

No. 617,064.

Patented Jan. 3, 1899.

H. TRAUN.  
NAIL, HOOK, OR STAPLE.

(Application filed Dec. 3, 1897.)

(No Model.)

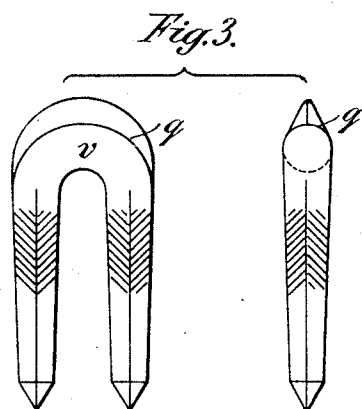
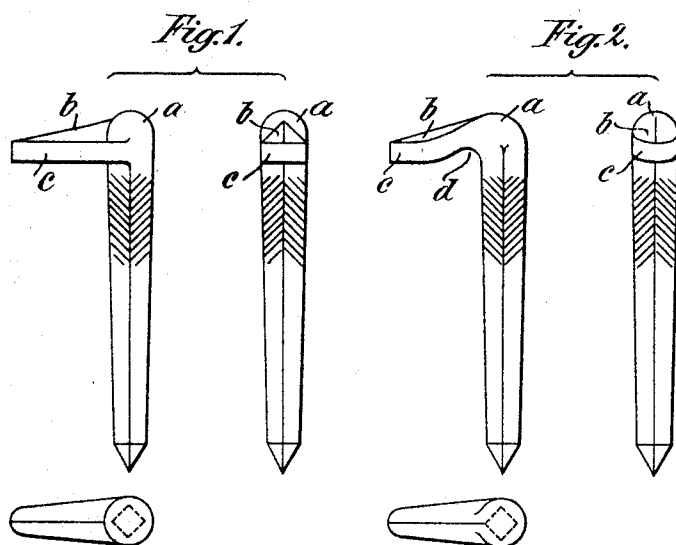
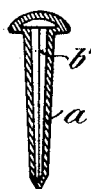


Fig. 4.



Witnesses

Alfred Meier  
Heinrich Neubart

Inventor

Heinrich Traun  
by Eustace Hopwood  
att'y.

# UNITED STATES PATENT OFFICE.

HEINRICH TRAUN, OF HAMBURG, GERMANY.

## NAIL, HOOK, OR STAPLE.

SPECIFICATION forming part of Letters Patent No. 617,064, dated January 3, 1899.

Application filed December 3, 1897. Serial No. 660,700. (No model.)

### *To all whom it may concern:*

Be it known that I, HEINRICH TRAUN, a subject of the Emperor of Germany, residing at Hamburg, in the Empire of Germany, have  
5 invented certain new and useful Improvements in Nails, Hooks, or Staples, of which the following is a full, clear, and exact description.

In connection with electric installations, explosive-factories, and apparatus in use in chemical and many physical laboratories it is often impossible to employ nails of iron or other metal, either on account of the danger of fire or because they are subject to corrosion or they influence disadvantageously certain observations or experiments. Hard rubber or vulcanite is indifferent to all these influences, and the object of the present invention is a nail, staple, hook, or the like which  
20 is made of vulcanite.

Vulcanite in its ordinary form is too brittle for employment in the form of nails, as it would not withstand the blow of the hammer. By a process of vulcanization, however, I have succeeded in imparting to the  
25 vulcanite nails, staples, hooks, and the like sufficient tensile strength and resistance to pressure to enable them to withstand ordinary influences. The extreme limit of strength for a serviceable nail is six kilograms per square millimeter, a degree of strength which has hitherto never been attained in connection with vulcanite.

In order to render the present specification  
35 more easily intelligible, reference is had to the accompanying drawings, in which similar letters of reference denote similar parts throughout the several views.

Figure 1 shows one form of nail in side and  
40 front elevation and plan. Fig. 2 shows similar views of a modified form of nail; Fig. 3, side and front elevations of a staple; Fig. 4,

a vertical section through a combined vulcanite and metal nail.

The comparatively small resisting strength 45 of vulcanite as compared with iron and other metals necessitates a corresponding formation of the nail not only as regards the head, but also with reference to the shank. From the accompanying drawings it will be seen 50 that the latter is considerably thicker than in the case of metal nails. The hook-nail shown at Fig. 1 for securing electric conductors is formed with a peculiarly-shaped head, which is hemispherical, as at *a*, while 55 the hook-shank *c* is provided with a strengthening-rib *b*, extending to the head *a*. In the modification of the invention shown at Fig. 2 the hook-nail is provided with a groove *d*, in which the electric conductor lies. 60

The staple shown at Fig. 3 has thick shanks, and the bend *v* is provided with a strengthening-rib *g*, as shown. In Fig. 4, *b'* is a metal nail, which is first covered with rubber and then vulcanized. The nails, hooks, and the 65 like may be formed to any other convenient shape, as circumstances may dictate or render advisable. In many cases metallic nails thus coated with rubber will serve the same purpose as a solid vulcanite nail. 70

I claim as my invention—

1. As articles of manufacture, a nail, hook, staple or the like of the class specified and made of vulcanite, substantially as described.

2. A vulcanite nail, hook or staple having 75 its shanks provided with strengthening-ribs substantially as described.

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

HEINRICH TRAUN.

Witnesses:

HERMANN COLPE,  
PAUL FISCHER.