

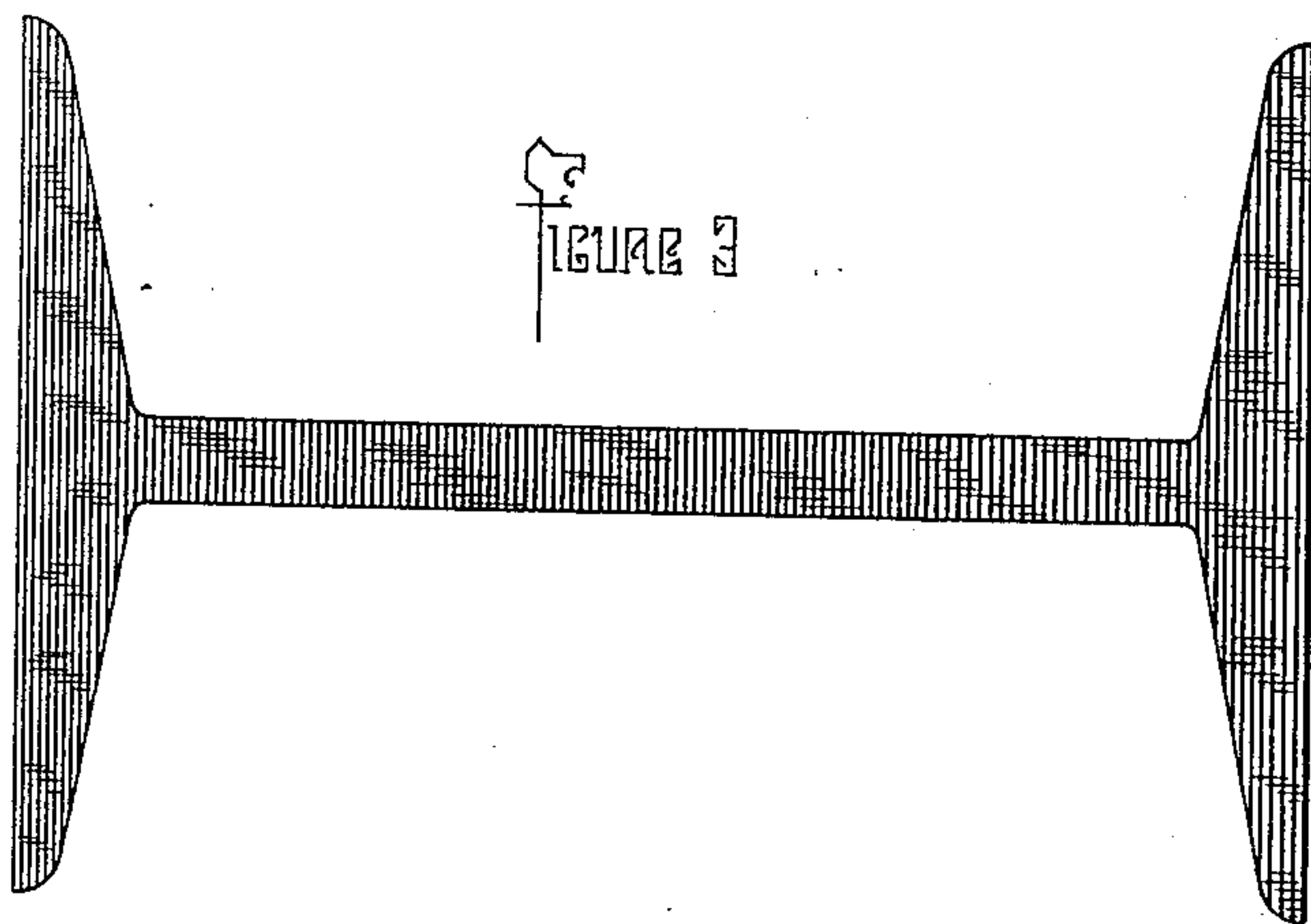
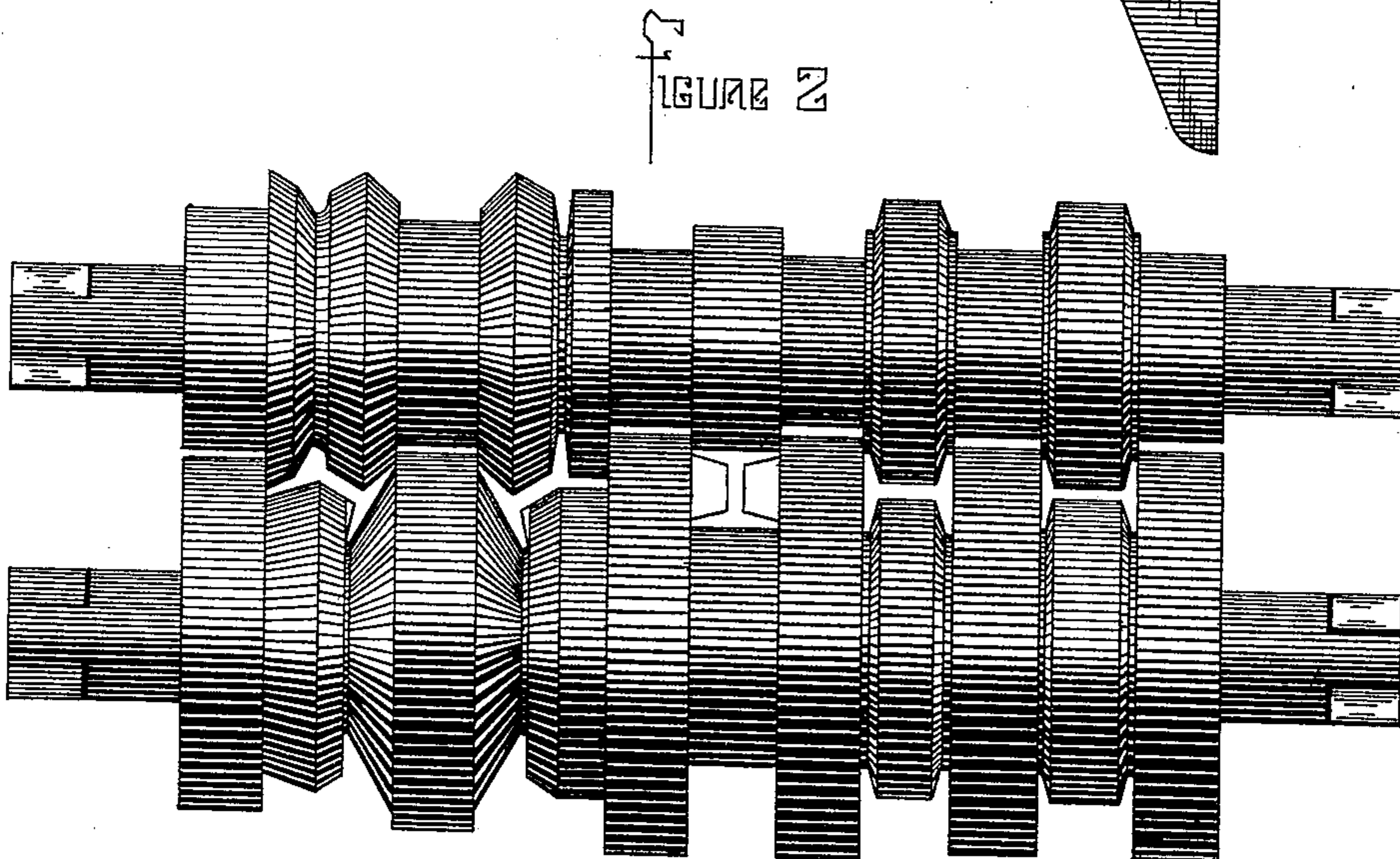
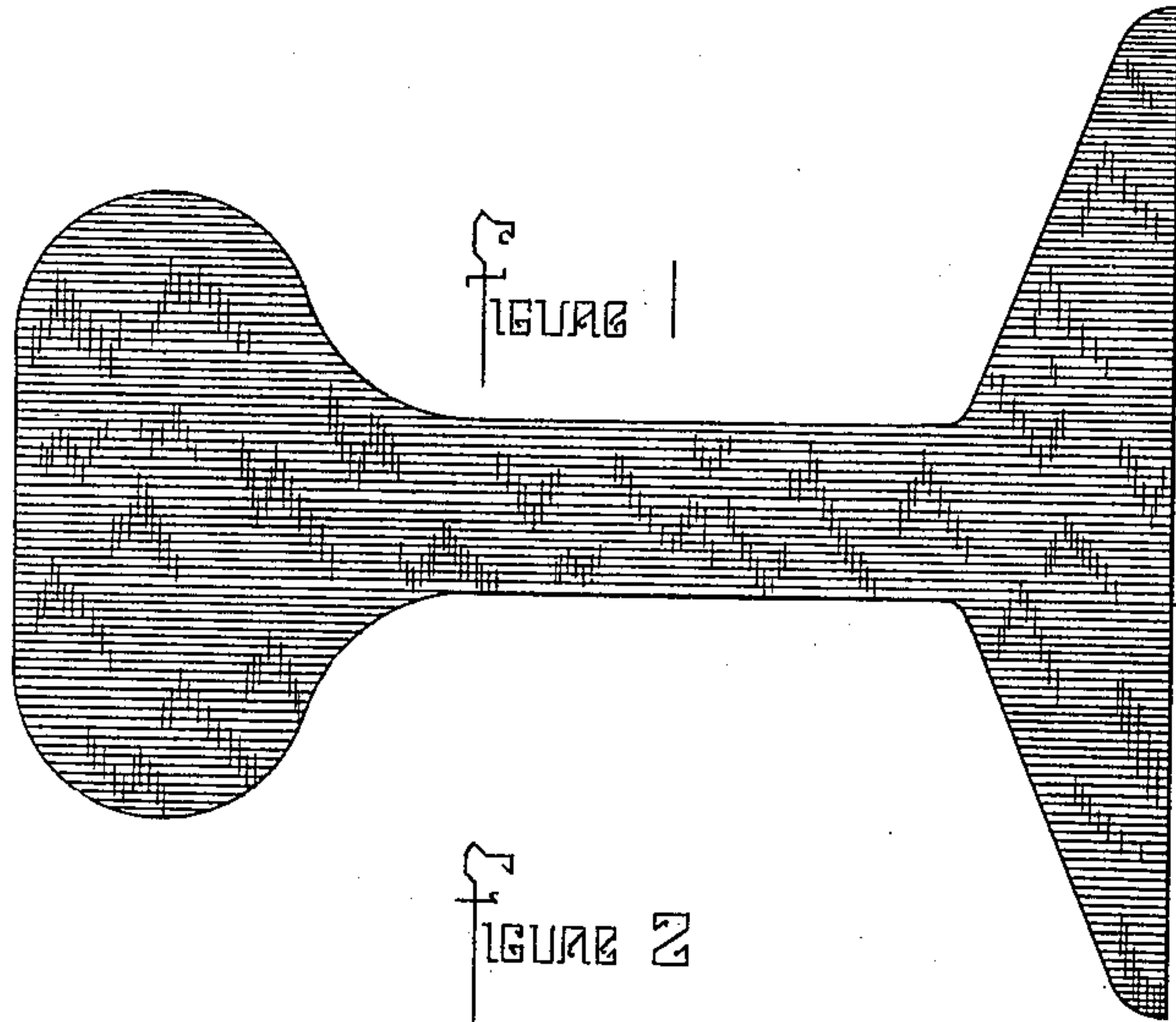
(No Model.)

J. REESE.

CONVERSION OF OLD RAILS INTO GIRDERS.

No. 371,361.

Patented Oct. 11, 1887.



Witnesses -  
Jacob Reese.  
Frank M. Reese.

Inventor -  
Jacob Reese

# UNITED STATES PATENT OFFICE.

JACOB REESE, OF PITTSBURG, PENNSYLVANIA.

## CONVERSION OF OLD RAILS INTO GIRDERS.

SPECIFICATION forming part of Letters Patent No. 371,361, dated October 11, 1887.

Application filed February 18, 1884. Serial No. 121,207. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB REESE, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in the Utilization of Old Rails in the Manufacture of Girders; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being  
10 had to the accompanying drawings, in which—

Figure 1 indicates a cross sectional view of an old rail. Fig. 2 indicates a front elevation of a set of rolls adapted to reduce an old rail into a girder. Fig. 3 indicates a cross-sectional view of a form of girder to be produced  
15 from the old rail.

Like letters of reference indicate like parts wherever they occur.

Girders have heretofore been made from  
20 blooms or pigs, which are worth at present from twelve to fifteen dollars per ton more than old steel rails.

My invention consists in subjecting the old rail to the action of a set of rolls provided  
25 with a series of grooves adapted to force the metal of the head out laterally until the head is reduced into a flange of the desired width, and then reduce the blank so formed into the finished form and size desired.

30 The rolls indicated in the drawings are provided with a series of peculiarly-shaped grooves for reducing the old rail into the form of a finished girder. The first two are oblique and are formed in such a manner as to spread laterally the metal in the rail-head, but make no  
35 material alteration in the shape or size of the web and flange. The function of the third is to simply flatten down the V-shaped flange produced from the rail-head by the action of  
40 the first two passes, so that the blank may be entered into the succeeding groove. The remaining grooves are simply ordinary finishing-grooves.

45 The operation of the improvement is as follows: The old rails are heated to a proper temperature by means of any suitable furnace, and are then entered, one at a time, into the first oblique groove. The action of this groove forces the metal of one side of the head down

and out laterally without materially disturbing it in the web and flange, which are merely compressed sufficiently to hold the rail in place while one side of the head is being widened, as before stated. The rails are then turned and passed through the second oblique  
55 groove, which produces a similar effect on the opposite side of the rail head, thus transforming the rail-head into a V-shaped flange. These blanks are then passed through the third groove, which flattens down the V-flange  
60 and brings the blanks to the proper form to pass through the succeeding grooves, which gradually reduce and finish the metal to the particular form, shape, and sizes desired.

Instead of the use of the two oblique grooves, 65 a greater number having less reduction may be used, as this is a matter which will depend on the size of the rail-head, on the width of the flange to be produced, and on the diameter of the rolls and their power to reduce.  
70

Small steel girders may thus be manufactured at a cost of about thirty to thirty-five dollars per ton, and, while they are very desirable, they have not, so far as I am aware, been made in this country or put upon the market. At present  
75 small iron girders are quoted at seventy dollars per ton. Either iron or steel girders, ranging from ten to forty pounds to the yard and from three to six inches in height, may be made by the use of my improvement, and, if desired, 80 still smaller sizes may be made by turning the third groove shallower, so as to squeeze down the web, and thus reduce the blank to the desired height.

The steel girders will be in demand for ship- 85 building and other structural purposes.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The rolls having the passes, the first conforming to the shape of a rail, the last to the shape of a girder, and the intervening ones shaped substantially as described.

JACOB REESE.

Witnesses:

FRANK M. REESE,  
WALTER REESE.