

No. 846,548.

PATENTED MAR. 12, 1907.

L. F. CLAR.

ANVIL.

APPLICATION FILED JAN. 5, 1905.

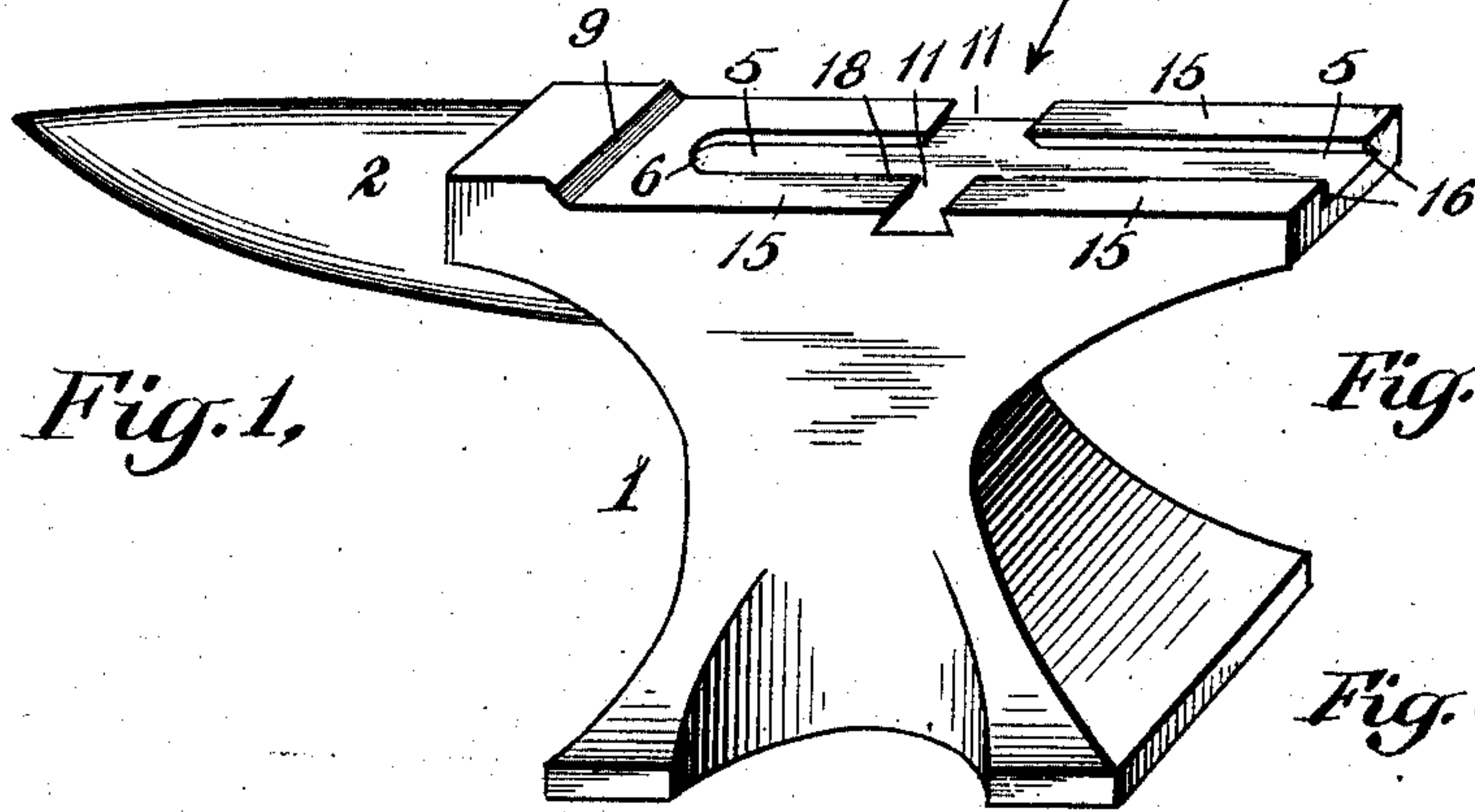


Fig. 1,

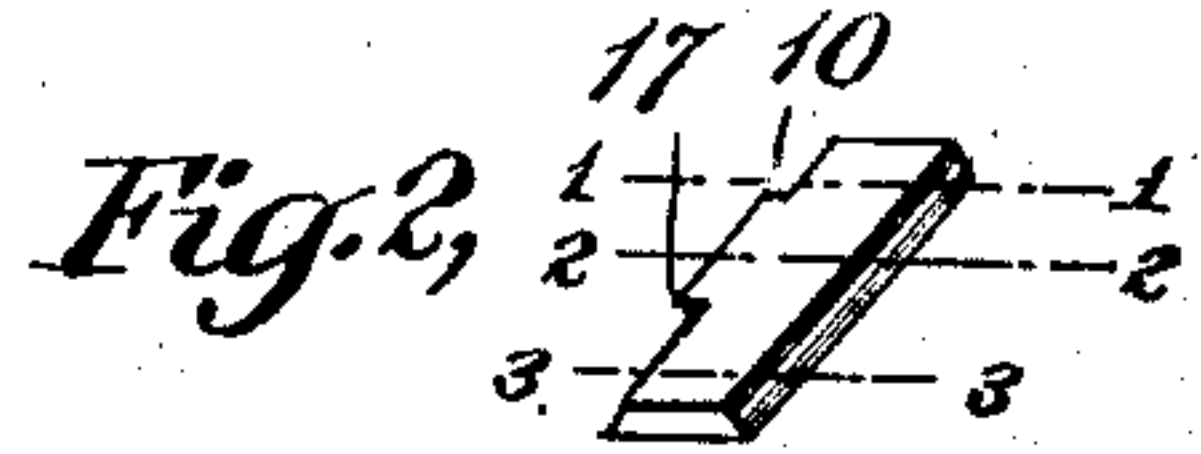


Fig. 2,

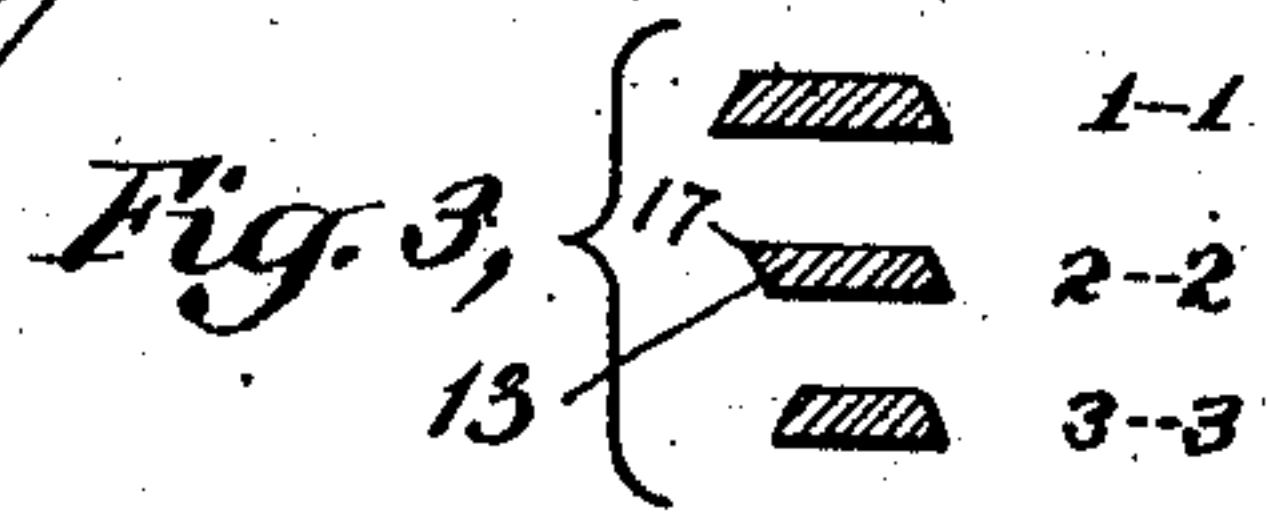


Fig. 3,

Fig. 4,

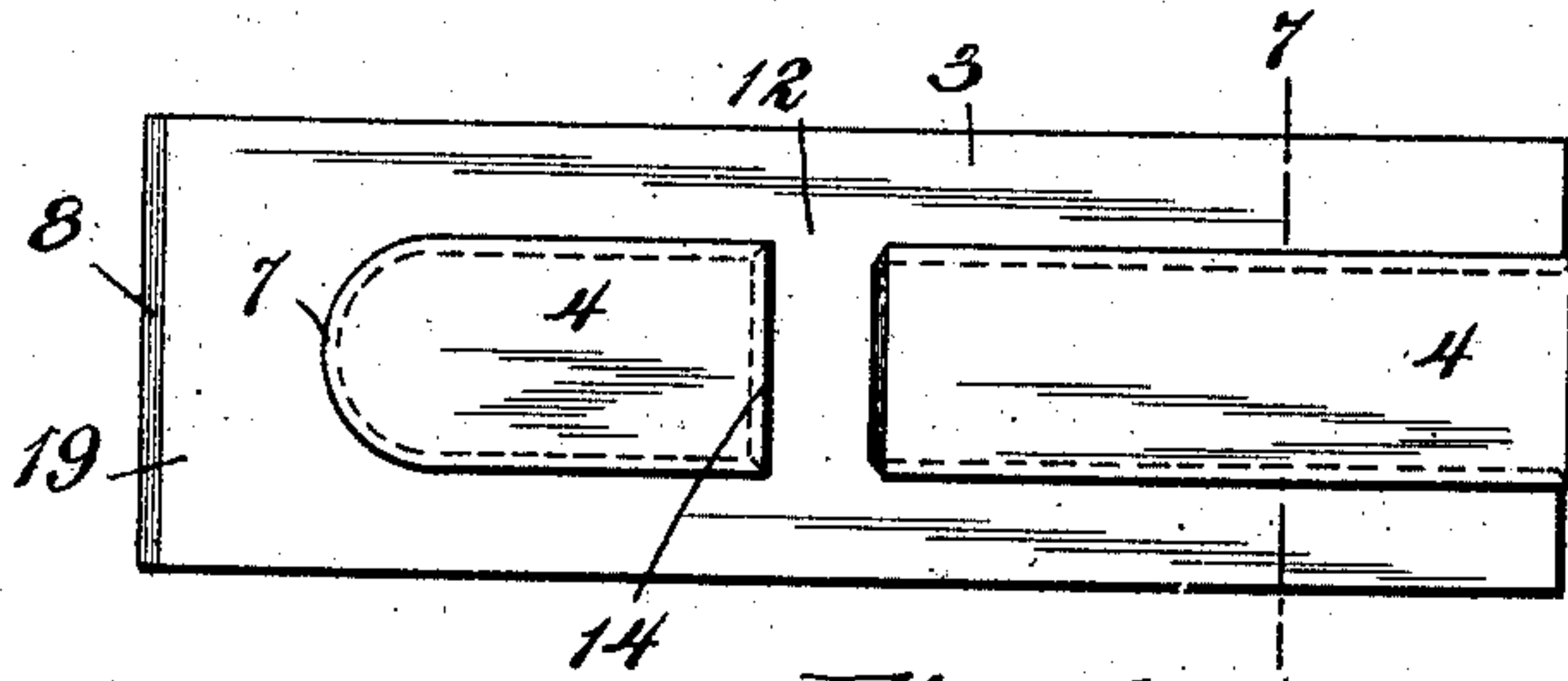


Fig. 6,

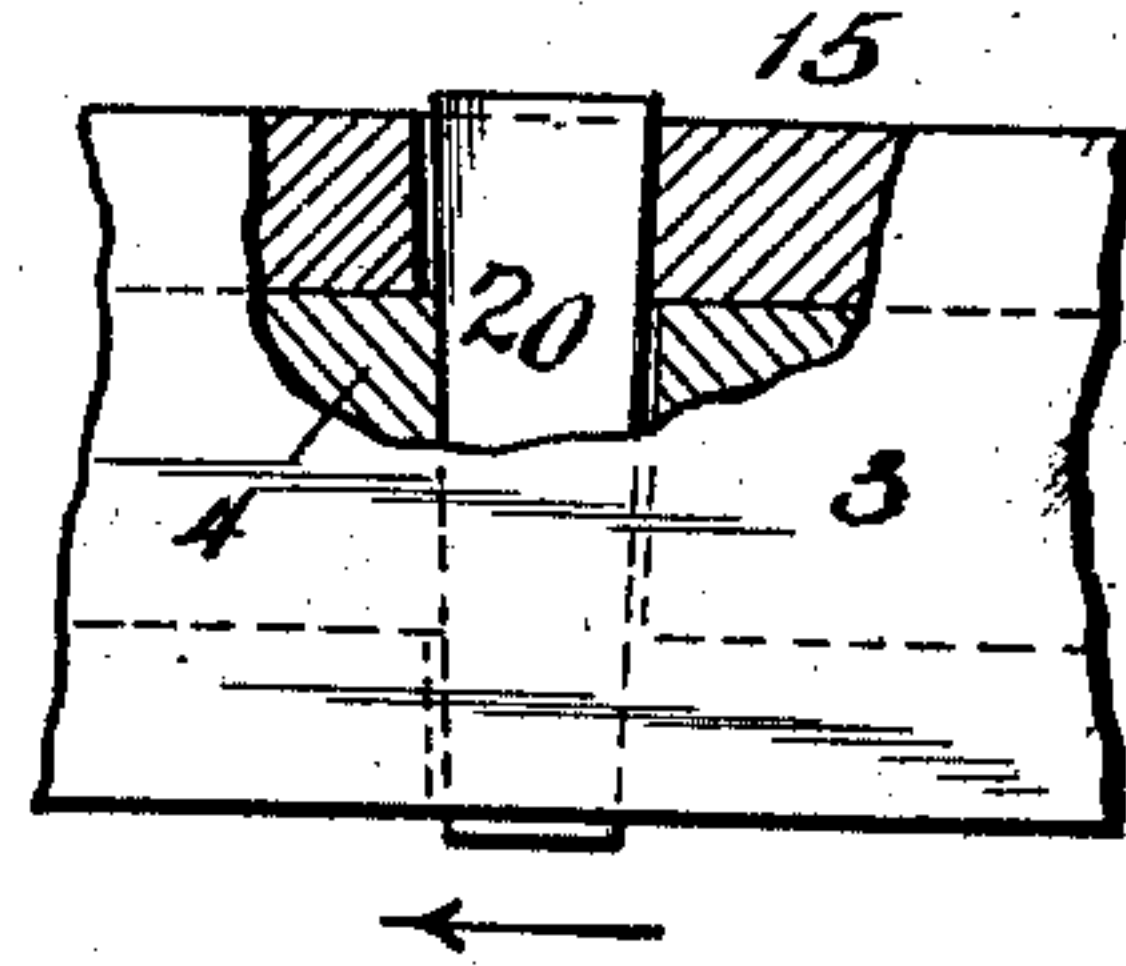


Fig. 5,

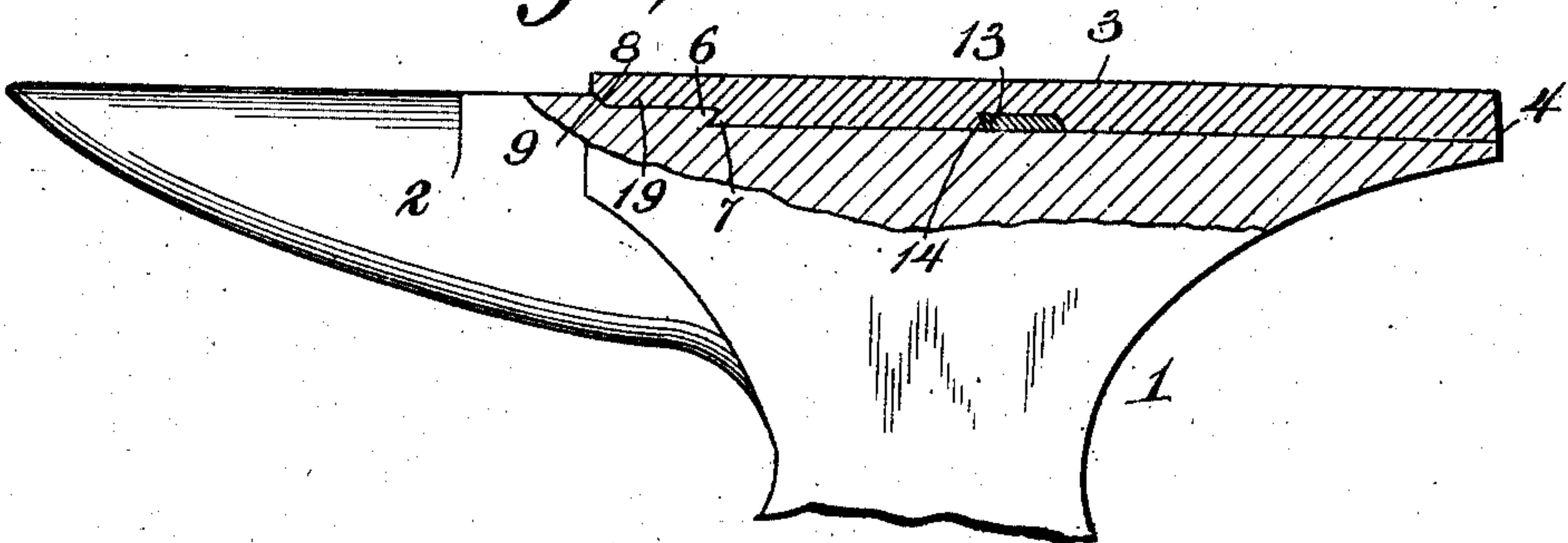
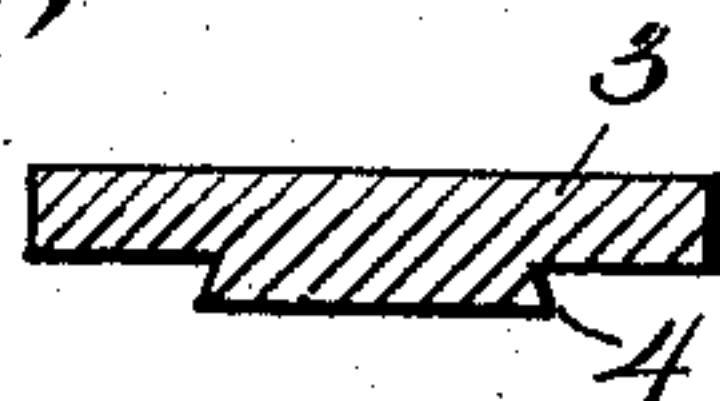


Fig. 7,



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ANVIL.

No. 846,548.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LAURENCE F. CLAR, a citizen of the United States, and a resident of the city of Willits, county of Mendocino, State of California, have invented certain new and useful Improvements in Anvils, of which the following is a specification.

My invention relates to anvils, and more particularly to anvils having a removable face-plate, and has for its objects new and improved means for securing such face-plate to the anvil, and the further object of providing a face-plate which is composite in its nature, whereby the working face of the plate can be made of hard resisting material, whereas the body thereof can be of comparatively soft and easily-workable material.

Some of the forms which my invention may take are shown in the accompanying drawings, of which—

Figure 1 is a perspective view of an anvil modified in accordance with my invention; Fig. 2, a perspective view of a locking-key to secure the face-plate to the anvil; Fig. 3, various sections through 1 1, 2 2, and 3 3, respectively, of Fig. 2; Fig. 4, an underneath view of the face-plate; Fig. 5, a side view of an anvil and face-plate embodying my invention, the same being shown partly in elevation and partly in section; Fig. 6, a top plan view of a face-plate on an anvil with the face-plate partly cut away to show a modified form of key, and Fig. 7 a transverse sectional view along the line 7 7 on Fig. 4.

Describing now the drawings, in which the same numerals of reference designate the same or corresponding parts throughout, the numeral 1 designates an anvil, and 2 the horn thereof. The removable face-plate 3 is secured to the top of the anvil by means of a dovetail joint extending lengthwise of the anvil and comprising the tongue 4 on the bottom of the face-plate and the groove 5 in the top of the anvil. It will be noted that the undercut sides 16 of this groove, coacting with the tongue on the face-plate along its entire length, have the effect of bearing the face-plate and its tongue down into solid contact with the top of the anvil. Extending across the horn end of the groove is an undercut portion 6, which coacts with an overcut portion on the end of the tongue to wedge the horn end of the tongue and face-plate solidly against the anvil when the same are seated thereon.

The numeral 8 designates an undercut por-

tion on the horn end of the face-plate which is adapted to coact in wedging contact with the overcut portion 9 on the anvil.

The effect of the respective wedging actions between the parts 6 and 7 is that the face-plate when driven endwise toward the horn is pulled down at 7, with the result that the horn end of the face-plate, extending beyond the tongue, is held with absolute rigidity. Moreover, the overcut end 7 of the tongue when driven and seated against the undercut portion 6 of the anvil has the effect of wedging the horn end of the tongue and the face-plate hard down against the anvil.

The numeral 10 designates a key which is adapted to be transversely applied through the sides of the anvil bordering the groove and through the tongue of the face-plate by inserting it through the keyways 11 and 12, formed in said sides of the groove and in said tongue, respectively. It will be noted in the construction illustrated in all the figures except Fig. 6 that the key makes dovetail joints with the keyways in the anvil. It will further be noted that in the construction illustrated in said figures the side of the key toward the horn of the anvil is undercut at 13, (see Fig. 3,) where it engages the keyway in the tongue, which keyway on the same side thereof is correspondingly overcut, the result being that when the key is driven home its undercut portion 13 bears the tongue, and consequently the face-plate, down against the anvil and, furthermore, wedges the tongue and face-plate endwise toward the horn, and thereby drives the ends of the tongue and face-plate into wedging contact with their corresponding coacting parts on the anvil. The key 10 will preferably be made tapering, as shown in Fig. 2, this being one way of giving the key a wedging effect on the face-plate to drive it toward the horn.

It will be noted that the projecting part 17 (see Fig. 2) on the key, which, as a matter of fact, is the projecting end of the undercut portion thereof, strikes against the corner 18 (see Fig. 1) of the keyway in one side of the groove in the anvil and prevents the key from being wedged in farther than necessary as it is driven in the direction of the arrow in Fig. 1.

Fig. 6 shows a modification wherein 20 is a flat wedge-shaped key adapted to wedge the tongue and face-plate endwise toward the horn, without having the strong pulling-down tendency of the key shown in Fig. 2, to seat

more firmly the part of the tongue and face-plate through which it passes against the anvil. The key shown in Fig. 2 is therefore for these reasons to be preferred to that shown in Fig. 6, whereas the latter is the cheaper construction.

It will be observed that only one key is shown in the drawings and that it is located at substantially the middle of the face-plate, where presumably most of the work on the face-plate is done; but I do not limit myself to one key in the position shown; but, on the contrary, there may be a plurality of transverse keys located at various positions.

Fig. 7 shows a cross-section of the face-plate wherein the part shown in light shading is meant to designate a hard and otherwise suitable material for the actual working face of the anvil—for example, it may be chrome-steel—whereas the portion shown in dark shading is intended to represent a softer material and one which is easily worked and tooled and may consist, for example, of Swedish iron. The two portions of my composite face-plate may be united by welding or any other suitable means. Thus it will be noted that this composite face-plate permits one to combine all the advantages of an exceedingly hard and otherwise suitable material for the actual working face of the plate and at the same time to have the body thereof—that is to say, the parts which have to be milled and tooled to make same accurately fit the groove in the anvil, the keys, &c.—of a material like Swedish iron, which is soft, easily worked, and conspicuously tough and non-brittle. Moreover, the further advantage accrues from having the bearing and engaging parts of the face-plate and tongue of a comparatively soft material, because the hammering and the work done on such a face-plate will tend to force said material into still closer conformity with all the grooves and resisting parts with which it engages, so that should the fit of the face-plate and tongue not have been perfect before it will become so when the anvil has been put into actual use.

It will be observed that in the constructions illustrated the dovetail connection between the face-plate and the anvil has the tongue on the face-plate and the groove in the anvil. As a matter of fact, however, these parts can of course be reversed without departing from the spirit of my invention, although the form illustrated is to be preferred, among other reasons, because it would unnecessarily weaken the face-plate to have the groove therein.

It will be observed in the device illustrated that the groove in the anvil does not extend so far toward the horn as to weaken that part of the anvil. Since, however, the face-plate must extend farther than the said groove toward the horn to the extent of the portion

19, by which the face-plate overlaps the tongue, and since such overlapping portion is therefore devoid of the securing means of the tongue, it has been necessary to provide other means to hold said overlapping portion securely to the anvil, which means in the preferred construction comprise the coacting parts 8 and 9 and 6 and 7.

It is to be understood with reference to the accompanying claims that it is not the intention to limit the application of the improvements herein or of the claims covering said improvements to anvils of the ordinary type; but, on the contrary, it is intended by the claims to cover the improvements as applied also to other types of anvils, including trip-hammer blocks, &c., and such other devices as my improvements may be applicable to.

Similarly, without enumerating equivalents and without setting forth other forms which my improvements may take, what I claim is—

1. In an anvil with a removable face-plate the combination of a face-plate member, comprising a plate and longitudinal tongue secured thereto; an anvil having a longitudinal groove adapted to receive said tongue to form a dovetail joint between said face-plate member and the anvil which is adapted to pull said member against the anvil; a transversely-undercut portion on the anvil into which a portion of the face-plate member is adapted to come in wedging contact to pull same against the anvil; and means adapted to drive and hold said face-plate member in wedging contact with said undercut portion.

2. In an anvil with a removable face-plate the combination of a longitudinal, tongue-and-groove connection between the face-plate and the anvil; a transversely-undercut portion on the anvil at one end thereof and adapted to coact in wedging contact with the end of the tongue when the face-plate is seated; and means comprising a tapering key extending through transverse keyways in the anvil and tongue, and adapted to drive said end of the tongue into said undercut portion on the anvil.

3. In an anvil with a removable face-plate the combination of a face-plate member comprising a plate and longitudinal tongue secured thereto; an anvil having a longitudinal undercut groove opening endwise and adapted to receive said tongue and to permit endwise engagement and disengagement thereof, but to prevent lateral movement, and also removal in a vertical direction from the anvil; a raised portion on the anvil adapted to wedge under a portion of the face-plate member when said member is driven toward one end thereof and seated; and means comprising a key adapted to wedge and hold the face-plate member in wedging position.

4. In an anvil with a removable face-plate

the combination of a face-plate member comprising a plate and a tongue extending along the length of said plate but not fully to one end thereof; an anvil having an undercut groove adapted to receive said tongue to form a dovetail joint between the face-plate member and the anvil; the said groove extending lengthwise of the anvil but not any substantial distance into the horn of the anvil; a transversely-undercut portion on the anvil into which the end of the tongue is adapted to come in wedging contact; a raised portion on the anvil adapted to wedge under that part of the plate extending beyond the tongue when the face-plate member is driven toward the horn and at the same time that the aforesaid undercut portion on the anvil and said tongue come into wedging contact.

5. In an anvil with a removable face-plate the combination of a face-plate member comprising a plate and longitudinal tongue secured thereto, an anvil having a longitudinal undercut groove opening endwise and adapted to coact with said tongue to permit endwise insertion and removal of the tongue in said groove but to prevent lateral movement and also removal in a vertical direction; a transversely-undercut portion on the anvil into which a portion of the face-plate member is adapted to come in wedging contact to pull same against the anvil; and means adapted to drive the face-plate member simultaneously both down against the anvil and endwise into said undercut portion and to maintain said member in the driven positions.

6. In an anvil with a removable face-plate the combination of a face-plate member comprising a plate and longitudinal tongue secured thereto; an anvil having a longitudinal undercut groove opening endwise and adapted to receive said tongue and to prevent removal thereof in all directions except endwise; a key adapted to be inserted into transverse keyways in the anvil and said tongue, said key where it coacts with the keyway in the tongue being undercut to drive said tongue down against the anvil and tapering to drive said tongue endwise toward one end of the anvil; and an abutment at said end of the anvil.

7. In an anvil with a removable face-plate the combination of a face-plate member comprising a plate and a longitudinal tongue, a longitudinal undercut groove in the anvil opening endwise and adapted to receive said tongue and prevent removal thereof in any direction except endwise; the keyways 11

and 12 through the sides of the anvil and the tongue respectively and the key 10 having end portions provided with oppositely-inclined edges and a middle portion provided with edges inclined in the same direction, one of which constitutes the undercut edge 13.

8. In an anvil with a removable face-plate the combination of an anvil having the longitudinal groove 5, the face-plate member 3 comprising the tongue 4 cut short so as to leave a portion 19 extending beyond the tongue; the undercut portion 6 coacting with the portion 7 on the tongue; the undercut portion 8 on the extension part of the face-plate coacting with the portion 9 on the anvil, and means comprising a tapering key adapted to be inserted through transverse keyways in the anvil and the tongue on the face-plate and further adapted to wedge the face-plate toward said undercut portion 6.

9. In an anvil with a removable face-plate the combination of an anvil having the longitudinal groove 5, the tongue 4 on the face-plate, the undercut portion 6 in the anvil adapted to coact with the portion 7 on the tongue; and means comprising a tapering key with an undercut edge, said key being insertible through the anvil and the tongue and adapted to pull the face-plate against the anvil and drive it toward said undercut portion 6.

10. In combination, an anvil; a composite removable face-plate comprising a hard material suitable for a working face integrally combined with another softer material suitable for the body portion of the face-plate; a tongue formed in the said softer material of the face-plate; and said anvil being provided with a groove with which said tongue is adapted to engage.

11. In an anvil with a removable face-plate, the combination of a face-plate member comprising a plate and longitudinal tongue secured thereto; an anvil having a longitudinal groove adapted to receive said tongue to form a dovetailed joint between the face-plate member and the anvil; means comprising a tapering key working in keyways in the anvil and adapted to drive and hold said face-plate member into contact with an abutment located in the path of the face-plate member; and said abutment.

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

LAURENCE F. CLAR.

Witnesses:

E. P. CONNELLY,
A. C. MOYCE.