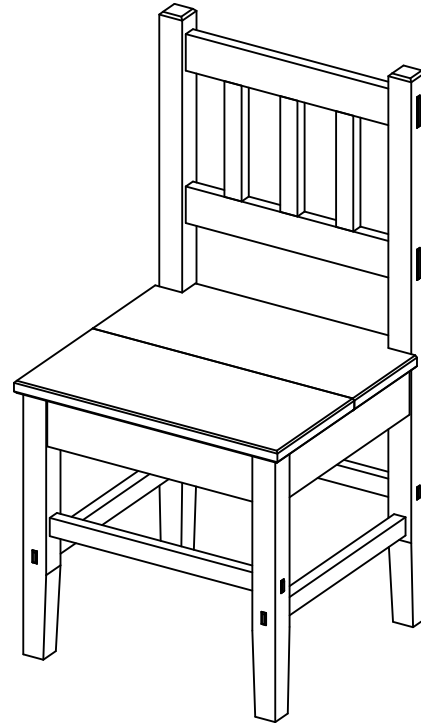


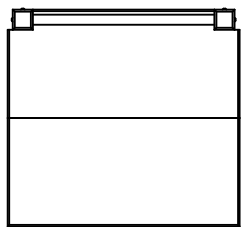
Chair



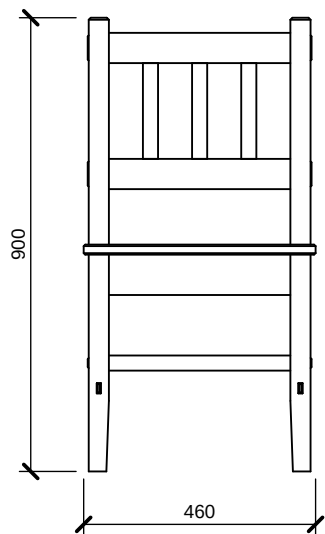
parts	19 (10 different)
overall	460 x 432 x 900 (W x D x H)
material	oak
date	2026-10-25
made with	woodwright 0.9.0

Contents

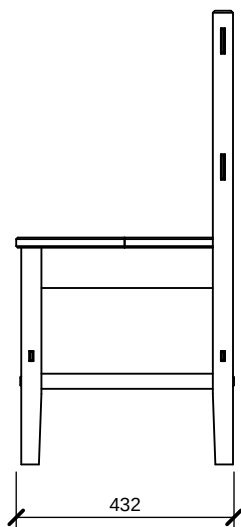
Drawings	3
Assembly	3
Parts	4
1 leg_front	5
2 leg_back	6
3 seat_rail_front_back	7
4 seat_rail_right_left	8
5 stretcher_front_back	9
6 stretcher_right_left	10
7 back_rail	11
8 splat	12
9 seat_1	13
10 seat_2	14
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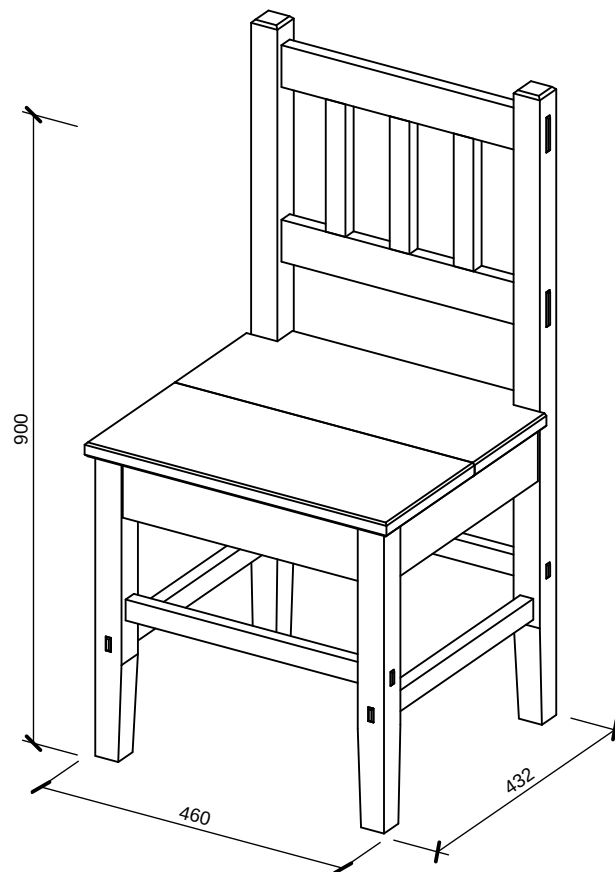
TOP



FRONT

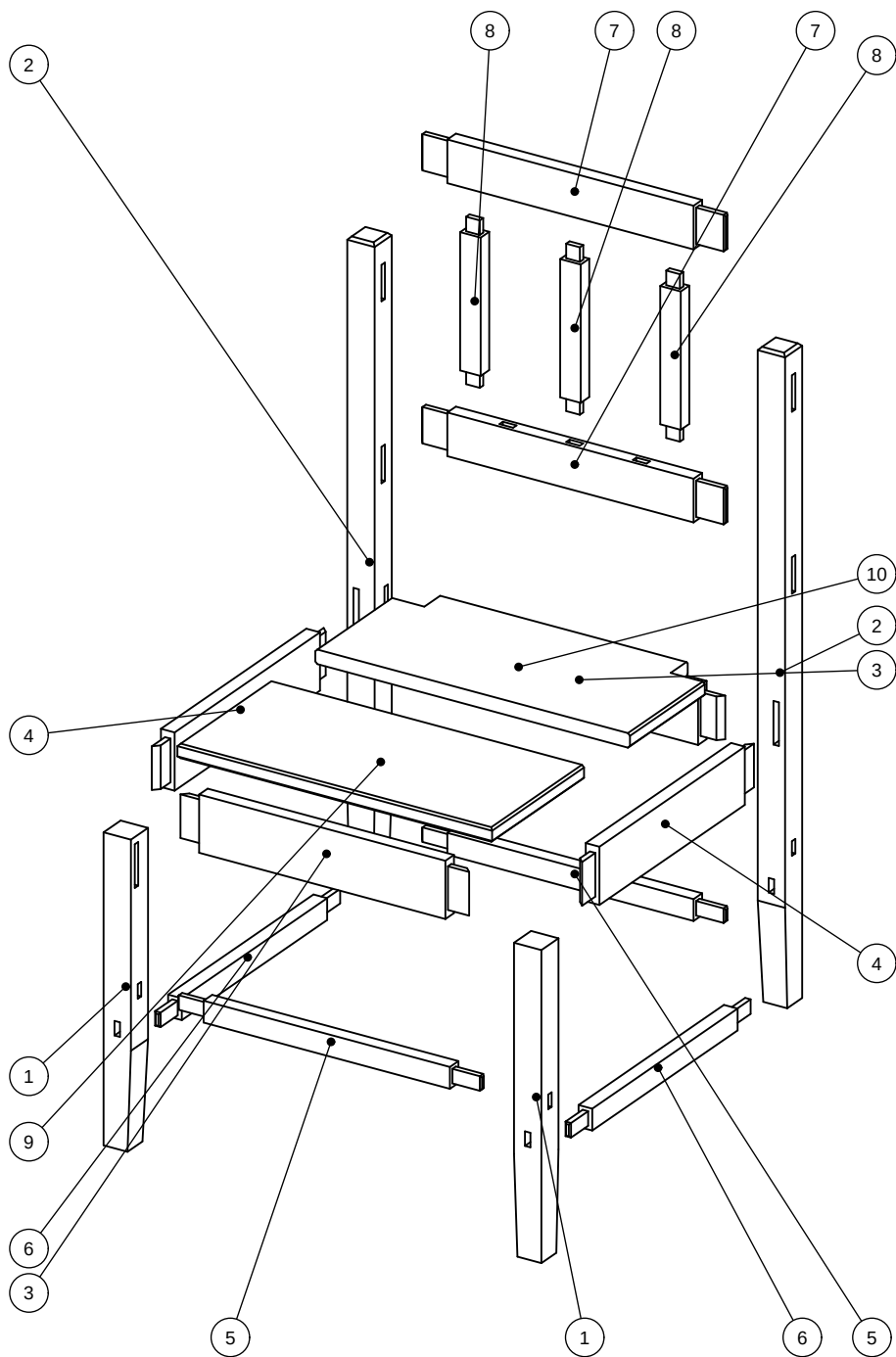


RIGHT SIDE



ISOMETRIC

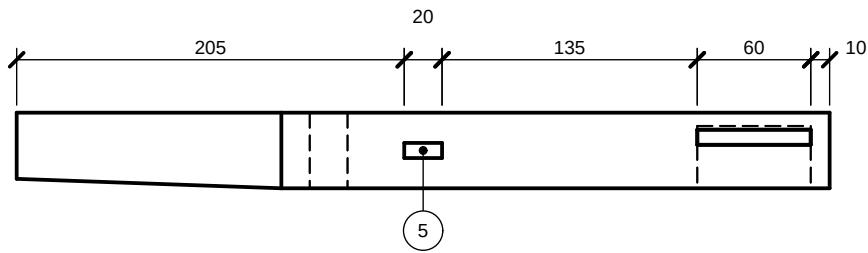
assembly	chair
parts	19 (10 different)
overall	460 x 432 x 900 (W x D x H)
material	oak
scale	1:15, mm



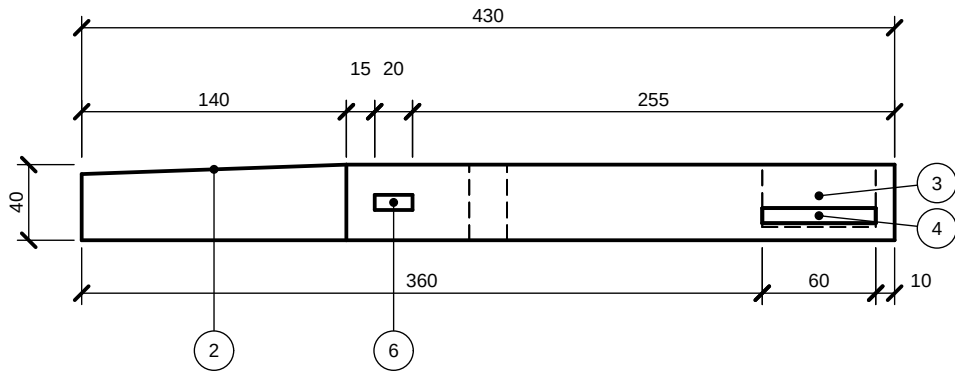
EXPLODED

no.	part	qty	cut size (L x W x T)	material	
1	leg_front	2	430 x 40 x 40	oak	1 mirror image
2	leg_back	2	900 x 40 x 40	oak	1 mirror image
3	seat_rail_front_back	2	422 x 80 x 20	oak	
4	seat_rail_right_left	2	402 x 80 x 20	oak	
5	stretcher_front_back	2	444 x 30 x 20	oak	
6	stretcher_right_left	2	424 x 30 x 20	oak	
7	back_rail	2	444 x 60 x 20	oak	
8	splat	3	230 x 30 x 20	oak	
9	seat_1	1	460 x 215 x 20	oak	
10	seat_2	1	460 x 215 x 20	oak	

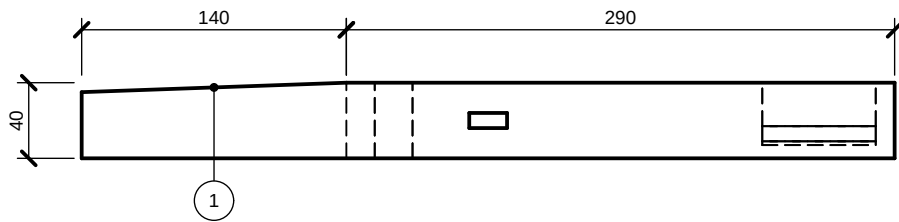
assembly	chair
parts	19 (10 different)
overall	460 x 432 x 900 (W x D x H)
material	oak
scale	not to scale, mm



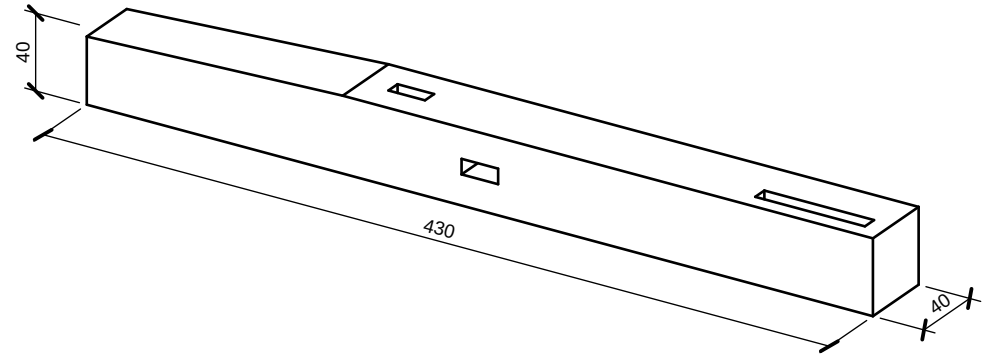
BACK EDGE



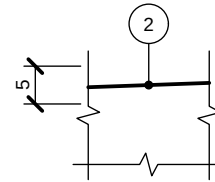
TOP FACE



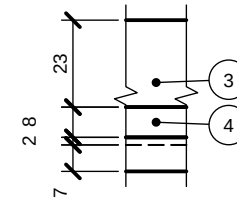
FRONT EDGE



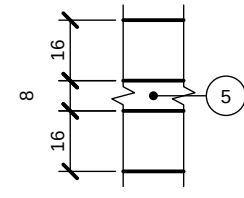
ISOMETRIC



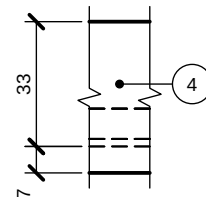
TOP FACE: 2 1:1



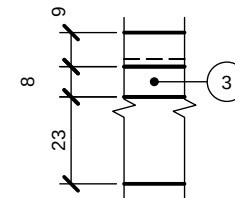
TOP FACE: 3, 4 1:2



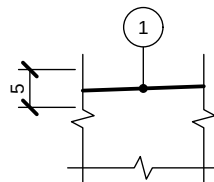
BACK EDGE: 5 1:2



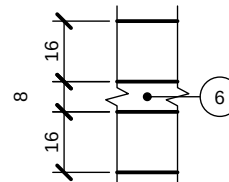
FRONT EDGE: 4 1:2



BACK EDGE: 3 1:2



FRONT EDGE: 1 1:1



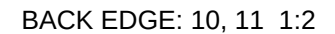
TOP FACE: 6 1:2

- 2 pieces: leg_front_left; mirror image: leg_front_right
- 1 taper 5 mm over 140 on top_face towards left_end
- 2 taper 5 mm over 140 on back_edge towards left_end
- 3 mortise 60 x 8 mm, 33 deep, in back_edge
- 4 mortise 60 x 8 mm, 33 deep, in top_face
- 5 through mortise 20 x 8 mm in back_edge
- 6 through mortise 20 x 8 mm in top_face

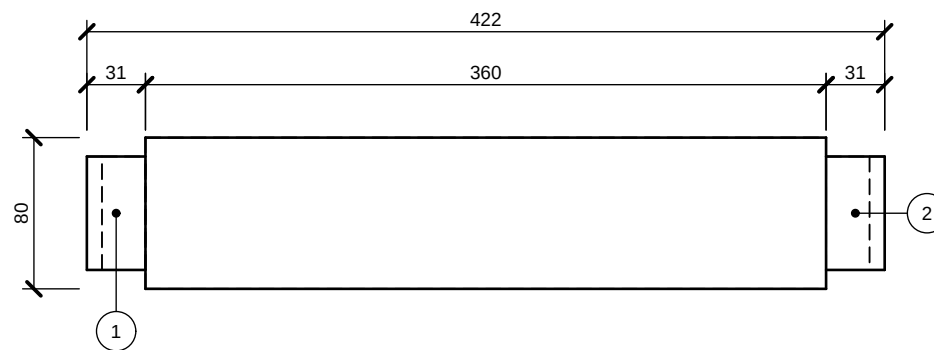
part	leg_front
of	chair
make	2 (1 mirror image)
cut size	430 x 40 x 40
material	oak
scale	1:4, mm



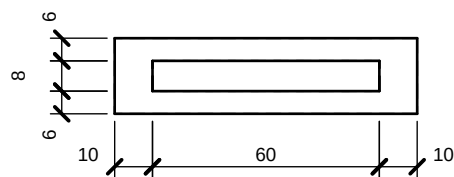
- 1 chamfer 4 mm on right_end_top_face_arris
- 2 chamfer 4 mm on right_end_bottom_face_arris
- 3 chamfer 4 mm on right_end_front_edge_arris
- 4 chamfer 4 mm on right_end_back_edge_arris
- 5 taper 5 mm over 140 on top_face towards left_end
- 6 taper 5 mm over 140 on back_edge towards left_end
- 7 mortise 60 x 8 mm, 33 deep, in top_face
- 8 mortise 60 x 8 mm, 33 deep, in back_edge
- 9 through mortise 20 x 8 mm in top_face
- 10 through mortise 20 x 8 mm in back_edge
- 11 2 x through mortise 50 x 8 mm in back_edge



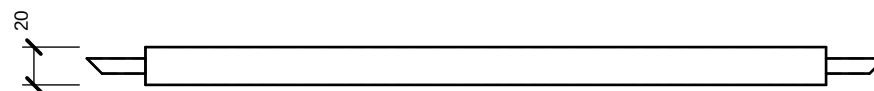
part	leg_back
of	chair
make	2 (1 mirror image)
cut size	900 x 40 x 40
material	oak
scale	1:8, mm



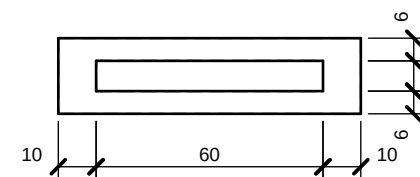
TOP FACE



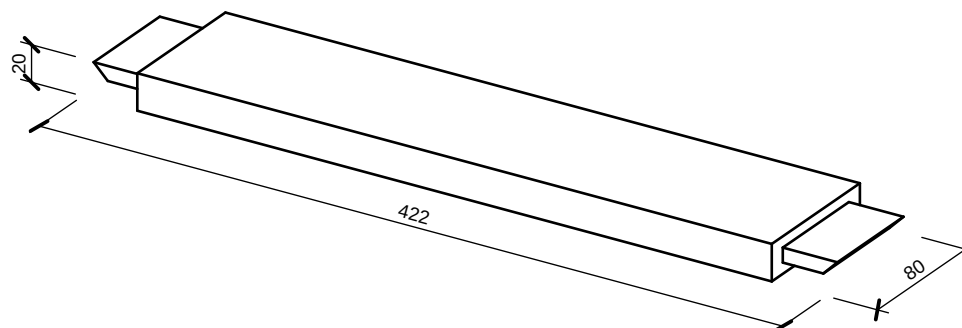
LEFT END 1:2



FRONT EDGE



RIGHT END 1:2



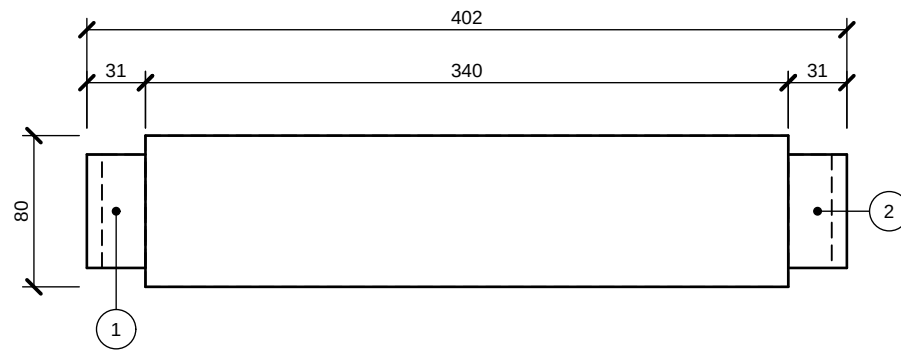
ISOMETRIC

2 pieces: seat_rail_front, seat_rail_back

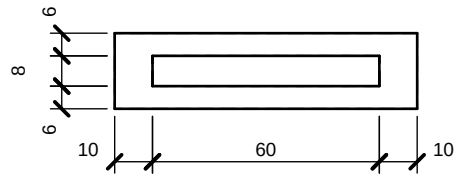
1 tenon 60 x 8 mm, 31 long, end mitred 45 deg towards bottom_face, on left_end

2 tenon 60 x 8 mm, 31 long, end mitred 45 deg towards bottom_face, on right_end

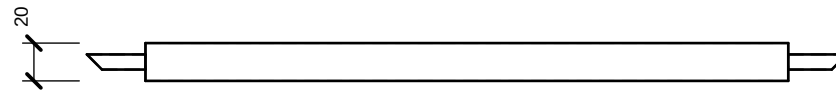
part	seat_rail_front_back
of	chair
make	2
cut size	422 x 80 x 20
material	oak
scale	1:4, mm



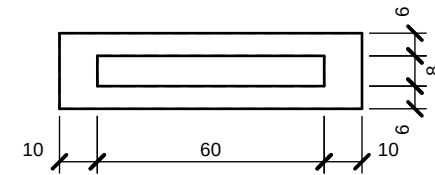
TOP FACE



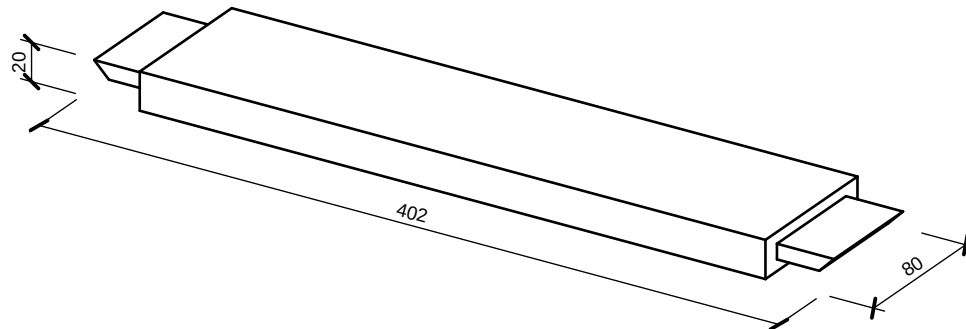
LEFT END 1:2



FRONT EDGE



RIGHT END 1:2



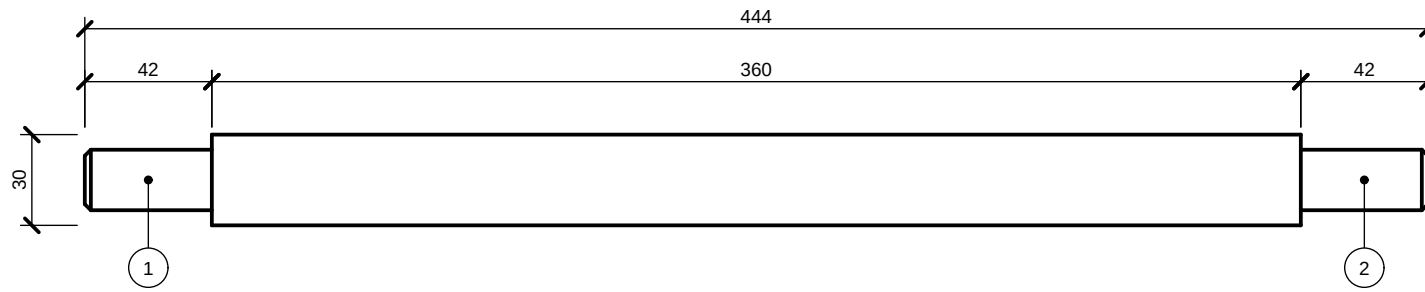
ISOMETRIC

2 pieces: seat_rail_right, seat_rail_left

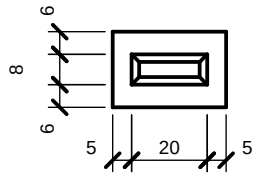
1 tenon 60 x 8 mm, 31 long, end mitred 45 deg towards bottom_face, on left_end

2 tenon 60 x 8 mm, 31 long, end mitred 45 deg towards bottom_face, on right_end

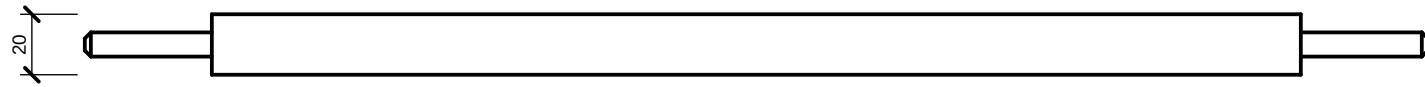
part	seat_rail_right_left
of	chair
make	2
cut size	402 x 80 x 20
material	oak
scale	1:4, mm



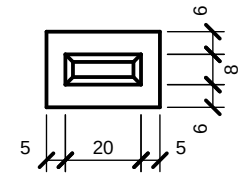
TOP FACE



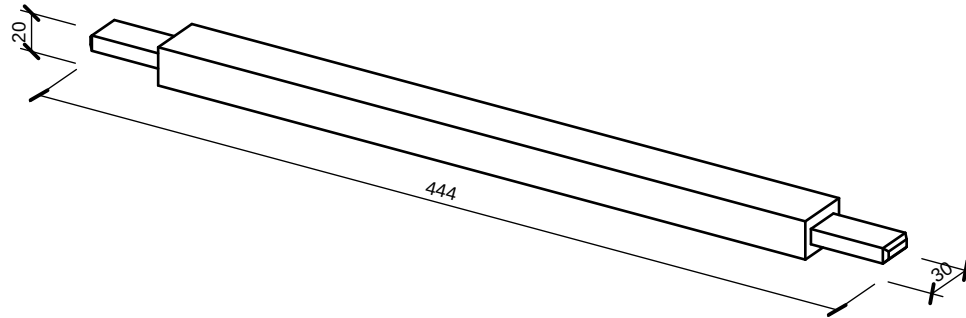
LEFT END 1:2



FRONT EDGE



RIGHT END 1:2

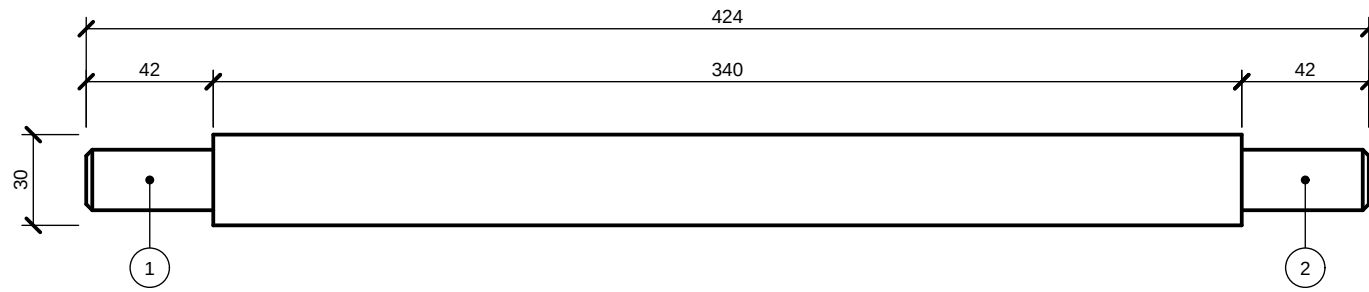


ISOMETRIC

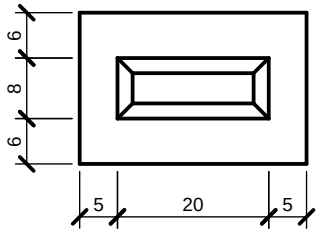
2 pieces: stretcher_front, stretcher_back

- 1 tenon 20 x 8 mm, 42 long, end chamfered 2 mm, on left_end
- 2 tenon 20 x 8 mm, 42 long, end chamfered 2 mm, on right_end

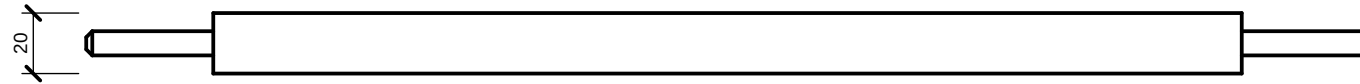
part	stretcher_front_back
of	chair
make	2
cut size	444 x 30 x 20
material	oak
scale	1:2.5, mm



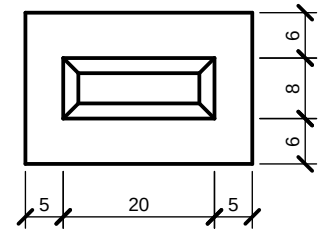
TOP FACE



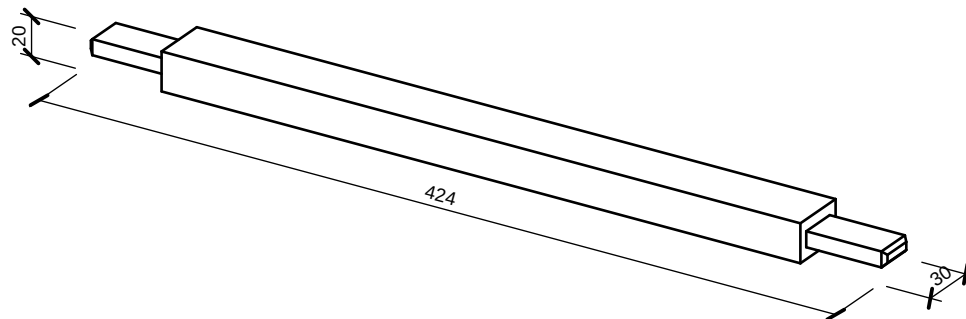
LEFT END 1:1



FRONT EDGE



RIGHT END 1:1

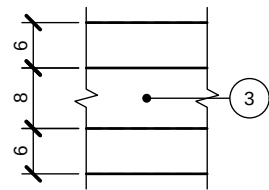


ISOMETRIC

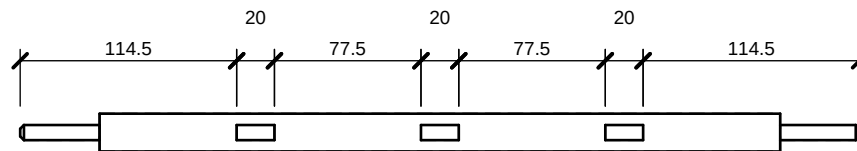
2 pieces: stretcher_right, stretcher_left

- 1 tenon 20 x 8 mm, 42 long, end chamfered 2 mm, on left_end
- 2 tenon 20 x 8 mm, 42 long, end chamfered 2 mm, on right_end

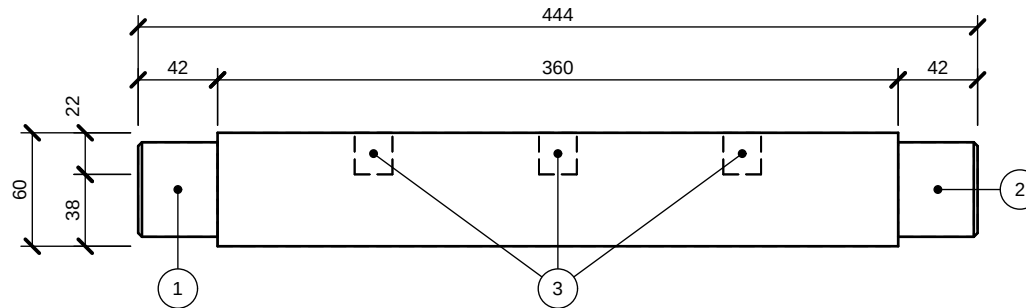
part	stretcher_right_left
of	chair
make	2
cut size	424 x 30 x 20
material	oak
scale	1:2.5, mm



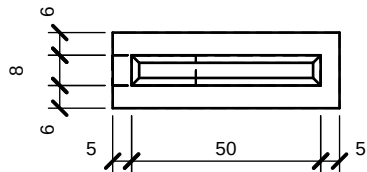
BACK EDGE: 3 1:1



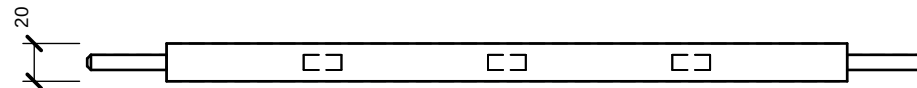
BACK EDGE



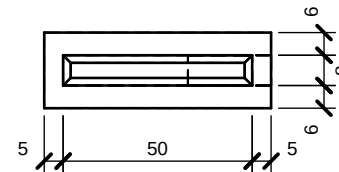
TOP FACE



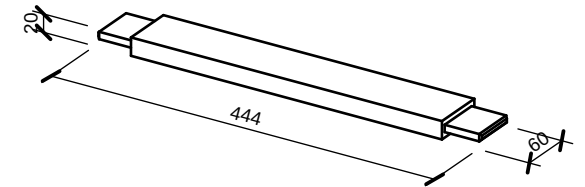
LEFT END 1:2



FRONT EDGE



RIGHT END 1:2



ISOMETRIC

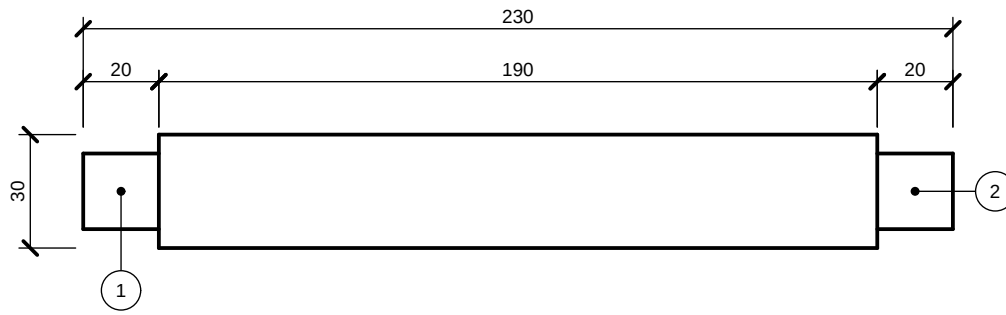
2 pieces: back_rail_lower, back_rail_upper

1 tenon 50 x 8 mm, 42 long, end chamfered 2 mm, on left_end

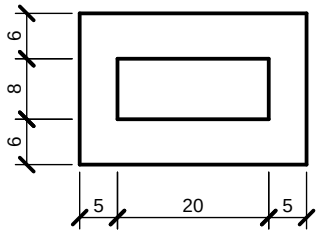
2 tenon 50 x 8 mm, 42 long, end chamfered 2 mm, on right_end

3 3 x mortise 20 x 8 mm, 22 deep, in back_edge

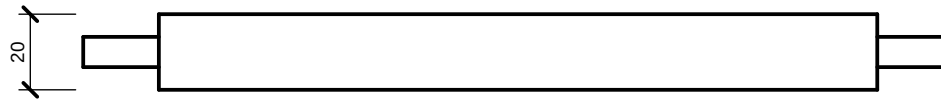
part	back_rail
of	chair
make	2
cut size	444 x 60 x 20
material	oak
scale	1:4, mm



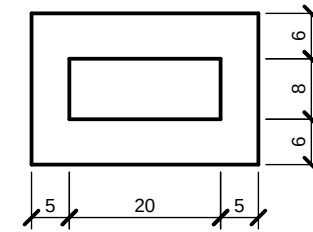
TOP FACE



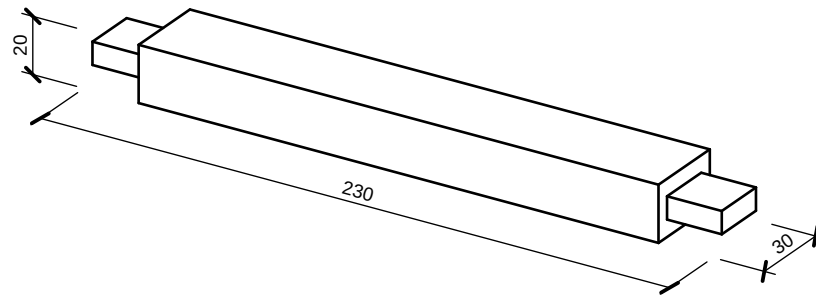
LEFT END 1:1



FRONT EDGE



RIGHT END 1:1



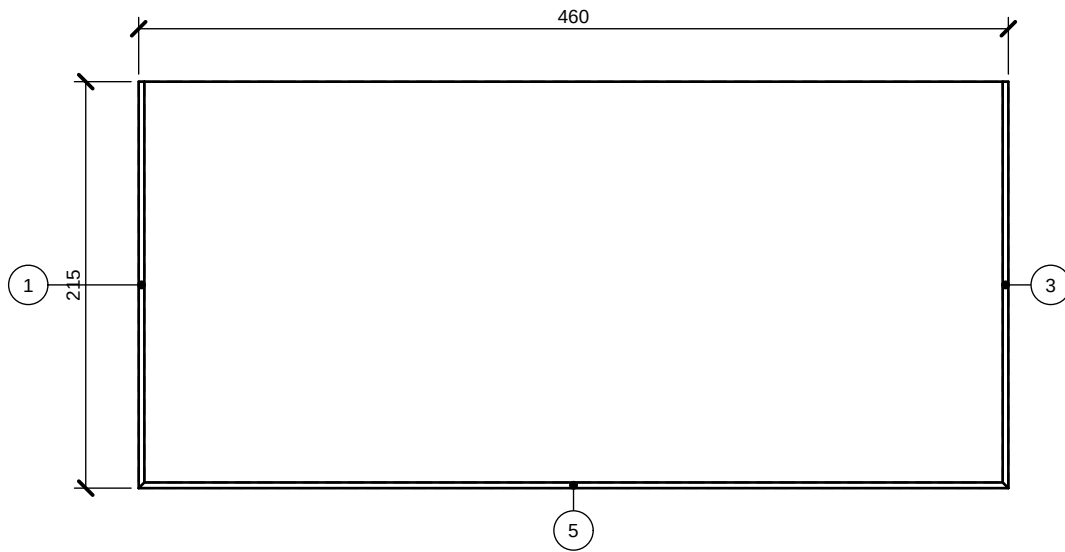
ISOMETRIC

3 pieces: splat_1, splat_2, splat_3

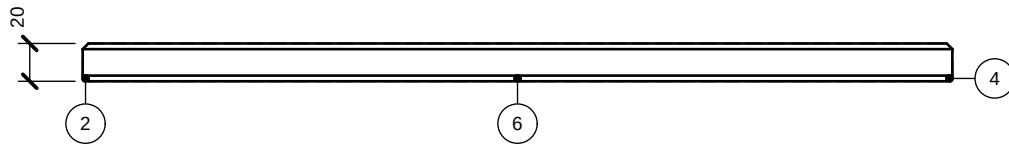
1 tenon 20 x 8 mm, 20 long, on left_end

2 tenon 20 x 8 mm, 20 long, on right_end

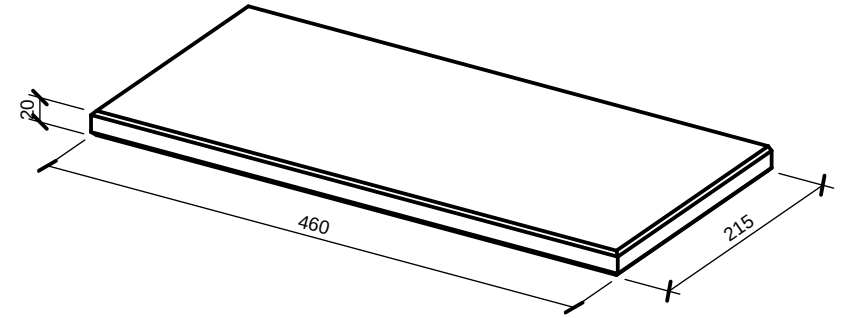
part	splat
of	chair
make	3
cut size	230 x 30 x 20
material	oak
scale	1:2, mm



TOP FACE



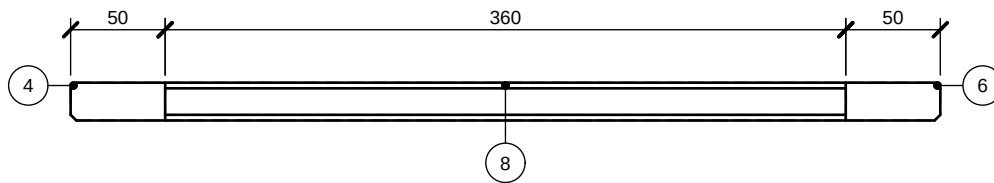
FRONT EDGE



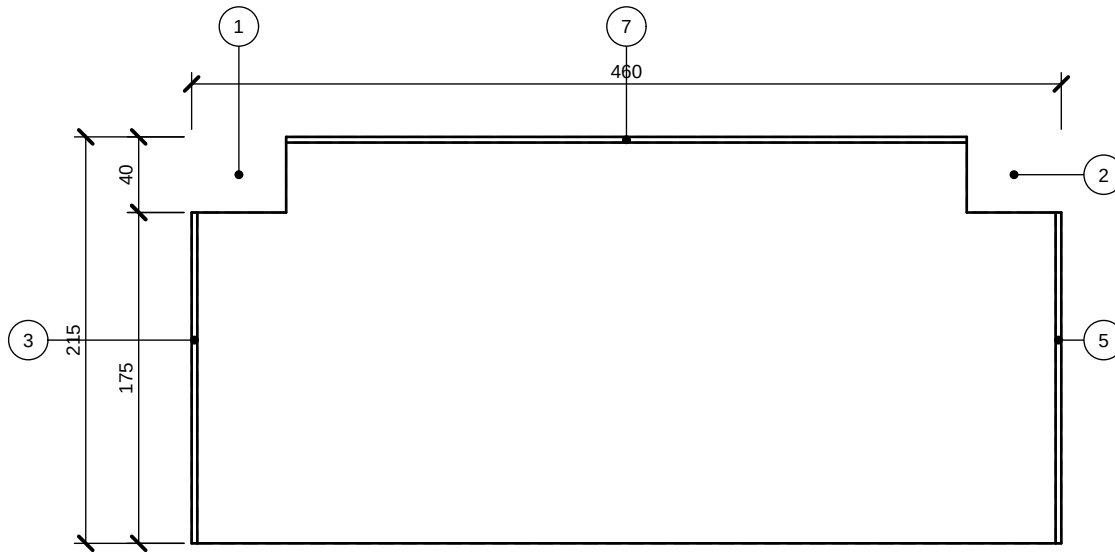
ISOMETRIC

- 1 chamfer 3 mm on top_face_left_end_arris
- 2 chamfer 3 mm on bottom_face_left_end_arris
- 3 chamfer 3 mm on top_face_right_end_arris
- 4 chamfer 3 mm on bottom_face_right_end_arris
- 5 chamfer 3 mm on top_face_front_edge_arris
- 6 chamfer 3 mm on bottom_face_front_edge_arris

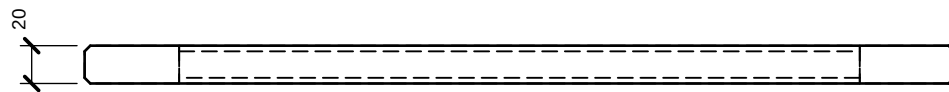
part	seat_1
of	chair
make	1
cut size	460 x 215 x 20
material	oak
scale	1:4, mm



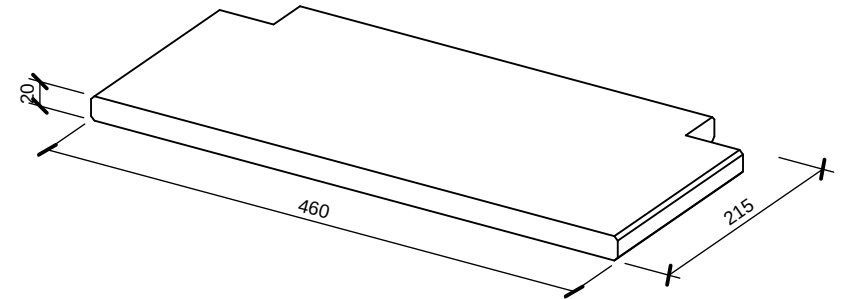
BACK EDGE



TOP FACE



FRONT EDGE



ISOMETRIC

- 1 notch 50 mm, 40 deep, in back_edge at left_end
- 2 notch 50 mm, 40 deep, in back_edge at right_end
- 3 chamfer 3 mm on top_face_left_end_arris
- 4 chamfer 3 mm on bottom_face_left_end_arris
- 5 chamfer 3 mm on top_face_right_end_arris
- 6 chamfer 3 mm on bottom_face_right_end_arris
- 7 chamfer 3 mm on top_face_back_edge_arris
- 8 chamfer 3 mm on bottom_face_back_edge_arris

part	seat_2
of	chair
make	1
cut size	460 x 215 x 20
material	oak
scale	1:4, mm

Cut list

leg_front	430 x 40 x 40 mm oak, 2 pieces: leg_front_left; mirror image: leg_front_right
	- taper 5 mm over 140 on top_face towards left_end
	- taper 5 mm over 140 on back_edge towards left_end
	- mortise 60 x 8 mm, 33 deep, in back_edge
	- mortise 60 x 8 mm, 33 deep, in top_face
	- through mortise 20 x 8 mm in back_edge
	- through mortise 20 x 8 mm in top_face
leg_back	900 x 40 x 40 mm oak, 2 pieces: leg_back_right; mirror image: leg_back_left
	- chamfer 4 mm on right_end_top_face_arris
	- chamfer 4 mm on right_end_bottom_face_arris
	- chamfer 4 mm on right_end_front_edge_arris
	- chamfer 4 mm on right_end_back_edge_arris
	- taper 5 mm over 140 on top_face towards left_end
	- taper 5 mm over 140 on back_edge towards left_end
	- mortise 60 x 8 mm, 33 deep, in top_face
	- mortise 60 x 8 mm, 33 deep, in back_edge
	- through mortise 20 x 8 mm in top_face
	- through mortise 20 x 8 mm in back_edge
	- 2 x through mortise 50 x 8 mm in back_edge
seat_rail_front_back	422 x 80 x 20 mm oak, 2 pieces: seat_rail_front, seat_rail_back
	- tenon 60 x 8 mm, 31 long, end mitred 45 deg towards bottom_face, on left_end
	- tenon 60 x 8 mm, 31 long, end mitred 45 deg towards bottom_face, on right_end
seat_rail_right_left	402 x 80 x 20 mm oak, 2 pieces: seat_rail_right, seat_rail_left
	- tenon 60 x 8 mm, 31 long, end mitred 45 deg towards bottom_face, on left_end
	- tenon 60 x 8 mm, 31 long, end mitred 45 deg towards bottom_face, on right_end
stretcher_front_back	444 x 30 x 20 mm oak, 2 pieces: stretcher_front, stretcher_back
	- tenon 20 x 8 mm, 42 long, end chamfered 2 mm, on left_end
	- tenon 20 x 8 mm, 42 long, end chamfered 2 mm, on right_end
stretcher_right_left	424 x 30 x 20 mm oak, 2 pieces: stretcher_right, stretcher_left
	- tenon 20 x 8 mm, 42 long, end chamfered 2 mm, on left_end
	- tenon 20 x 8 mm, 42 long, end chamfered 2 mm, on right_end
back_rail	444 x 60 x 20 mm oak, 2 pieces: back_rail_lower, back_rail_upper
	- tenon 50 x 8 mm, 42 long, end chamfered 2 mm, on left_end
	- tenon 50 x 8 mm, 42 long, end chamfered 2 mm, on right_end
	- 3 x mortise 20 x 8 mm, 22 deep, in back_edge
splat	230 x 30 x 20 mm oak, 3 pieces: splat_1, splat_2, splat_3
	- tenon 20 x 8 mm, 20 long, on left_end

seat_1	- tenon 20 x 8 mm, 20 long, on right_end
	460 x 215 x 20 mm oak
	- chamfer 3 mm on top_face_left_end_arris - chamfer 3 mm on bottom_face_left_end_arris - chamfer 3 mm on top_face_right_end_arris - chamfer 3 mm on bottom_face_right_end_arris - chamfer 3 mm on top_face_front_edge_arris - chamfer 3 mm on bottom_face_front_edge_arris
seat_2	- notch 50 mm, 40 deep, in back_edge at left_end - notch 50 mm, 40 deep, in back_edge at right_end
	460 x 215 x 20 mm oak
	- chamfer 3 mm on top_face_left_end_arris - chamfer 3 mm on bottom_face_left_end_arris - chamfer 3 mm on top_face_right_end_arris - chamfer 3 mm on bottom_face_right_end_arris - chamfer 3 mm on top_face_back_edge_arris - chamfer 3 mm on bottom_face_back_edge_arris

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 projects.chair
```

projects.chair, in woodwright/examples/projects.py

```
def chair(
    width: float = 440,
    depth: float = 420,
    seat_height: float = 450,
    height: float = 900,
    rail_width: float = 80,
    stretcher_width: float = 30,
    stretcher_heights: tuple[float, float] = (230, 180),
    back_rails: tuple[float, float] = (620, 870),
    back_rail_width: float = 60,
    setback: float = 3,
    protrusion: float = 2,
    tenon_chamfer: float = 2,
    top_chamfer: float = 4,
    overhang: float = 10,
    seat_boards: int = 2,
    seat_chamfer: float = 3,
    splats: int = 3,
    splat_width: float = 30,
    splat_tenon_length: float = 20,
    leg_taper: float = 5,
    leg_taper_length: float = 140,
    leg_stock: Stock = CHAIR_LEG_STOCK,
    stock: Stock = OAK,
    seat_stock: Stock = OAK,
) -> Assembly:
    """A simple chair, all square; outside sizes of the frame.

    The back legs run up into the back. Under the seat, rails `rail_width`
    wide are tenoned into the legs as in a table frame, flush with the tops
```

of the front legs. The seat, a panel glued up from `seat\_boards` boards edge to edge, its grain from side to side, lies on them, its top `seat\_height` above the floor; it overhangs the frame by `overhang` at the front and the sides and the back board is notched at the corners around the back legs, flush with their outsides. The arrises around the seat, top and bottom, are chamfered. Stretchers near the floor and two rails in the back (their top edges at `stretcher\_heights`, for the front and back and for the sides, and at `back\_rails`) have through tenons standing `protrusion` proud of the legs, their ends chamfered. The side stretchers are lower than the front and back ones, so that the tenons don't meet inside the legs. Between the back rails stand `splats`, as thick as the rails, with blind tenons in their edges. The tops of the back legs are chamfered all round; the legs taper on their inner sides from `leg\_taper\_length` above the floor, below the stretchers, to `leg\_taper` thinner at the floor.

```

"""
asm = Assembly("chair", root_location=STANDING)
seat = seat_height - seat_stock.thickness
legs, rails = _table_frame(
    asm,
    width,
    depth,
    seat,
    rail_width,
    setback,
    leg_stock,
    stock,
    leg_lengths=(seat, seat, height, height),
    apron_name="seat_rail",
)
back_rail_spans = [
    (f"back_rail_{name}", 2, level, back_rail_width)
    for name, level in zip(["lower", "upper"], back_rails, strict=True)
]
members = _leg_rails(
    asm,
    legs,
    width,
    depth,
    _stretchers(stretcher_heights, stretcher_width) + back_rail_spans,
    stock,

```

```

        tenon_length=leg_stock.thickness + protrusion,
        tenon_chamfer=tenon_chamfer,
    )
    for leg in legs[2:]:
        for side in (leg.top_face, leg.bottom_face, leg.front_edge, leg.back_edge):
            leg.cut(Chamfer(leg.aris(leg.right_end, side), size=top_chamfer))
# The outer sides of the legs are their bottom faces and front edges.
for leg in legs:
    for side in (leg.top_face, leg.back_edge):
        leg.cut(Taper(side, end=leg.left_end, amount=leg_taper, length=leg_taper_length))

# The splats stand evenly spaced between the back rails, whose back edges are up.
lower, upper = members["back_rail_lower"], members["back_rail_upper"]
splat_length = back_rails[1] - back_rail_width - back_rails[0]
gap = (lower.length - splats * splat_width) / (splats + 1)
for j in range(splats):
    splat = asm.add(Board(f"splat_{j + 1}", stock, length=splat_length, width=splat_width))
    distance = gap + j * (gap + splat_width)
    for end, mortise in [
        (splat.left_end, lower.back_edge),
        (splat.right_end, upper.front_edge),
    ]:
        rail = mortise.part
        asm.join(
            MortiseTenon(
                tenon=end,
                mortise=mortise,
                position=offset(distance, ref=rail.left_end),
                flush=(rail.ref_face, splat.ref_face),
                tenon_length=splat_tenon_length,
            )
        )
boards = _glued_top(
    asm,
    rails[0],
    "seat",
    width,
    depth,
    overhang,
    0,

```

```

    seat_boards,
    leg_stock,
    setback,
    seat_stock,
)
front, back = boards[0], boards[-1]
# The notches reach from the back edge (y = back.width) and the ends.
leg_width = leg_stock.thickness
notch_x, notch_y = overhang + leg_width, (back.width - leg_width, INF)
for x in [(-INF, notch_x), (back.length - notch_x, INF)]:
    back.cut(Pocket(back.back_edge, (x, notch_y, (-INF, INF)), kind="notch"))
for board in boards:
    sides = [board.left_end, board.right_end]
    sides += [
        edge
        for edge, outer in [(board.front_edge, front), (board.back_edge, back)]
        if board is outer
    ]
    for side in sides:
        for face in (board.top_face, board.bottom_face):
            board.cut(Chamfer(board.arris(face, side), size=seat_chamfer))
return asm

```