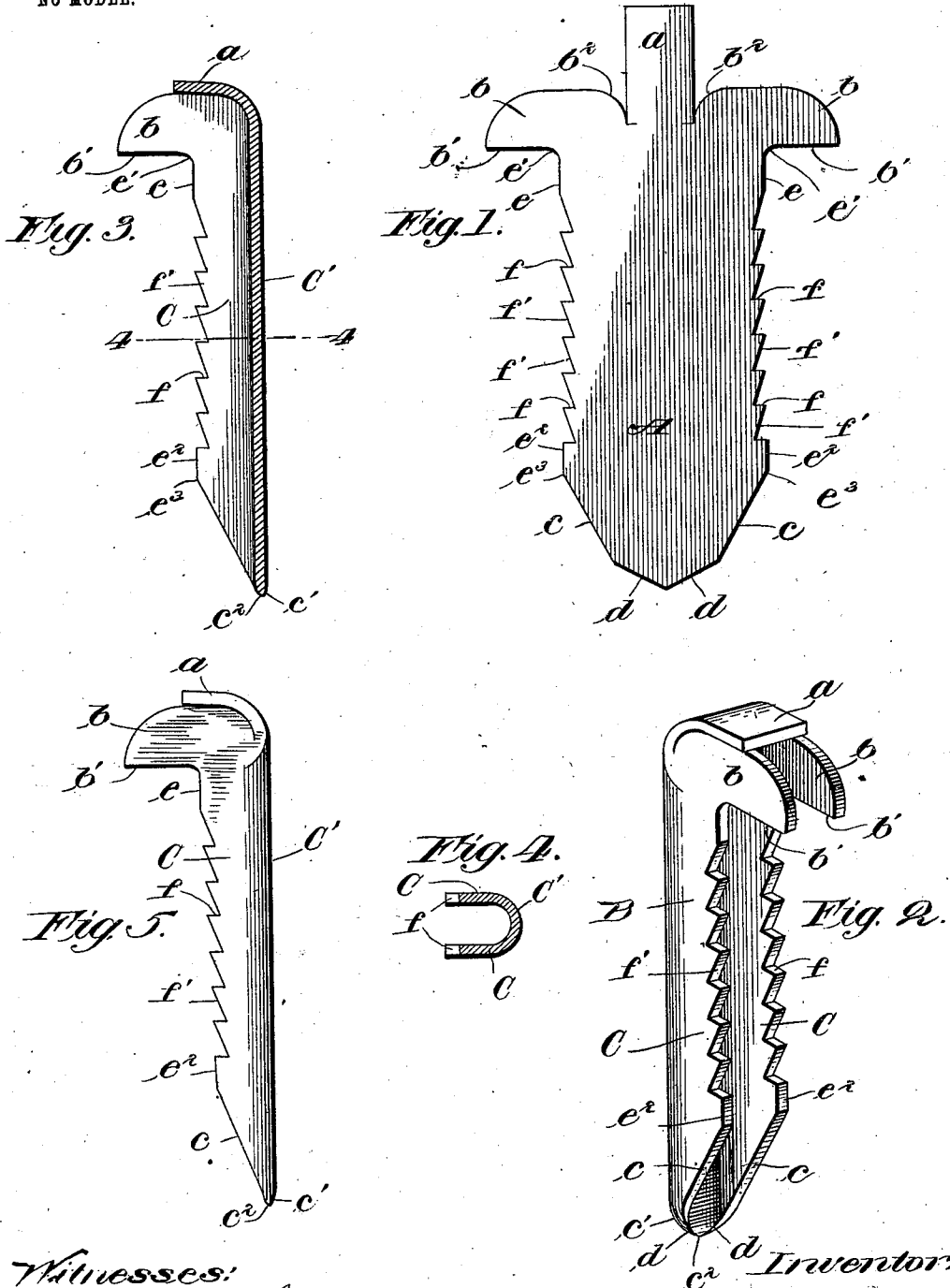


J. H. DUFFY.
RAILWAY SPIKE.

APPLICATION FILED SEPT. 20, 1901.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

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RAILWAY-SPIKE.

SPECIFICATION forming part of Letters Patent No. 727,111, dated May 5, 1903.

Application filed September 20, 1901. Serial No. 75,854. (No model.)

To all whom it may concern:

Be it known that I, JEAN H. DUFFY, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Spikes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to railway-spikes, and more particularly to that class of such devices formed of sheet-steel and pressed into shape; and the same consists in the novel features illustrated in the accompanying drawings and more fully set forth in the claims appended to the description of said drawings.

In the drawings I have illustrated in Figure 1 a plate of sheet metal approximating the shape of the blank from which my spike is made. Fig. 2 is a perspective view of the completed spike. Fig. 3 is a longitudinal central sectional view of the spike. Fig. 4 is a transverse sectional view taken upon the line 4 4 of Fig. 3. Fig. 5 is a side view of a slightly-modified form of the device.

In the drawings let A represent the blank as a whole, and B the completed spike. The blank A will be provided at its upper end with a rectangular lug *a*, extending upwardly therefrom, and also with laterally-projecting lugs *b*, extending in opposite directions, one on either side of the lug *a*. The lower portion of the blank A is shaped on either side in a downwardly and centrally inclined direction, as indicated by the marginal lines lettered *c*, while the extreme point of the blank is formed by the lines *d*. The under side or margin of the lug *b* is substantially horizontal or at right angles with the marginal line of the blank A, as indicated by the letter *b'*, and joins said margin *e* of the blank, at the upper end thereof, by a fillet *e'*, the lower margins of the lugs *b* constituting the retaining-shoulders of the head, which bear against the rail-flange when the spike is driven in place. The lower portion *e*² of the margin *e* joins the upper portion of the margin *c*, as clearly shown. The intermediate

portion of the margin is serrated or notched by horizontal and angular cuts, as clearly indicated by the letters *ff'*. It will be observed that the margin *e* and the margin *e*² and the points of serration are in the same longitudinal plane and also that they are parallel with the similar portions of the other side of the blank.

In constructing my improved spike I prefer to use suitable dies and presses whereby the cutting of the blank from the sheet-steel in substantially the form shown in Fig. 1 and the bending or shaping of the blank into the form illustrated in Fig. 2 may be continuous, so that it may be said that the railway-spike is made in a single operation. It may, however, of course be sometimes convenient to stamp the blanks in one operation and to make the completed spike in another operation and at a different time.

Referring now to the completed spike B, it will be observed that the blank has been folded or bent so as to form two parallel side walls C, joined integrally to a rounded rear wall C', and that the lug *a* has been bent over the rounded rear margin *b*² of the lugs *b* and forms a head for the spike by which it may be driven into the railway-tie. It will also be observed that the margins of the blank *ccdd* form sharp-edged facets, which greatly assist in cutting the wood as the spike is driven into it. It will be noticed also by reference to Figs. 2, 3, and 5 that the lower portion of the back C' is tapered somewhat, as shown at *c'*, so that by reason thereof and the line of cut at *dd* a substantially sharp point *e*² is provided.

In the modification shown in Fig. 5 it will be noticed that the side walls C C are deeper at their upper ends than at their lower ends—that is to say, the longitudinal line *ee*² is not parallel, but is inclined with relation to the plane of the back of the spike. This slight modification provides a spike with a tapered shank as distinguished from a straight shank, such as is shown in Figs. 2 and 3; otherwise the spikes are similar in construction.

It will be understood, of course, that the margins *b'* of the lugs *b* are adapted for engagement with the surface of the flange of the rail or other object which it is desired to se-

cure by such spikes to a tie or other piece of timber.

In practice it is found that the spike constructed in accordance with the principles of my invention may be quickly and very easily driven into place and that the fibers of the wood are cut rather than torn as the spike enters and readily spring back into position and enter the spaces adjacent to the serrations ff' , and, furthermore, form shoulders, which engage the upper and horizontally-directed portion f , whereby the spike is held more securely in position and accidental displacement or working loose is prevented.

The simplicity of construction, the strength of the spike due to the construction of the shank with parallel side walls united by a curved back wall, the cutting edges formed by the shape and direction of the facets at the lower end of the shank, and the double set of retaining-shoulders formed by the marginal serrations combine to give rigidity of construction with great durability and effectiveness in operation.

Although I have shown in Fig. 2 a preferred form of this device made from sheet metal embodying my invention, I do not wish to be understood as limiting myself to the precise details of construction hereinbefore described and shown in the drawings, as it will be obvious to any one skilled in the art to which this invention relates that modifications may be made without departing from the spirit or scope of the invention. For example, the upper rear margin of the lug b may not be given as much of a curve as is shown at b^2 , or the serrations ff' may be deeper or may be closer together or may be somewhat farther apart, according to the particular use to which the spike may be put and the character of the wood. In some instances it may be desirable to avoid the point e^3 , formed by the meeting of the cutting edges c e^2 , by cutting the blank so that the line of cut c will extend directly from the line d to the point or lowermost shoulder f . While, therefore, many modifications may suggest themselves to the skilled mechanic, I desire it distinctly to be understood that all such are embraced

within the scope of my invention as herein claimed, notwithstanding the fact that the form of the railway-spike as herein shown, both in its general aspect as well as in its various details, is recommended as a commercial and practical embodiment of the invention.

Having now described my invention, what I desire to claim and secure by Letters Patent is as follows:

1. A railway-spike made of sheet metal and having a shank provided with serrated edges, and with a suitable point, laterally-projecting, substantially parallel lugs, the lower margins of which face downwardly to form retaining-shoulders, and a head integral with the back of the shank and bent laterally over the top margins of said lugs.

2. A sheet-metal railway-spike comprising a shank embracing longitudinal side walls united by an integral transverse wall and a head comprising lugs or extensions projecting laterally from the upper ends of the side walls, and a part formed integral with the back wall which is folded laterally over the upper margins of said laterally-directed lugs.

3. A pressed-steel railway-spike comprising parallel side walls united to a back wall to form a shank, the side walls being provided on their free margins with suitable serrations forming retaining-shoulders and having on their lower portions cutting-facets c which unite with cutting-facets d and c' of the back wall and form the point c^2 , and which side walls are provided at their upper portions with laterally-projecting lugs b , provided with the engaging shoulders b' , and affording on their upper edges a suitable rest for the spike-head, which latter is formed of the lug a integrally projecting from the upper end of the rear wall C' and bent over the lugs b .

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 16th day of September, A. D. 1901.

JEAN H. DUFFY.

Witnesses:

TAYLOR E. BROWN,
DOROTHY E. MARNON.