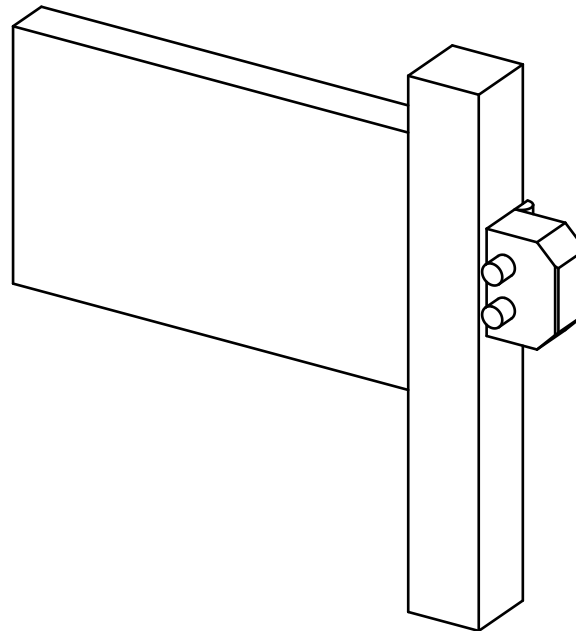


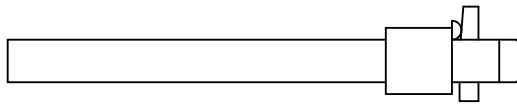
Dowel tusk tenon



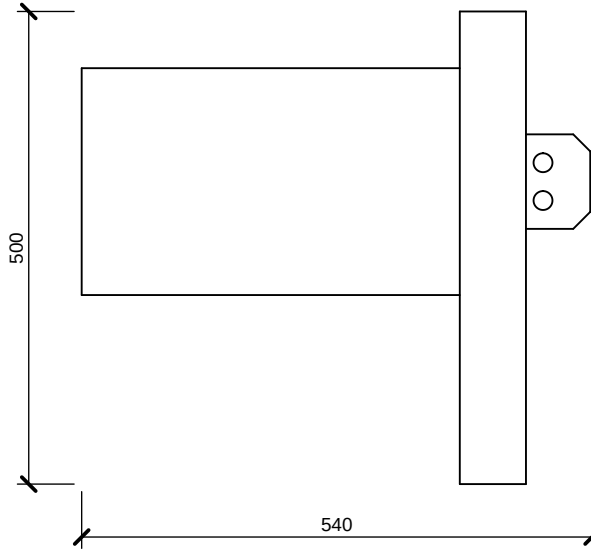
parts	5 (4 different)
overall	540 x 100 x 500 (W x D x H)
material	oak
date	2026-10-25
made with	woodwright 0.9.0

Contents

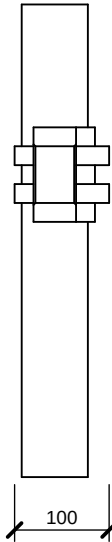
Drawings	3
Assembly	3
Parts	4
1 leg	5
2 stretcher	6
3 tusk	7
4 bearing	8
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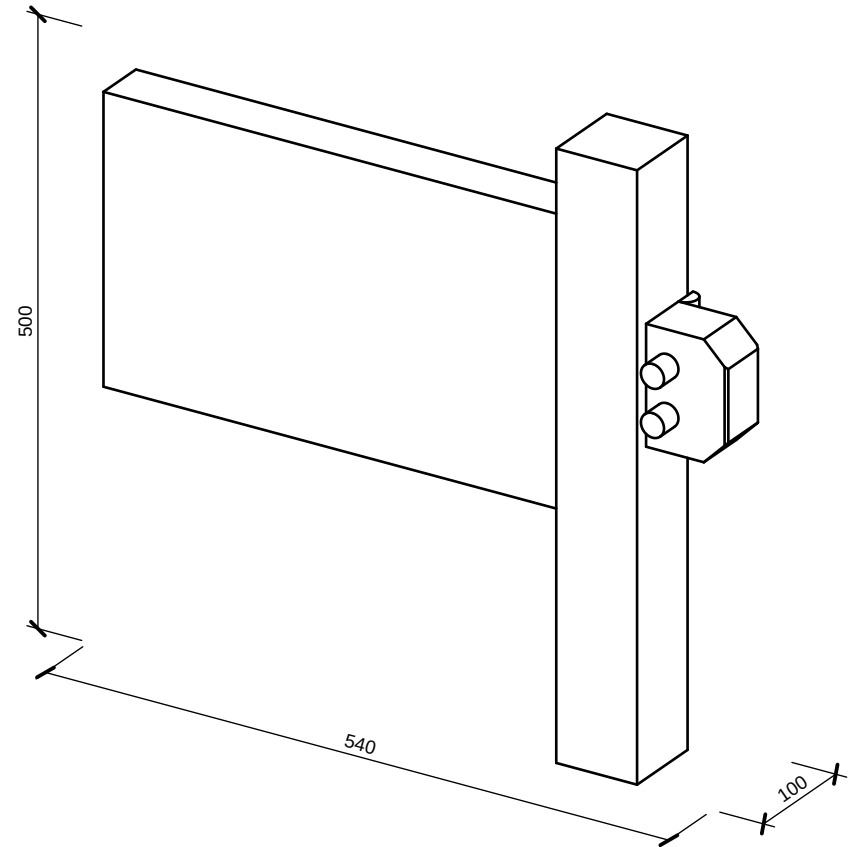
TOP



FRONT

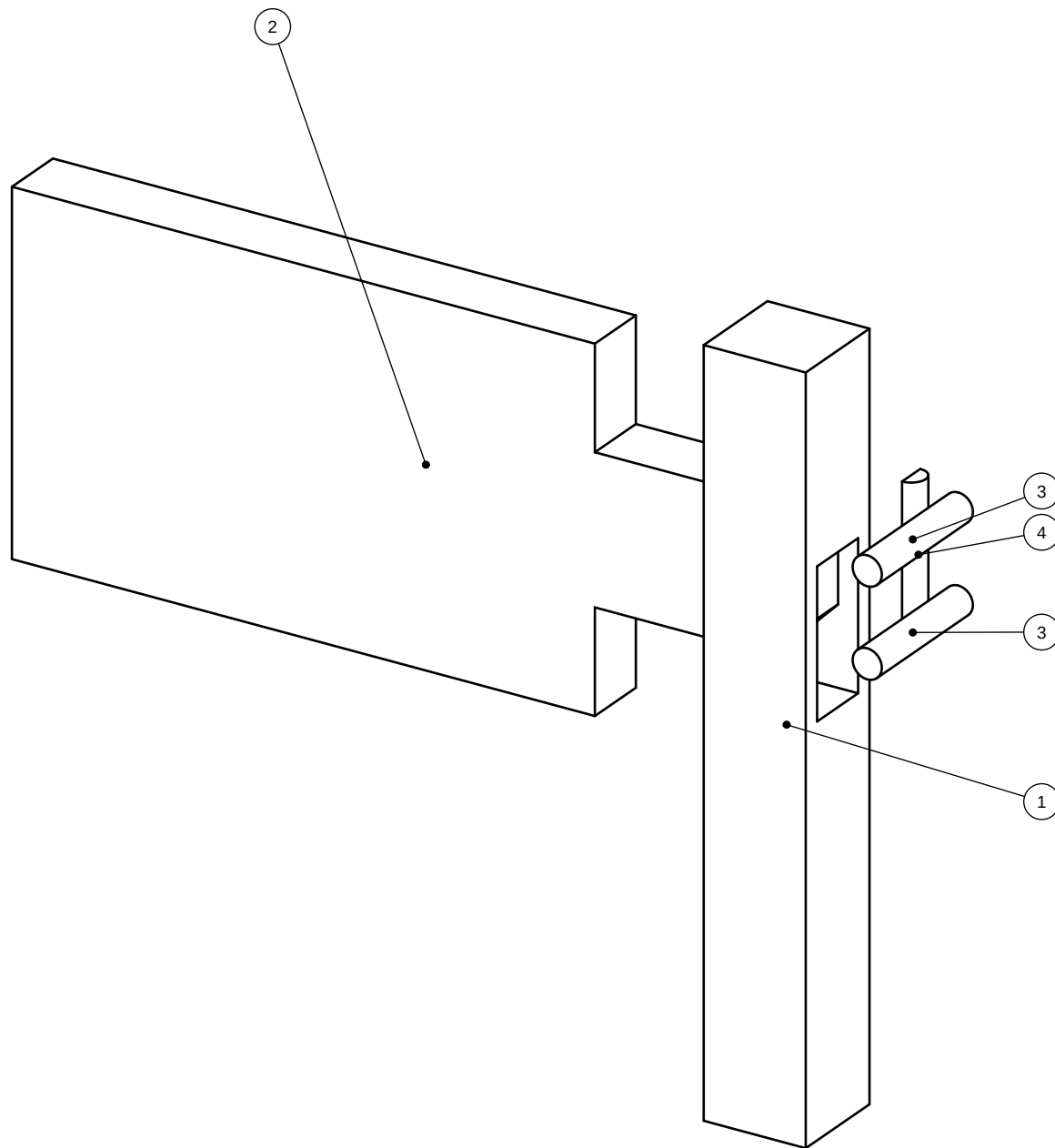


RIGHT SIDE



ISOMETRIC

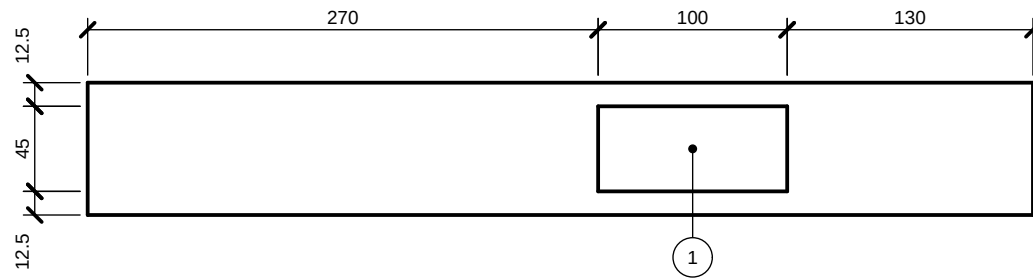
assembly	dowel_tusk_tenon
parts	5 (4 different)
overall	540 x 100 x 500 (W x D x H)
material	oak
scale	1:8, mm



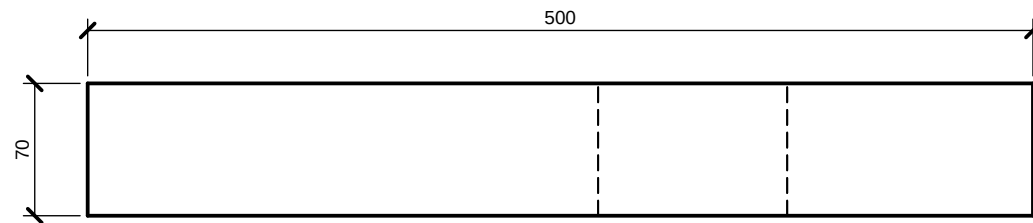
no.	part	qty	cut size (L x W x T)	material
1	leg	1	500 x 70 x 70	oak
2	stretcher	1	540 x 240 x 45	oak
3	tusk	2	ø20 x 100	oak
4	bearing	1	ø20 x 100	oak

EXPLODED

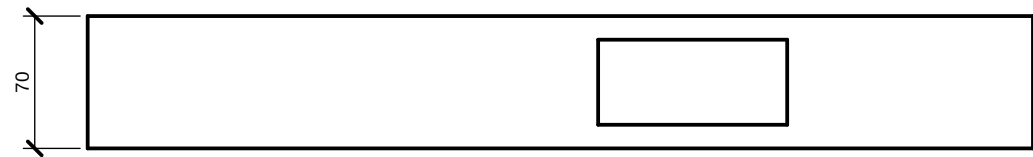
assembly	dowel_tusk_tenon
parts	5 (4 different)
overall	540 x 100 x 500 (W x D x H)
material	oak
scale	not to scale, mm



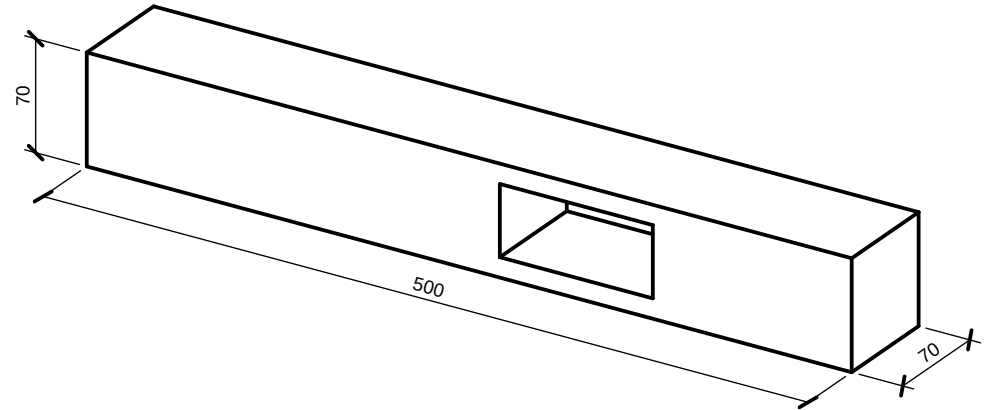
BACK EDGE



TOP FACE



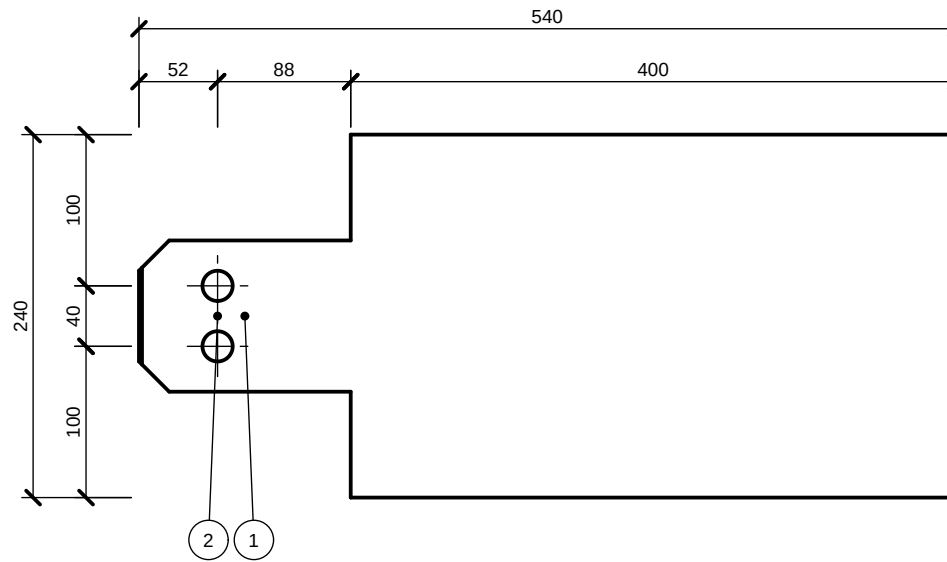
FRONT EDGE



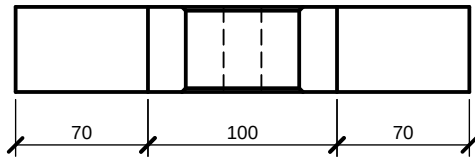
ISOMETRIC

1 through mortise 100 x 45 mm in back_edge

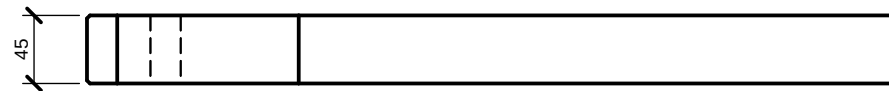
part	leg
of	dowel_tusk_tenon
make	1
cut size	500 x 70 x 70
material	oak
scale	1:4, mm



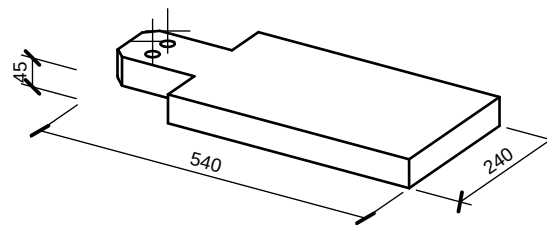
TOP FACE



LEFT END 1:4



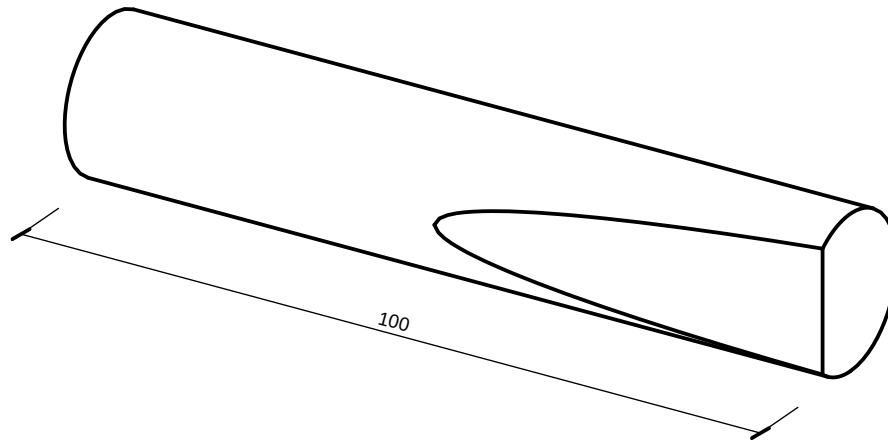
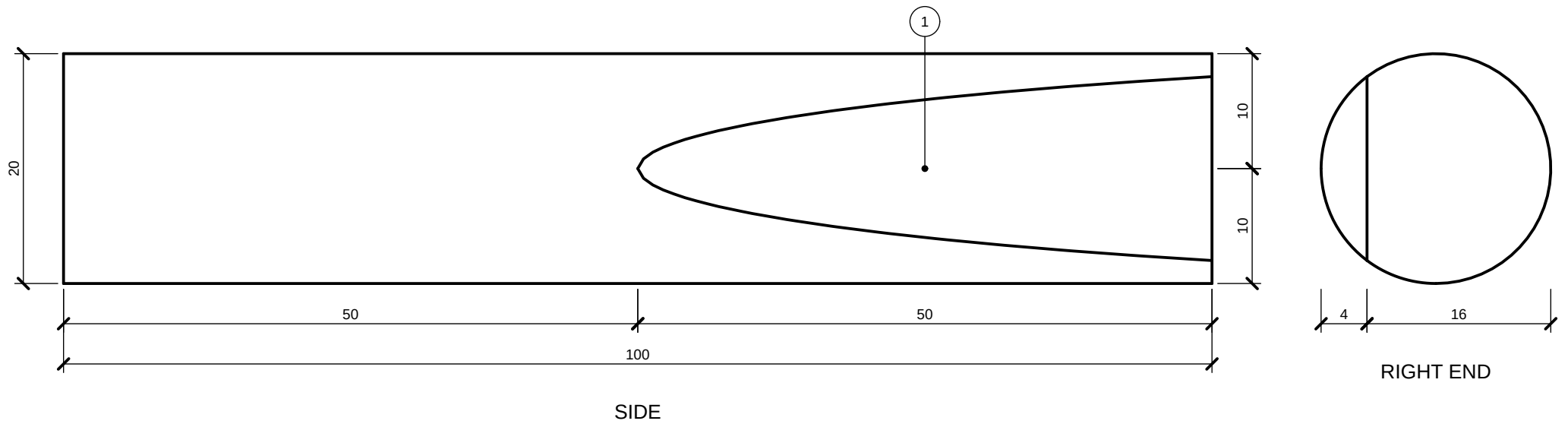
FRONT EDGE



ISOMETRIC

- 1 tenon 100 x 45 mm, 140 long, end chamfered 2 mm, corners chamfered 20 mm, on left_end
 2 2 holes $\varnothing 20$ for tusks through the tenon on left_end, parallel to leg.front_edge, 8 mm off it

part	stretcher
of	dowel_tusk_tendon
make	1
cut size	540 x 240 x 45
material	oak
scale	1:5, mm

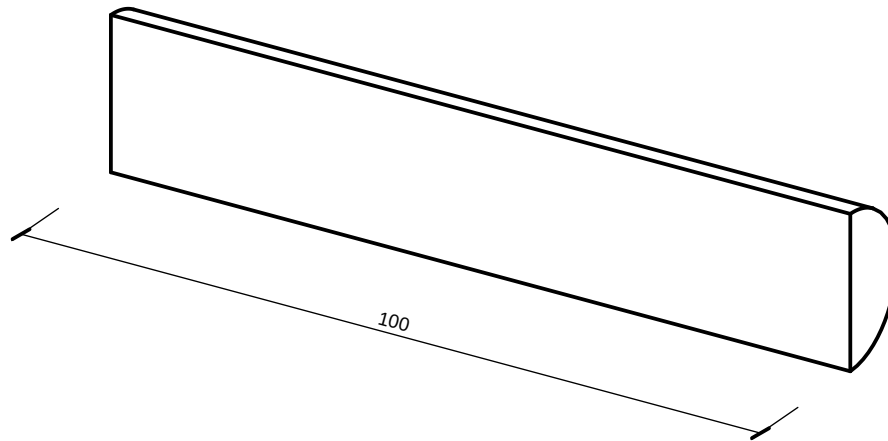


ISOMETRIC

2 pieces: tusk_1, tusk_2

1 flat taper 4 mm over 50 on front_edge towards right_end

part	tusk
of	dowel_tusk_tenon
make	2
cut size	ø20 x 100
material	oak
scale	2:1, mm



ISOMETRIC

1 flat 20 mm wide, 10 deep, on front_edge

part	bearing
of	dowel_tusk_tenon
make	1
cut size	ø20 x 100
material	oak
scale	2:1, mm

Cut list

leg	500 x 70 x 70 mm oak
	- through mortise 100 x 45 mm in back_edge
stretcher	540 x 240 x 45 mm oak
	- tenon 100 x 45 mm, 140 long, end chamfered 2 mm, corners chamfered 20 mm, on left_end
	- 2 holes ø20 for tusks through the tenon on left_end, parallel to leg.front_edge, 8 mm off it
tusk	ø20 x 100 mm oak, 2 pieces: tusk_1, tusk_2
	- flat taper 4 mm over 50 on front_edge towards right_end
bearing	ø20 x 100 mm oak
	- flat 20 mm wide, 10 deep, on front_edge

Appendix: source

Made with woodwright 0.9.0, build123d 0.13.0, Python 3.14.4.

To make these plans again:

```
uvx --python 3.14 woodwright==0.9.0 export joints.dowel_tusk_tenon
```

joints.dowel_tusk_tenon, in woodwright/examples/joints.py

```
def dowel_tusk_tenon(
    leg_length: float = 500,
    stretcher_length: float = 400,
    width: float = 240,
    tusk_diameter: float = 20,
    tusk_length: float = 100,
) -> Assembly:
    """A tusk tenon held by dowels (after Rex Krueger's workbench): a wide
    stretcher through a 70 mm square leg, held by two tapered dowels through
    its tenon, level, their heads towards the viewer.

    The 45 mm thick stretcher's tenon is as thick as the stretcher and 100
    mm wide, standing out of the leg by as much as the leg is wide, with big
    chamfers at its corners. The tusks, `tusk_diameter` dowels `tusk_length`
    long, have flats planed over their tip halves, tapering 1:12.5, and go
    through straight holes in the second and the fourth fifth of the tenon;
    behind the tenon their flats bear on the round top of a half dowel
    glued flat side down across the leg. Knocked out, the tusks free the
    stretcher.
    """
    asm = Assembly("dowel_tusk_tenon", root_location=orient(right_end=UP, back_edge=LEFT))
    leg = asm.add(Board("leg", POST_STOCK, length=leg_length, width=POST_STOCK.thickness))
    stretcher = asm.add(Board("stretcher", LEG_STOCK, length=stretcher_length, width=width))
    dowel = Stock.rod(diameter=tusk_diameter, species="oak")
    tusks = tuple(asm.add(Rod(f"tusk_{i + 1}", dowel, length=tusk_length)) for i in range(2))
    tenon = 100
    bearing = asm.add(Rod("bearing", dowel, length=tenon))
    asm.join(
        DowelTuskTenon(
            tenon=stretcher.left_end,
```

```

        mortise=leg.back_edge,
        position=offset(60, ref=leg.right_end),
        across=CENTERED,
        shoulder=(width - tenon) / 2,
        tenon_thickness=LEG_STOCK.thickness,
        tenon_chamfer=2,
        tenon_corner_chamfer=20,
        tusks=tusks,
        bearings=(bearing,),
        tusk_head=leg.top_face,
        tusk_slope=12.5,
        protrusion=POST_STOCK.thickness,
    )
)
return asm

```