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Reference Book for the C.K.D.

**1½ Litre Riley
Part II Body**

NUFFIELD EXPORTS LTD., OXFORD, ENGLAND



THE REFERENCE BOOK OF THE C.K.D.

RILEY 1½ LITRE SALOON.

PART II. BODY.

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PART II. BODY.

INTRODUCTION.

Part One of this reference book covered the assembly of the Chassis and it is the purpose of this volume to set forward recommendations for the assembly of the Body.

In view of the design and construction of this body it has been decided to offer main jig built assemblies and if these assemblies can be accepted in this form a considerable simplification will be effected in the local construction of these bodies.

The body conditions at present offered comprise the following:-

<u>Dash.</u>	Complete assembly as depicted in Illustration 2. Panels finished one coat primer.
<u>Tonneau.</u>	Complete panel assembly as shown in Illustrations 9, 10, 11 & 12. One coat primer. Timber details in knocked down condition.
<u>Luggage Lid.</u>	Complete assembly, as Illustration 14.
<u>Spare Wheel Lid.</u>	Complete assembly, as Illustration 14.
<u>Centre Pillar.</u>	Complete assembly, finished one coat primer. Illustration 28.
<u>Front & Rear Doors.</u>	Framed and panelled, less garnish rail, locks, and window regulator. One coat of primer. Illustration 30.
<u>Bottom Side & Sill.</u>	Assembled and panelled as Illustration 16 items E & F. Finished one coat primer. Timber treated with preservative.
<u>Roof.</u>	Perforated metal panel. Complete - Illustration 26. Timber details. Roof stick and stiffening brackets. Illustration 22.
<u>Foot Well.</u>	Complete assembly as Illustration 16, item C, enamelled.
<u>Seat Pan.</u>	As Illustration 16, item B, enamelled.

<u>Squab Panel.</u>	One coat primer, as Illustration 16, item A.
<u>Front Floorboard.</u>	Assembled as Illustration 16, item D. Timber treated with preservative.
<u>Trimming Materials.</u>	All items cut to size or pattern but unstitched (will be omitted where not required).
<u>Windscreen.</u>	Complete frames chrome plated. Including rubber weather seal. (Glazed or unglazed as required.)
<u>Spring Cases.</u>	Can be omitted where not required.
<u>Bucket Seats.</u>	Panel assembly, with tacking strip and fittings attached. Finished painted.
<u>Furniture.</u>	All handles, finished chrome plated. Waist mouldings, finished chrome plated. Boot lid hinges, finished chrome plated. Boot lid handle and escutcheon, finished chrome plated.
<u>Cappings & Facias.</u>	Supplied polished finish. Instrument facia Riley supply.
<u>Drip Moulding.</u>	Supplied in cut lengths.
<u>Rear Quarter Moulding.</u>	Supplied in cut lengths.
<u>Sundries.</u>	All nuts, bolts, screws and washers, sufficient to cover consignment of bodies to be supplied. Thread, tacks, Bostik solution.

SUB ASSEMBLY OF SHELF. See Illustration 13.

Treat all joint surfaces with "Bostik 'C'" Solution before commencing assembly operation.

1. Fit into a suitable table fixture back fillet and shelf back, and screw together.
2. Fit and secure corner fillets.
3. Fit and secure shelf bottom.

BACK LIGHT AND SHELF ASSEMBLY. See Illustration 13.

Sub Assemblies of back light frame and shelf required for this operation.

1. Place in a suitable table jig and back light frame.
2. Screw to top rail of frame - trim pad support block.
3. Using "Bostik 'C'" solution cover bottom face of frame and screw to top back rail, located in jig.
4. Place in position - shelf assembly and screw to back light frame assembly and pin between screws.
5. Clean off any surplus timber.

BODY SIDE ASSEMBLY. See Illustration 27.

These assemblies comprise - R.H. and L.H.

Front doors - framed and panelled. Illustration 29.
Rear doors - framed and panelled. Illustration 29.
Centre pillar assemblies. Illustration 27.
Cant rails including stiffening bracket, R.H. and L.H.

The factory method is to:-

1. Fit and clamp into jig (see Illustration 30), sill bottom side, correct location to be provided on jig.
2. Fit and clamp in position cant rail.
3. Fit centre pillar and bolt to sill sides, secure to cant rail and stiffening bracket, anti-squeak packing between joint faces.
4. Fit front door using 1/32" thick sheet rubber between hinge flaps and door timber - check for correct clearances, etc., screw in position, and secure with metal thread bolt through centre hole into tee nut fixed to timber frame.
5. Fit rear door, operation as for front door.
6. Final check for clearance, etc.
7. Complete operation by bolting centre pillar to sill.

DASH SIDE ASSEMBLY - L.H. AND R.H. See Illustration 4.

1. In a suitable table jig, place in position the following details:- Reinforcement plate assembly,

using mounting holes in bottom bracket for correct location - dash frame pillar - scuttle pillar ("A" post) - scuttle rocker - scuttle corner block - scuttle rocker extension - moulding rail - reinforcement plate packing.

Treat all adjacent surfaces and joints with "Bostik 'C'" rubber solution, screw up all joints tight and clean off any projections or surplus timber.

2. Cover over surface of timber with adhesive tape ready to receive shroud side panel.
3. Fit shroud side panel and securely pin in position.
4. Remove assembly from jig and turn over, complete operation by screwing reinforcement plate to timber framing and finish pinning shroud side panel to moulding rail.
5. Clean off by disc grinding, edges of shroud side panel flush to timber at dash frame pillar.

DASH ASSEMBLY. See Illustrations 2, 3, 4, 5 & 6.

1. Fit assemblies of dash sides (right and left hand) into jig, using mounting holes in bottom bracket to ensure correct location.
2. Using "Bostik 'C'" solution and felt, cover adjacent surfaces ready to receive the dash panel assembly.
3. Place the dash panel assembly in position.
4. After treating all joints with "Bostik 'C'" solution place in position in jig the following details:- Dash frame top rail - windscreen, top and bottom rails - front roof stick and formers, securely screw framing together, all joints to be up tight, clean off any surplus projections, etc.
5. Check dash panel for its correct location, see that panel rests on top flange of reinforcement plates, securely screw panel to windscreen bottom rail and dash frame top rail.
6. Felt underside of bonnet rails, and fit into position, its correct location for height and distance from dash frame to be incorporated in assembly jig, securely screw to scuttle pillar ("A" post), drill through dash panel located through holes in timber, and bolt up tight, clean off flush to timber any projections of bolts.
7. Cover over with adhesive tape all timber framing ready to receive windshield panel.
8. Fit windshield panel and clamp in position, check aperture for correctness, securely pin, using serrated panel pins. .
9. Tape and fit scuttle corner filler blocks to bonnet rails.

10. Remove assembly from jig.
11. Fit and secure filler blocks in corners of windscreen top rail.
12. Complete assembly by screwing and bolting dash panel assembly to reinforcement plate and dash framing at points not accessible in assembly jig.

TONNEAU ASSEMBLY. See Illustrations 7, 8, 9, 10, 11, 12 & 13.

The complete tonneau panel assembly, see Illustration 9, comprises the following items:-

Tonneau side panel assembly. R.H. & L.H.
 Tonneau centre panel.
 Trunk opening reinforcement assembly.
 Luggage and spare wheel compartment assembly.
 Squab side support rail. R.H. & L.H.
 Squab side support filler. R.H. & L.H.
 Squab top support rail.

Note. All welded joints around wheel arch, luggage and spare wheel compartment to be treated with "Bostik Compound No.692" to prevent ingress of water into compartments - this operation will be carried out prior to despatch of assembly for export.

1. Countersink all pin holes in tonneau panel.
2. Fit timber packing block between lower reinforcement panel and outer panel of dog's leg. ("D" post).
3. Secure with "Bostik 'C'" a strip of felt along the top flange of squab support top rail.
4. Tape adjacent surfaces of top, centre, and bottom trim packings, and place in position, drill inner reinforcement panel through holes provided in trim packings, and secure in position with metal thread screw, etc. Care to be taken that clearance is maintained for accommodation of brackets of the trafficator box, use a suitable jig or template.
5. Fit and clamp in position rocker trim packings, drill through wheel arch panel and secure with screws.
6. Fit wheel arch trim blocks, drill through wheel arch and secure by screws.
7. Fit and clamp in position trafficator pillar assemblies, check for clearance of trafficator aperture, pin in position and secure to inner reinforcement panel with round head screws.
8. After covering surface with tape, place in position cant rail trim packing and secure in position

with wood screws.

9. Fit and clamp into position - assembly of back light and shelf, joints to be previously treated with "Bostik 'C'" solution, secure to rear corner rail - drill through ply shelf into squab support top rail and bolt in position (7 bolts equally spaced), complete pinning of tonneau panel to timber framing.
10. "Bostik" joint faces of roof corner ply, use template for correct location, screw in position and check for alignment.
11. Fit previously taped squab trim packing, drill and bolt in position.
12. Clean off all joints by disc grinding or other approved method.

BODY FRAME ASSEMBLY. See Illustrations 19, 22 & 23. (Note that the roof sticks depicted in Illustrations 20, 22 & 23 are the original pattern superseded by those shown in Illustration 21.)

Body frame assembly comprises:-

Body side assemblies. R.H. & L.H.	Illustration 26.
Dash assembly.	Illustration 2.
Tonneau assembly.	Illustration 7.

With additional components added as required in the following operations:-

1. Before placing body side assemblies in jig, tape front end of cant rail and cant rail bracket, secure to front and rear end of sill, anti-squeak cloth with "Bostik 'C'" solution.
2. Place on jig, tonneau assembly, its correct location to be provided through mounting holes.
3. Fit on jig body side assemblies, R.H. & L.H.
4. Fit on jig dash assembly.
5. Locate tonneau in its correct relation to sill through mounting holes - situated at bottom of "D" post. (Use plug to retain position).
6. Secure cant rail to tonneau with woodscrews after treating joint faces with "Bostik 'C'" solution.
7. Check for correct door clearance of tonneau, adjust as necessary and clamp tonneau to sill, secure tonneau to sill with woodscrews and metal thread bolts.
8. Clamp dash assembly to sill, check for correct door clearance.

9. Fit and secure top corner blocks to cant rail and scuttle pillar ("A" post), complete securing front roof stick.
 10. Complete pinning of windshield panel to top corner blocks, clean off any surplus metal flush to timber frame.
 11. Re-check doors for clearance and adjust as necessary.
 12. Secure foot of scuttle pillar to sill, drill through holes in reinforcement plate and bolt up tight, using hexagon head bolts (5 per side), drill and csk. through scuttle extension (in the rebate) and securely screw to sill.
 13. Secure bottom of dash frame to sill.
 14. Place in temporary position front floorboard assembly, location obtained from jig.
 15. With suitable template determine position and width between roof longitudinal rails at back light assembly - fit and secure roof rails after treating joints with "Bostik 'C'" solution.
 16. Secure trimming strip and cant rail to tonneau on inside face.
 17. Fit and secure in position metal roof stick, its correct location determined by a suitable template or jig - also secure roof stiffening bracket to longitudinal roof rail.
 18. Pin foot board panel to top of sill.
 19. Fit footwell assembly and screw in position to sill, drill and rivet to wheel arch panel at the rear end - assembly to have been previously felted on adjacent surfaces.
 20. Fit and secure in position seat pan support blocks.
 21. Drill through front floor board to coincide with holes in footwell assembly - remove board from jig and fit tee nuts to underside face, replace in jig and bolt up tight to footwell assembly and sill.
 22. Bolt in position squab detachable panel using mushroom head metal threads.
 23. Bolt seat pan in position.
 24. Fit and secure roof lamp switch block to the "right hand" roof stiffening bracket.
- Body frame is now ready to be passed to assembly line.

BODY FRAME FINAL ASSEMBLY.

Before commencing the following operations, the body panels, including luggage compartment and spare wheel lids, re to be cleaned by removing the protective oil or grease.

Sequence of operations:-

1. Fit perforated metal roof panel. Illustration 25.
2. Fit front and rear door locks, etc.
3. Fit spare wheel lid.)
4. Fit boot lid.) Illustration 15.
5. Weld and solder joints.
6. Final check and clean off.

1. FITTING ROOF PANEL.

- a. Cover roof rails with felt.
- b. Temporarily fit roof panel (See Illustrations 25, 31 & 32). Use stretcher between cant rails to maintain correct width.
- c. Remove roof panel from body and trim off any surplus metal.
- d. Tape timber of back light framing ready to receive panel.
- e. Replace roof panel and secure to cant rails and tonneau with copper pins and No.4 woodscrews, alternately spaced approximately $1\frac{1}{2}$ " pitch. Ensure panel beds to framing. Secure panel to front roof stick with copper pins and clinch over - turn panel edge into trench provided - pin round back light.
- f. Drill and countersink panel along centre of roof longitudinal rails, between panel reinforcement strips and secure with screws - drill and countersink at strip ends and secure with screws to cant rail.
- g. Stretcher between metal roof stick and body floor to bed panel to roof stick - drill through holes provided in roof stick and secure to panel with copper rivets.

2. FIT FRONT DOOR LOCK, ETC.

- a. Fit and secure window regulator assembly.
- b. Screw into position garnish rail, use location template to ensure correct position in relation to waist rail, etc.
- c. Place door lock in position, locate with spindle jig for correct alignment with door handle - drill facing panel and secure lock.
- d. Temporarily fit striker plate (dovetail type) to lock - adjust as necessary timber face on scuttle pillar ("A" post) to obtain correct clearance, allowance to be made for facing panel thickness.
- e. Clear away any obstruction (i.e. tape or panel) at door buffer recess.
- f. Cover underside of scuttle pillar facing panel with adhesive tape and clamp panel in position - drill and countersink flange at rebate and secure with No.4 woodscrews. Pin inside flange to timber framing and remove clamp.
- g. Fit door lock striker to scuttle pillar ("A" post) and check for correct clearance.
- h. Fit and glue cant rail fillets and secure in position.
- j. Fit cant rail facing panels and clamp in position, pin securely, file and clean up edges.
- k. Final check for correct clearances.

3. FIT REAR DOOR, LOCKS, ETC.

Note. Operations for rear door as for front door with the exceptions that door lock remote control is secured to garnish rail before fitting to body frame.

4. FIT SPARE WHEEL LID. Illustration 15.

- a. Screw to the left hand side of lid the hinged stay, use location jig for correct position.
- b. Bolt in position striker for boot lid lock.
- c. Screw hinges to lid, drill panel to coincide with hinges through the rubber sealing channel, bolt hinge in position.
- d. Clear holes of panel obstruction, etc., for locking assembly.

e. Fit locking rod assembly as follows:-

Thread locking bar through hole provided in lid top rail, slide into temporary position, cam plate, spring, washer and bottom guide plate. Fit drive pin in cam.

Compress spring by forcing washer to position - fit split pin.

Secure bottom guide plate and cam plate with screws.

f. Using a drill template, drill side of spare wheel compartment panel for hinged stay.

g. Temporarily bolt in position striker plate for locking rod to underside of compartment floor.

h. Fit and bolt spare wheel lid to body, using mushroom head bolts, check for clearances and alignment with bottom edge of tonneau - secure hinged stay to panel.

5. FIT BOOT LID. Illustration 15.

a. Using slave hinges, bolt these to the lid.

b. Place lid in position on body and bolt hinges to tonneau.

c. Check for clearances and alignment, adjust as necessary.

d. Fit lid slam lock and secure with metal thread screws.

e. Insert into channel a slave length of sealing rubber. Re-check lid for correct clearances and alignment.

Note. The slave hinges and sealing rubber are removed before body passes into the paint operations.

6. GAS WELD AND CLEAN OFF THE FOLLOWING JOINTS. See Illustrations 31 & 32.

a. Windshield panel to shroud side panel on inside.

b. Dog's leg panels to sill sides.

c. Joints of cant rail facing panels.

Solder over and clean off the following:-

d. Joint of windshield panel at bonnet rail front.

- e. Cover screws in rebate of scuttle pillar facing panel.
 - f. Joint of windshield panel and shroud side panel.
7. The body shell to be finally inspected, checked for clearances and panel blemishes, any rectifications to be carried out. Panels thoroughly cleaned off ready for paint operations.

Illustrations 33, 34, 35, 36 and 37 depict the exterior and interior finish of the complete car.

NOTES ON WIRING.

1. CHASSIS - MAIN HARNESS CABLE. Harness is laid to L.H. chassis side member at a point just in front of second cross member from front of frame, at the branch - in the cable for reversing light switch and regulator and fuse box connections.

The cable is attached at this point with 2 large clips, then taken down under cross member and clipped to the rear side of it with 2 large clips.

Harness cable will now be against R.H. side member. Proceed along the side member until the third cross member is reached - this should be at a point beyond the branch off for the stop light switch.

Take the cable down under the third cross member and clip to the underside of the chassis side member with 2 small clips - the second of which should remain loose, since the main petrol feed pipe clip picks up on the same bolt.

Continue with the cable under the fourth cross member and up, on to the inside of the side member, attaching with 2 large clips, the second of which is also left slack for petrol pipe clip. These latter clips are located one on either side of the branch off for connections to trafficator and roof lamp body harness. Carry the cable on along the side member and under the rear cross member, attach with 2 large clips, one on each side of the branch off for petrol tank gauge attachment.

Finally, pass cable under bracing tube and clip to side member with 1 small clip at a point before the branch off of earth lead, this latter being connected to one of the chassis back rail bolts.

2. INTERIOR WIRING. The interior wiring is commenced at rear R.H. side of body in line with trafficator, to which first connection is made, from thence to roof lamp switch and on to roof lamp, continuing to L.H. trafficator.

Connection to main chassis harness is by snap connectors. The above is carried out before trimming and before body mounting.

3. INSTRUMENT PANEL. Instruments are mounted in panel and wired up before fitting in body. The instrument panel is located on dash, the cables threaded through rubber grommet in bulkhead and connected to regulator and fuse box which is located on bulkhead (top left hand corner). This operation is effected before body is mounted.
4. HORNS AND LAMPS. Harness for horns, side and head lamps is clipped across bulkhead from regulator and fuse box and is thus fitted before the body is mounted.

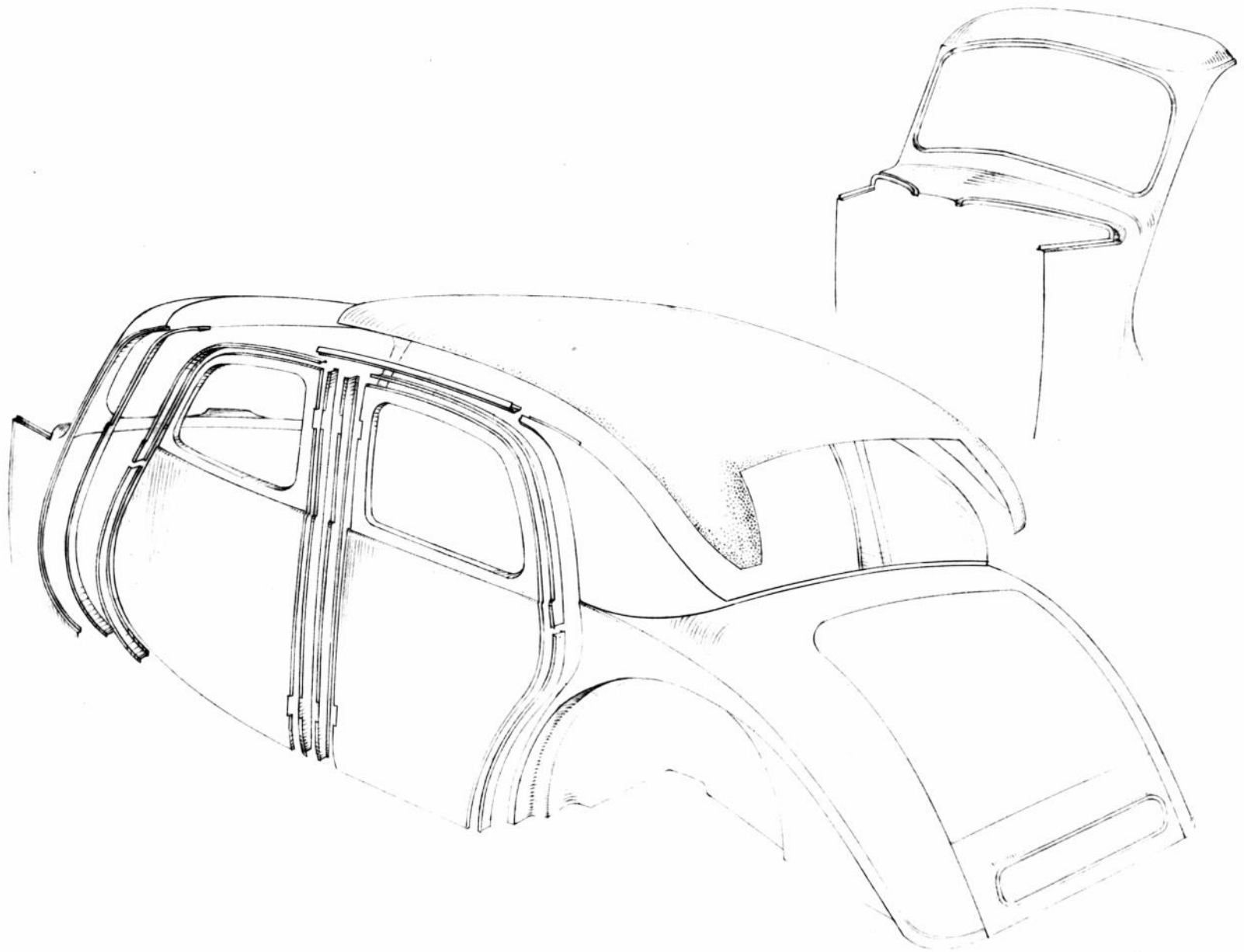
Note. The above is designed to give a brief outline of the positions of the various wiring cables, and the wiring diagram - Illustration No.39 - gives full details.

NOTES ON STEERING.

When fitting steering assembly the following sequence should be adopted:- (a) Slide locking ring on to bare steering mast from bottom end. (b) Fit steel circlip into groove - bottom end. (c) Insert bottom splined portion of mast into steering unit socket and screw locking ring down tightly. (d) Now fit steering column tube and secure with steering outer column clip. (e) Now fit steering column bush. (f) Fit spring sheath and cups (telescopic). (g) Slide steering wheel on splines of mast. (h) Now fit safety ring, followed by circlip into groove.

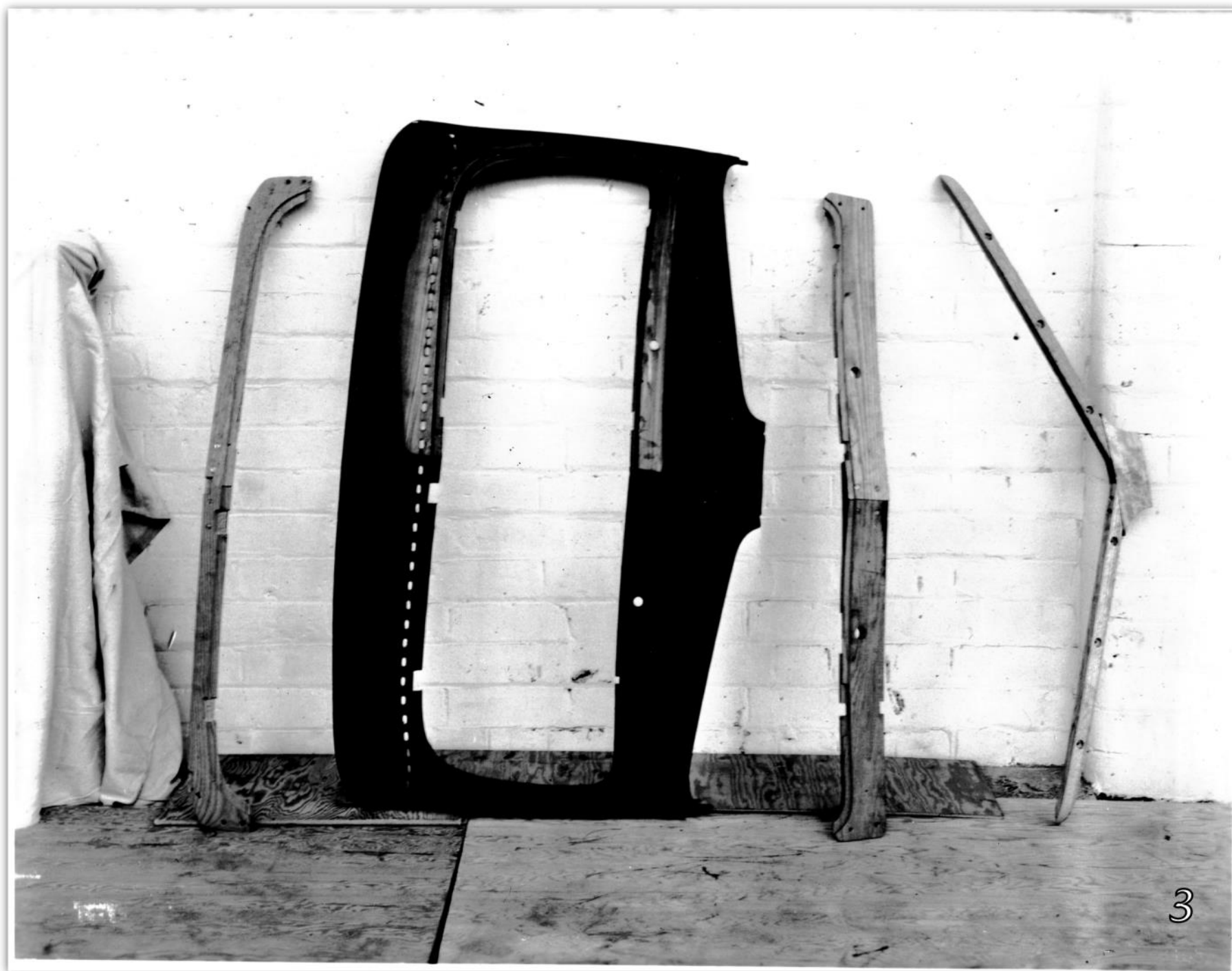
Tooling:- Screwdriver. Pliers. "C" spanner.

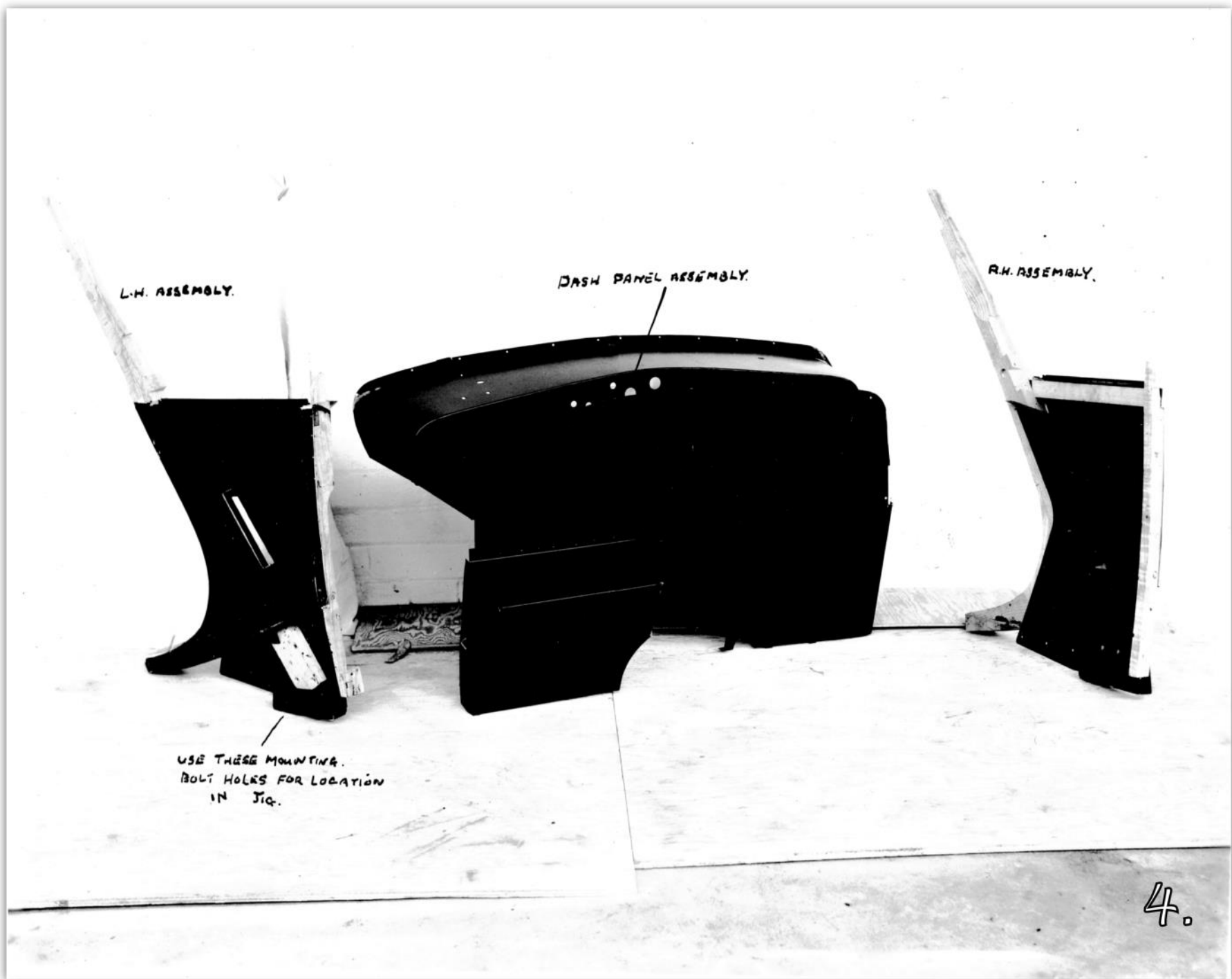
NOTE. Care should be taken that circlips are down in groove. The safety ring at top of mast should be brought up until the circlip is covered, the safety ring should then be peened over in four places round its circumference. (Illustration 38)

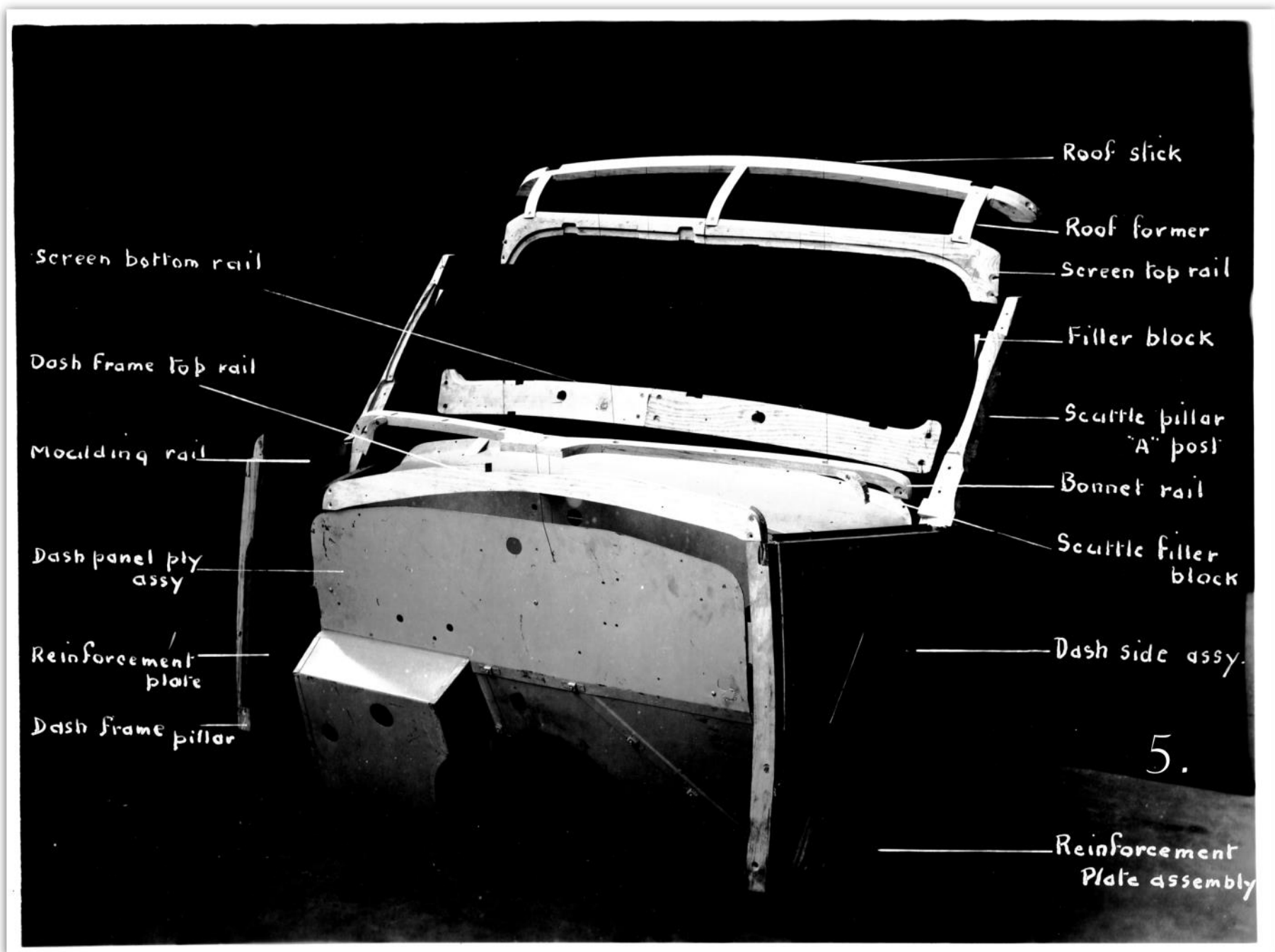


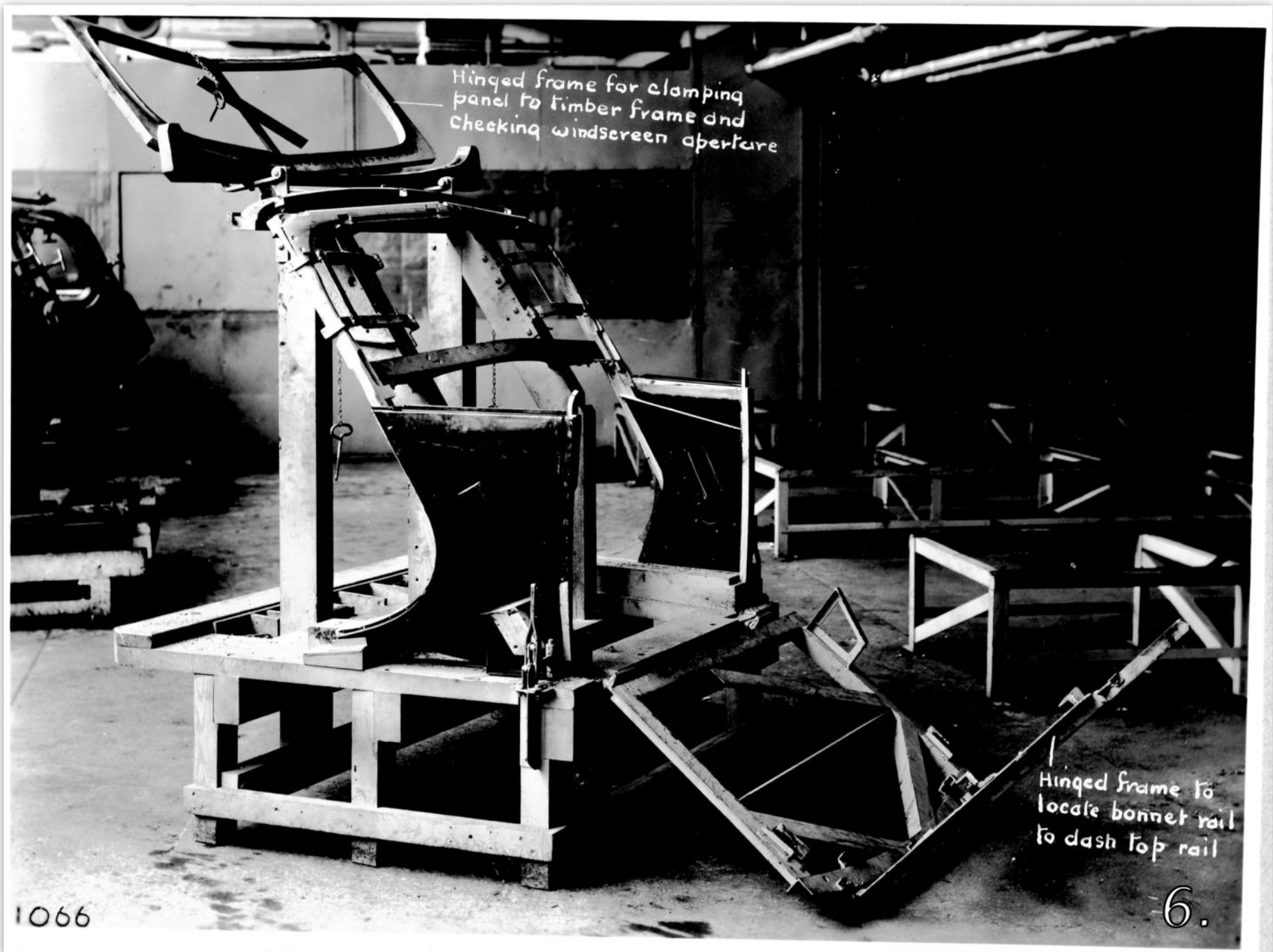


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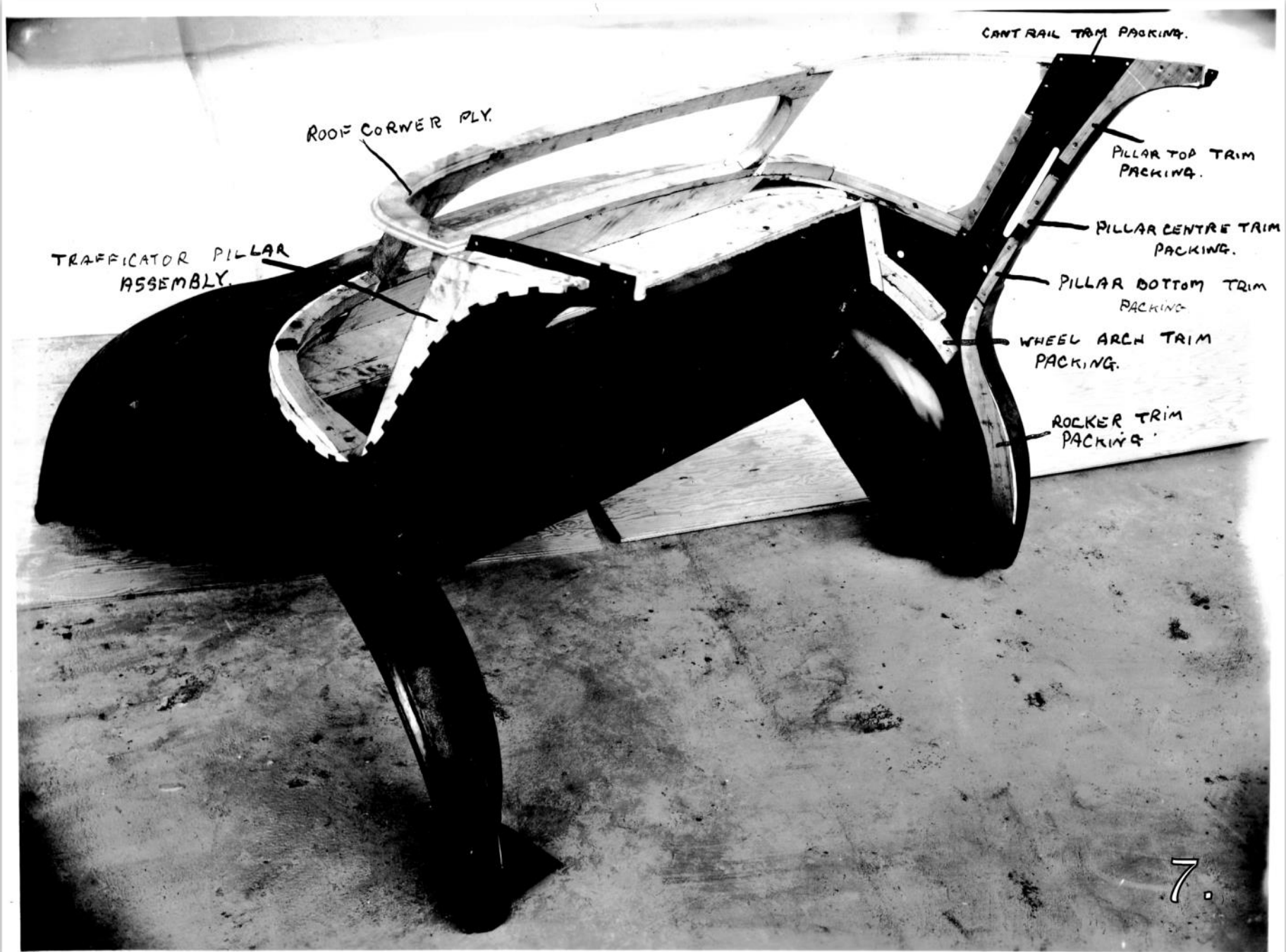


Hinged frame for clamping
panel to timber frame and
checking windscreen aperture

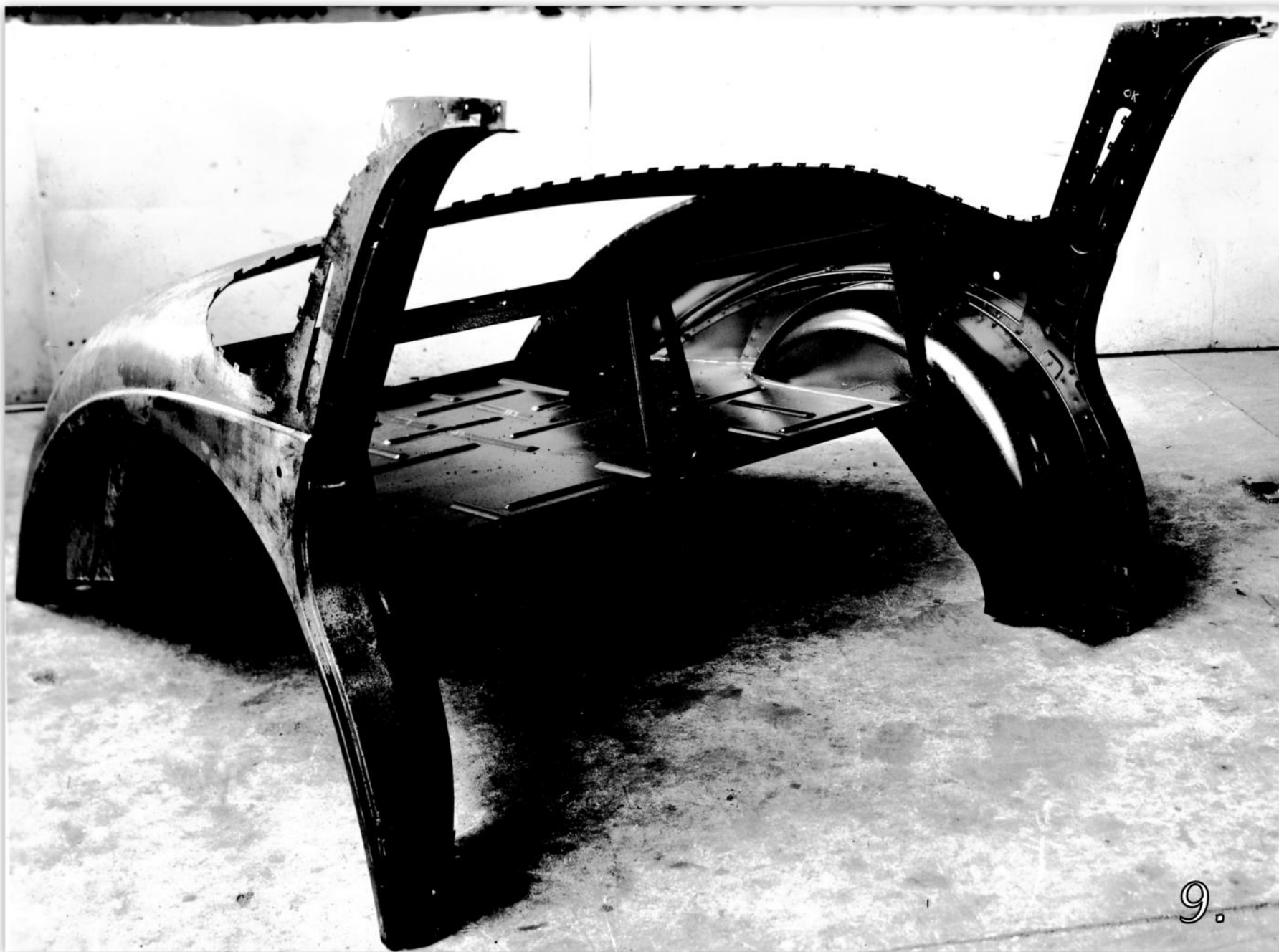
Hinged frame to
locate bonnet rail
to dash top rail

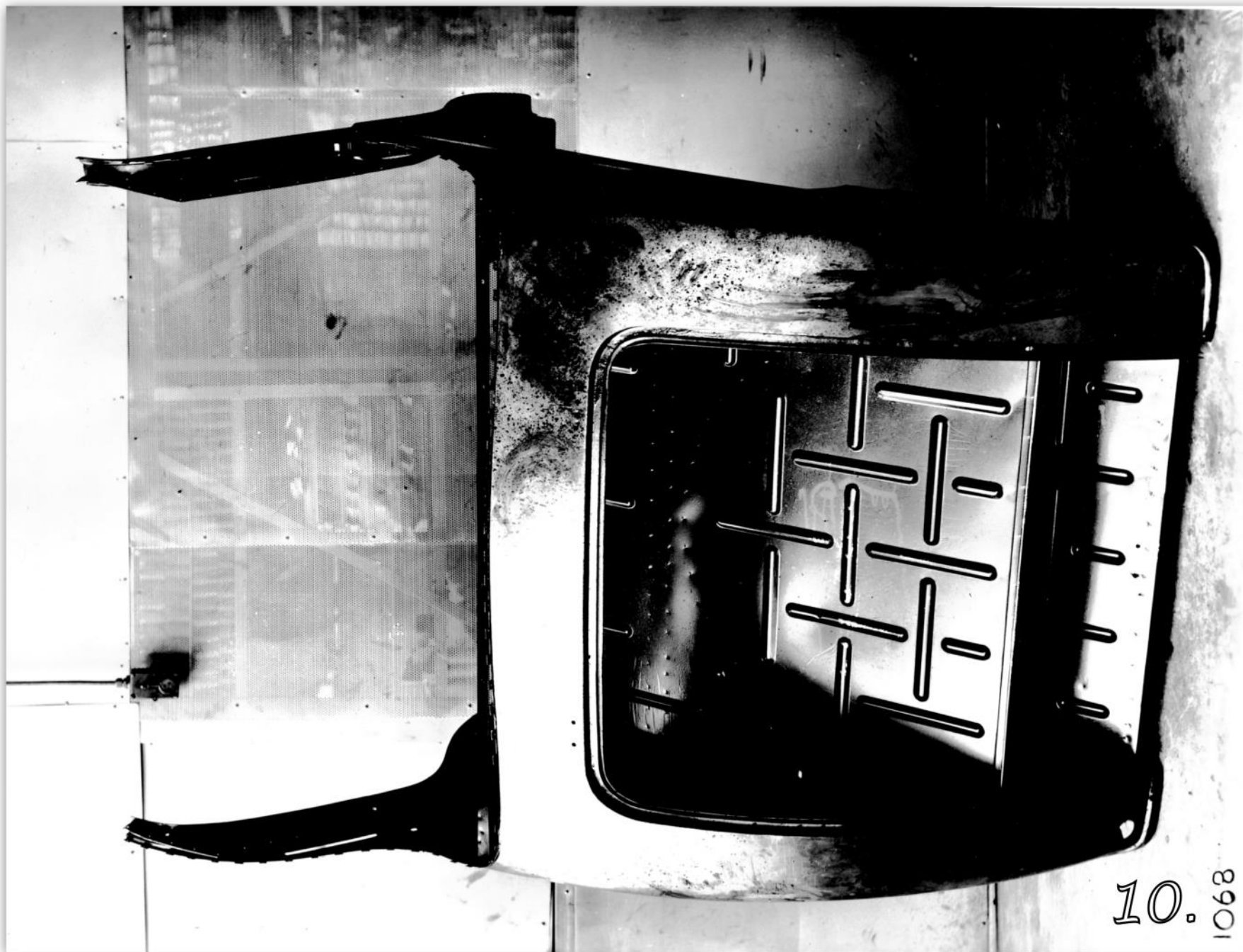
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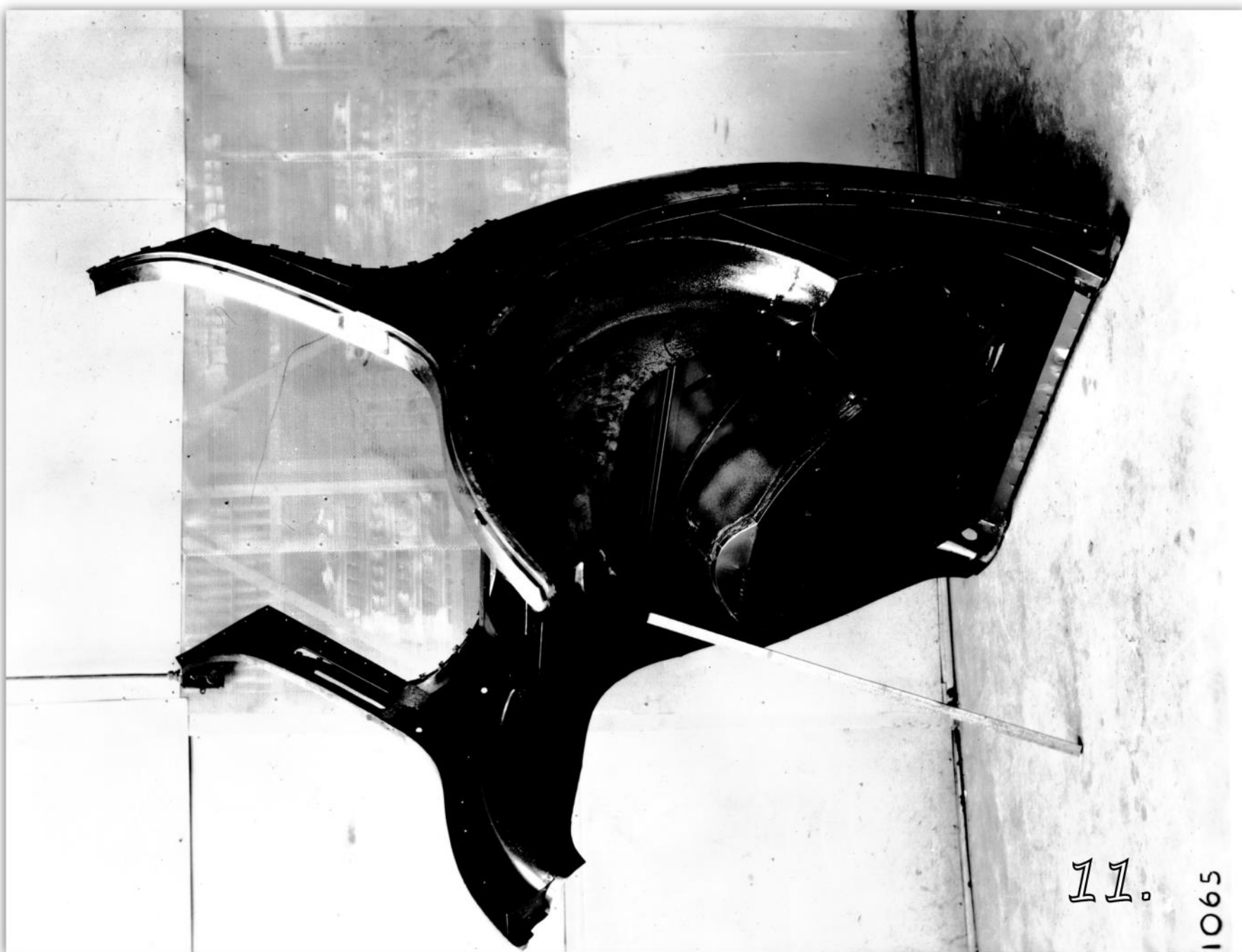


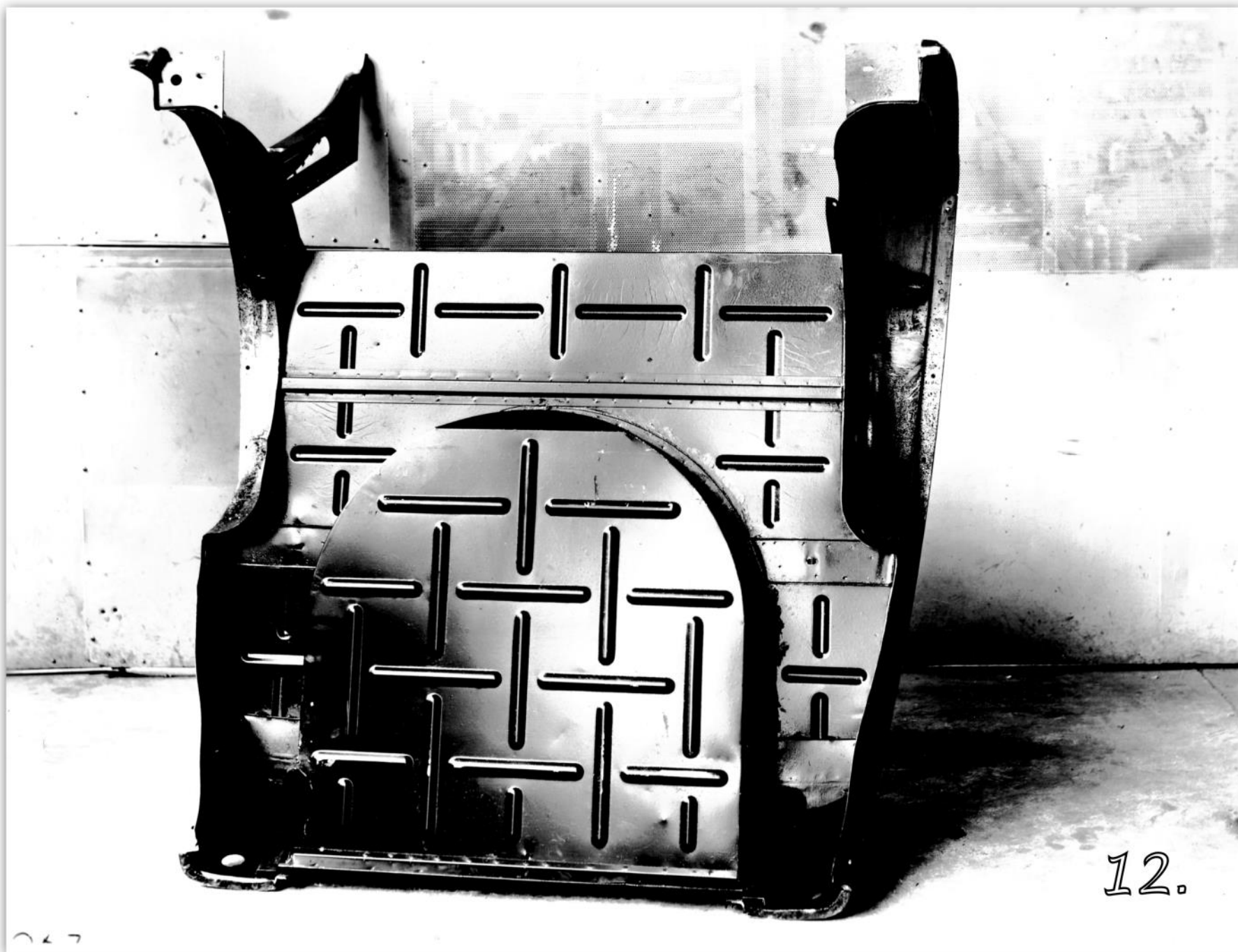




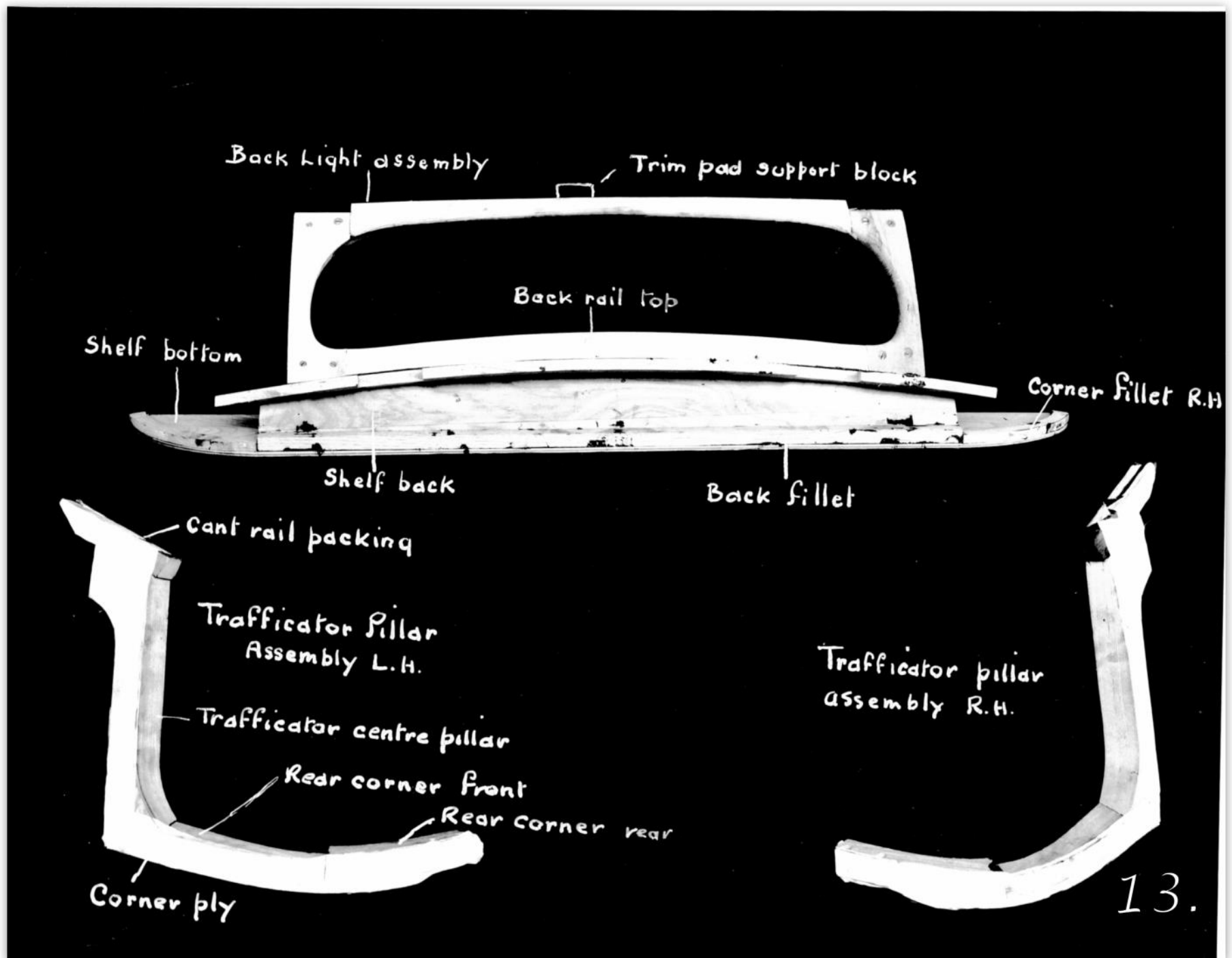


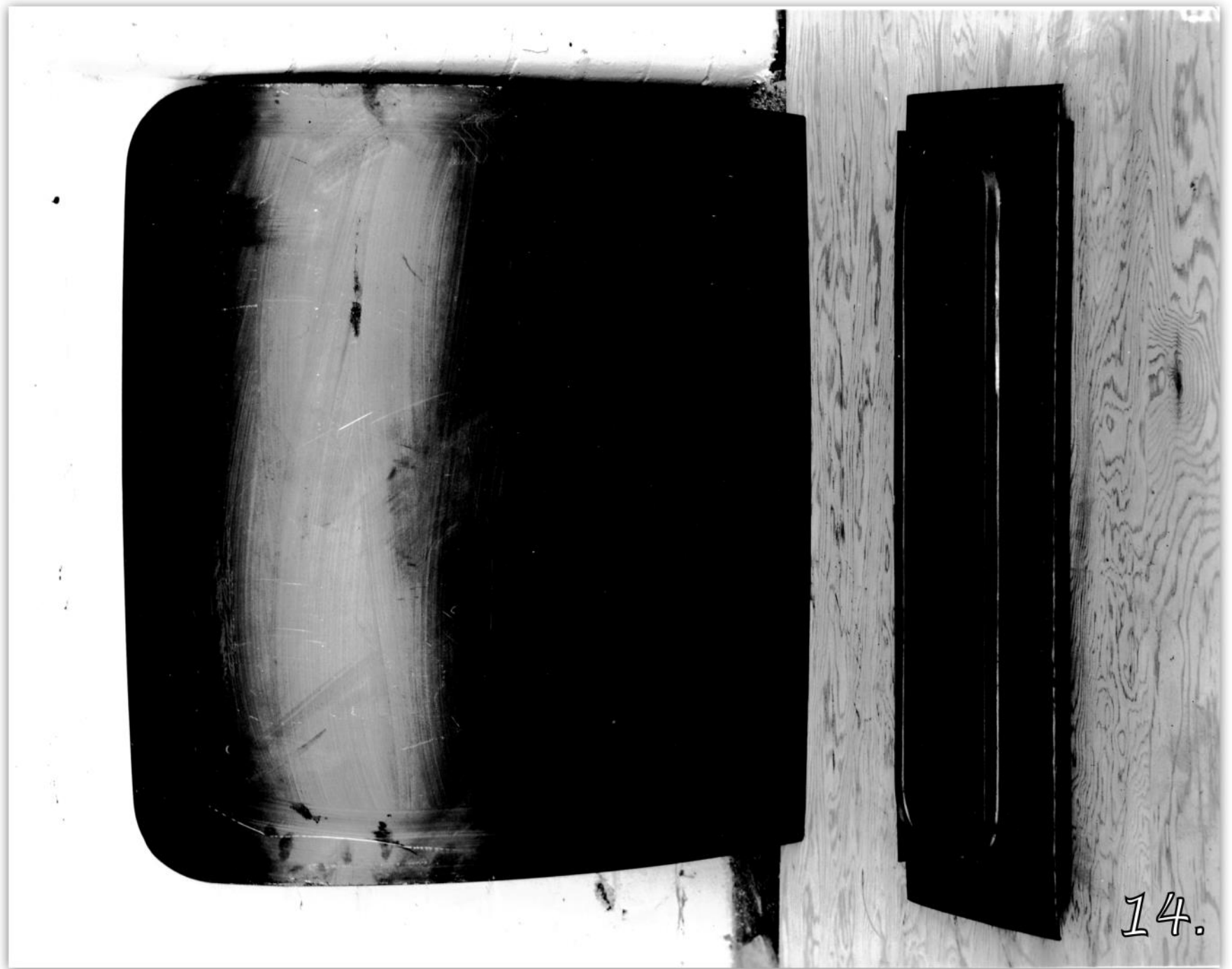
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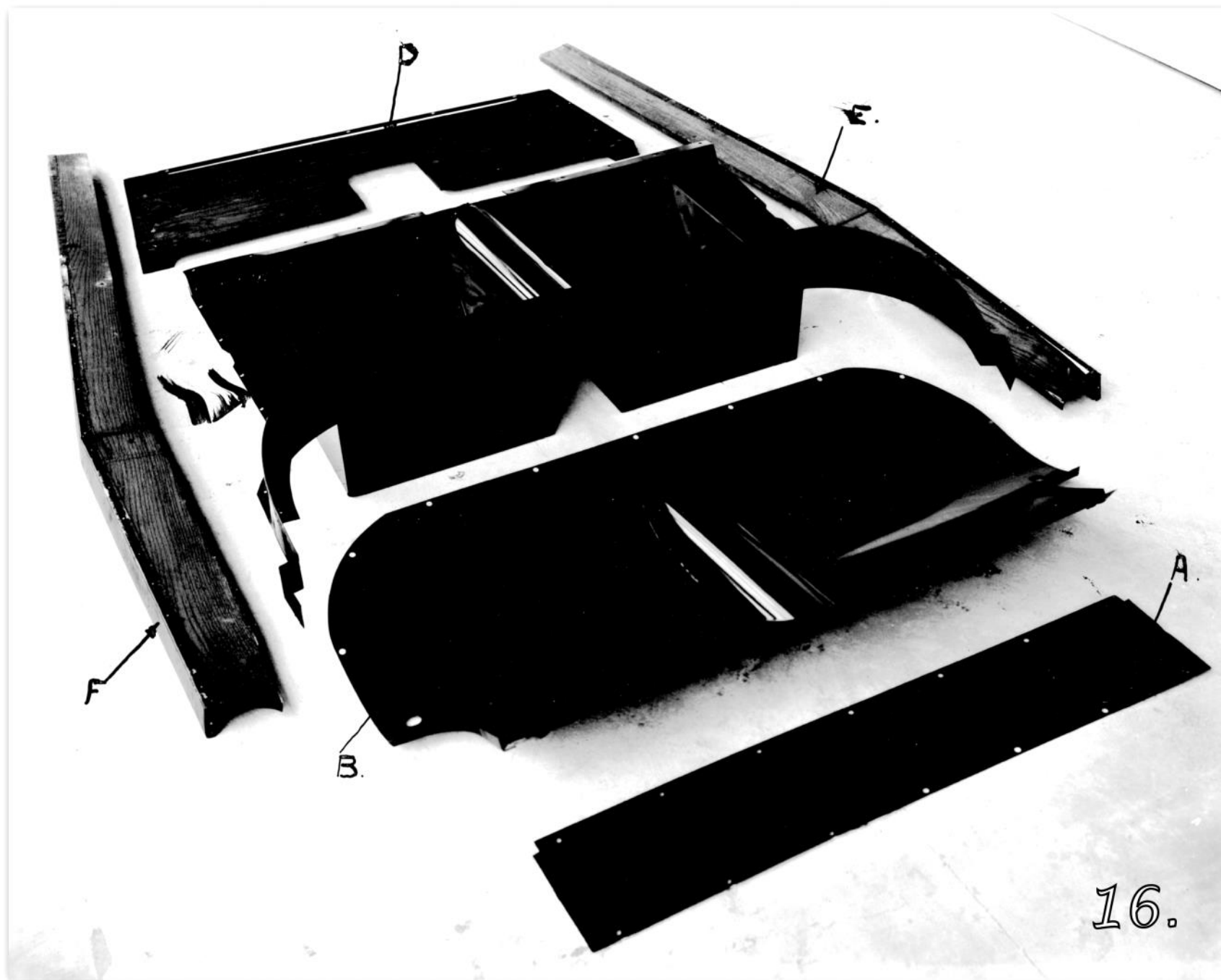
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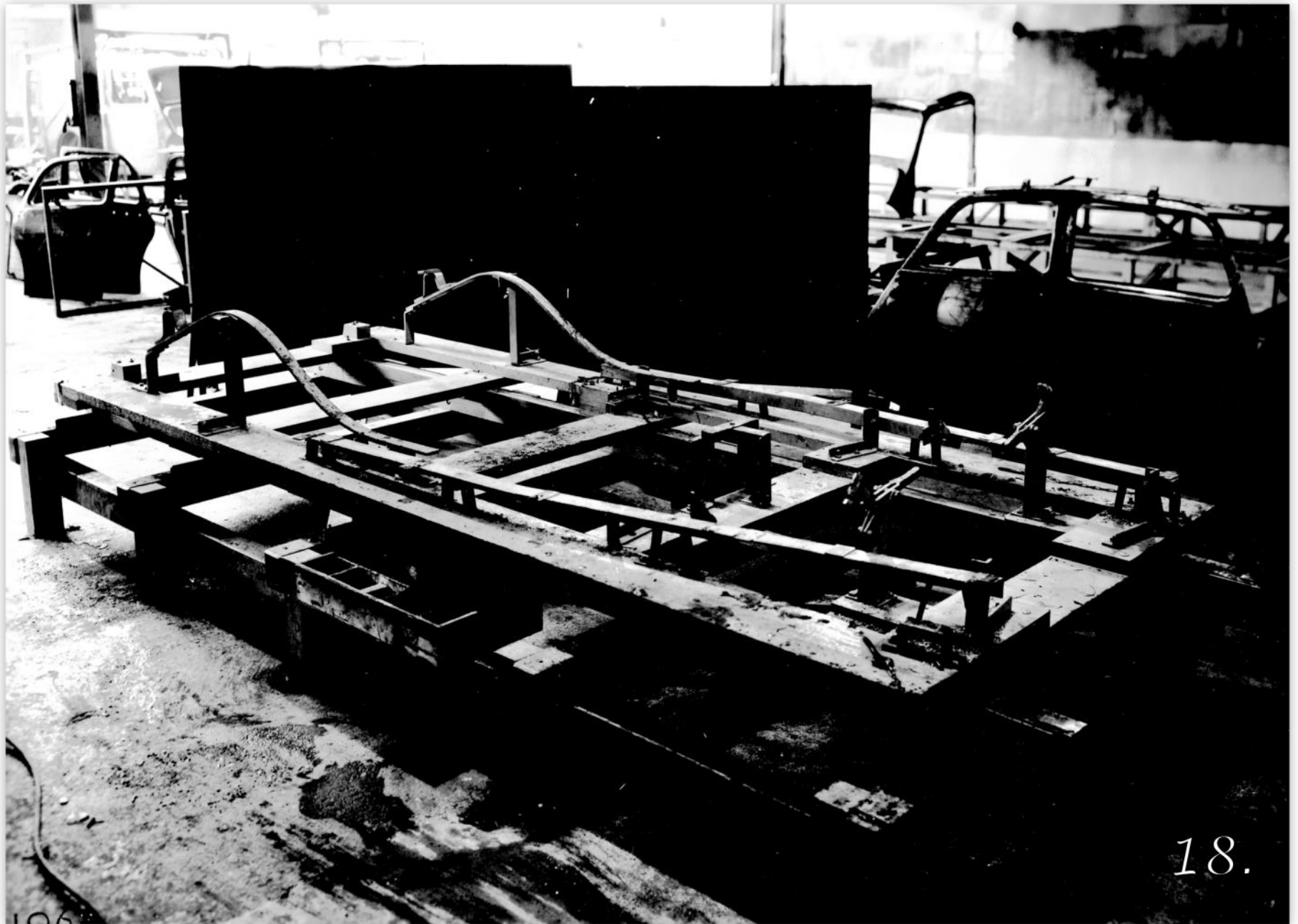


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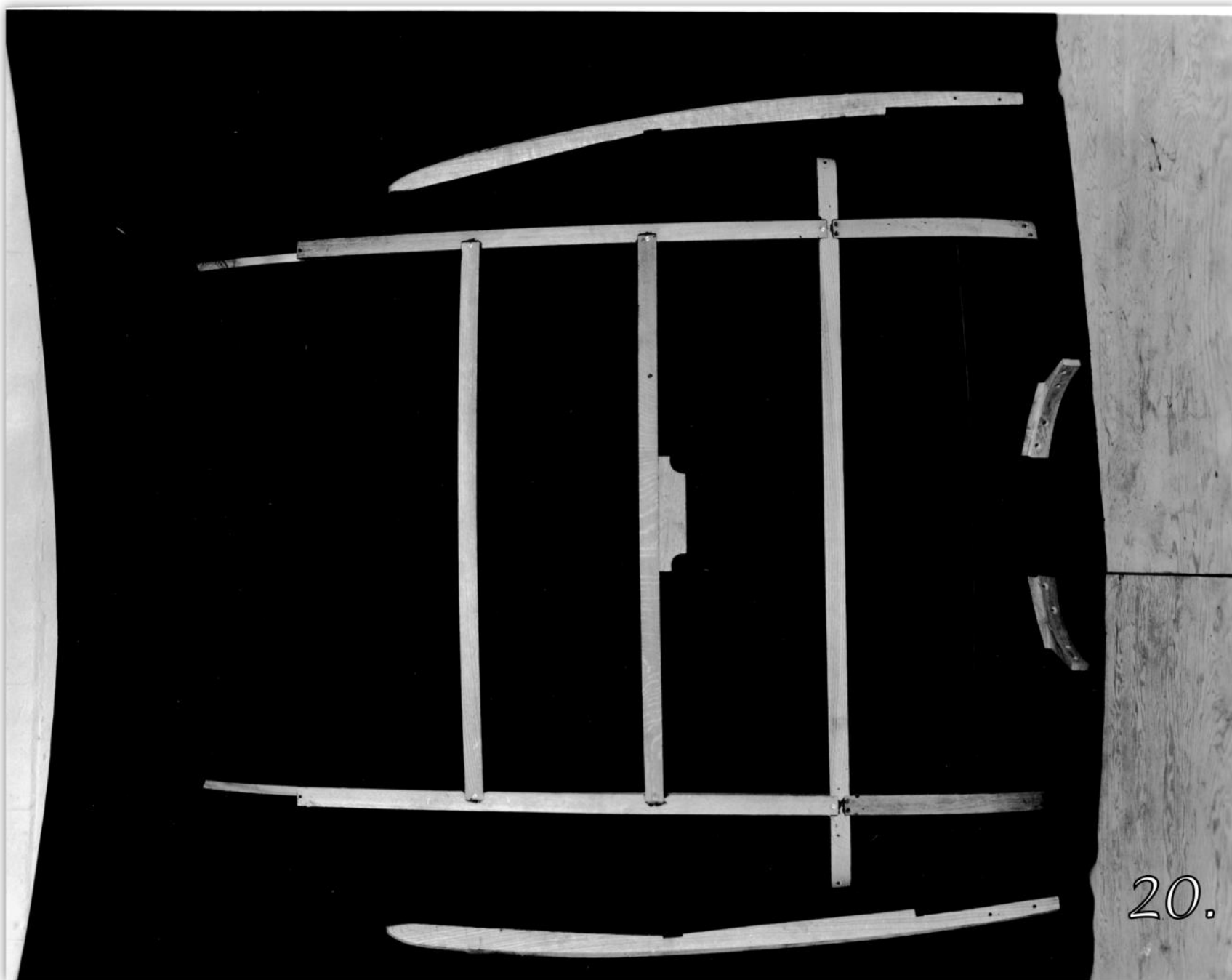
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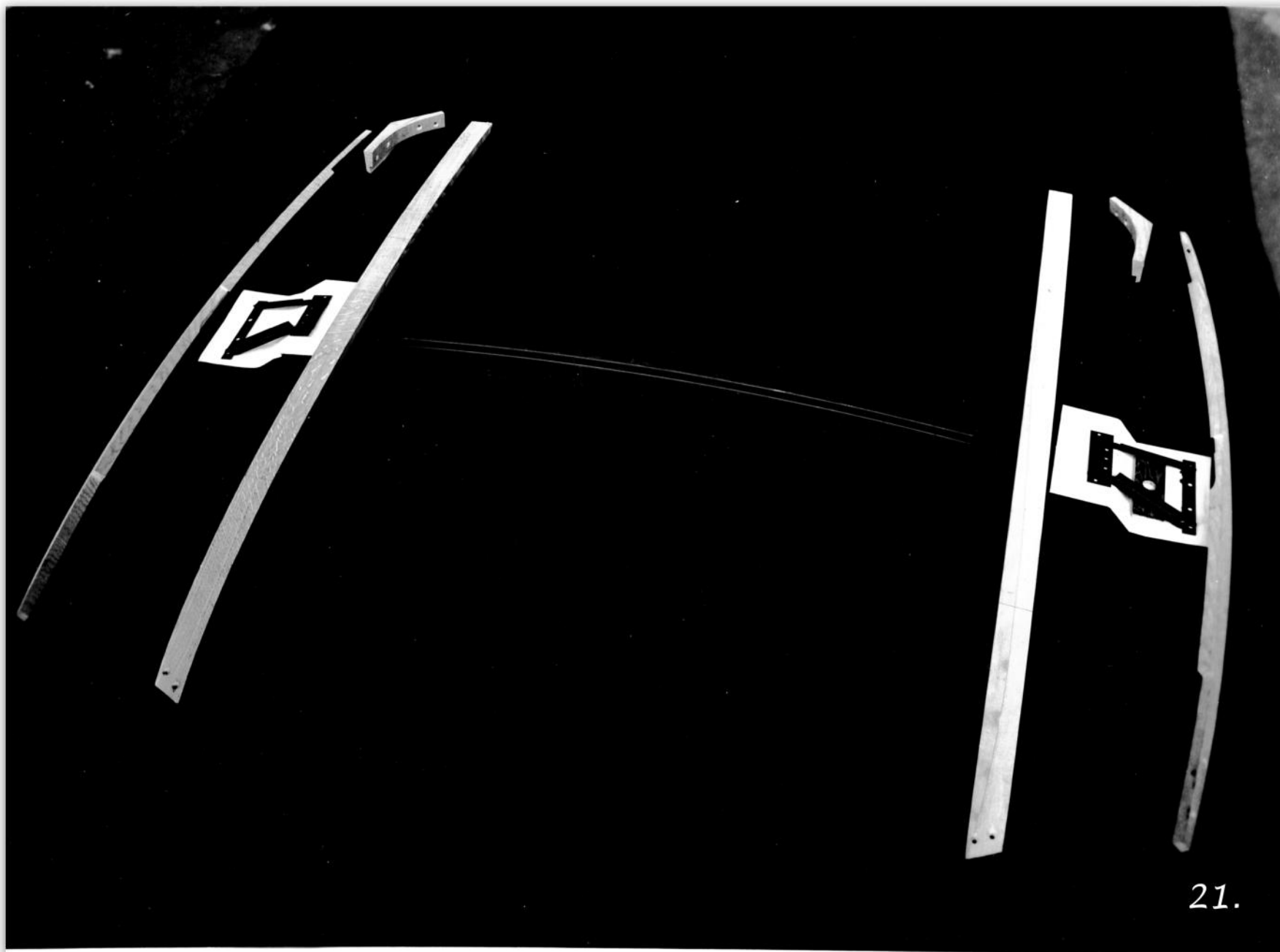






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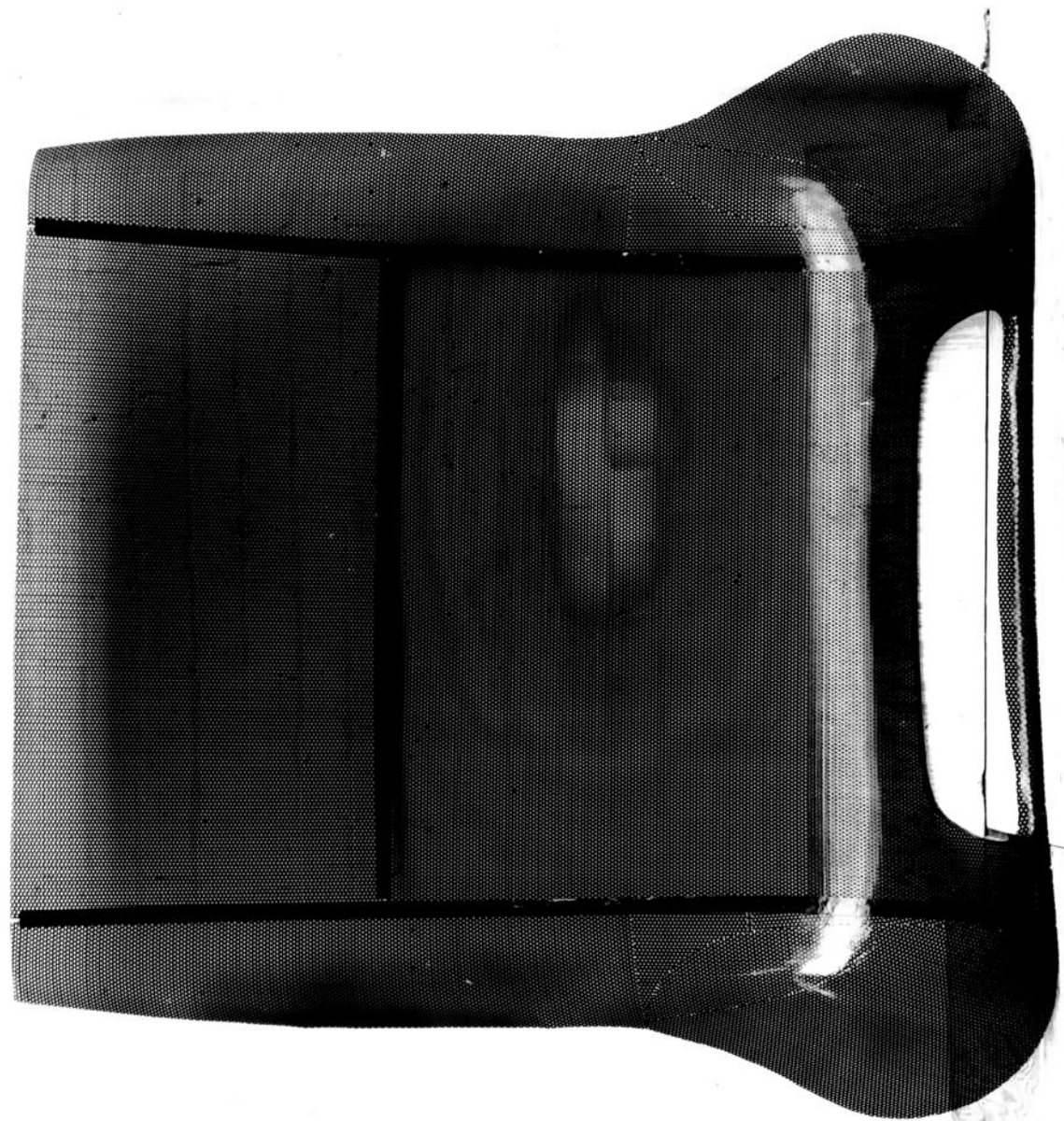






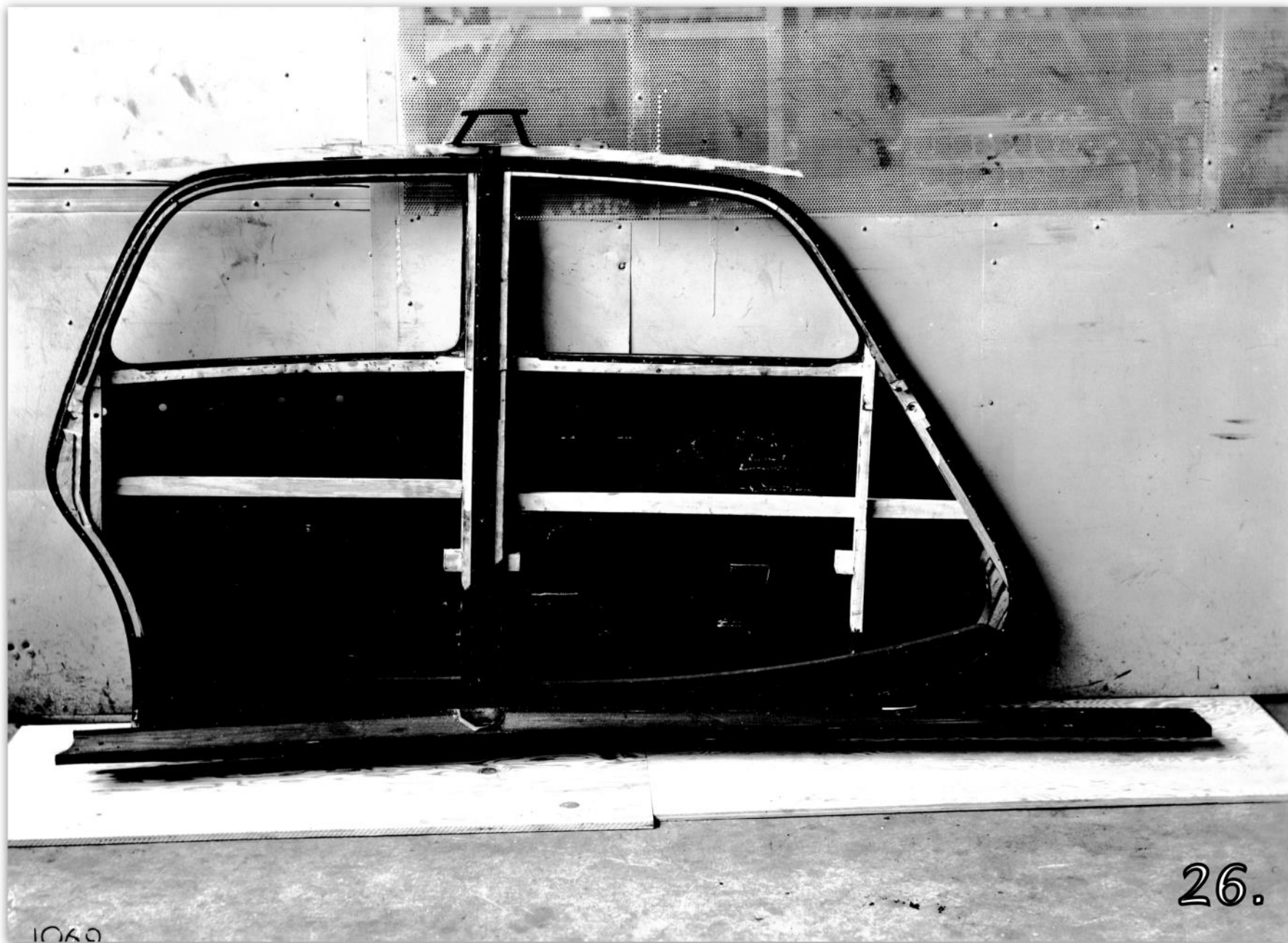
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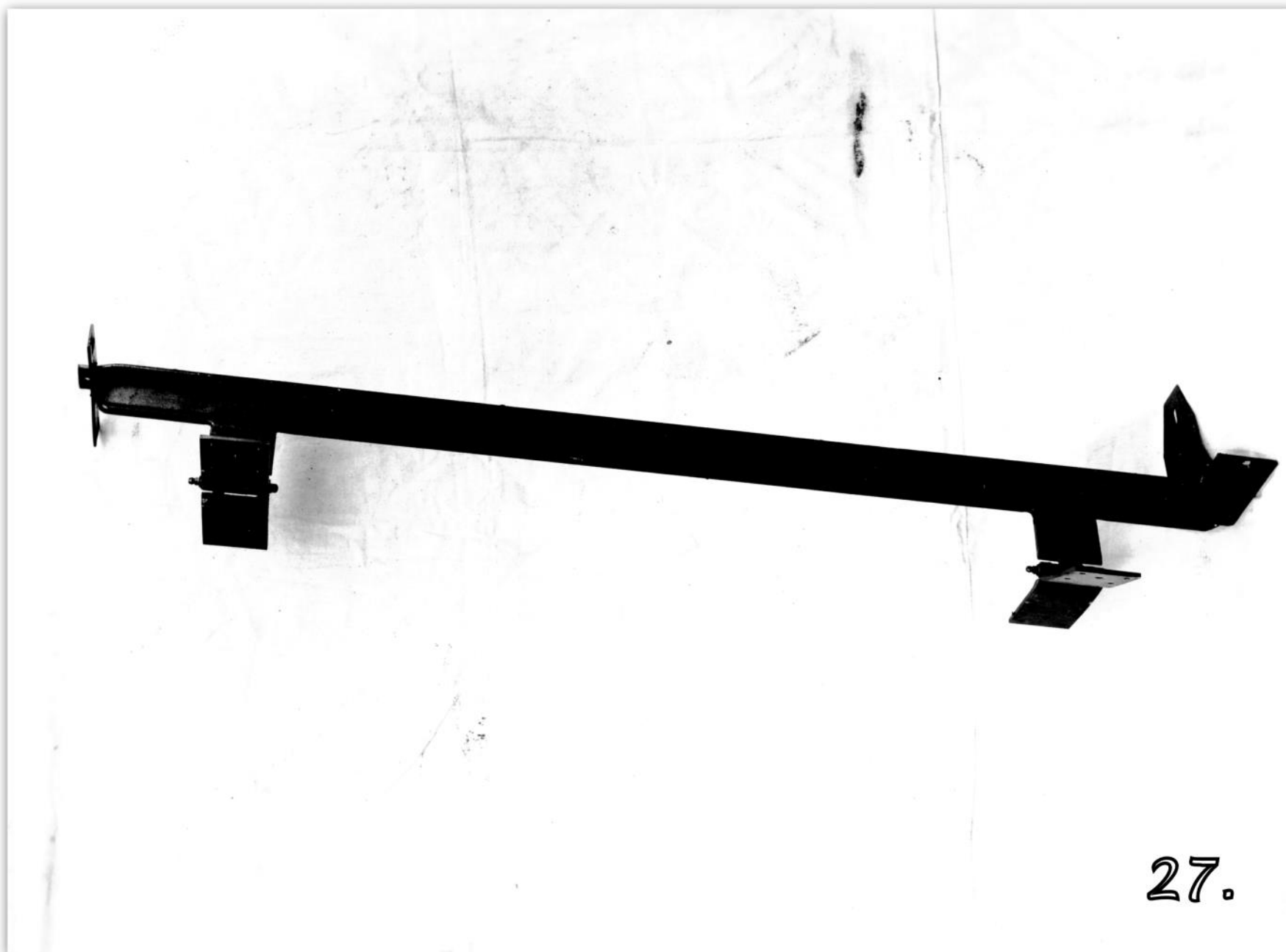




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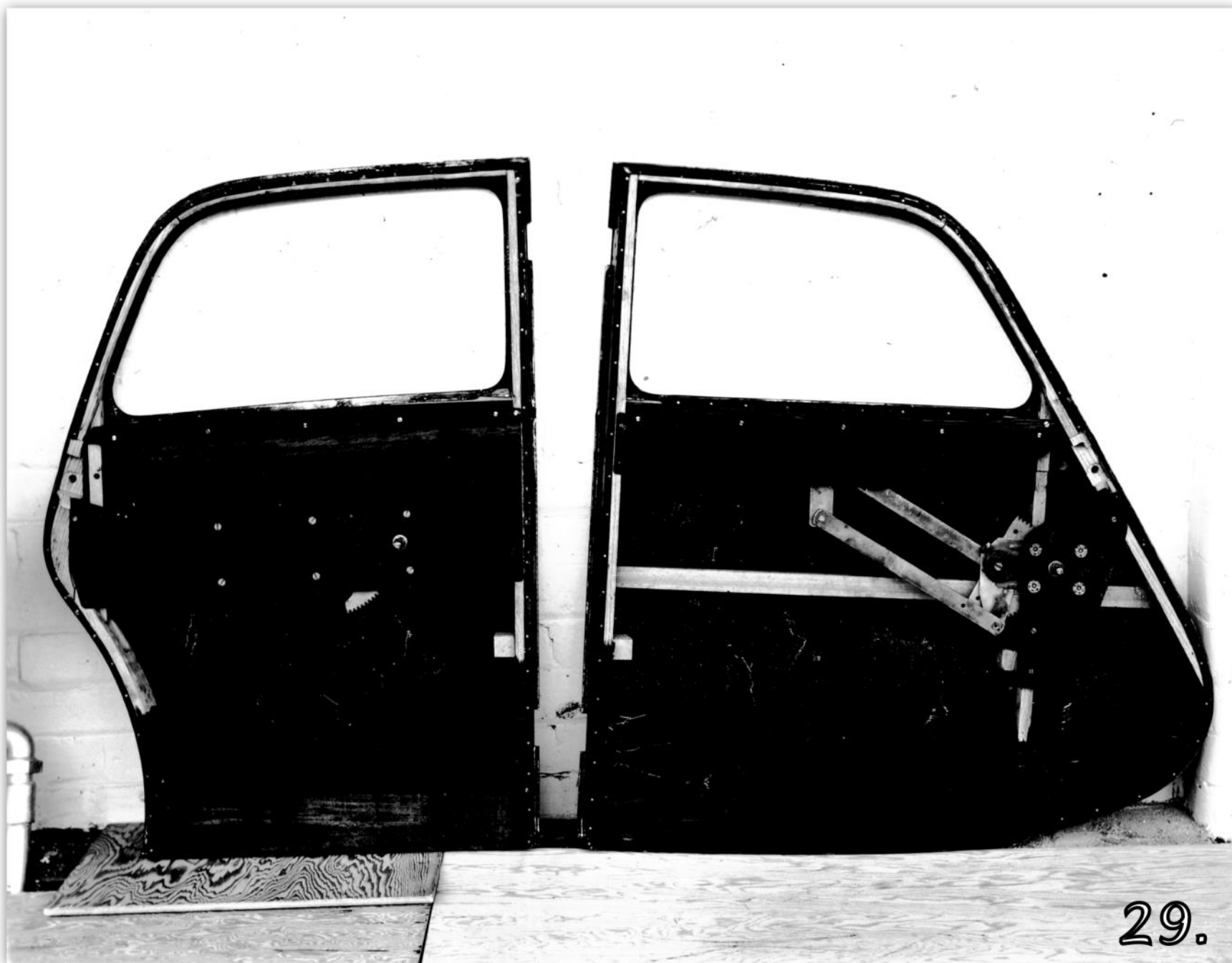


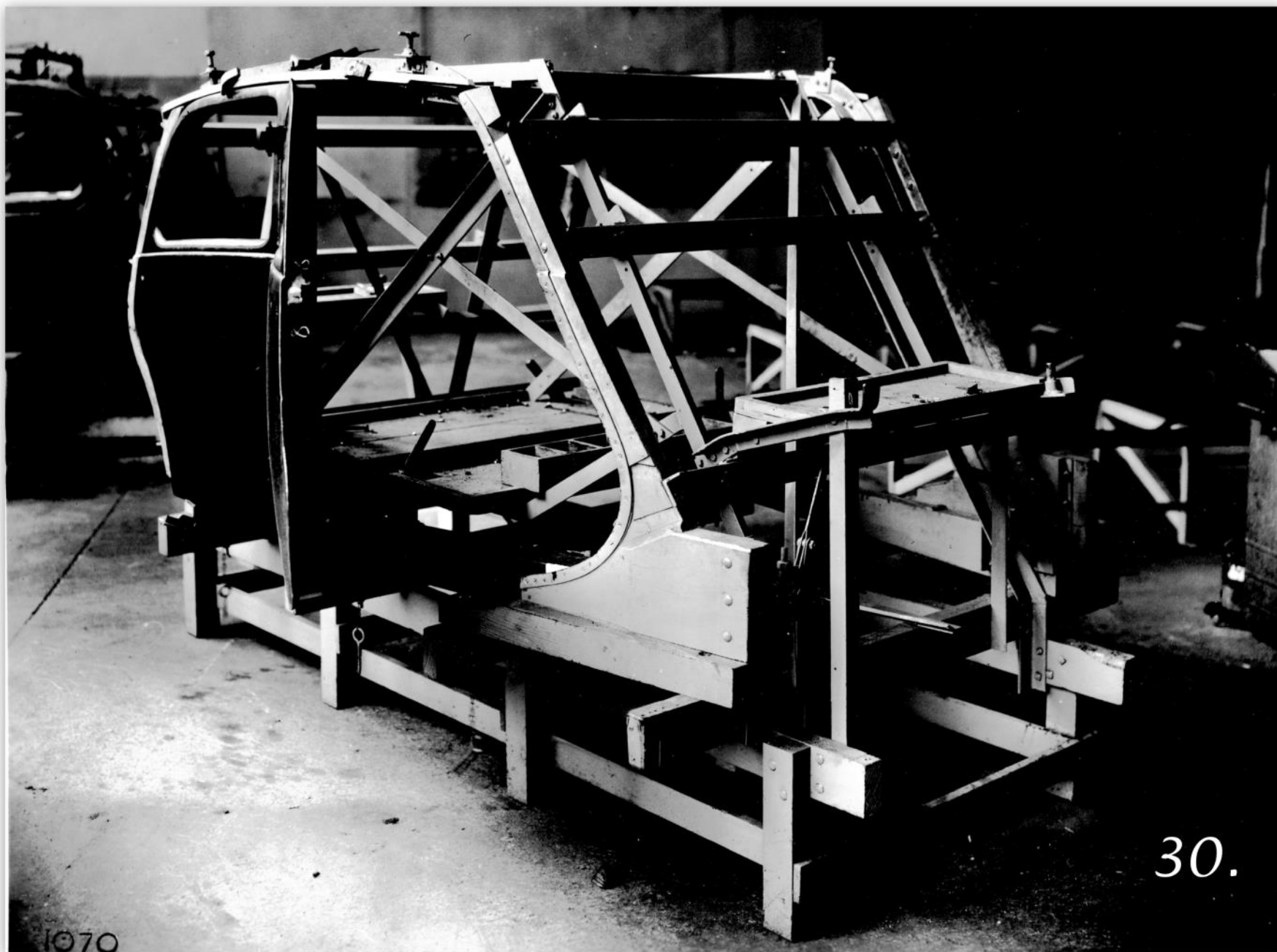


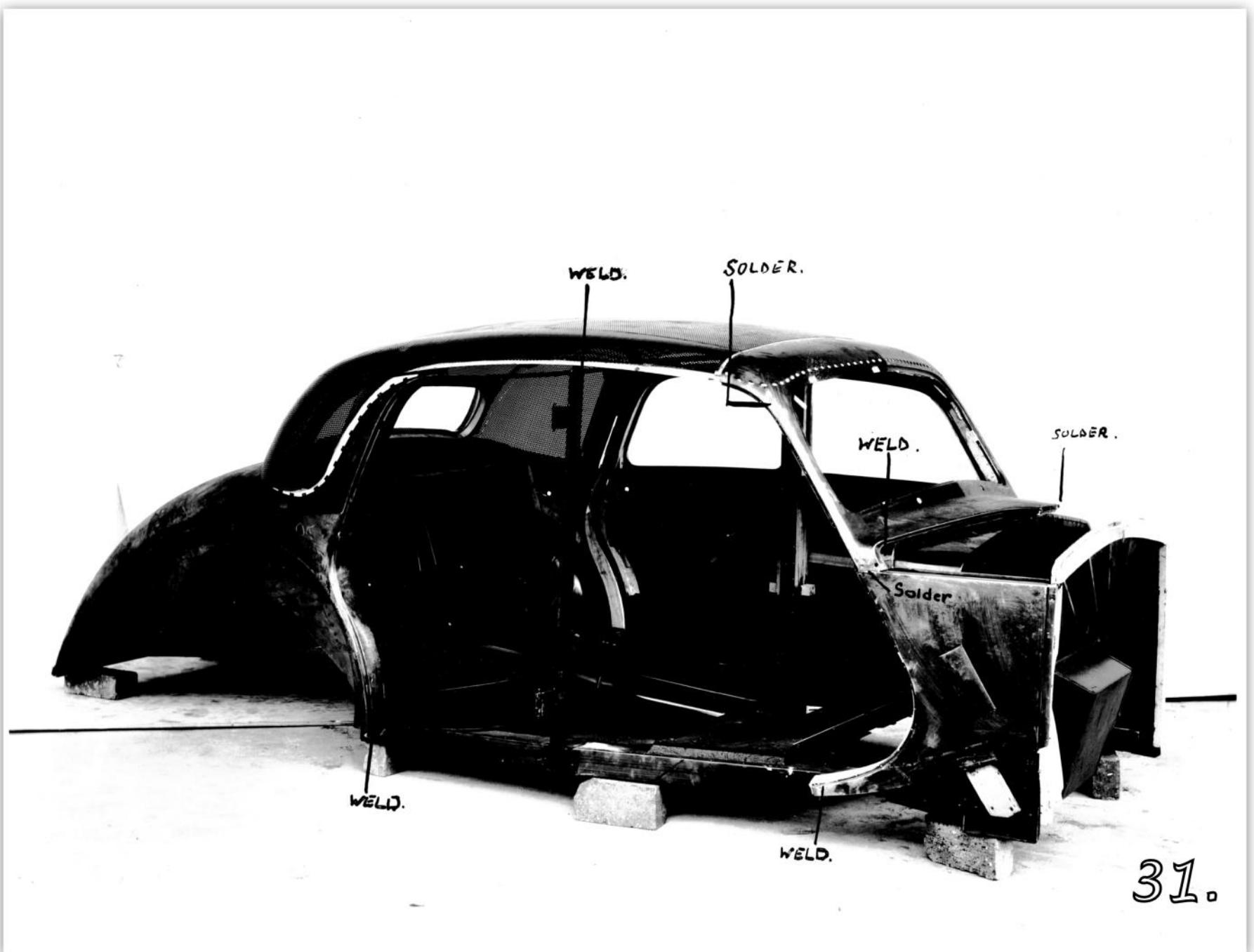
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28.









32.



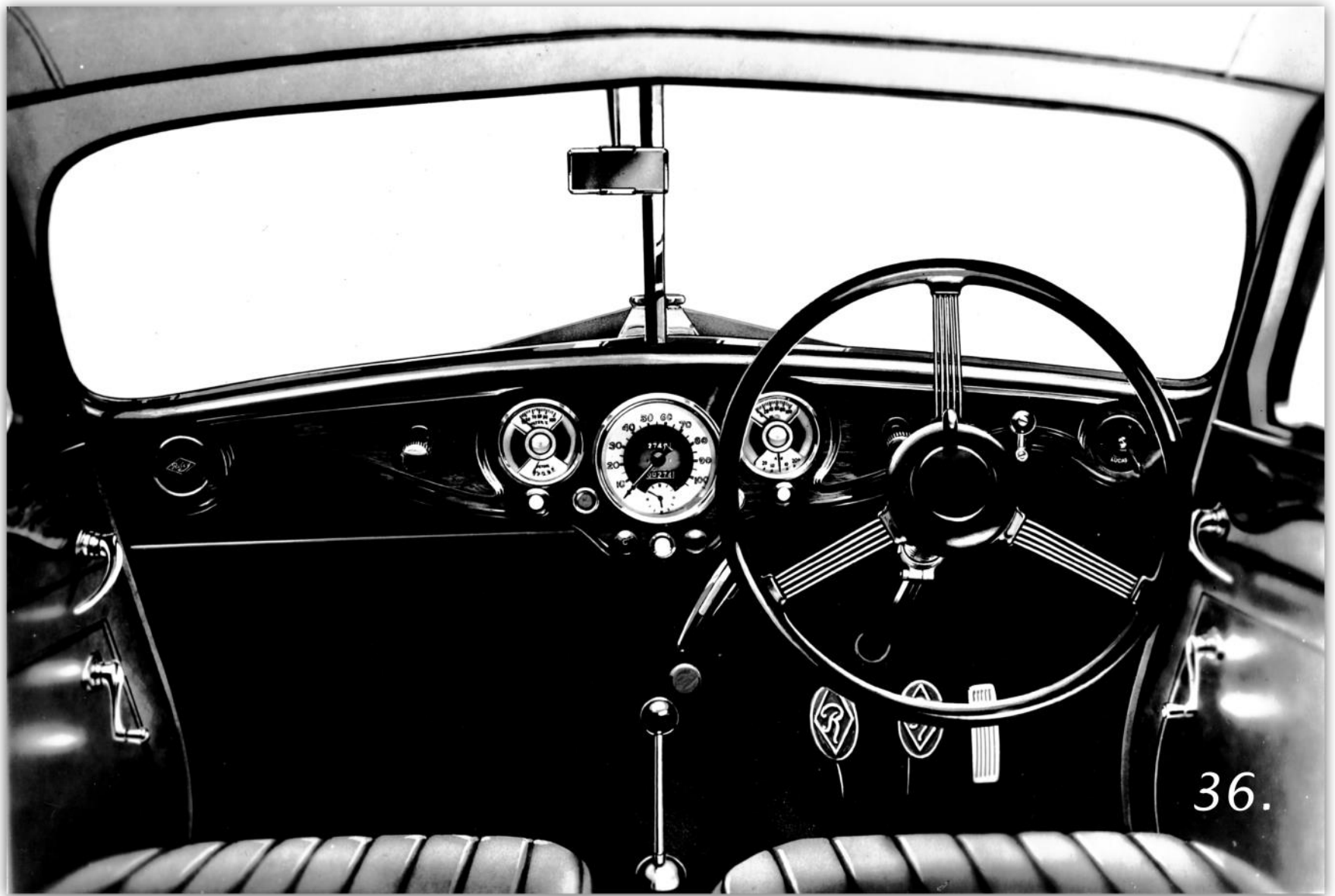
33.



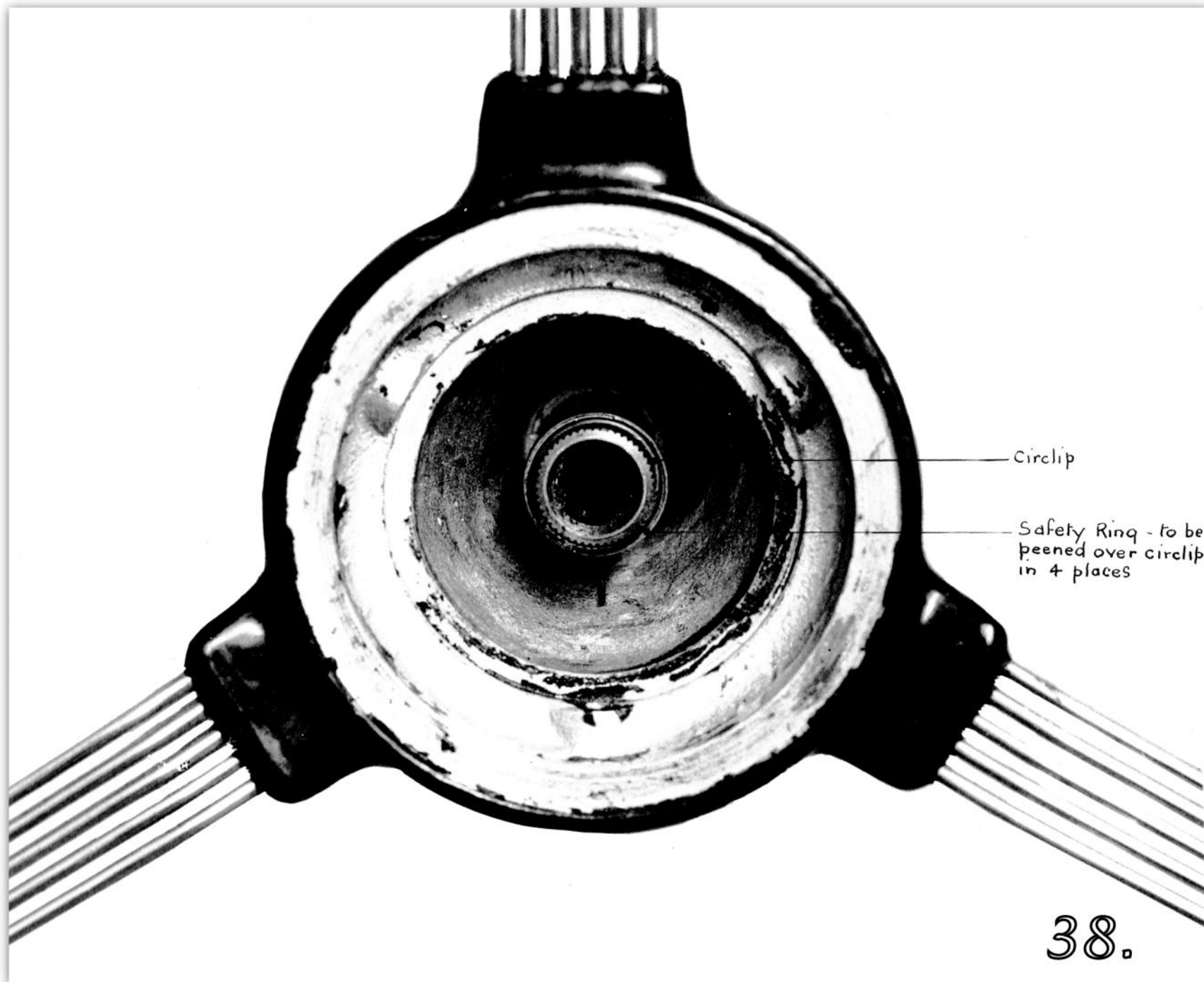
34.

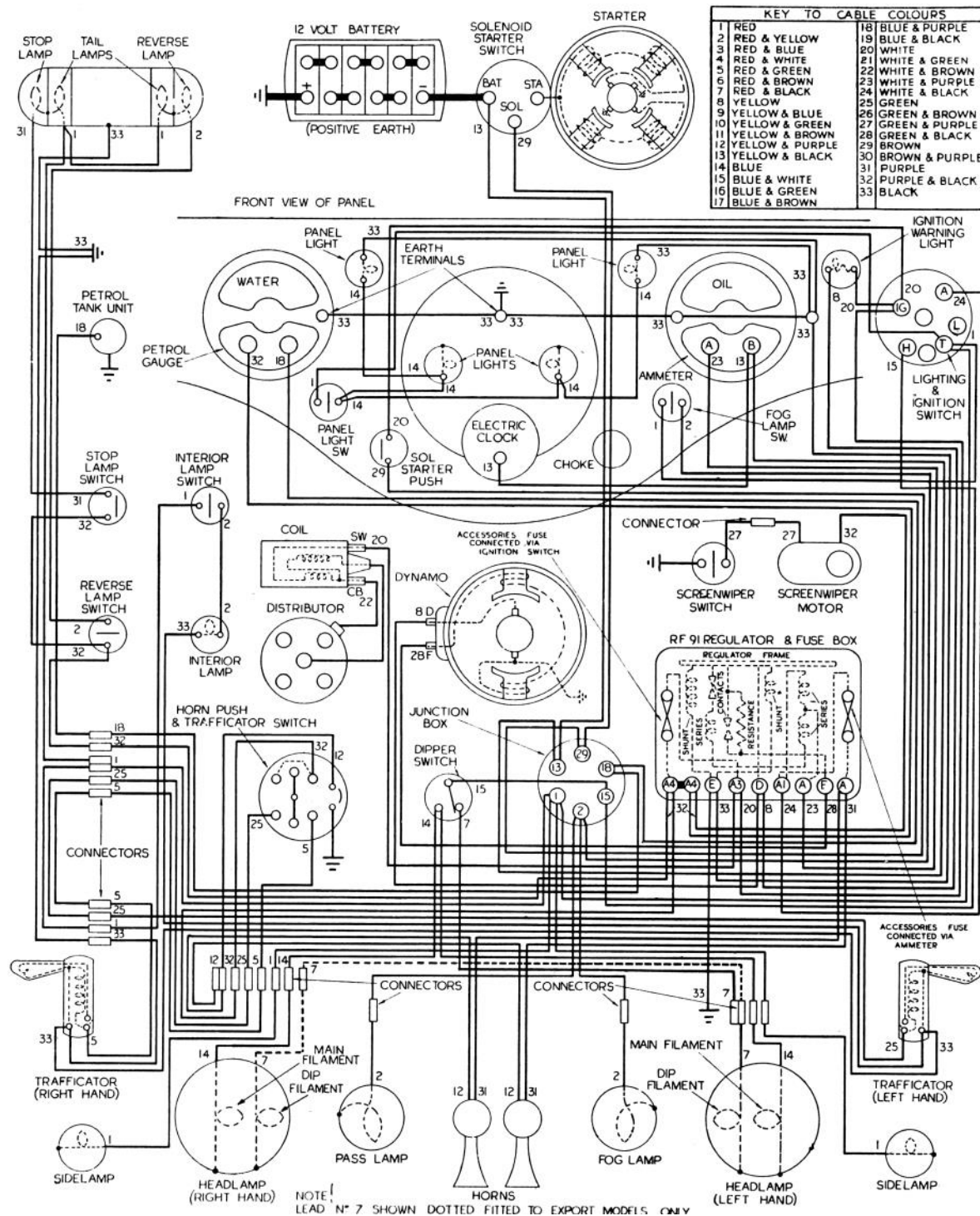


35.









RILEY
1½ LITRE & 2½ LITRE
CONTINENTAL
39. WIRING DIAGRAM

