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(12) **United States Design Patent**  
**Aston et al.**

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(45) **Date of Patent:** **\*\* Dec. 8, 2015**

- (54) **CONCRETE BRIDGE UNIT** 1,332,243 A 3/1920 Whalen
- 1,474,808 A 11/1923 Zucco
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(US); **Michael G. Carfagno**, Dayton, OH (US); **Philip A. Creamer**, Springboro, OH (US) 1,784,271 A 12/1930 Collins  
2,616,149 A 11/1952 Waller  
3,195,852 A 7/1965 Lundell  
3,286,972 A 11/1966 Jackson  
3,397,494 A 8/1968 Waring
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4,094,110 A 6/1978 Dicken et al.  
4,099,360 A 7/1978 Outram  
4,141,666 A 2/1979 DeGraff  
4,211,504 A 7/1980 Sivachenko
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4,318,635 A 3/1982 Gurtner et al.  
4,558,969 A 12/1985 FitzSimons  
4,563,107 A 1/1986 Peterson  
4,564,313 A 1/1986 Niswander et al.  
4,587,684 A 5/1986 Miller  
4,650,369 A 3/1987 Thomas
- (\*\*) Term: **14 Years** 4,687,371 A 8/1987 Lockwood  
4,693,634 A 9/1987 Chiaves
- (21) Appl. No.: **29/475,040** 4,723,871 A 2/1988 Roscoe
- (22) Filed: **Nov. 27, 2013** 4,797,030 A 1/1989 Lockwood  
4,817,353 A 4/1989 Woods et al.  
4,854,775 A 8/1989 Lockwood

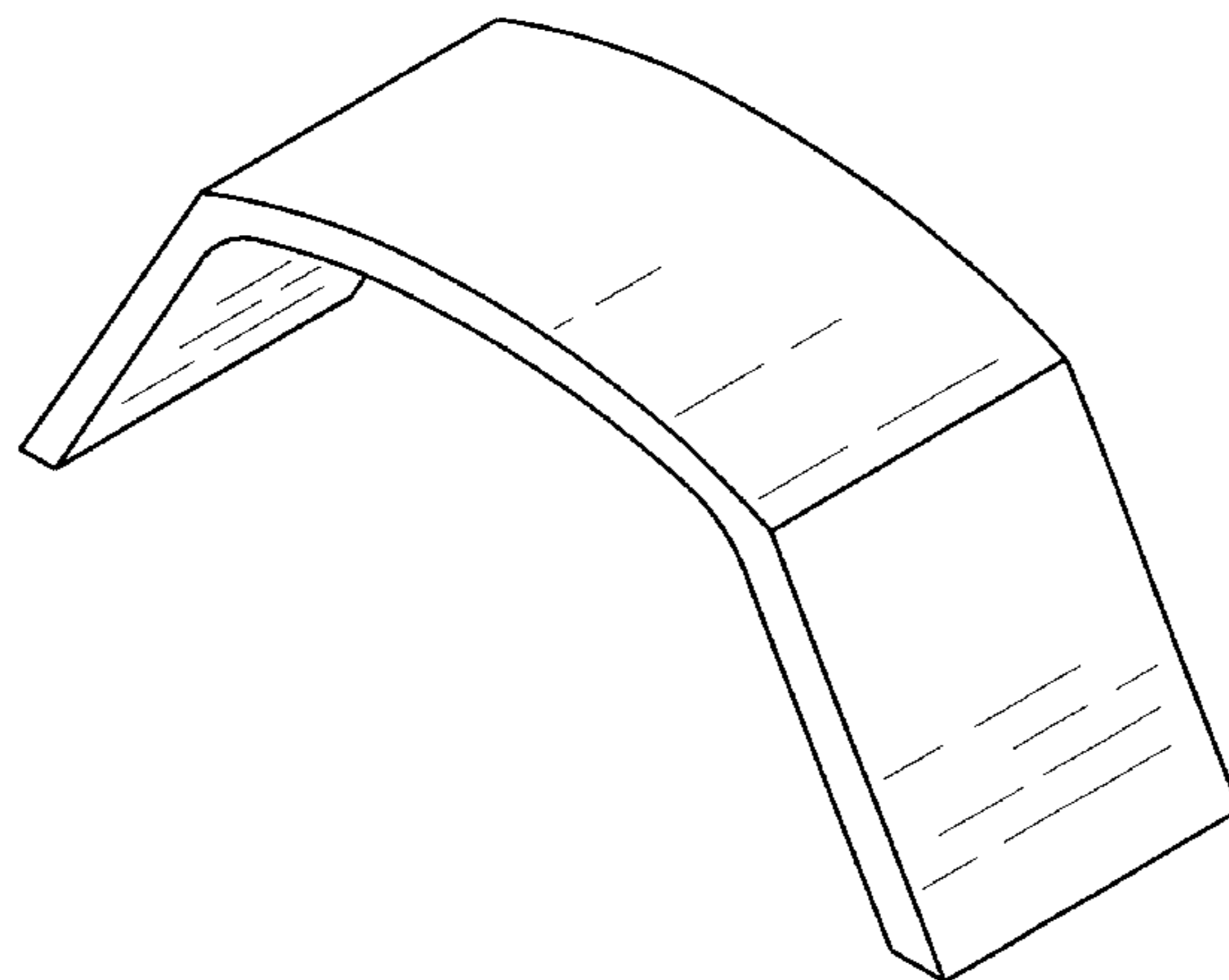
**Related U.S. Application Data**

- (62) Division of application No. 29/417,404, filed on Apr. 3, 2012, now Pat. No. Des. 694,910. 4,972,641 A 11/1990 Barrios  
4,972,646 A 11/1990 Miller et al.  
4,987,707 A 1/1991 Kiselev et al.  
4,993,872 A 2/1991 Lockwood
  - (51) **LOC (10) Cl.** ..... **25-03** 5,252,002 A 10/1993 Day
  - (52) **U.S. Cl.** ..... **D25/1** 5,326,191 A 7/1994 Wilson et al.  
USPC ..... **D25/1** 5,384,997 A 1/1995 McClinton  
D356,163 S 3/1995 Ryan
  - (58) **Field of Classification Search** 5,505,033 A 4/1996 Matsuo et al.  
USPC ..... D25/102, 35; 14/2, 24, 25, 26; 405/134, 405/124, 126 5,524,405 A 6/1996 Byrd  
5,533,835 A 7/1996 Angelette  
5,536,113 A 7/1996 McGregor  
5,586,417 A 12/1996 Henderson et al.  
5,590,433 A 1/1997 Fricke
- See application file for complete search history.

**References Cited**

**U.S. PATENT DOCUMENTS**

|             |         |              |              |         |                |
|-------------|---------|--------------|--------------|---------|----------------|
| 109,886 A   | 12/1870 | Freeman      | D380,278 S   | 6/1997  | Cote           |
| 567,653 A   | 9/1896  | Parker       | 5,720,577 A  | 2/1998  | Sanders et al. |
| 701,034 A   | 5/1902  | Gray         | 5,836,717 A  | 11/1998 | Bernini        |
| 832,017 A   | 9/1906  | Hummel       | D406,364 S   | 3/1999  | Robert         |
| 1,013,440 A | 1/1912  | Rankin       | D406,902 S   | 3/1999  | Lockwood       |
| 1,040,442 A | 10/1912 | Shannon      | D426,321 S   | 6/2000  | Lockwood       |
| 1,074,268 A | 9/1913  | Kelly et al. | 6,094,881 A  | 8/2000  | Lockwood       |
| 1,184,634 A | 5/1916  | Duerswachter | 6,129,484 A  | 10/2000 | Chiaves        |
| 1,219,434 A | 3/1917  | Burkholder   | 6,161,342 A  | 12/2000 | Barbier et al. |
|             |         |              | 6,205,605 B1 | 3/2001  | Orsat          |
|             |         |              | 6,205,717 B1 | 3/2001  | Shall et al.   |
|             |         |              | 6,243,994 B1 | 6/2001  | Bernini        |



|              |      |         |                    |         |
|--------------|------|---------|--------------------|---------|
| 6,367,214    | B1   | 4/2002  | Monachino          |         |
| 6,408,581    | B2   | 6/2002  | Monachino          |         |
| 6,474,907    | B2   | 11/2002 | Semotiuk et al.    |         |
| D471,989     | S    | 3/2003  | Van Gilst          |         |
| 6,640,505    | B1   | 11/2003 | Heierli            |         |
| D484,609     | S    | 12/2003 | Harrington         |         |
| D484,610     | S    | 12/2003 | Lockwood           |         |
| D487,778     | S    | 3/2004  | Kahlig             |         |
| 6,719,492    | B1   | 4/2004  | Heierli            |         |
| D490,533     | S    | 5/2004  | Lockwood           |         |
| 6,854,928    | B2   | 2/2005  | Lockwood           |         |
| 6,922,950    | B2   | 8/2005  | Heierli            |         |
| D511,215     | S    | 11/2005 | Vala               |         |
| D511,387     | S    | 11/2005 | Beach              |         |
| 6,962,465    | B2 * | 11/2005 | Zax et al. ....    | 405/124 |
| D512,513     | S    | 12/2005 | Wasniak et al.     |         |
| 6,988,337    | B1   | 1/2006  | Heierli            |         |
| D514,706     | S    | 2/2006  | Beach              |         |
| 7,001,110    | B2   | 2/2006  | Lockwood           |         |
| 7,114,305    | B2   | 10/2006 | Heierli            |         |
| 7,217,064    | B1   | 5/2007  | Wilson             |         |
| 7,305,798    | B1   | 12/2007 | Heierli            |         |
| D566,852     | S    | 4/2008  | Gaster             |         |
| D573,722     | S    | 7/2008  | Lockwood           |         |
| 7,556,451    | B2   | 7/2009  | Beach et al.       |         |
| 7,568,860    | B2   | 8/2009  | Chiaves            |         |
| 7,572,084    | B2   | 8/2009  | Robertson          |         |
| 7,770,250    | B2 * | 8/2010  | Boresi et al. .... | 405/124 |
| D645,572     | S    | 9/2011  | Vonhandorf         |         |
| D658,976     | S    | 5/2012  | Morrow, Jr.        |         |
| 8,523,486    | B2   | 9/2013  | Aston et al.       |         |
| 8,672,583    | B1   | 3/2014  | Mailhot et al.     |         |
| 2005/0123354 | A1   | 6/2005  | Zax et al.         |         |
| 2006/0174549 | A1   | 8/2006  | Dagher et al.      |         |
| 2006/0201091 | A1   | 9/2006  | Lockwood           |         |
| 2007/0098503 | A1   | 5/2007  | Vaia               |         |
| 2009/0183321 | A1   | 7/2009  | Bores et al.       |         |

FOREIGN PATENT DOCUMENTS

|    |             |         |
|----|-------------|---------|
| EP | 0244890     | 11/1987 |
| EP | 0568799     | 11/1996 |
| FR | 2330818     | 6/1977  |
| WO | WO 92/07144 | 4/1992  |

OTHER PUBLICATIONS

Design U.S. Appl. No. 29/413,755, filed Feb. 20, 2012, entitled "Concrete Bridge Unit".

Written Opinion of the International Searching Authority, mailed Aug. 27, 2014, International Application No. PCT/US2014/033459, filed Apr. 9, 2014; 8 pages.

\* cited by examiner

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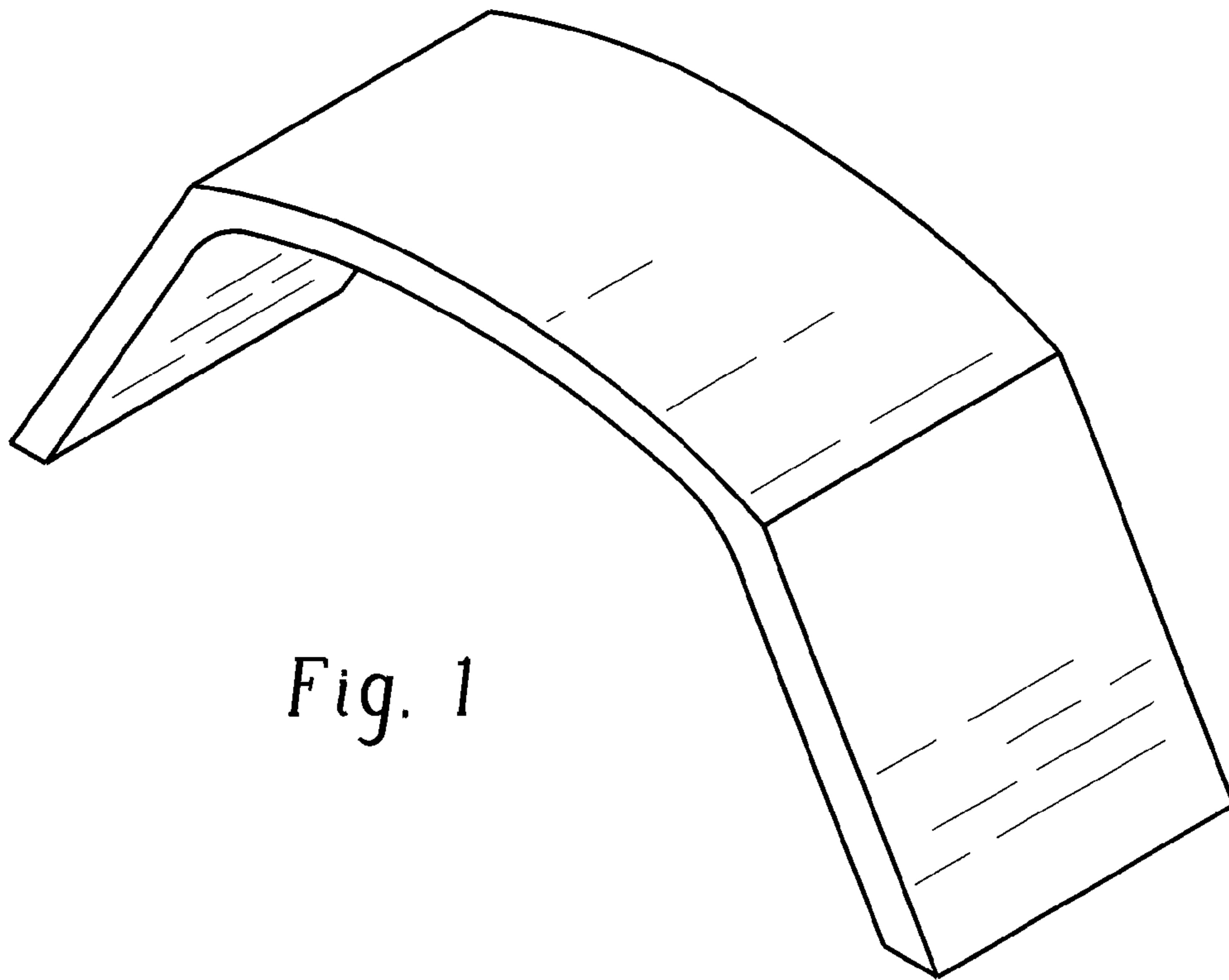
(57) **CLAIM**

The ornamental design for a concrete bridge unit, as shown and described.

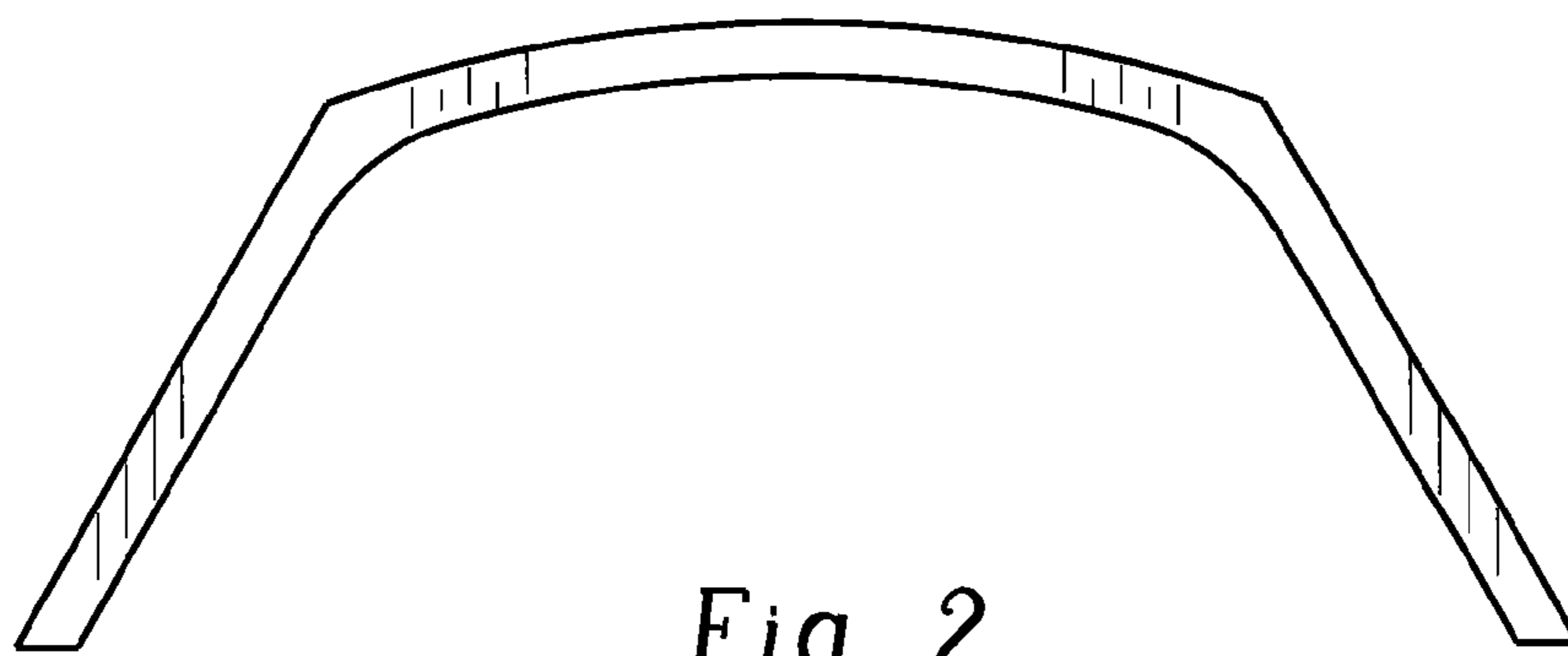
**DESCRIPTION**

FIG. 1 is a perspective view of a first embodiment of a concrete bridge unit;  
FIG. 2 is a front elevation of the concrete bridge unit of FIG. 1;  
FIG. 3 is a side elevation of the concrete bridge unit of FIG. 1;  
FIG. 4 is a perspective view of a second embodiment of a concrete bridge unit;

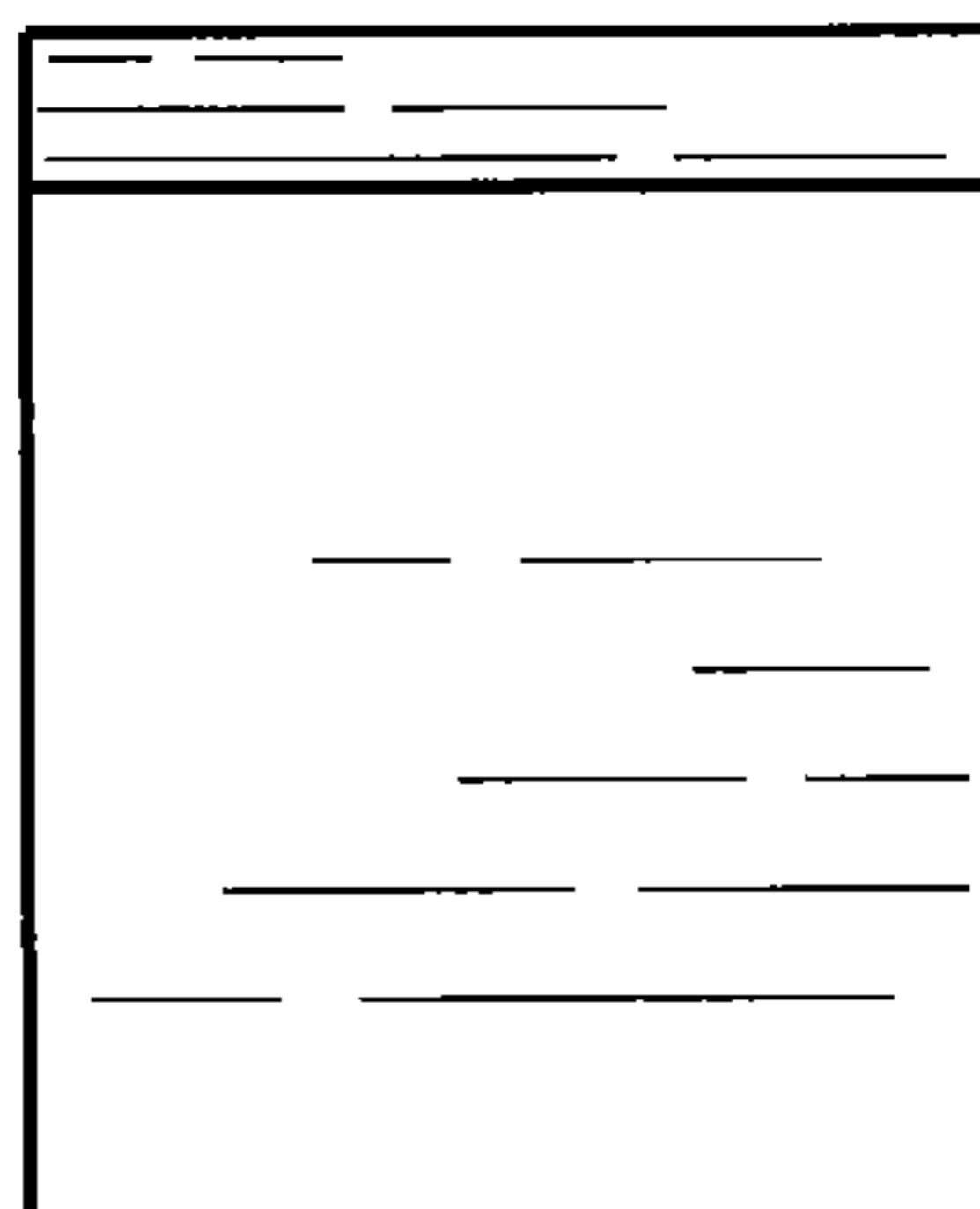
FIG. 5 is a front elevation of the concrete bridge unit of FIG. 4;  
FIG. 6 is a side elevation of the concrete bridge unit of FIG. 4;  
FIG. 7 is a perspective view of a third embodiment of a concrete bridge unit;  
FIG. 8 is a front elevation of the concrete bridge unit of FIG. 7;  
FIG. 9 is a side elevation of the concrete bridge unit of FIG. 7;  
FIG. 10 is a perspective view of a fourth embodiment of a concrete bridge unit;  
FIG. 11 is a front elevation of the concrete bridge unit of FIG. 10;  
FIG. 12 is a side elevation of the concrete bridge unit of FIG. 10;  
FIG. 13 is a perspective view of a fifth embodiment of a concrete bridge unit;  
FIG. 14 is a front elevation of the concrete bridge unit of FIG. 13;  
FIG. 15 is a side elevation of the concrete bridge unit of FIG. 13;  
FIG. 16 is a perspective view of a sixth embodiment of a concrete bridge unit;  
FIG. 17 is a front elevation of the concrete bridge unit of FIG. 16;  
FIG. 18 is a side elevation of the concrete bridge unit of FIG. 16;  
FIG. 19 is a perspective view of a seventh embodiment of a concrete bridge unit;  
FIG. 20 is a front elevation of the concrete bridge unit of FIG. 19;  
FIG. 21 is a side elevation of the concrete bridge unit of FIG. 19;  
FIG. 22 is a perspective view of an eighth embodiment of a concrete bridge unit;  
FIG. 23 is a front elevation of the concrete bridge unit of FIG. 22;  
FIG. 24 is a side elevation of the concrete bridge unit of FIG. 22;  
FIG. 25 is a perspective view of a ninth embodiment of a concrete bridge unit;  
FIG. 26 is a front elevation of the concrete bridge unit of FIG. 25;  
FIG. 27 is a side elevation of the concrete bridge unit of FIG. 25;  
FIG. 28 is a perspective view of a tenth embodiment of a concrete bridge unit;  
FIG. 29 is a front elevation of the concrete bridge unit of FIG. 28;  
FIG. 30 is a side elevation of the concrete bridge unit of FIG. 28;  
FIG. 31 is a perspective view of an eleventh embodiment of a concrete bridge unit;  
FIG. 32 is a front elevation of the concrete bridge unit of FIG. 31;  
FIG. 33 is a side elevation of the concrete bridge unit of FIG. 32;  
FIG. 34 is a perspective view of a twelfth embodiment of a concrete bridge unit;  
FIG. 35 is a front elevation of the concrete bridge unit of FIG. 34; and,  
FIG. 36 is a side elevation of the concrete bridge unit of FIG. 34.



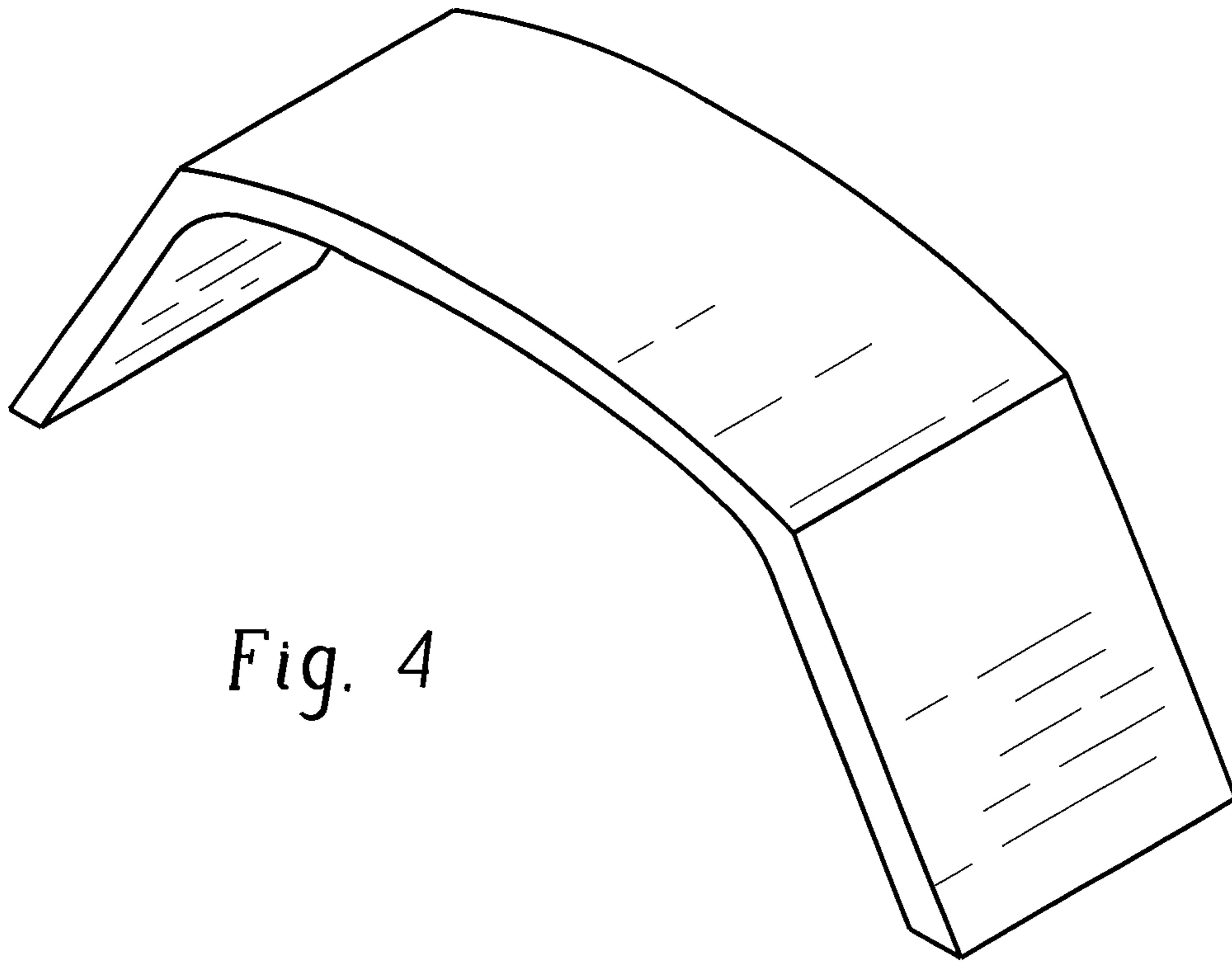
*Fig. 1*



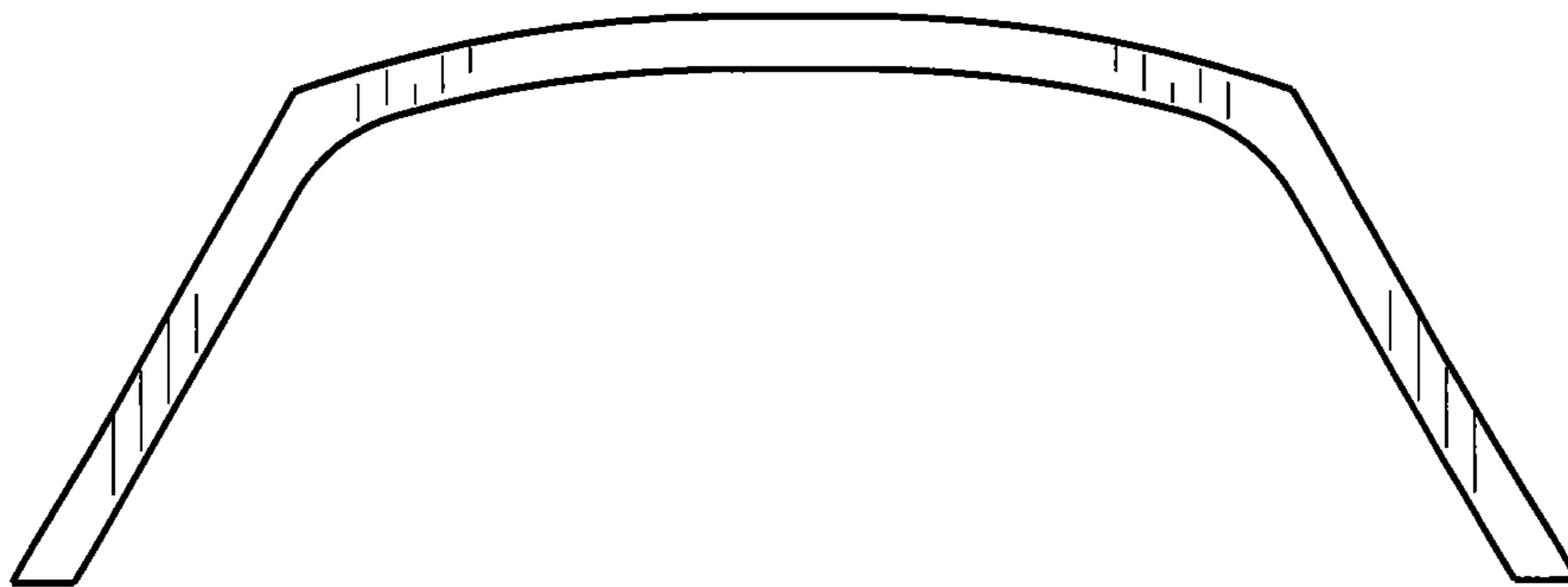
*Fig. 2*



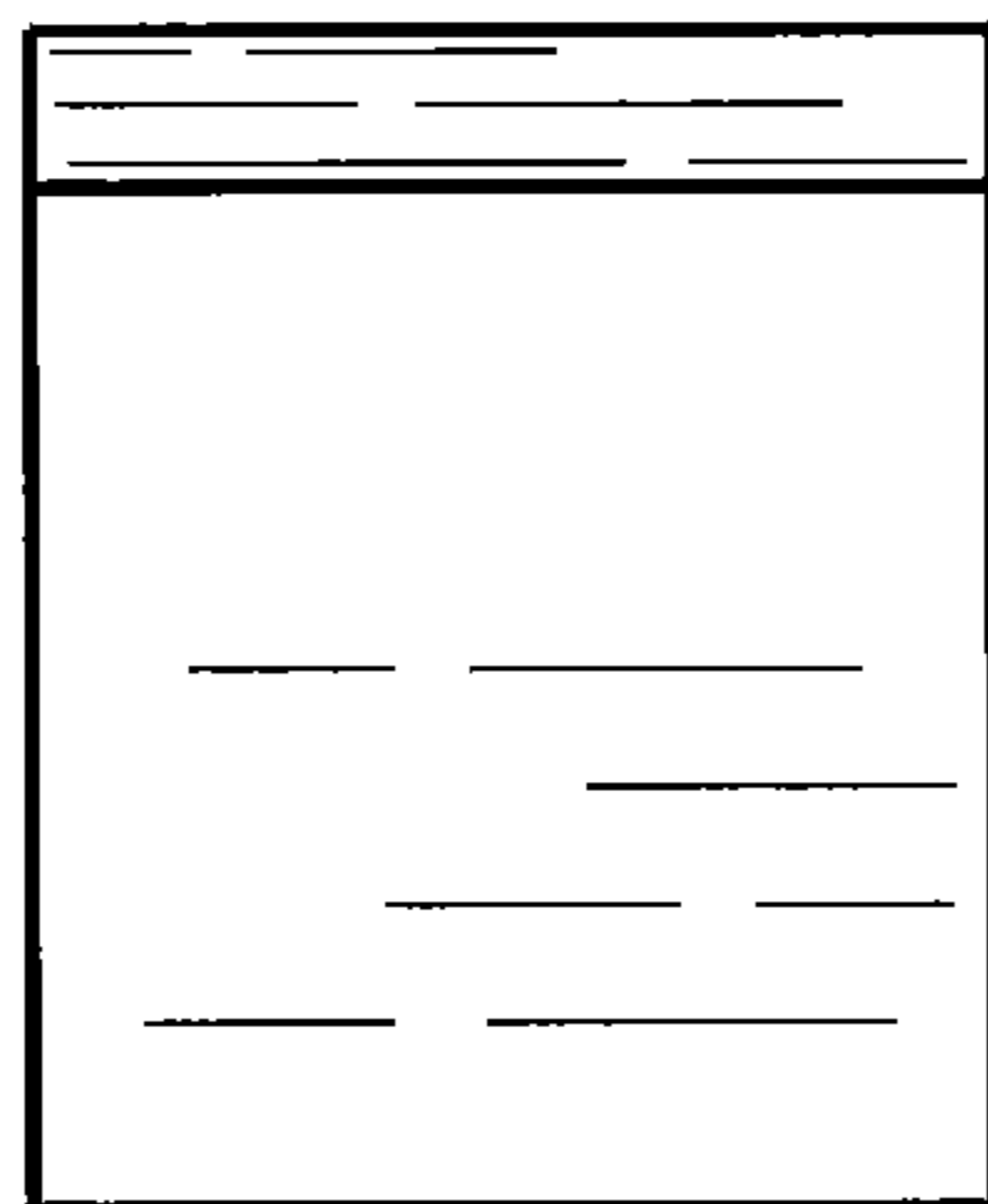
*Fig. 3*



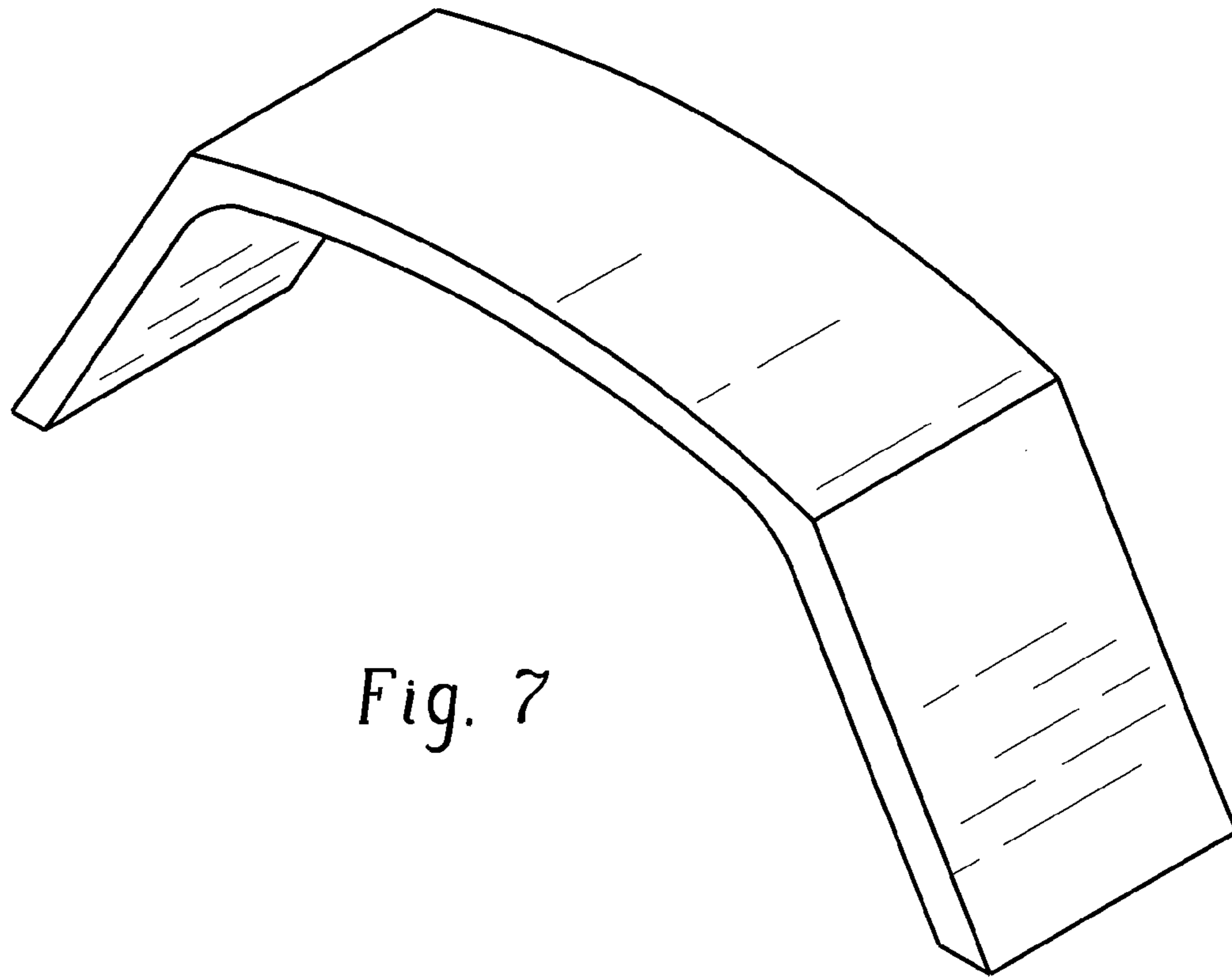
*Fig. 4*



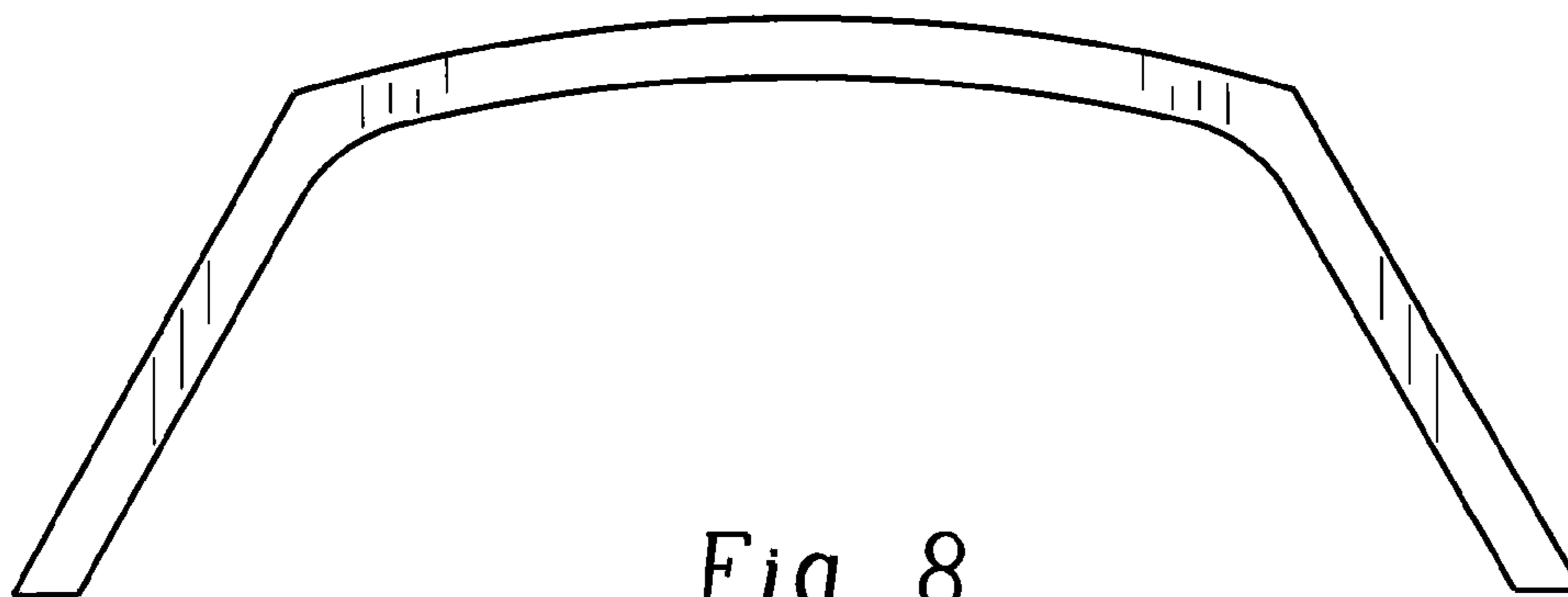
*Fig. 5*



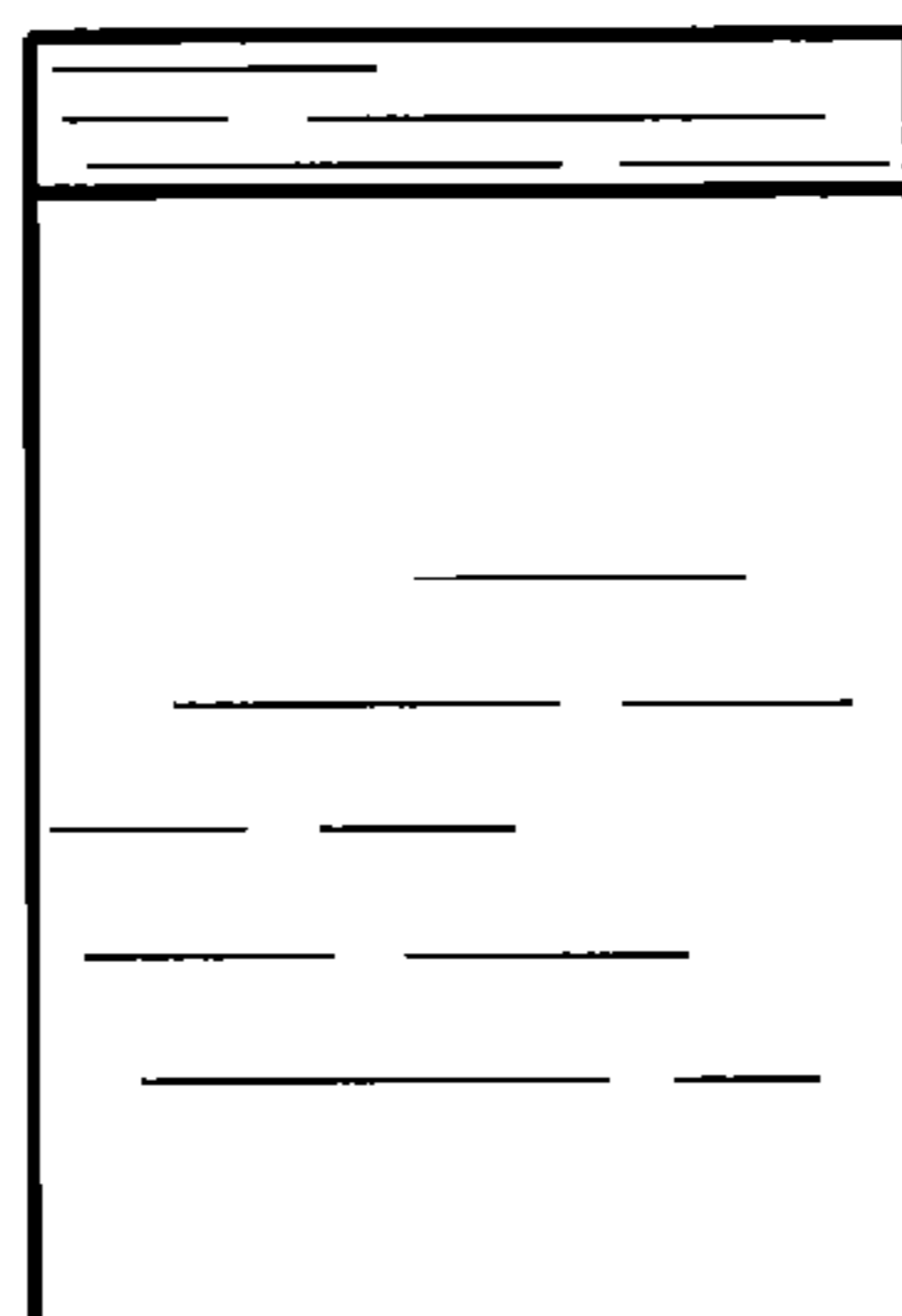
*Fig. 6*



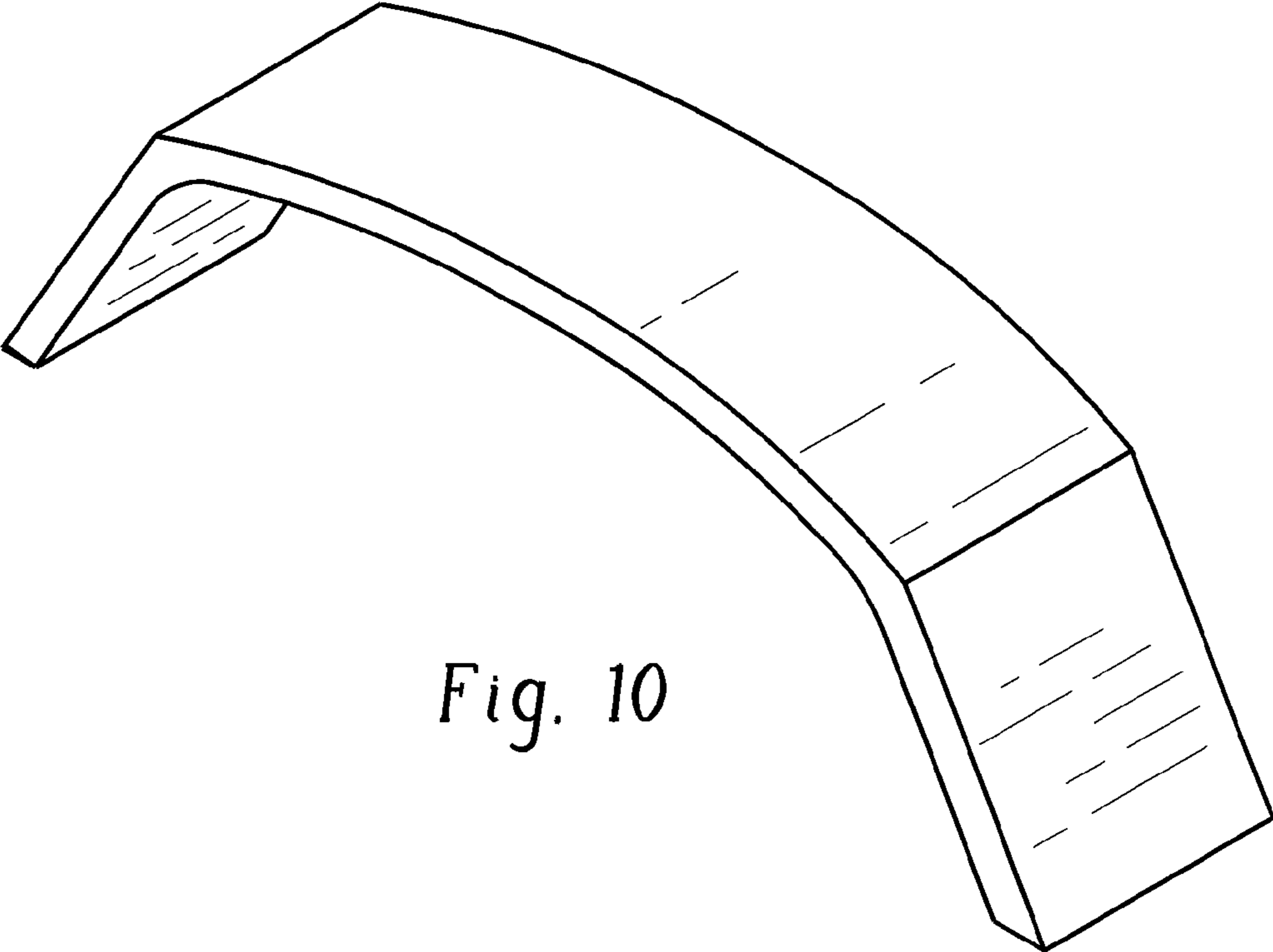
*Fig. 7*



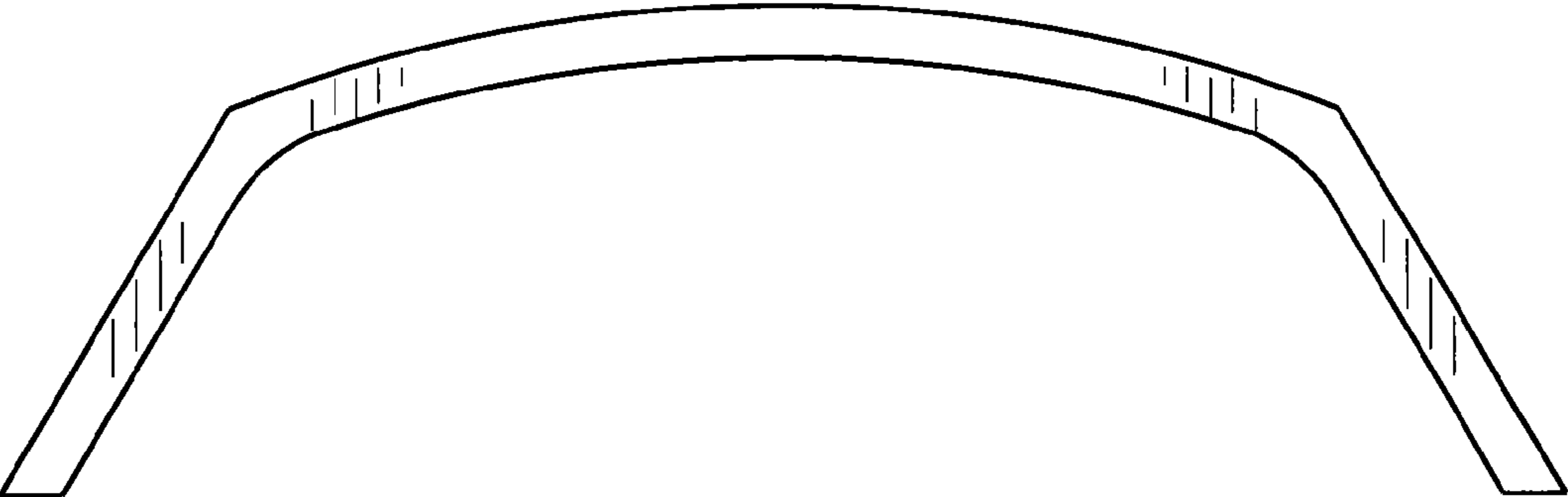
*Fig. 8*



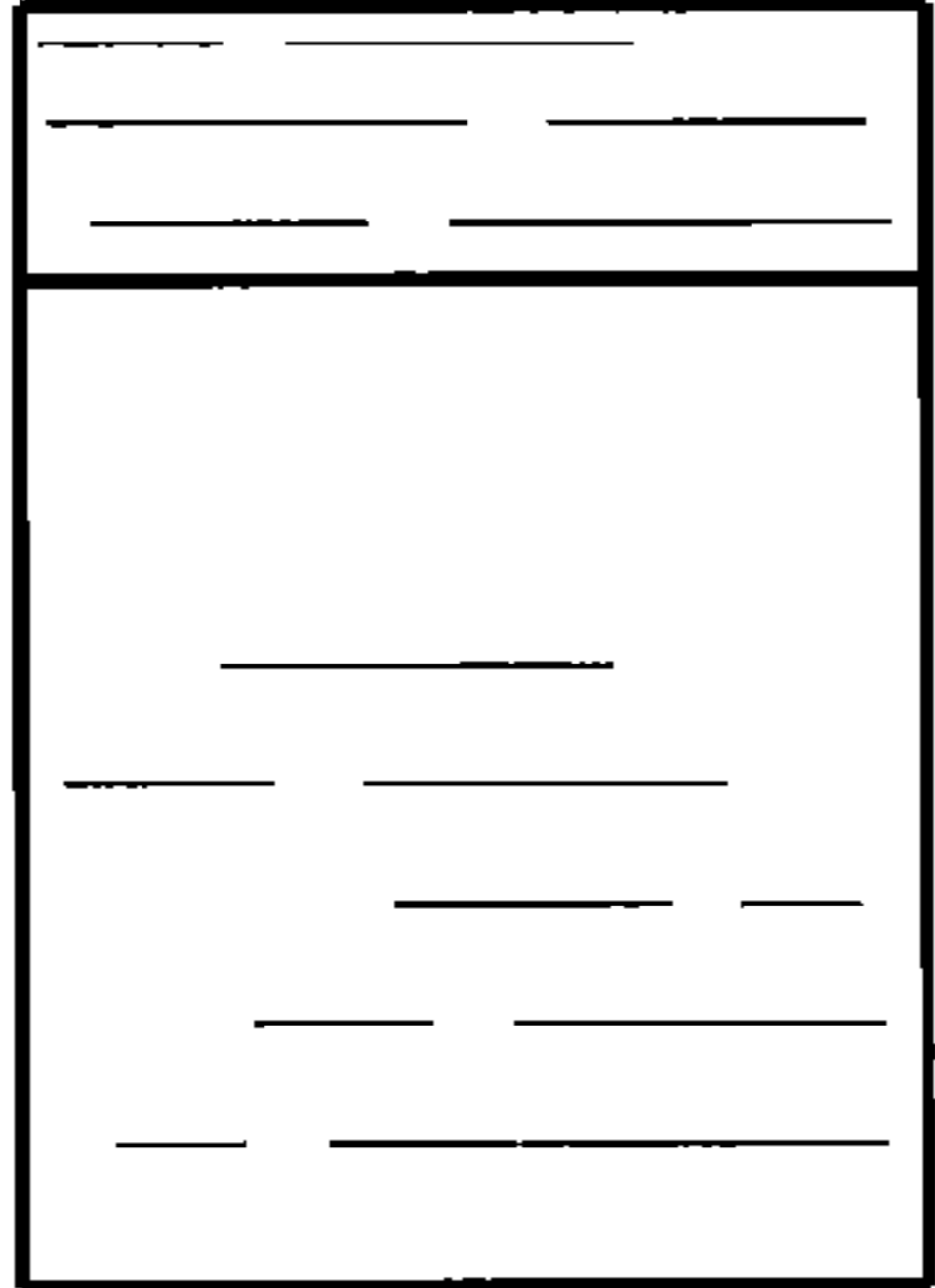
*Fig. 9*



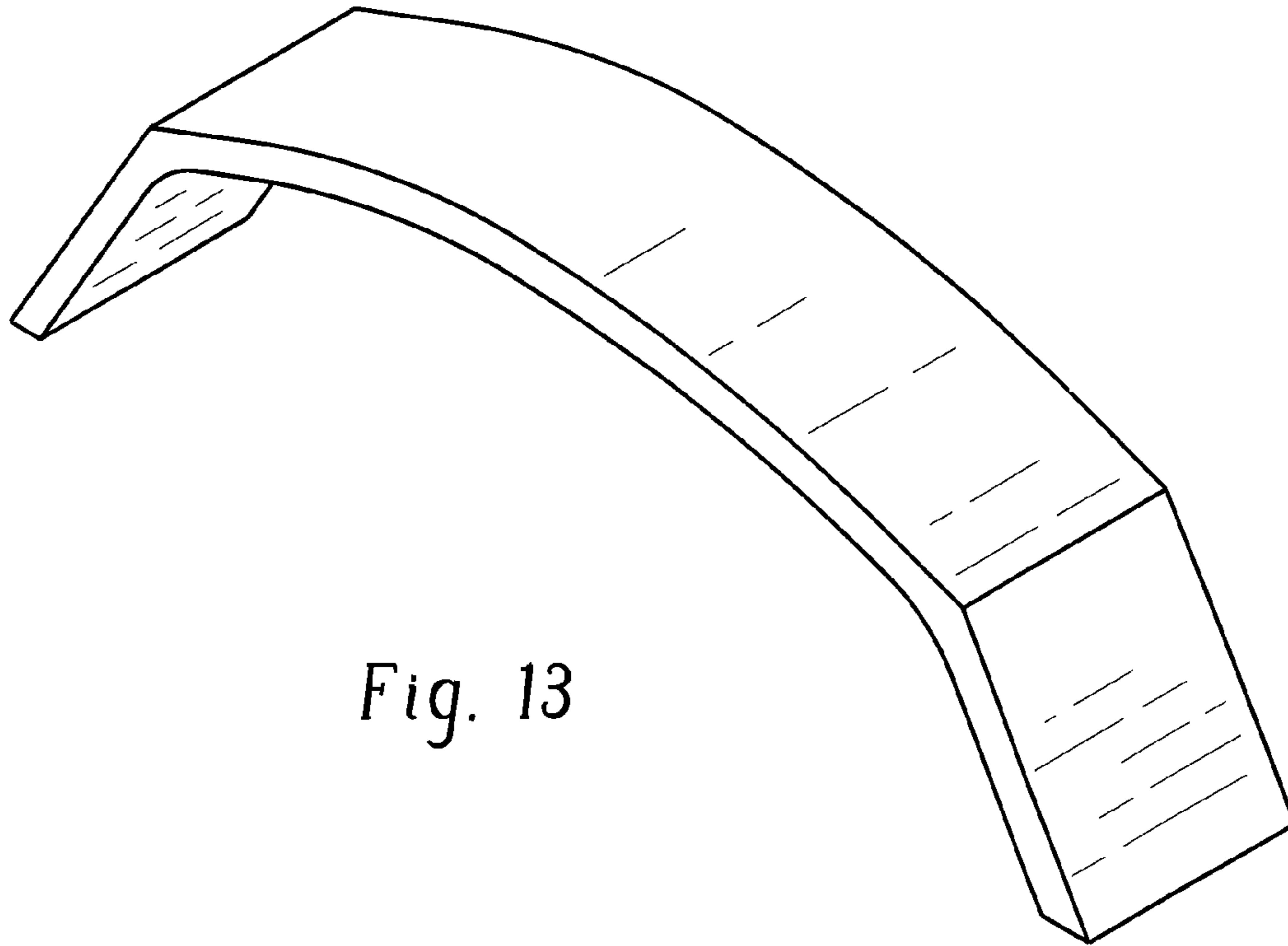
*Fig. 10*



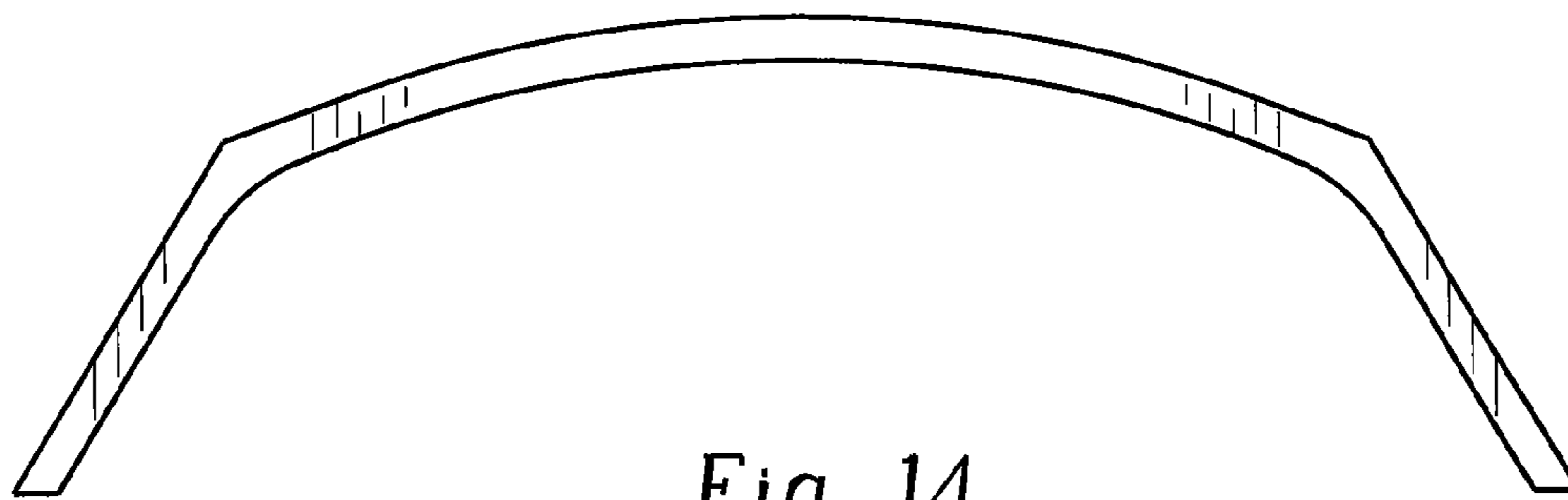
*Fig. 11*



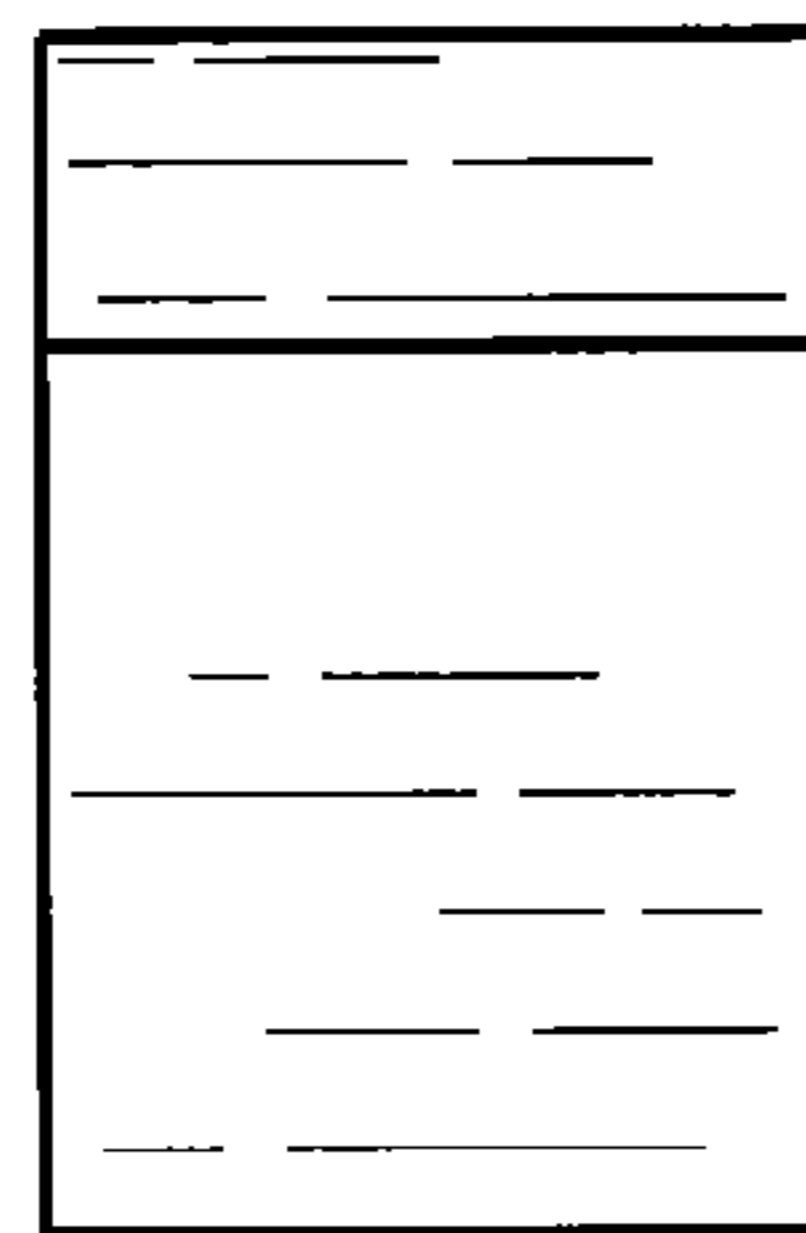
*Fig. 12*



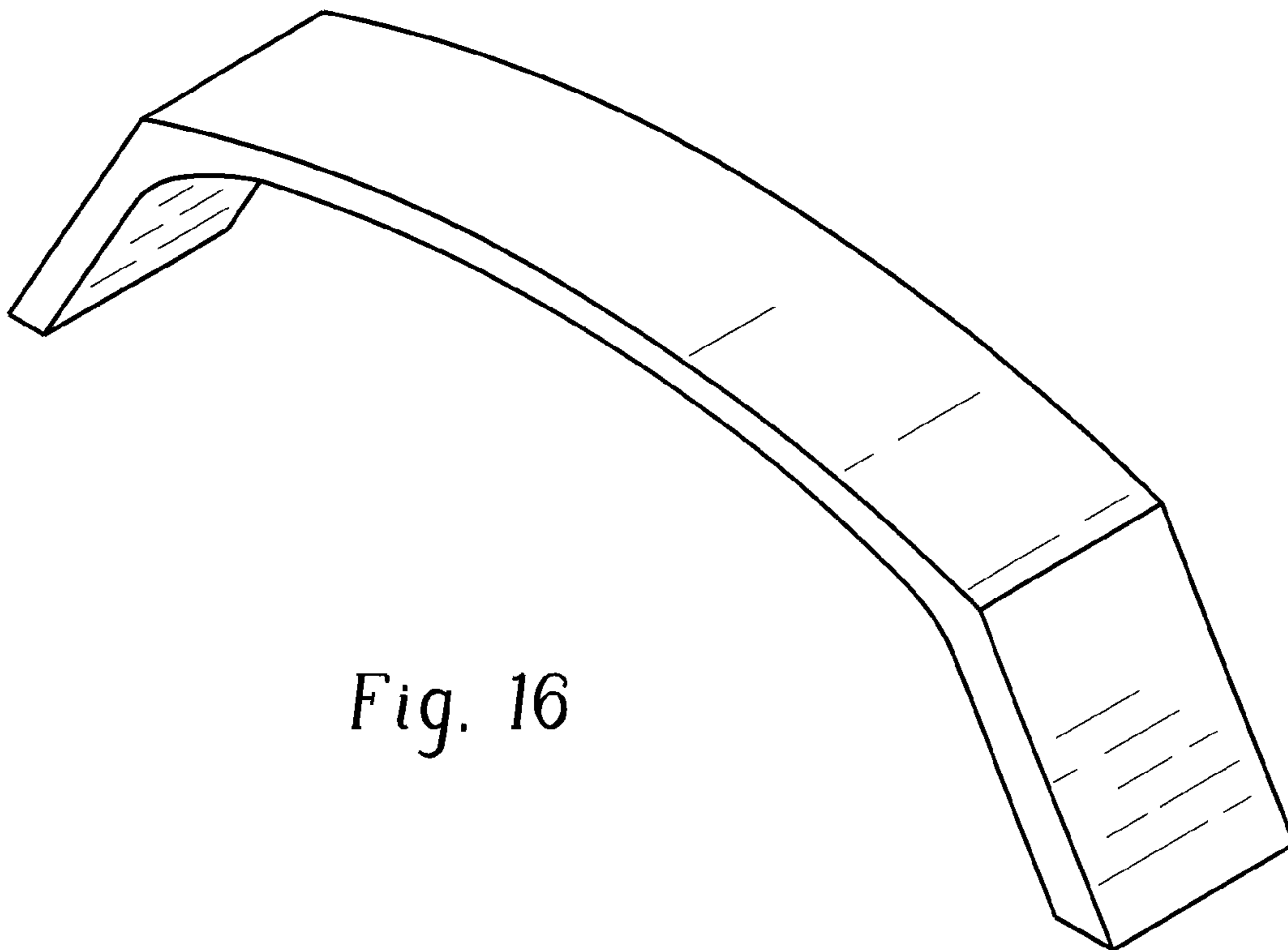
*Fig. 13*



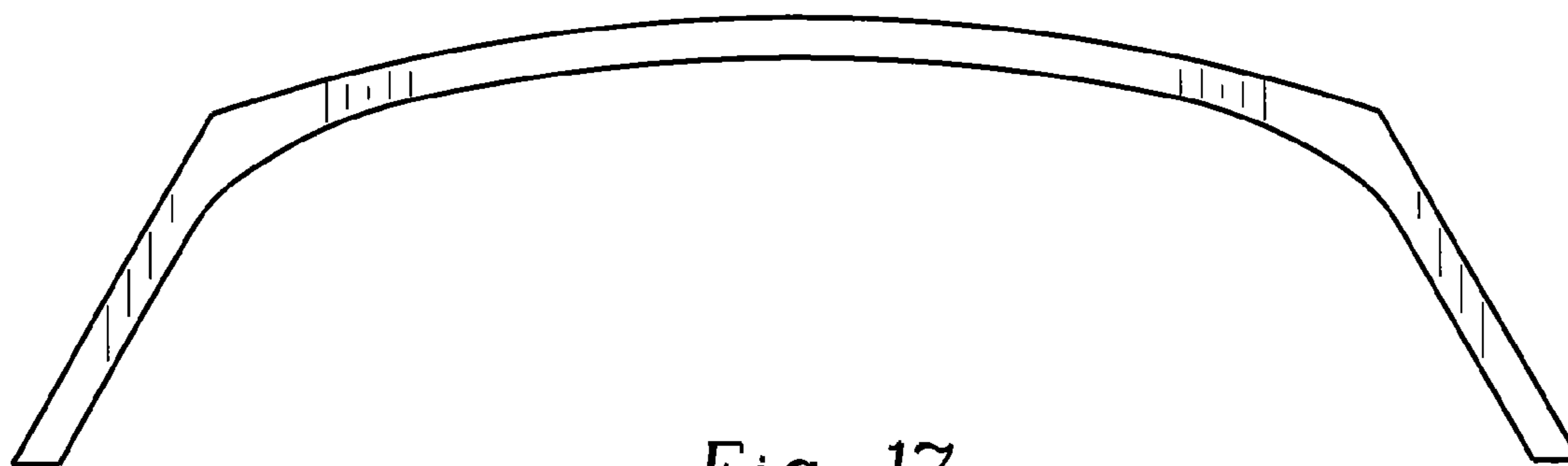
*Fig. 14*



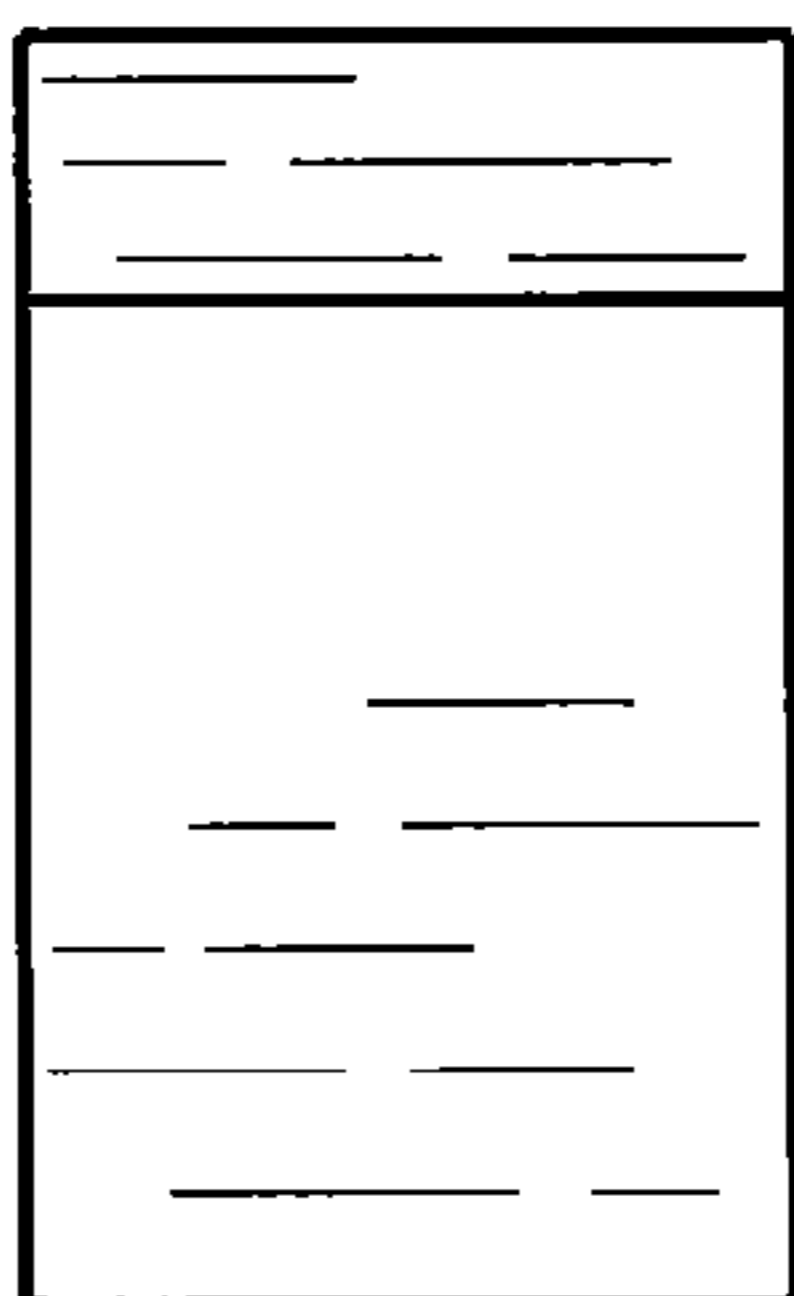
*Fig. 15*



*Fig. 16*

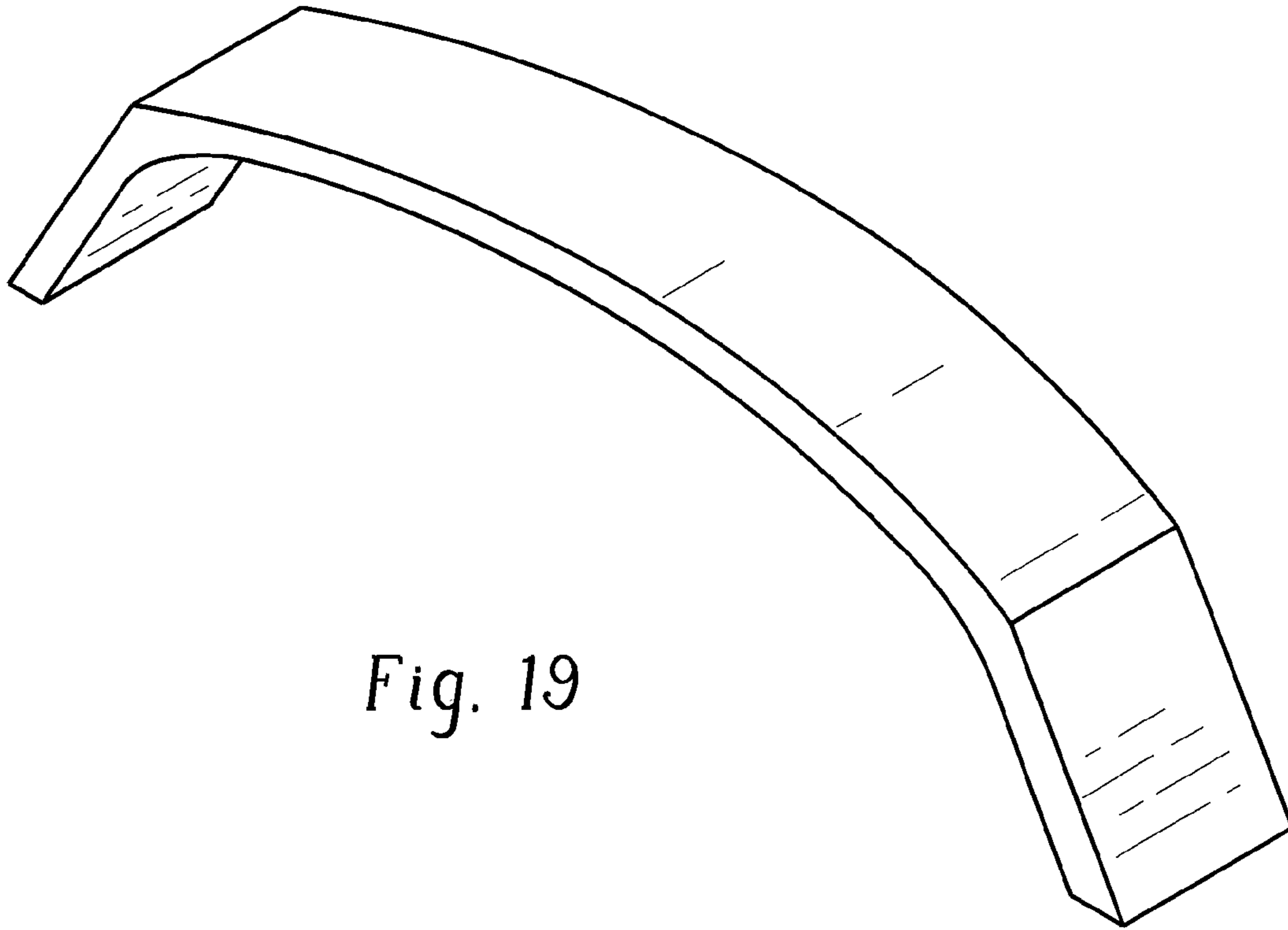


*Fig. 17*

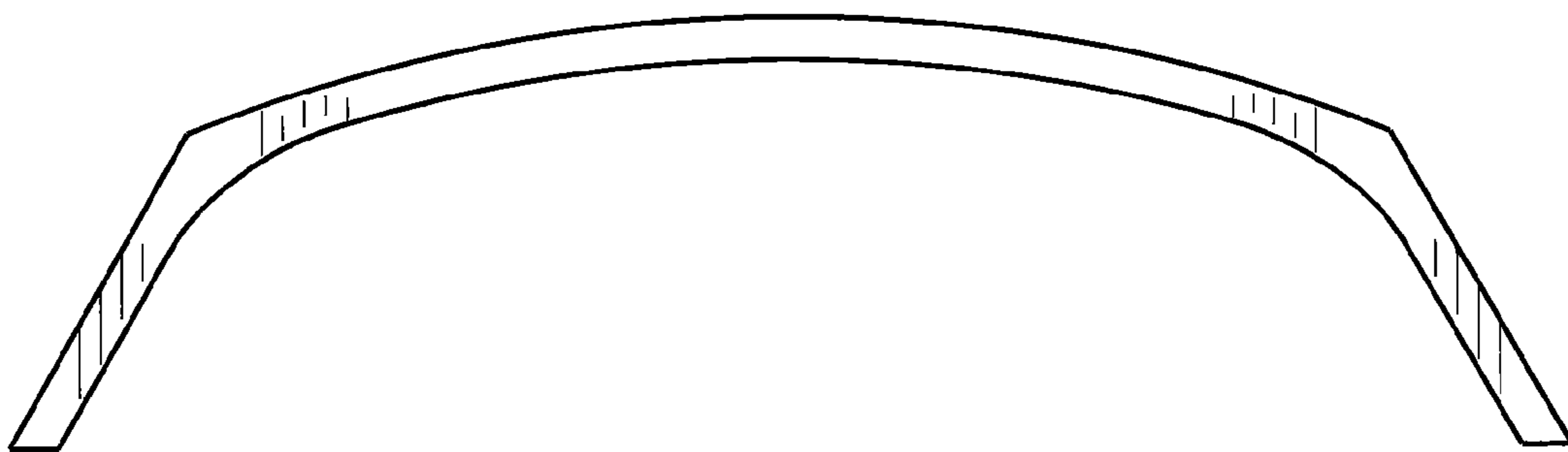


*Fig. 18*

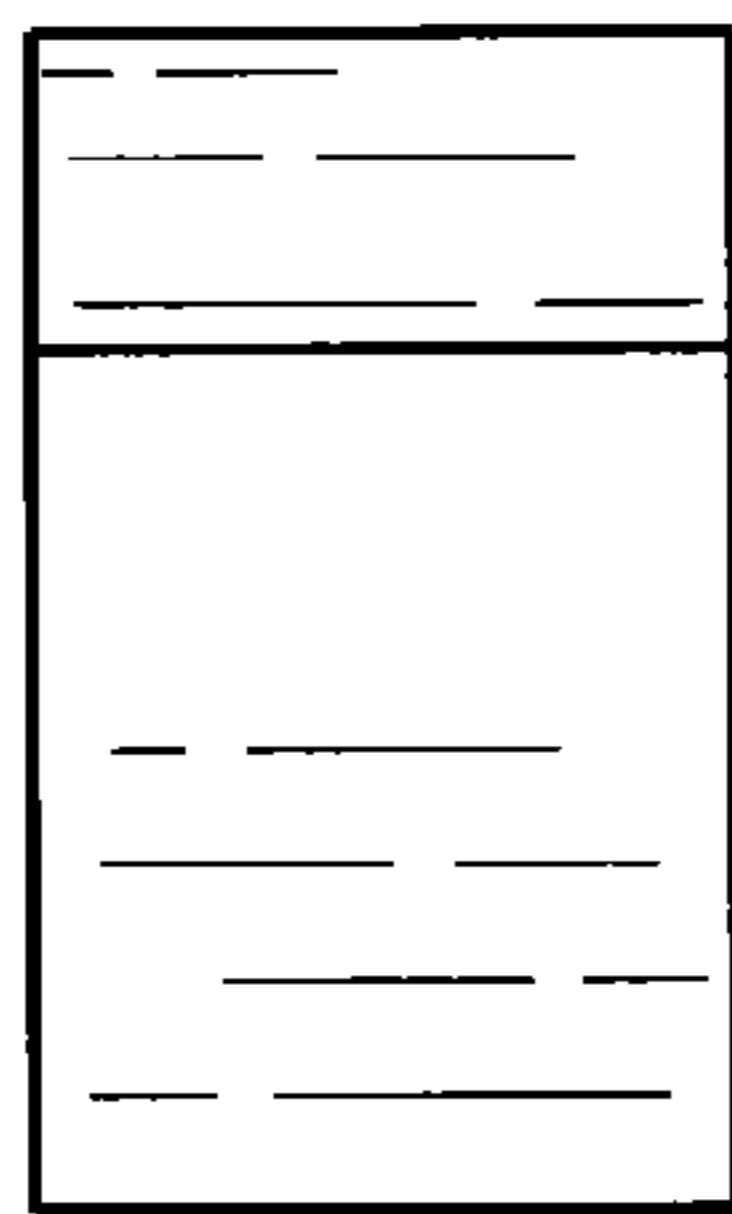




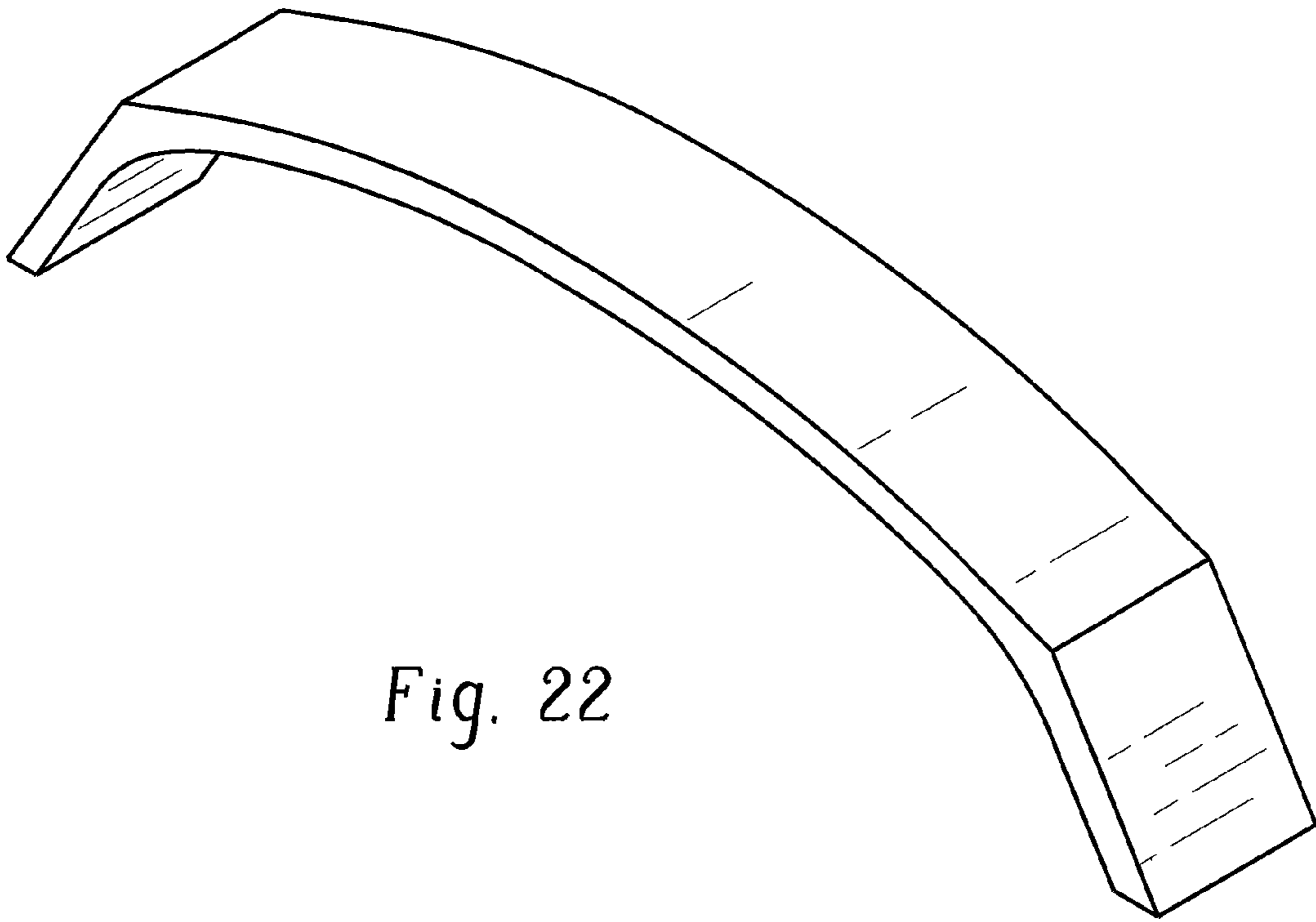
*Fig. 19*



*Fig. 20*



*Fig. 21*



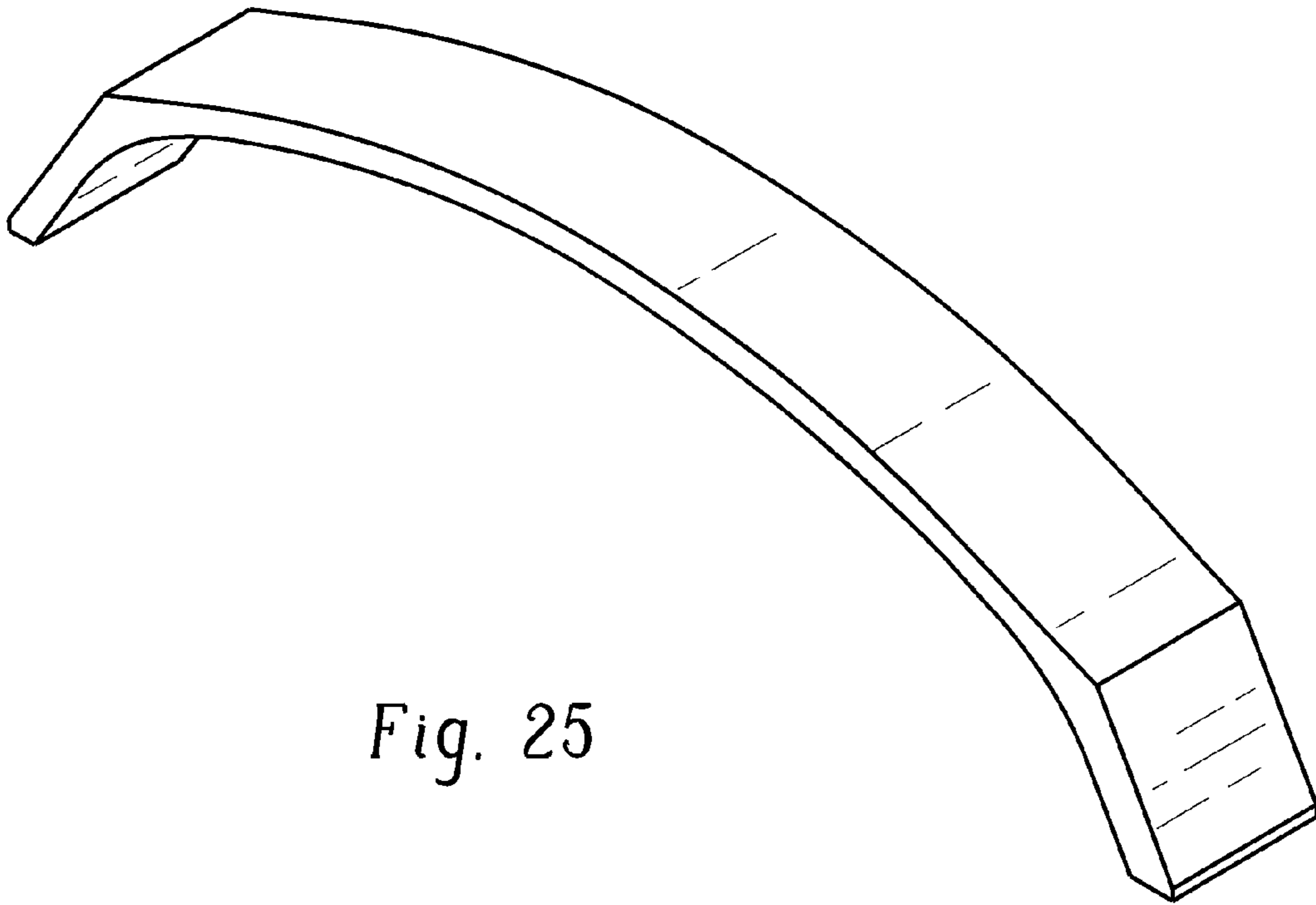
*Fig. 22*



*Fig. 23*



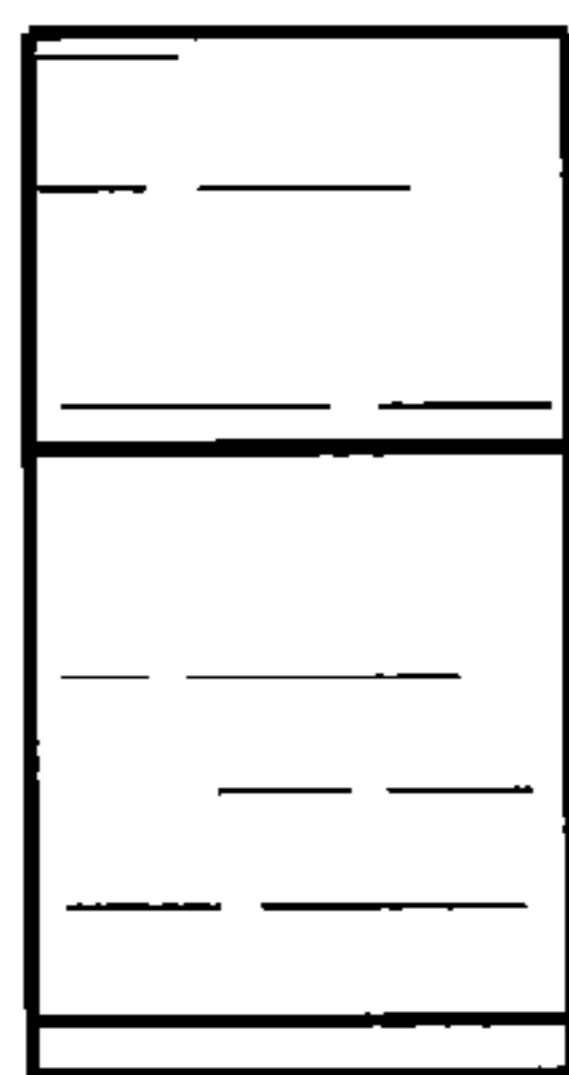
*Fig. 24*



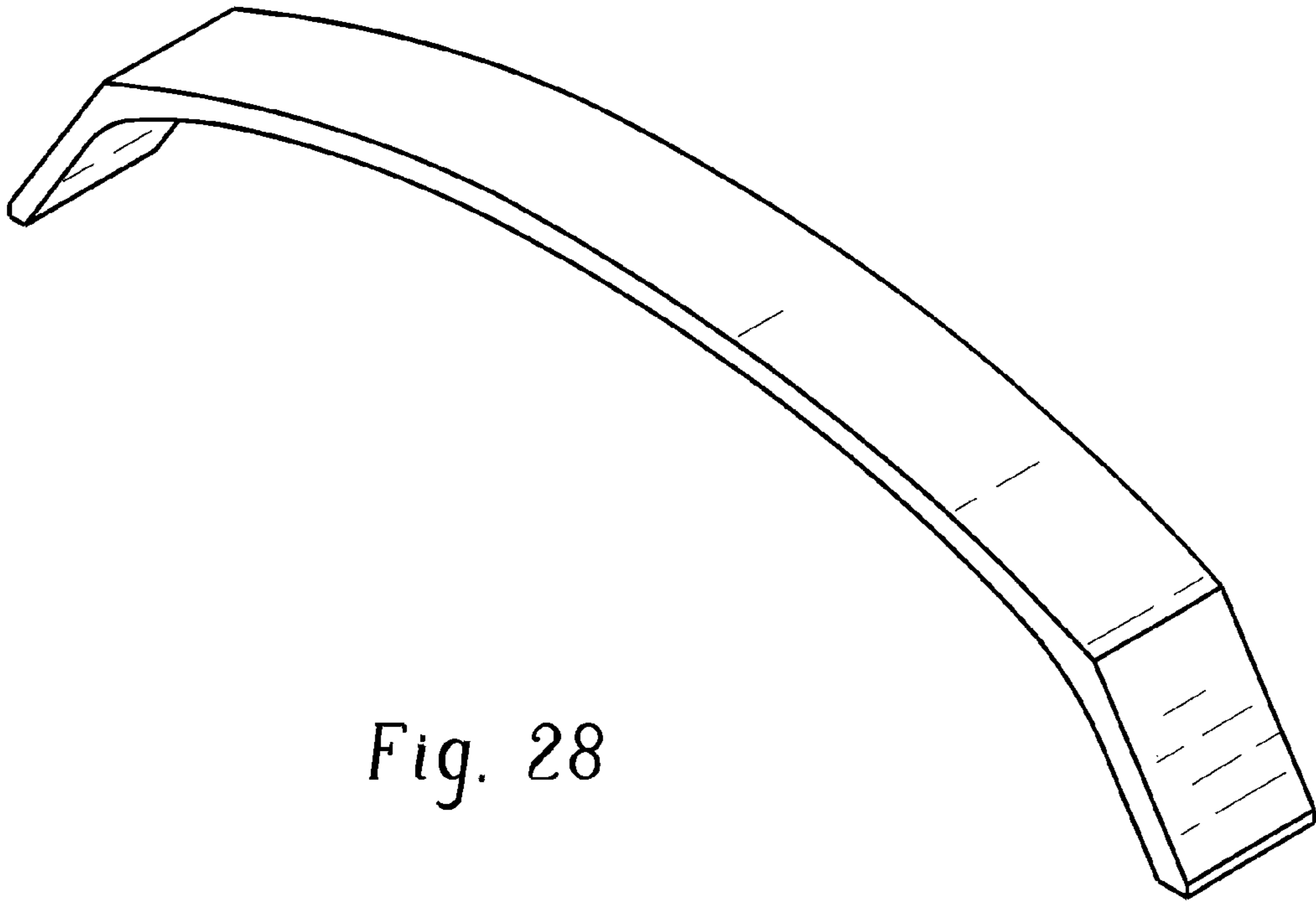
*Fig. 25*



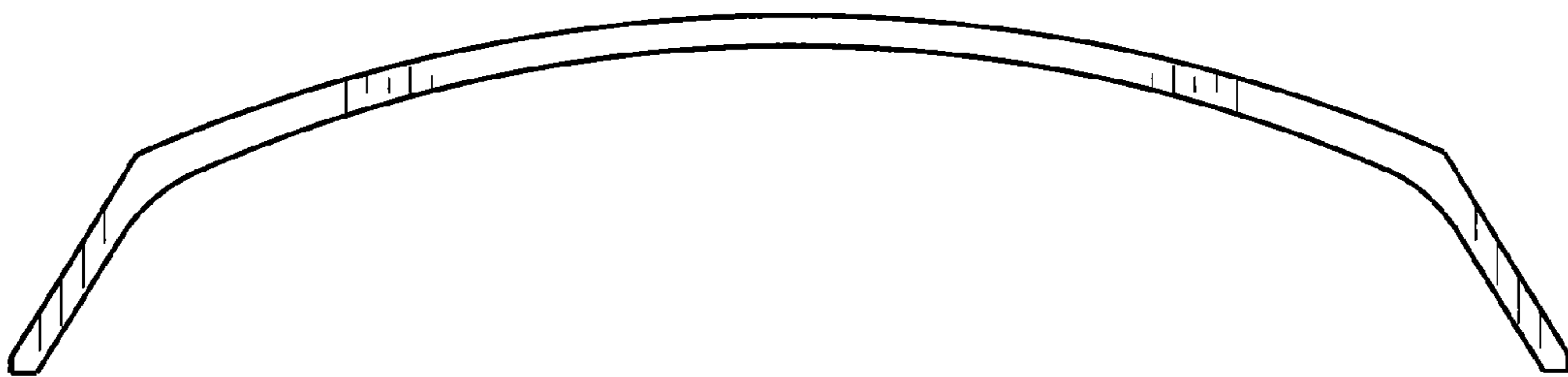
*Fig. 26*



*Fig. 27*



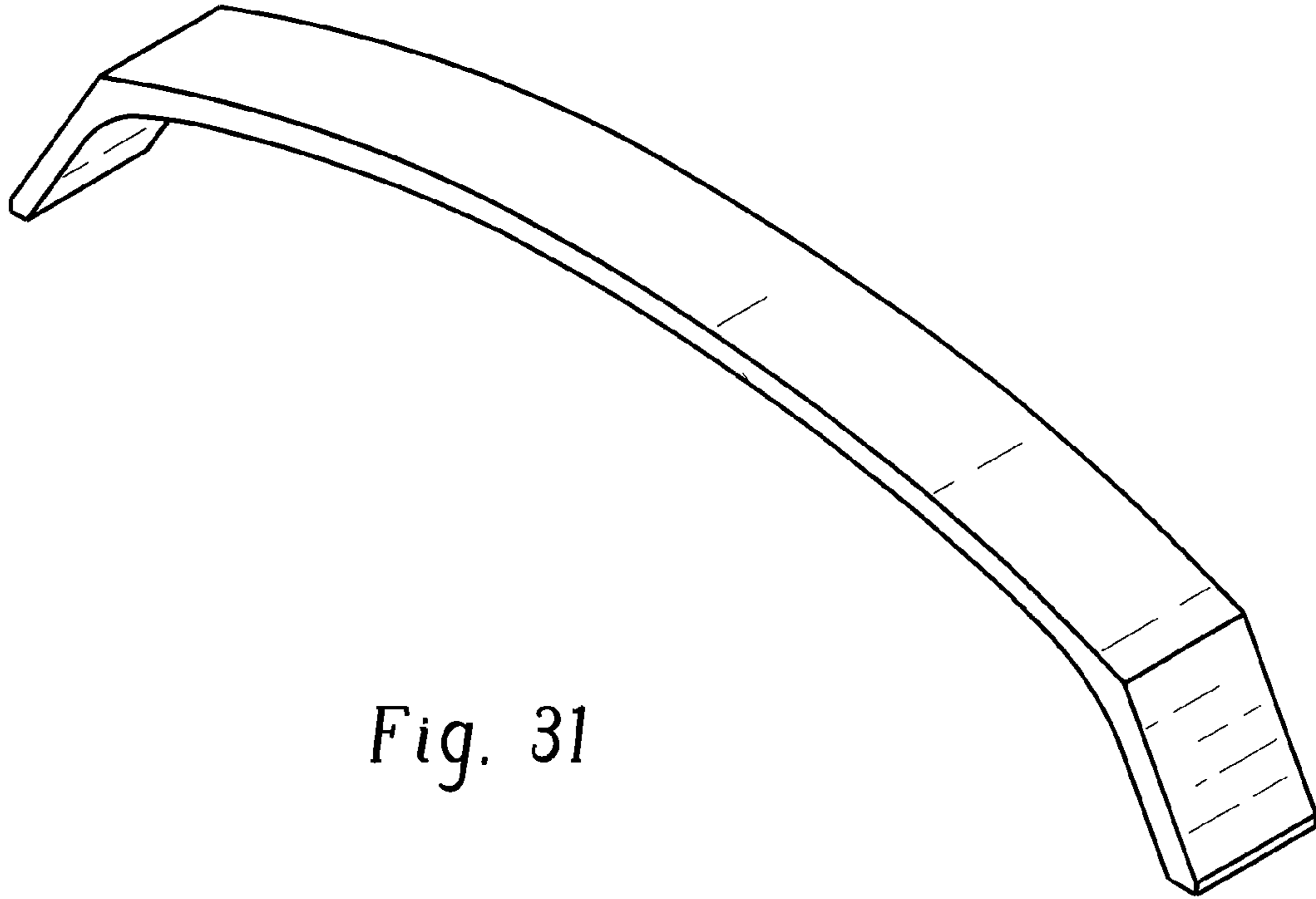
*Fig. 28*



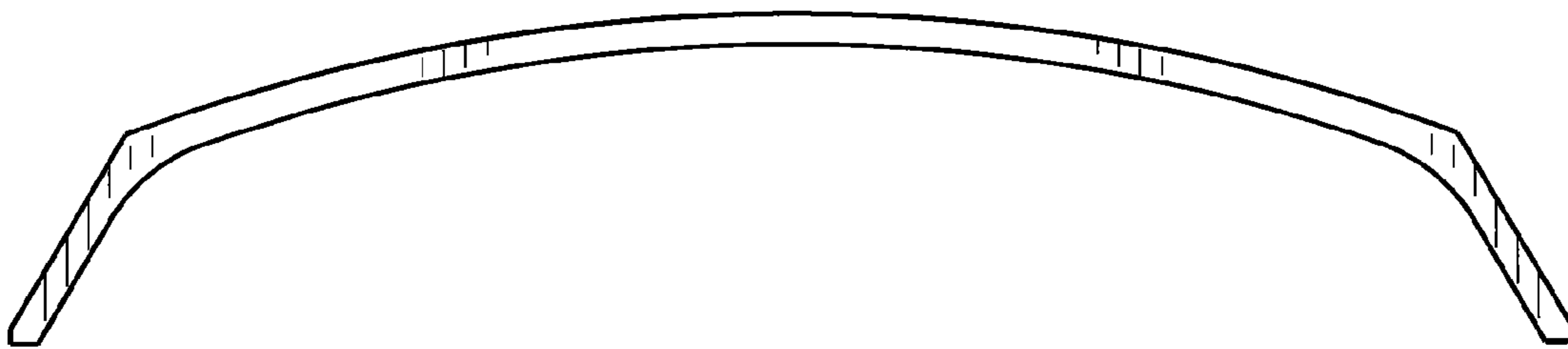
*Fig. 29*



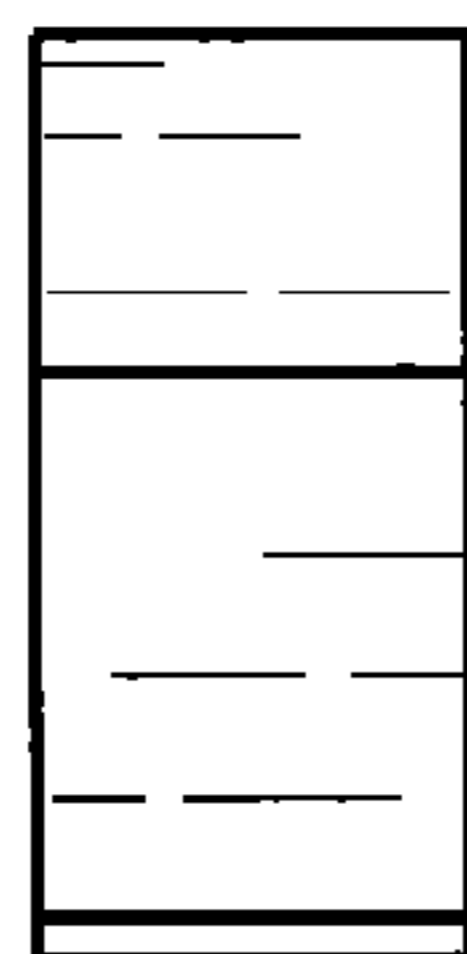
*Fig. 30*



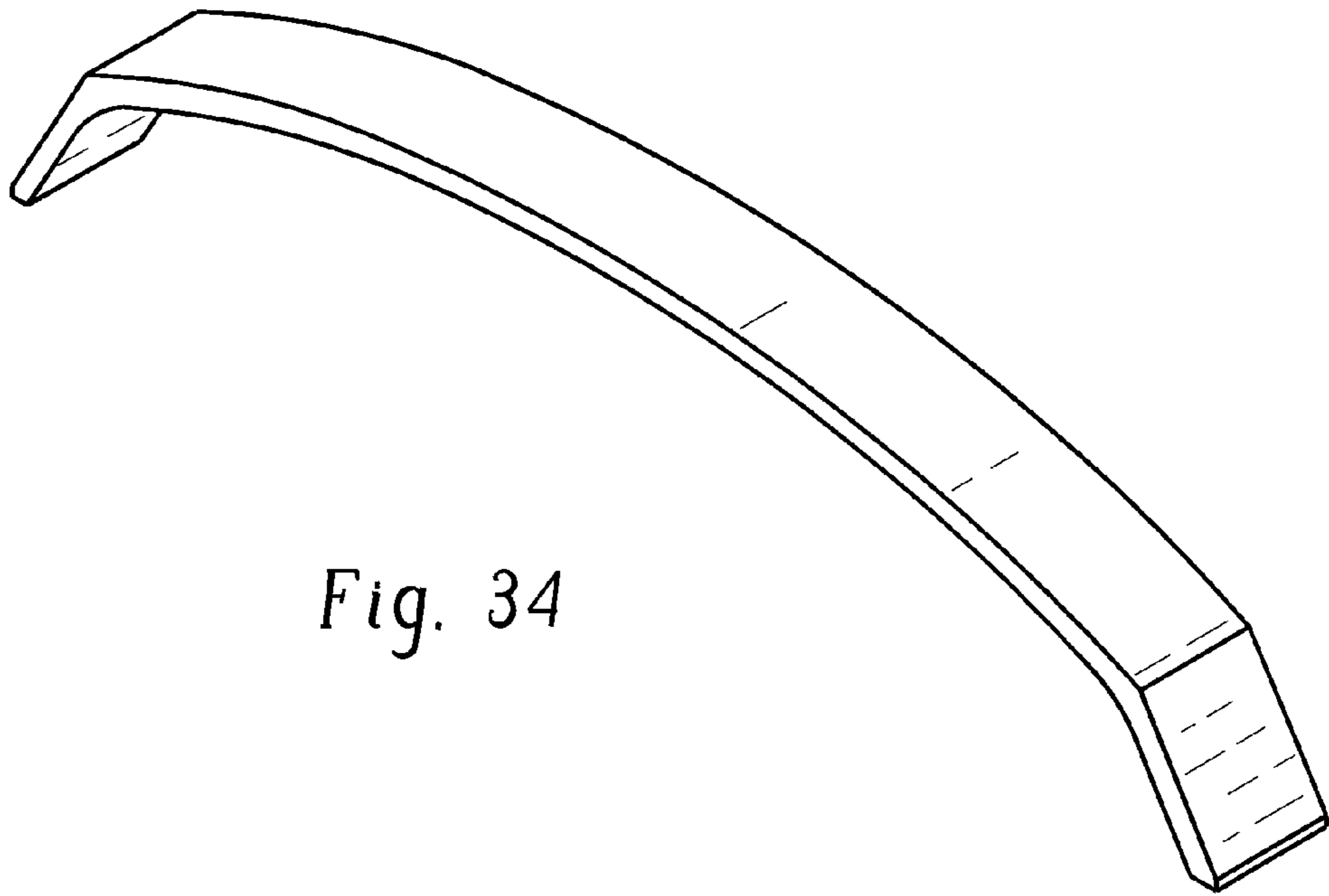
*Fig. 31*



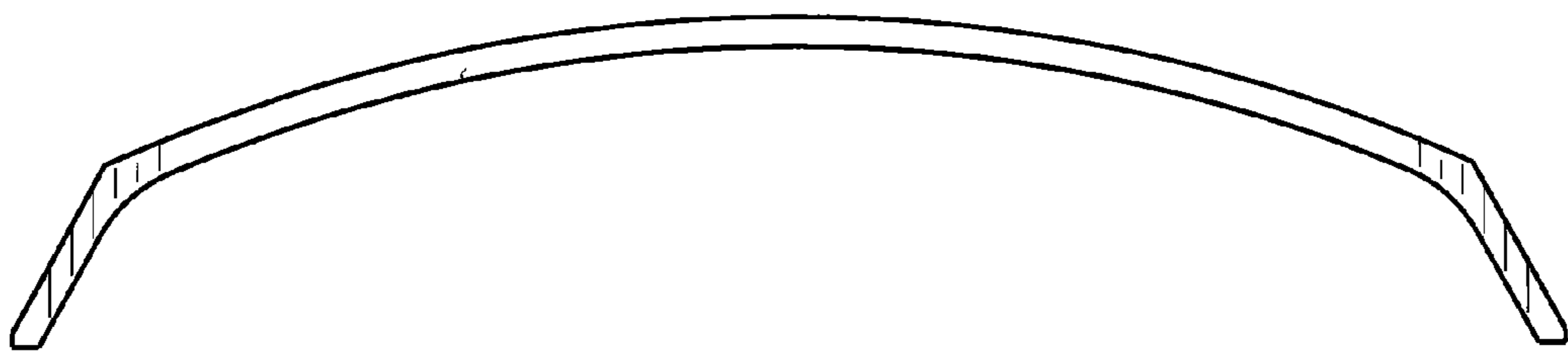
*Fig. 32*



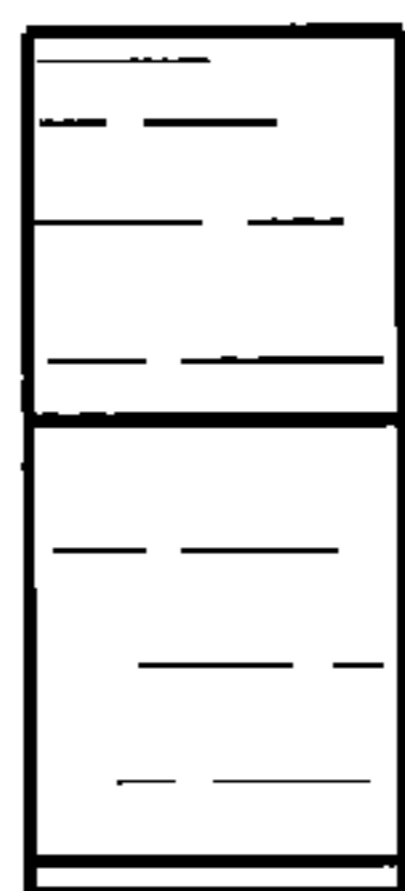
*Fig. 33*



*Fig. 34*



*Fig. 35*



*Fig. 36*