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A project of Volunteers in Asia

Kabaryolo Toolbar

ITDG Agricultural Equipment and Tools No. 4

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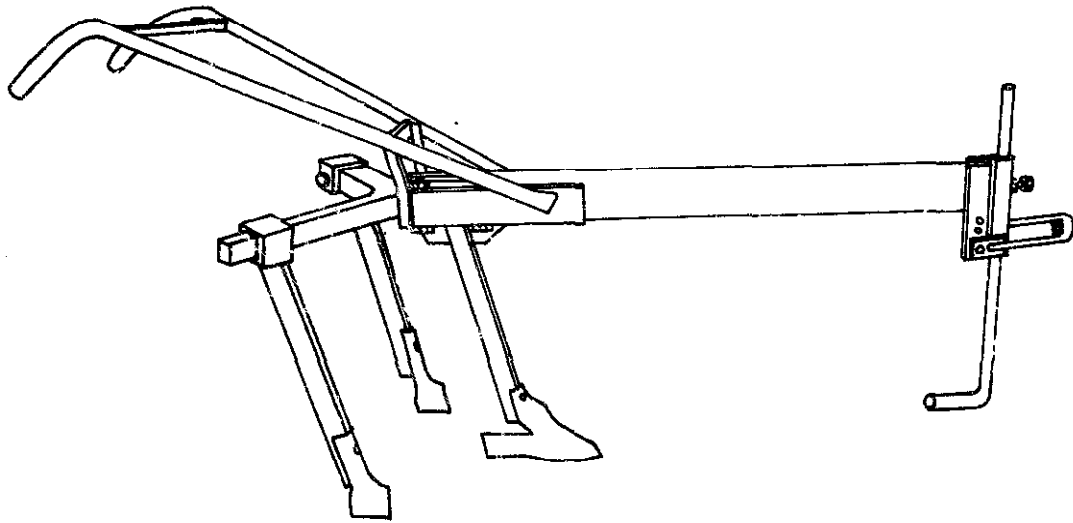
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"KABANYOLO" TOOLBAR

"KABANYCLO" OX TOOLFRAME

DEVELOPED BY:

Based on the "UNIBAR" developed and made by A.R. STOKES, Project Equipment Ltd., Newton Tony, Salisbury, U.K., with local modifications by L.J. Clarke, Makerere University, Uganda.

DESCRIPTION:

This multi-purpose toolframe is shown in plan and side views with a plough stem attached. When fitted with the "Y" frame it can be used as an adjustable-width 3-tine cultivator/weeder.

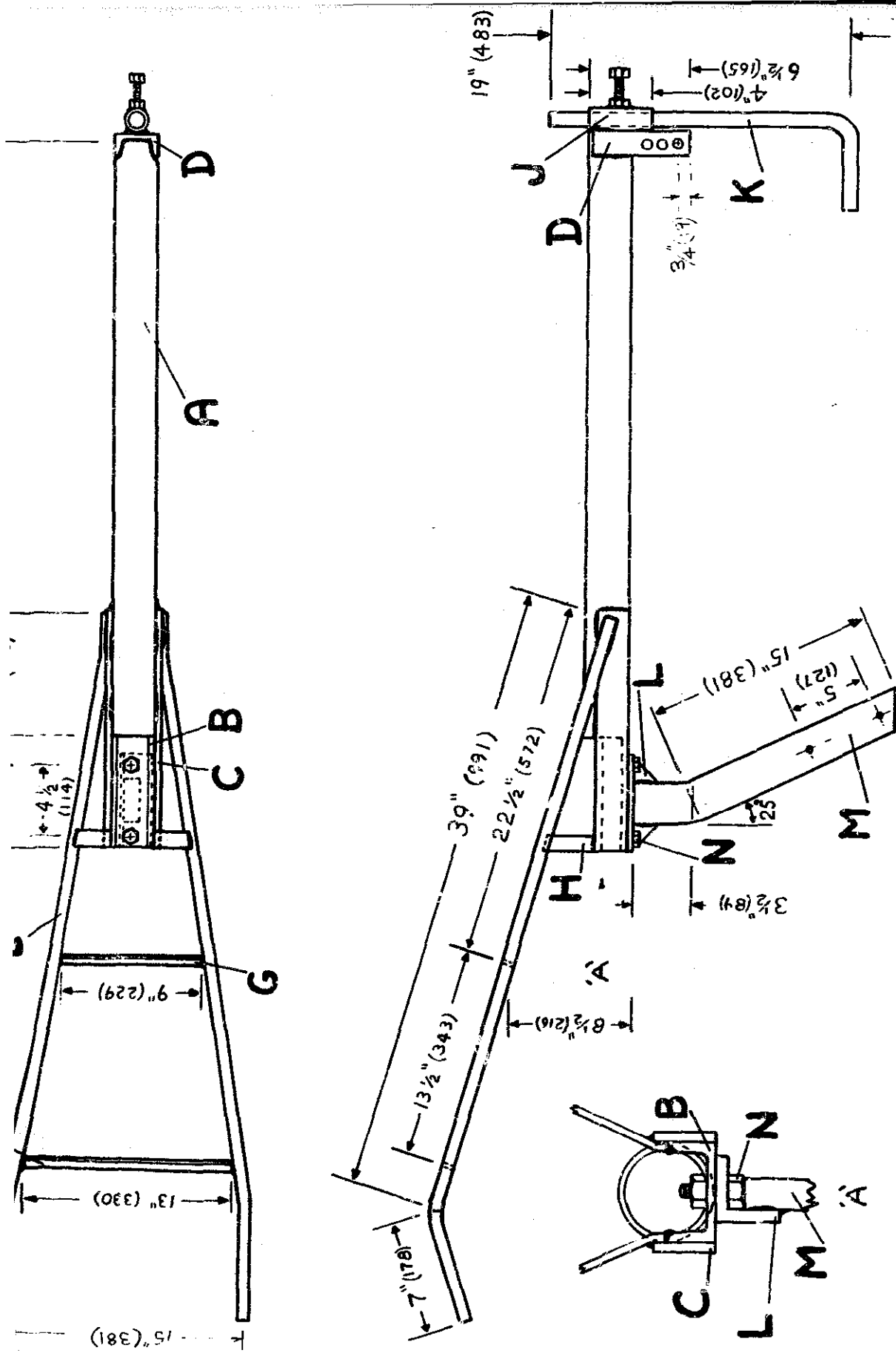
The toolframe is fabricated from mild steel flat, pipe, bar, channel, angle and box section materials. A simple skid is used instead of a depth wheel.

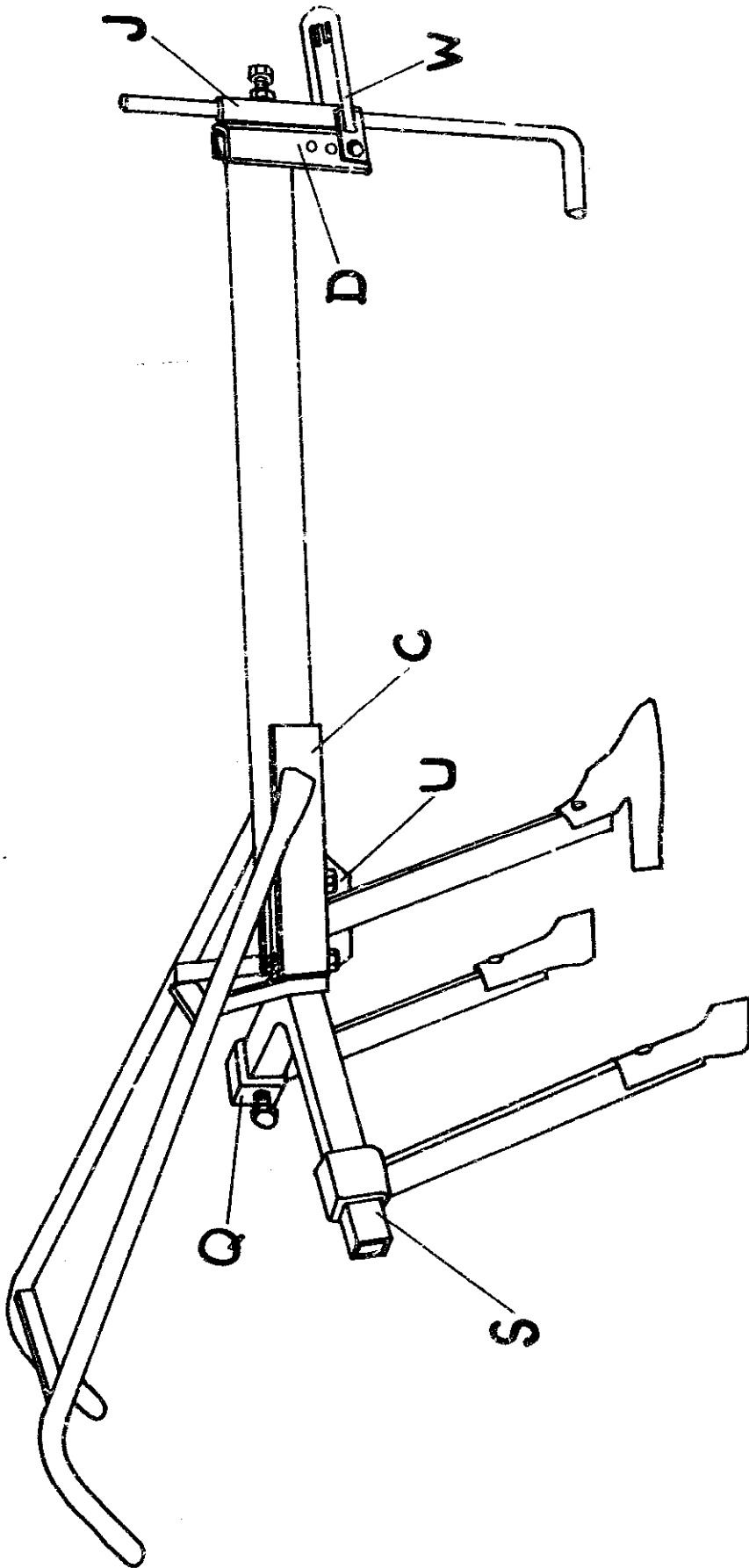
Note: Figures in brackets are in millimetres.

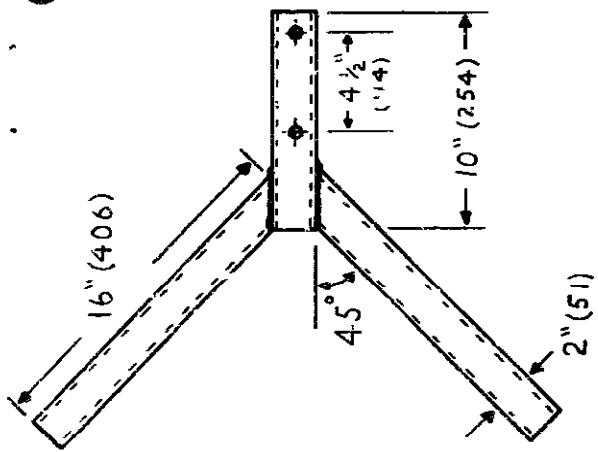
KEY:

<u>ITEM</u>	<u>NAME</u>	<u>QUANTITY</u>	<u>ITEM DESCRIPTION</u>
A	MAIN FRAME	1	Of 2 $\frac{1}{2}$ " (63) internal diameter, $\frac{1}{4}$ " (6.3) thick wall mild steel pipe, 38" (965) long.
B	REAR CHANNEL SECTION	1	Of 3" x 1 $\frac{1}{2}$ " x $\frac{1}{4}$ " (76 x 38 x 6.3) mild steel channel section, 7" (178) long.
C	SIDE PIECE	2	Of 2" x $\frac{3}{8}$ " (51 x 9.5) flat mild steel, 15" (381) long.
D	FRONT CHANNEL SECTION	1	Of 3" x 1 $\frac{1}{2}$ " x $\frac{1}{4}$ " (76 x 38 x 6.3) mild steel channel section, 6 $\frac{1}{2}$ " (165) long, 3 holes each $\frac{1}{4}$ " (19) diameter drilled 1" (25) apart.
E	HANDLE SIDE PIECE	2	Of $\frac{1}{2}$ " (19) internal diameter pipe, 46" (1168) long.
F	HANDLE BRACE	1	Of 1" x $\frac{3}{8}$ " (25 x 9.5) flat mild steel, 13" (330) long.
G	HANDLE BRACE	1	Of 1" x $\frac{3}{8}$ " (25 x 9.5) flat mild steel, 9" (229) long.
H	HANDLE SIDE BRACE	2	Of 1" x $\frac{3}{8}$ " (25 x 9.5) flat mild steel, 4 $\frac{1}{2}$ " (114) long.
J	SKID CLAMP	1	Of 1" (25) internal diameter pipe, 4" (102) long.
K	SKID	1	Of 1" (25) diameter mild steel round bar, 25" (635) long.
L	STEM BRACKET	1	Of 2" x 2" x $\frac{3}{8}$ " (51 x 51 x 9.5) mild steel angle, 6" (152) long.
M	PLOUGH STEM	1	Of 2 $\frac{1}{2}$ " x $\frac{1}{4}$ " (63 x 19) flat mild steel, 18 $\frac{1}{2}$ " (470) long.

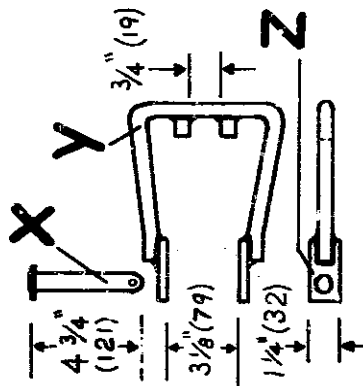
N	PLOUGH STEM/ CENTRE TINE BOLT	2	$\frac{5}{8}$ " (16) diameter mild steel bolt, $1\frac{1}{2}$ " (38) or $3\frac{1}{2}$ " (89) long as required.
P	SIDE TINE	2	Make one left hand tine and one right hand tine. Use shares of choice.
Q	SIDE TINE CLAMP	2	Each made from two 3" (76) length pieces of $2\frac{1}{2}$ " x $2\frac{1}{2}$ " x $\frac{1}{4}$ " (63 x 63 x 6.3) angle iron of section dimensions to ensure a sliding fit on the 'I' frame.
R	BOLT HOLE	1 per tine	$\frac{1}{8}$ " (9.5) diameter hole drilled through tine foot for share attachment bolt. Tine of $1\frac{1}{2}$ " x $\frac{1}{4}$ " (38 x 19) rectangular section mild steel.
<u>S</u>	'Y' FRAME	1	Made of 2" x 2" x $\frac{1}{8}$ " (51 x 51 x 3) square hollow section mild steel, two $\frac{5}{8}$ " (16) diameter holes drilled through the front end for bolting to item B.
<u>T</u>	CENTRE TINE	1	When used with the 'Y' frame the centre tine is attached to the main frame by two $\frac{5}{8}$ " (16) diameter bolts $3\frac{1}{2}$ " (89) long.
U	CENTRE TINE BRACKET	1	Of 2" x 2" x $\frac{1}{8}$ " (51 x 51 x 9.5) mild steel angle, 6" (152) long.
V	BOLT HOLE	1	$\frac{1}{8}$ " (9.5) diameter hole drilled through tine foot for share attachment bolt. Tine of $1\frac{1}{2}$ " x $\frac{1}{4}$ " (38 x 19) rectangular section mild steel.
<u>W</u>	HITCH ASSEMBLY	1	Made of mild steel, hitch height adjustment provided by holes in front channel section (item D).
X	HITCH PIN	1	Of $\frac{1}{2}$ " (19) diameter mild steel round bar.
Y	HITCH HOOK	1	Made of $\frac{1}{2}$ " (16) diameter mild steel round bar.
Z	HITCH PIVOT PIECE	2	Welded to hitch hook, each of $2\frac{1}{2}$ " x $1\frac{1}{4}$ " x $\frac{3}{8}$ " (63 x 32 x 9.5) flat mild steel.



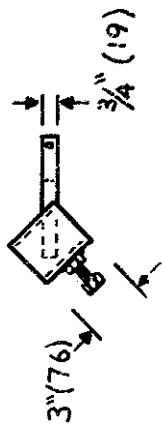




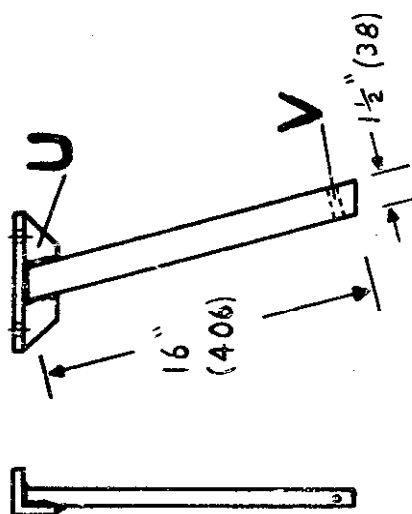
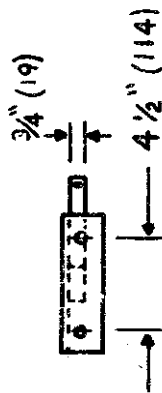
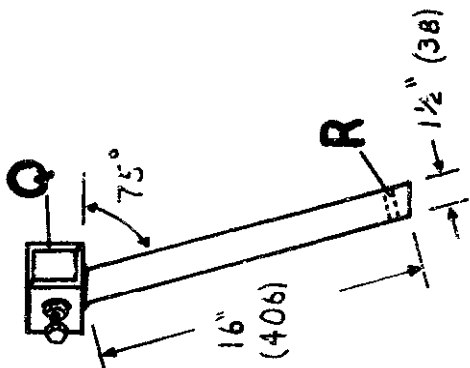
S



W



P



T