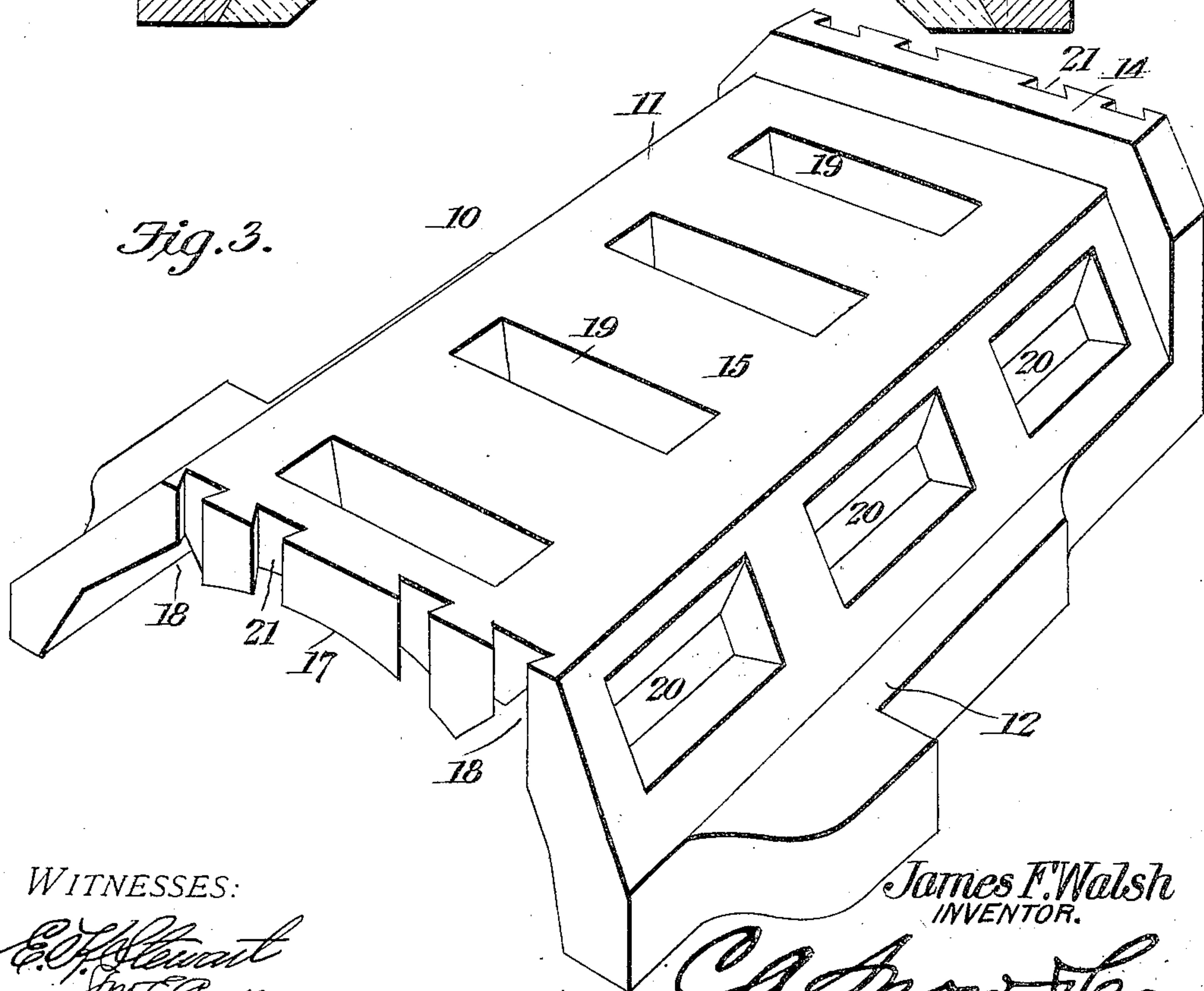
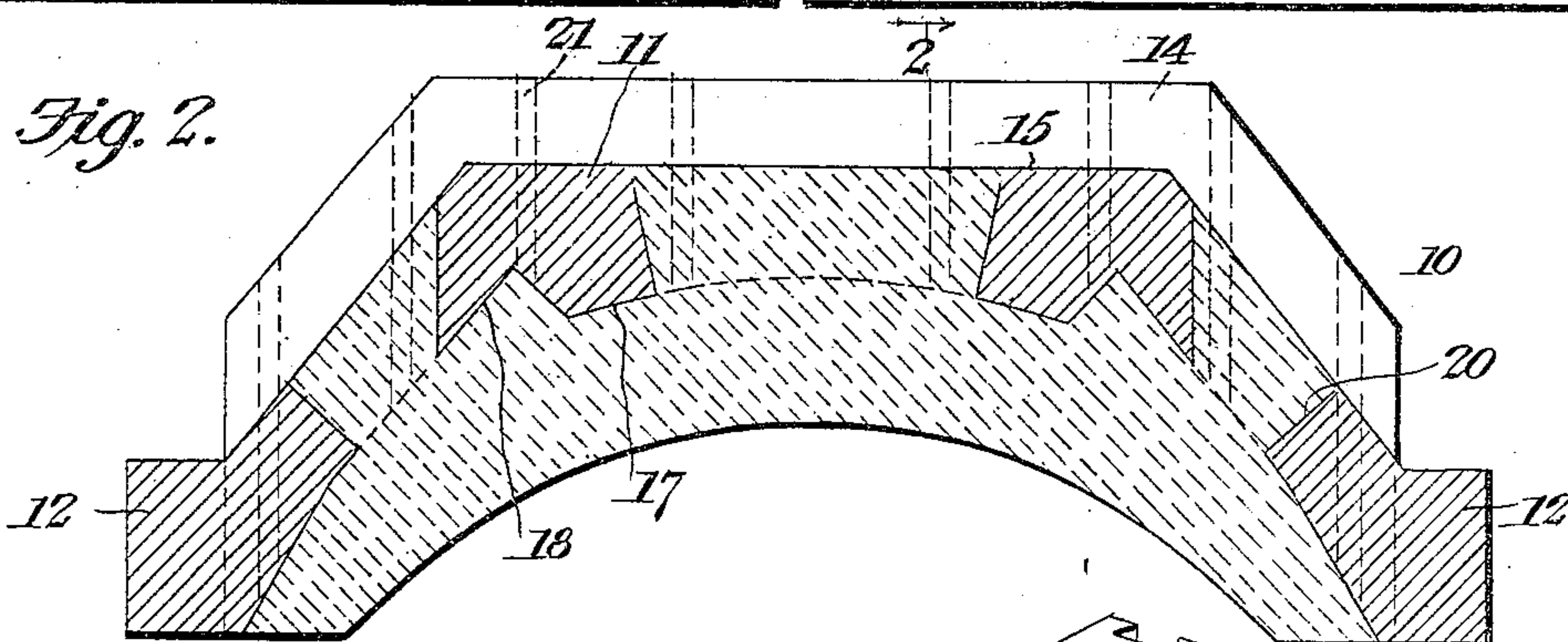
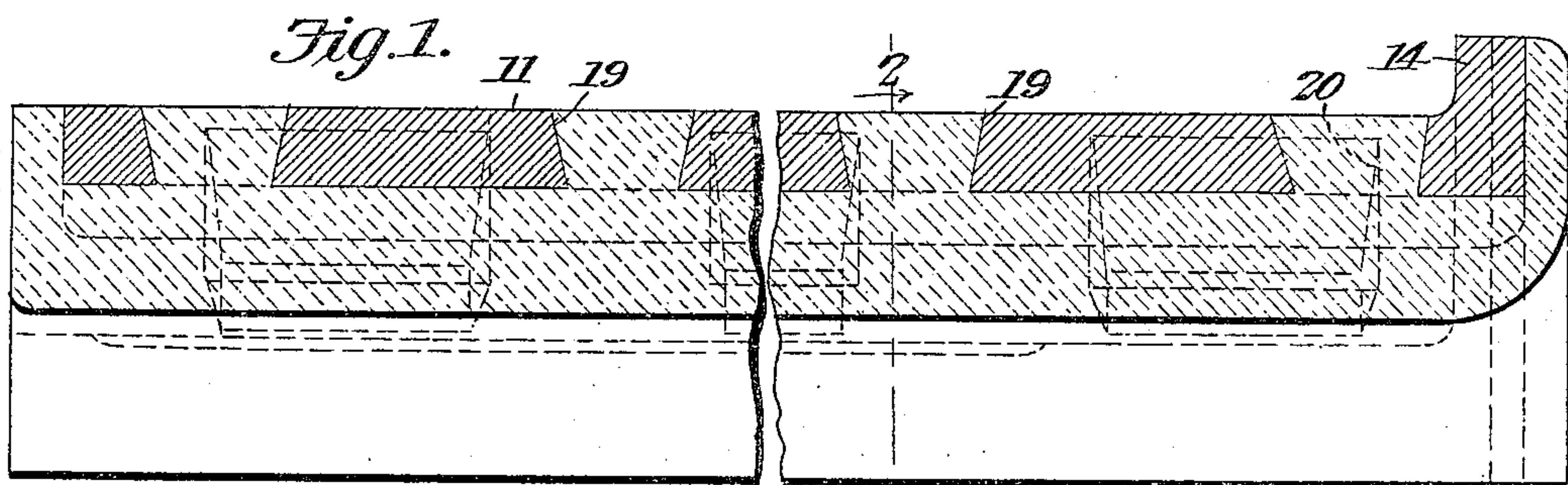


No. 838,925.

PATENTED DEC. 18, 1906.

J. F. WALSH.  
JOURNAL BEARING.  
APPLICATION FILED MAR. 2, 1906.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES F. WALSH, OF RICHMOND, VIRGINIA.

## JOURNAL-BEARING.

No. 838,925.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed March 2, 1906. Serial No. 303,846.

*To all whom it may concern:*

Be it known that I, JAMES F. WALSH, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented a new and useful Journal-Bearing, of which the following is a specification.

This invention relates to journal-bearings, and especially to bearings of that general class employed in the journal-boxes of railway rolling-stock.

The principal object of the invention is to provide an improved bearing in which the antifriction metal or lining is securely held in position in the shell and will be retained in place and will afford an antifriction supporting-surface even when worn down close to the shell proper.

A further object of the invention is to provide a bearing of this type in which the shell is so constructed as to permit the ready introduction of the lining metal and the interlocking of the latter with the shell.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts herein-after fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a vertical sectional view of a journal-bearing constructed in accordance with the invention. Fig. 2 is a transverse sectional view of the same on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of the shell proper before the application of the lining metal thereto.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In carrying out the invention a shell 10 is first formed of cast metal, or it may be drop-forged or pressed, the shell being of the peculiar construction best shown in Fig. 3 and comprising a transversely-arched plate 11, having laterally-extended side flanges 12 and provided at one end with a vertical flange 14. The outer face of the shell has plane surfaces arranged at angles to each other, the upper face 15 being horizontal when in position within the journal-box. The lower face of

the shell has its central portion arranged on a transversely-arched line 17, and at the ends of this arched surface are grooves 18 of V shape in cross-section and extending the full length of the shell. One wall of each groove is continued to the lower surface of each flange 12, as best shown in Fig. 2.

Extending through the body of the shell are a number of openings 19 and 20, the openings 19 having their greatest length transversely of the shell and extending through from the upper horizontal surface thereof to the arched inner face 17. The walls of these openings are inclined, so that the openings are in the nature of dovetailed recesses, of which the smallest area is at the arched face, while the largest area is at the upper flat surface 15. The openings 20 have their greatest lengths longitudinally of the shell and extend through from the inclined outer face of said shell to the inclined inner face thereof at points beyond the arched line 17, and the walls of these openings are also inclined in order to form dovetailed recesses, these walls, moreover, being so arranged as to permit the ready inflow of the lining metal while the latter is being applied in molten condition to the shell.

At both ends of the shell are arranged vertically-disposed dovetailed slots 21, all of the walls of which are arranged at a right angle to the horizontal upper face 15 of the shell.

When the lining metal is applied, the shell is inverted—that is to say, the flat face 15 is placed downward within a suitable mold—and the lining metal is poured in in molten condition, filling all of the openings and the dovetailed slots formed in the shell and extending slightly beyond both ends of the shell, as will be apparent on reference to Fig. 1. The inner or bearing surface of the lining metal is arranged on a curved line, the radius of which is greater than that of the shaft or axle to be supported or with which the bearing is to engage, so that at the start the point of contact between the shaft and the lining metal will be in the vertical plane of the longitudinal median line of the lining metal and the shell.

After being in use for some time the metal becomes worn away and the periphery of the shaft will gradually approach the metal of the shell; but the construction is such that should the lining metal become worn away flush with the arcuate line 17 of the shell said lining metal will still cling to the shell, owing



to the interlocking of the metal in the dovetailed openings and slots of the shell and owing to the filling of the longitudinal grooves 18 with the antifriction metal.

5 I claim—

1. In a journal-bearing of the class described, a shell having its inner face transversely concaved and provided with longitudinal grooves that extend from end to end 10 of the shell and define the limits of the concaved portion, one end of the shell being flanged, the body of the shell being provided with an approximately central row of openings that extend through the shell, to the 15 concaved portion, and a pair of rows of openings at the sides of the central row and extending through the shell to portions beyond the longitudinal grooves, the walls of all of the openings being tapered, and a lining of antifric- 20 tion metal which is extended through all of said openings and is supported at both the center and near its opposite sides by the tapered walls of said openings.

2. In a journal-bearing, a shell having at 25 one end a series of dovetailed grooves and at its opposite end a projecting flange that is

provided with dovetailed grooves in its outer face, the central portion of the inner face of said shell being concaved transversely from end to end of the shell, there being parallel 30 grooves arranged at each side of and defining the limits of the concaved portion and also extending for the full length of the shell, the shell being provided with tapered openings extending through the concaved face and 35 having their greatest length transversely of the shell, there being additional tapered openings extending through the shell at points beyond said grooves and having their greatest length parallel with the shell, and a 40 lining of soft metal that extends to and covers both ends of the shell, the lining metal fitting in the several openings and dovetailed grooves.

In testimony that I claim the foregoing as 45 my own I have hereto affixed my signature in the presence of two witnesses.

JAMES F. WALSH.

Witnesses:

THOS. BYRNE,  
J. G. EARNEST.