

No. 627,819.

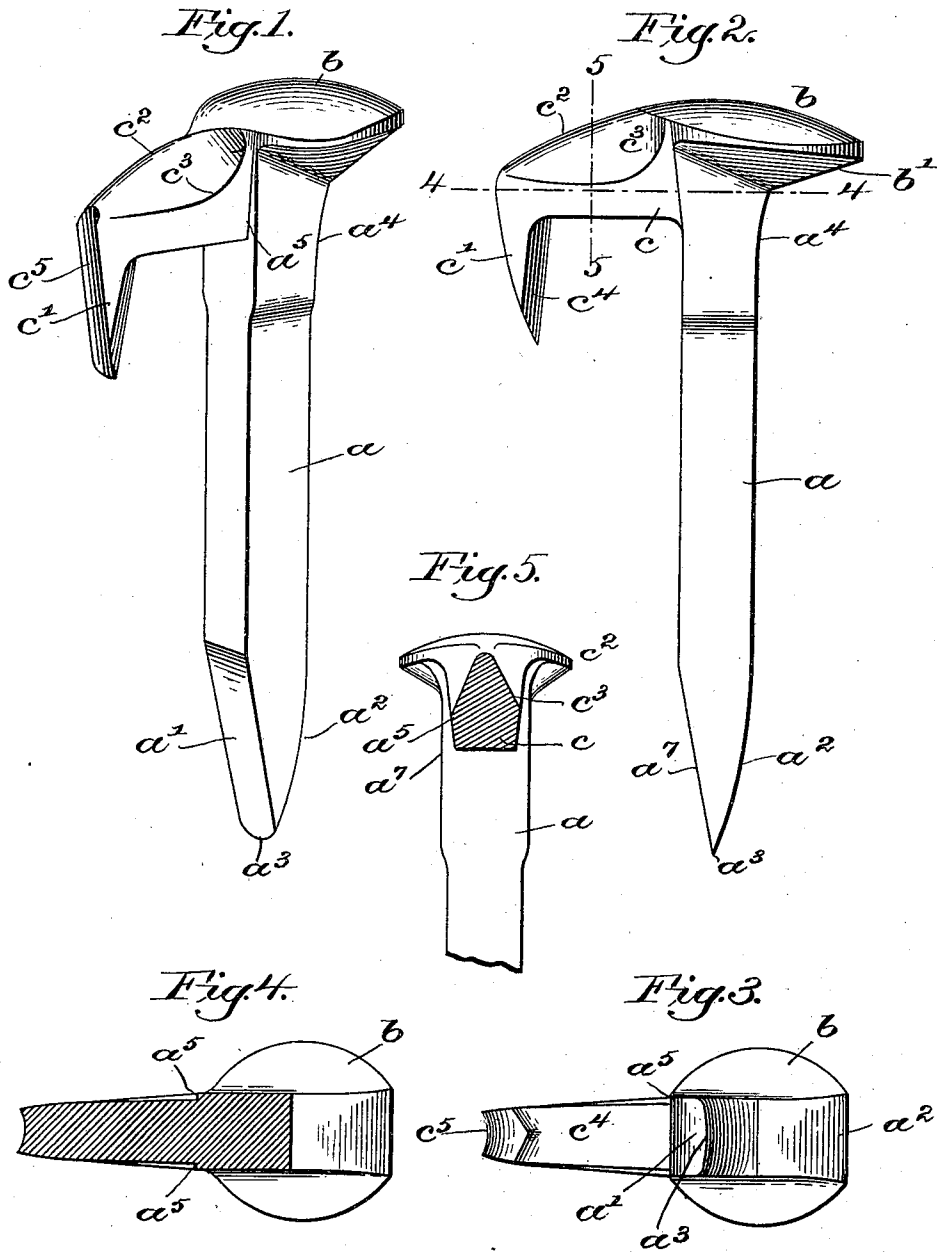
H. H. CUMMINGS.

Patented June 27, 1899.

SPIKE.

(Application filed Apr. 3, 1899.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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SPIKE.

SPECIFICATION forming part of Letters Patent No. 627,819, dated June 27, 1899.

Application filed April 3, 1899. Serial No. 711,636. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. CUMMINGS, of Malden, county of Middlesex, State of Massachusetts, have invented an Improvement in
5 Spikes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to spikes commonly
10 employed for securing railway-rails and the like.

The invention relates more especially to spikes of the type wherein is provided a rearwardly-extended bridge-piece having a depending spur or point which when driven into the holding-tie adds to the holding power of the spike.

In the following specification, in connection with the accompanying drawings, I will describe my invention in the best form now known to me, it being understood, however, that my invention is not thereby limited or restricted to the particular form or embodiment thus described.

25 In the drawings, Figure 1 is a perspective view of a spike containing my invention; Fig. 2, a side elevation thereof; Fig. 3, a view looking at the point end of the spike; Fig. 4, a horizontal section on the line 4 4, Fig. 2, looking toward the head; and Fig. 5 a vertical section on the dotted line 5 5, Fig. 2.

Referring to the drawings, my improved spike in the particular form there shown consists of a suitable or usual shank *a*, shown as rectangular in cross-section and provided at its lower end with a proper point. As herein shown, the point is formed by two converging faces, one face, *a'*, preferably flat and the other face, *a''*, preferably curved or convex, thereby to form a cutting edge *a'''* having an approximately central cutting-point to facilitate starting of the spike and thereafter the driving of the same, the concave side serving to gather in the fibers cut by the point and
45 give a strong resistance to any movement of the spike in that direction, while the convex side acts to wedge its way into the wood at that side, the two cooperating to compel the spike to drive snugly against the rail instead of retreating therefrom in the process of driving. Moreover, this formation tends to pre-

vent the fibers of the wood from being broken to a greater width than the width of the spur, this being of particular advantage in my spike in cooperation with the supporting
55 shoulders or faces to be hereinafter mentioned. At its upper end the shank is provided with a suitable or usual head *b*, the front face of the shank, immediately below the head, preferably sweeping outwardly somewhat, as
60 indicated at *a'*, to cause the spike in driving to hug the rail and at the same time give added strength in the vicinity of the head.

At its rear side and close to the head the spike is provided with a rearwardly-extended
65 bridge member *c* of desired length, it having, preferably at or near its end, a depending spur or point *c'*. For the best results the under side of the bridge should be flat, as shown, to rest squarely upon the surface of the tie when
70 the spike is driven. The upper edge *c''* or top of the bridge is shown as curved upwardly to the top or crown of the head, and preferably this curved upper edge of the bridge is given a curvature or direction different from that
75 of the under face *b'* of the holding portion of the head in front of the shank, thereby to give added strength and symmetry to the spike at the point where it is more likely to fracture in driving. The side of the bridge
80 *c*, near its upper edge, may be chamfered off, as shown at *c''*, to economize metal without sacrificing the depth and rigidity of the bridge and at the same time to restrict the head proper of the spike to an area, as shown, which
85 will tend to centralize the blows delivered in driving, the upper edge of the bridge being sugar-loafed in shape or A-shaped in cross-section.

The spur *c'*, of desired shape, is preferably
90 substantially V-shaped, as shown, and to increase the holding power and at the same time facilitate its free entrance into the wood without destroying the fibers thereof the inner face *c''* of the spur is made crowning and the
95 outer face *c'''* is made concaved, the two faces converging to oblique cutting edges or knife-like edges, although this formation of these faces is not essential to my spike.

By reference to Figs. 1, 3, and 4 it will be
100 seen that in this the preferred form of spike the shank *a* in the vicinity of the bridge is

thickened or is wider at its rear face immediately below and adjacent the bridge than the bridge is at its spur end to provide vertical supporting-faces a^5 a^5 , which project beyond the lines of cut of said spur as the latter is driven into a tie, so that said faces or shoulders a^5 abut against those fibers of the wood which are uncut by the sharp spur c' . The bridge is thus of a thickness less than the width of the rear face of the shank which connects the converging side faces of the spike-shank.

My improved spike in the form shown presents a superior centering and cutting point, an exceedingly strong and substantial head, and an effective bridge-support and spur for resisting any tendency of the spike to loosen under lateral thrusts of the rail, and the novel formation which presents the spur-faces c^4 and c^5 and the auxiliary supporting-faces a^5 collectively or singly gives to the spike a holding power quite lacking in spikes of this general type heretofore known to me.

My invention may be varied in its embodiment according to the requirements of service and according to the individual preferences of the users without departing from the spirit and scope of the invention as herein set forth.

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

1. A spike having a shank, a head, and a laterally-extended bridge provided with a depending spur, said spur having a concave rear holding-face disposed at an angle to the axis of the spike, substantially as described.

2. A spike having a shank, a head, and a laterally-extended bridge provided with a depending spur, said spur having opposite, transverse, converging, concave and convex holding-faces, substantially as described.

3. A spike having a shank, a head, and a laterally-extended bridge provided with a depending spur, said spur having opposite concave and convex holding-faces converging to oblique transversely-disposed cutting edges at the end of the spur, substantially as described.

4. A spike, comprising a shank, a head, a bridge, and a spur, substantially as set forth, said spur having on its inner or front side a convex face extending uniformly from the point of the spur up to the bridge, and hav-

ing on its outer or rear side a concave face extending uniformly throughout the length of the spur from the point up, substantially as described.

5. A spike comprising a shank and head and a laterally-extended bridge, said bridge being narrow and high and having a sugar-loaf shape in cross-section, the thin portion thereof extending centrally and longitudinally of the top of the bridge, as and for the purpose set forth.

6. A spike having a shank, the front face of the shank immediately below the head sloping outwardly, a head, and a laterally-extended flange provided with a depending spur, said spur having a concave rear holding-face, substantially as described.

7. A spike having a laterally-extended supporting-bridge with one or more auxiliary supporting-faces at the rear of the spike and adjacent said bridge and extending laterally beyond the latter.

8. A spike, having an overhanging head, the front face of the shank, immediately below said head, sloping outwardly, and a bridge extending from the back of said shank and head, said shank extending laterally beyond the bridge at the sides of the latter to afford supporting-faces a^5 .

9. A spike, having an overhanging head, the front face of the shank, immediately below said head, sloping outwardly, and a bridge extending from the back of said shank and head, said shank extending laterally beyond the bridge at the sides of the latter to afford supporting-faces a^5 , said bridge having a depending spur at its rear end having a concave rear or outer face.

10. A spike, having an overhanging head, the front face of the shank, immediately below said head, sloping outwardly, and a bridge extending from the back of said shank and head, said shank extending laterally beyond the bridge at the sides of the latter to afford supporting-faces a^5 , said bridge having a depending spur at its rear end having a concave rear or outer face, and a convex inner face.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY H. CUMMINGS.

Witnesses:

GEO. H. MAXWELL,
FREDERICK L. EMERY.