrying two bearing surfaces acting as the pivot point for the rotatable tines and a further two bearing surfaces acting as the pivot point for a hoe blade having two pre-determined angle settings and held in position by a spring wire. The metal plate (9) having a provision for a clamp for fitting a handle to the invention.

2. A hoe blade as claimed in claim (1) made from hardened metal extended beyond the blade width on both sides and both bent at ninety degrees at blade edge to form attachment to the bearing surfaces and held in position by spring pressure in indents around the pivot point.

3. Cultivator tines as claimed in claim (1) spaced relative to two of the bearing surfaces by a metal rod and made from suitably hardened metal suitably shaped for tilling soil and held in place by spring pressure in indents around the pivot point.

4. A scraper as claimed in claim (1) made from high grade wear resistant metal threaded for adjustment and pointed on the working end.

5. A cultivator hoe substantially as herein before described with reference to Figures one to eight of the accompanying drawings.

No claim is made for the handle shown in the drawings.
AMENDED CLAIMS
received by the International Bureau on 30 June 2008 (30.06.08).

1. A multipurpose gardening implement comprising:
   a moveable hoe blade; moveable cultivator tines; and a fixed
   cultivator tine having an adjustable scraper attached; all
   combined as a hand operated garden tool whereby a plurality of
   cultivator tines can be rotated to two pre-determined setting on a
   pivot point and held in these settings by a spring wire giving
   access to either a multiple number of tines or the said single tine
   which is a fixture to a flat carrier plate carrying two bearing
   surfaces acting as the pivot point for the said movable tines, a
   further two bearing surfaces acting as the pivot point for
   the said hoe blade, a centrally located block for holding two
   spring wires and having provision for a clamp for fitting a handle
   to the implement the said hoe blade being rotatable to either of
   two pre-determined settings and held in position by pressure
   from a spring wire.

2. A hoe blade as claimed in claim (1) made from hardened metal
   extended beyond the blade width on both sides and both bent at
   ninety degrees at blade edge to form attachment to the bearing
   surfaces and held in position by spring pressure in indents
   around the pivot point.

3. Cultivator tines as claimed in claim (1) spaced relative to two of
   the bearing surfaces by a metal rod and made from suitably hardened
   metal suitably shaped for tilling soil and held in place by spring
   pressure in indents around the pivot point.

4. A scraper as claimed in claim (1) made from high grade wear
   resistant metal threaded for adjustment and pointed on the
   working end.

5. A multi-purpose gardening implement comprising a hoe, cultivator
   and scraper substantially as herein before described with reference
   to Figures one to eight of the accompanying drawings.

AMENDED SHEET (ARTICLE 19)
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

AOIB 1/20 (2006.01)

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)

AU IPC

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

Electronic database consulted during the international search (name of database and, where practical, search terms used)

DWPI IPC AOIB 1/-, AOIC 5/-, A62C 8/6c and KEYWORDS hoe, shovel, spade, blade, scraper, tine, tine, finger, spike, tooth, teeth, fork, combine, join, integral, multi, dual, twin, pivot, rotate, turn, swing, twist, swivel, hinge and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>A</td>
<td>U S 6109013 A (SCOTT) 29 August 2000 Column 1; line 29 to Column 2, line 31 and Figures</td>
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<tr>
<td>A</td>
<td>DE 37 40 261 C1 (KARST) 28 July 1988 Abstract</td>
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<tr>
<td>A</td>
<td>U S 5609215 A (RIOS et al) 11 March 1997 Column 3, line 64 to Column 4, line 65 and Figures</td>
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[X] Further documents are listed in the continuation of Box C  [X] 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 application or patent but published on or after the international filing date
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  "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
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Date of the actual completion of the international search

23 May 2008

Date of mailing of this international search report

10 JUN 2008

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<td>A</td>
<td>US 5425226 A (KAUFMAN) 20 June 1995 Figures</td>
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<tr>
<td>A</td>
<td>DE 198 39 317 A1 (KURZ) 2 March 2000 Abstract</td>
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Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX