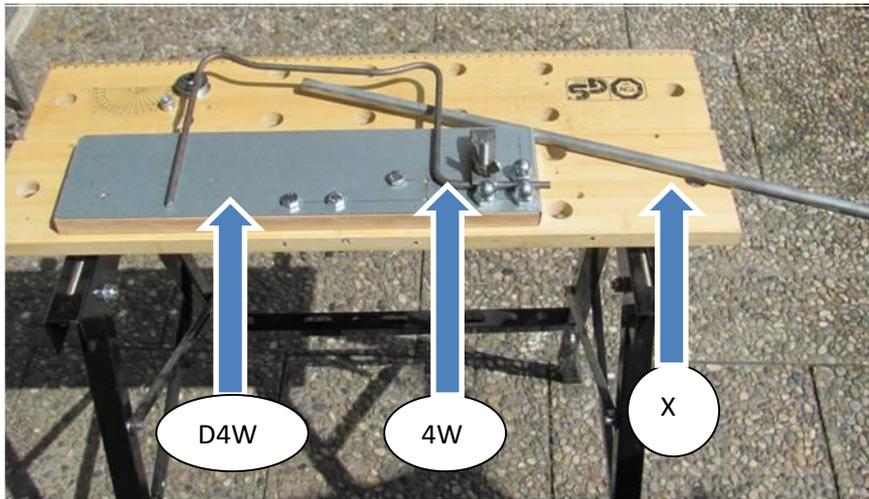


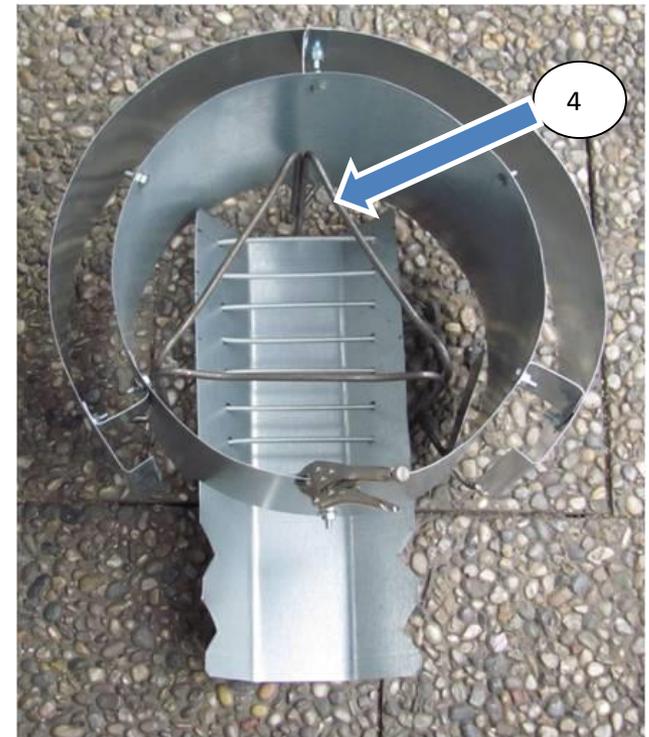
Ben 2 and Ben 3 – Fuelwood Stoves Annex E)

Photos, Drawings and Lists of Parts of Device (D4W) for Welded Tripod



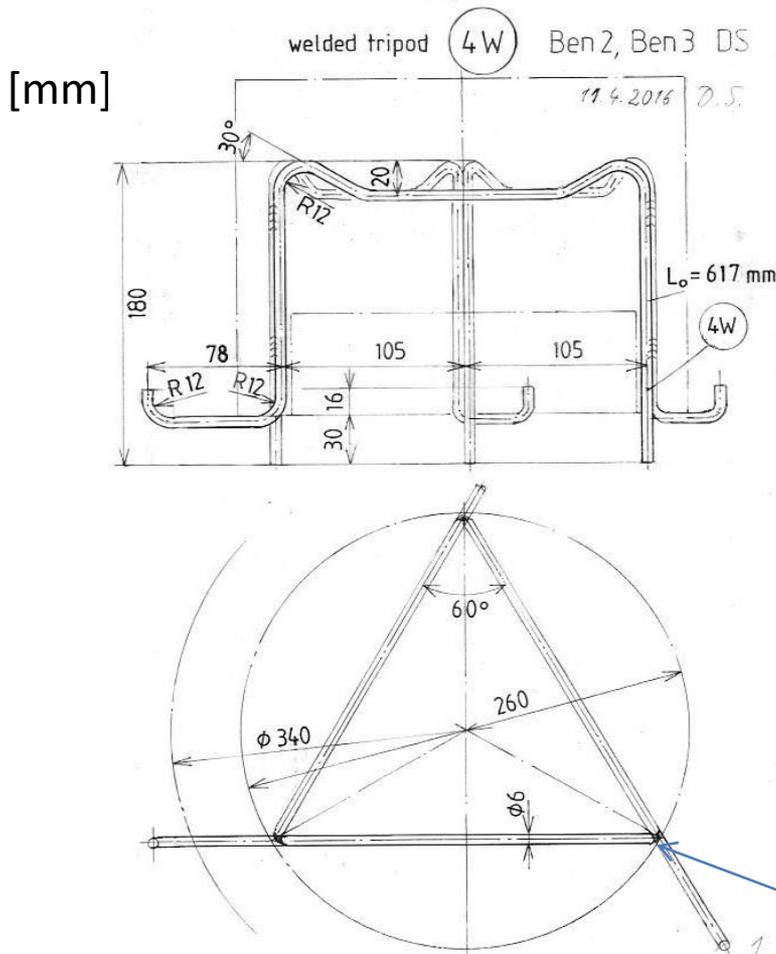
Bending device (D4W) installed on foldable work bench (X) for bending tripod leg (4W)

Ben stove with tripod (4) made of round steel



Documentation of Ben 2 and Ben 3 is an open source. Of course liability is excluded.

Ben 2 and Ben 3 – Fuelwood Stoves Welded Tripod Legs (4W)

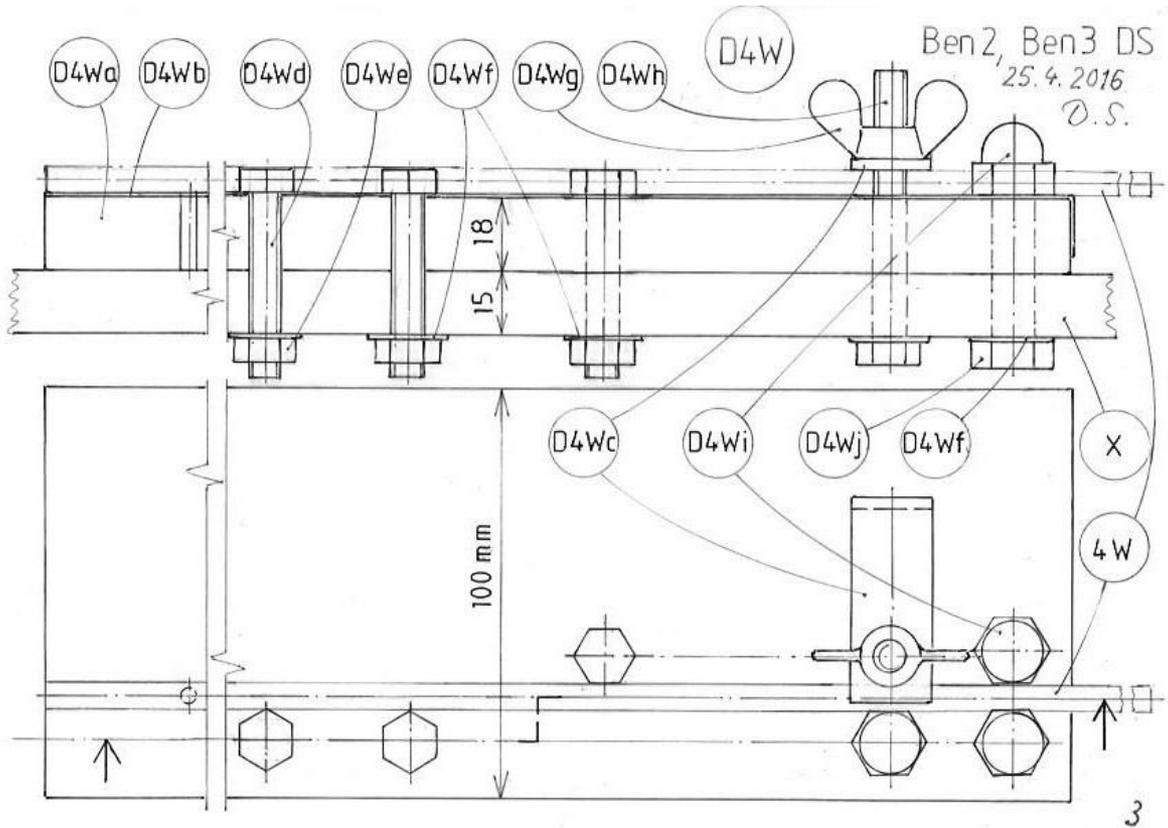


The welded tripod consists of three equal parts (4W) which are welded together.

The parts (4W) are made of mild steel with a diameter of 6 mm. This material can be cold bended by hand with a simple bending device described on the next pages. Bending steps are illustrated on pages 6 ... 8.

Ben2 and Ben 3 – Fuelwood Stoves

Device (D4W) for Welded Tripod: Assembly Drawing



Part Number	Quantity of Pieces	Name
X		foldable work bench
Z		bench vice
lever	1	steel tube (lever)
4W	1	tripod
4W	3	tripod leg
altern.	3	rope clamp, s. page 9
D4W	1	device for bending tripod leg (4W)
D4Wa	1	base board
D4Wb	1	cover plate
D4Wc	1	clamping piece
D4Wd	3	hexagonal bolt
D4We	3	hexagonal nut
D4Wf	7	washer
D4Wg	1	wing nut
D4Wh	1	hexagonal bolt
D4Wi	3	hexagonal cap nut
D4Wj	3	hexagonal bolt

Device (D4W) for bending of tripod leg:

Base board and cover plate of (D4W) are attached to the foldable work bench (X).

The bending steps are described with the photo gallery (pages 6 ... 8).

List of Parts: Bending Device (D4W) for Welded Tripod (4W)

With the proposed welded tripod the tripod ring (4a) and tripod legs (4b) together with the devices (D4), (D5) and (D6) are replaced.

Welded Tripod and Bending Device (D4W)										Dr.-Ing. Dieter Seifert	27.04.2016
Part Number	Quantity of Pieces	Name	Nr of drawing./ standard	Material	Thickness or Diameter	Width	Length	Cross section	Weight per part	Total weight	Notes/Alternatives (A:)
					mm	mm	mm	mm ²	kg	kg	
X		foldable work bench									
Z		bench vice									
lever	1	steel tube (lever)	DIN 2394	steel	12 x 1,5	12	500	49,5	0,194	0,194	for correcting of bends photos pages 6...8
4W	1	tripod	11.04.2016		mm	mm	mm	mm ²	kg	kg	
4W	3	tripod leg	4W	round mild steel	6		617	28	0,137	0,411	
altern.	3	rope clamp, s. page 10	DIN 741	galvanized steel	6				0,018	0,054	A: instead of welding
D4W	1	device for bending tripod leg (4W)	25.04.2016								
D4Wa	1	base board	D4Wa	hard wood	18	100	380	1800	0,547	0,547	
D4Wb	1	cover plate	D4Wb	galvanized steel	0,75	100	395		0,233	0,233	
D4Wc	1	clamping piece	D4Wc	strip steel	3	20	57		0,027	0,027	
D4Wd	3	hexagonal bolt	DIN 933	galvanized steel	M8 x 45				0,024	0,072	A: 40mm or > 45mm
D4We	3	hexagonal nut	DIN 555	galvanized steel	M8				0,005	0,015	
D4Wf	7	washer	DIN ISO 7089	galvanized steel	10,5 x 20				0,005	0,035	
D4Wg	1	wing nut	DIN 934	galvanized steel	M8				0,012	0,012	
D4Wh	1	hexagonal bolt	DIN 933	galvanized steel	M8 x 80				0,030	0,030	A: 65mm
D4Wi	3	hexagonal cap nut	DIN 1587	galvanized steel	M10				0,018	0,054	
D4Wj	3	hexagonal bolt	DIN 933	galvanized steel	M10 x 45				0,036	0,108	
Total weight (D4W)										1,13	

Ben 2 and Ben 3 – Fuelwood Stoves

Photos from Bending the Tripod Legs for the Welded Tripod (4W)



1

Fix the round steel (617 mm length, 6 mm diameter) at the bending device with the clamping piece and the wing nut. Align left end of the rod with the left side of the plate.



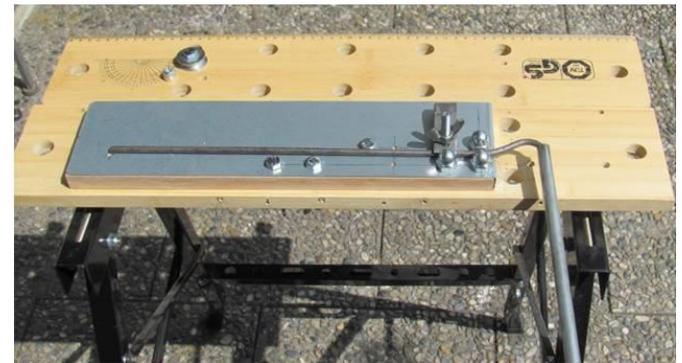
2

First bend with the help of the tube as lever



3

Prepare the second bend, fixing the rod with its left end aligned with the center of the hole.

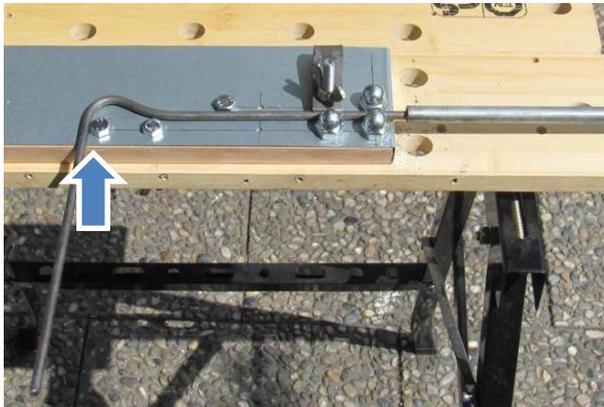


4

Second bend with the help of the tube as lever

Ben 2 and Ben 3 – Fuelwood Stoves

Photos from Bending the Tripod Legs for the Welded Tripod (4W)



5

Prepare the third bend, positioning the bended rod at the bolt head and fixing with the wing nut.

7



Prepare the forth bend, positioning the workpiece with its left part at the right bolt head and fixing with the wing nut.



6

Third bend with the help of the tube as lever

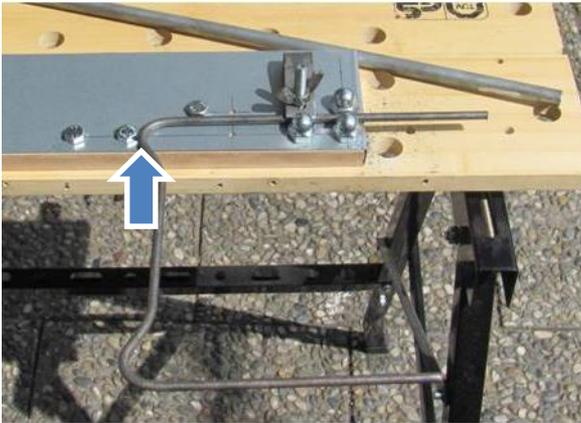
8



Forth bend with the help of the tube as lever

Ben 2 and Ben 3 – Fuelwood Stoves

Photos from Bending the Tripod Legs for the Welded Tripod (4W)



9

Prepare the fifth bend, positioning the longer part so that the curvature touches the right bolt head.



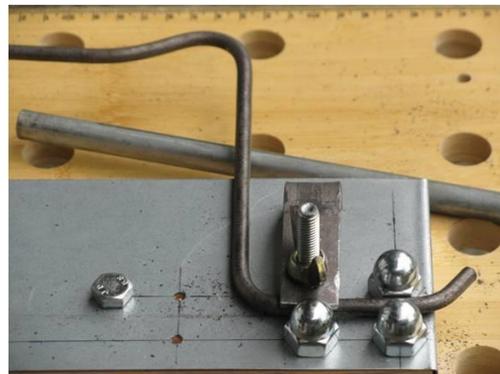
10

Fifth bend with the help of the tube as lever



11

Prepare the last bend, fixing the end of the workpiece with a distance of 24 mm to the center line of the cap nuts.



12

The last bend may be performed with the bench vise. The bench vise will also be helpful for correcting the planar form of the tripod leg. Do not use a hammer with the bending device.

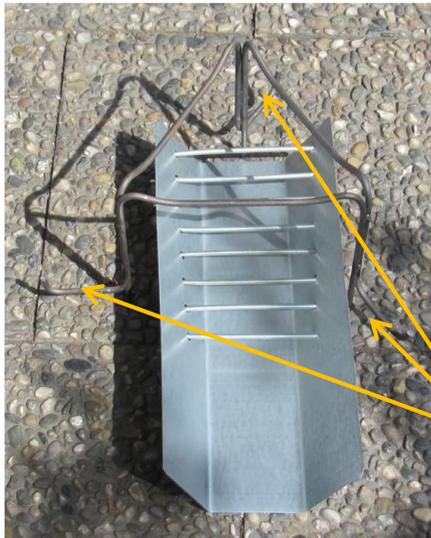
Ben 2 and Ben 3 – Fuelwood Stoves

Photos from Bending the Tripod Legs for the Welded Tripod (4W)



13

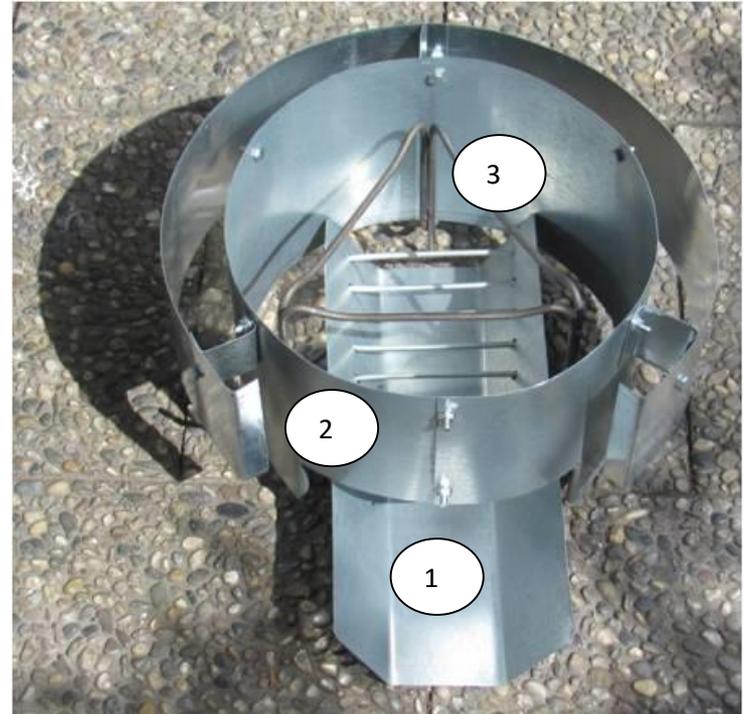
Three tripod legs are welded together; welding seam at the outside.



14

The stove shell will be supported by the three horizontal extensions of the tripod.

15



The photo shows the three parts of the Ben stove: Ash pan (1) with grate, tripod (2) and stove shell (3) (with attached stove shield).

Ben 2 and Ben 3 – Fuelwood Stoves Photos of Alternative to Welded Tripod Legs



16

Rope clamp M5 x 6 at tripod leg

17



Rope clamps may provide an alternative for connection of the tripod legs if welding equipment is not available.