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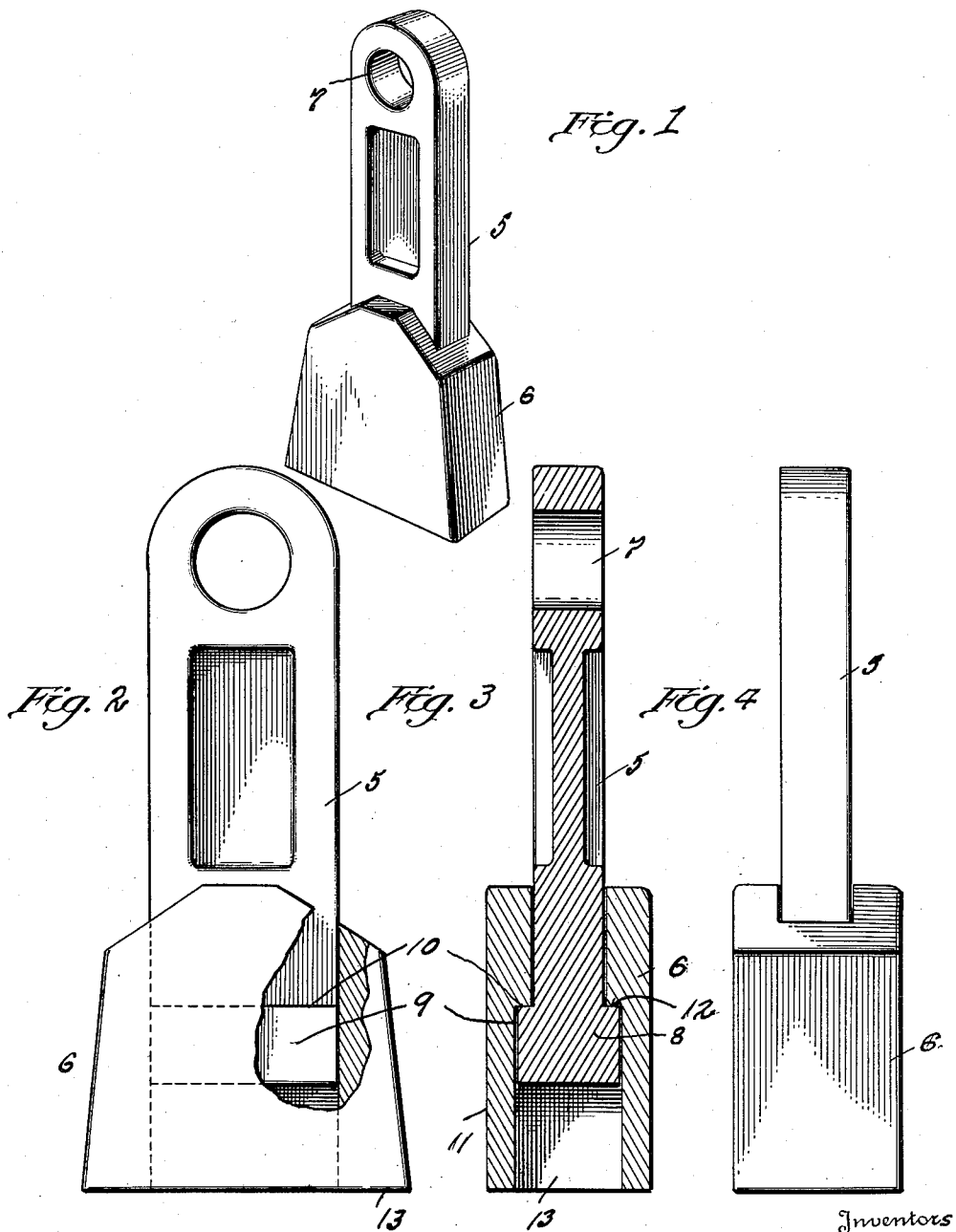
J. C. TAYLOR, JR., ET AL

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SECTIONAL HAMMER FOR GRINDING MILLS

Filed Feb. 11, 1932

2 Sheets-Sheet 1



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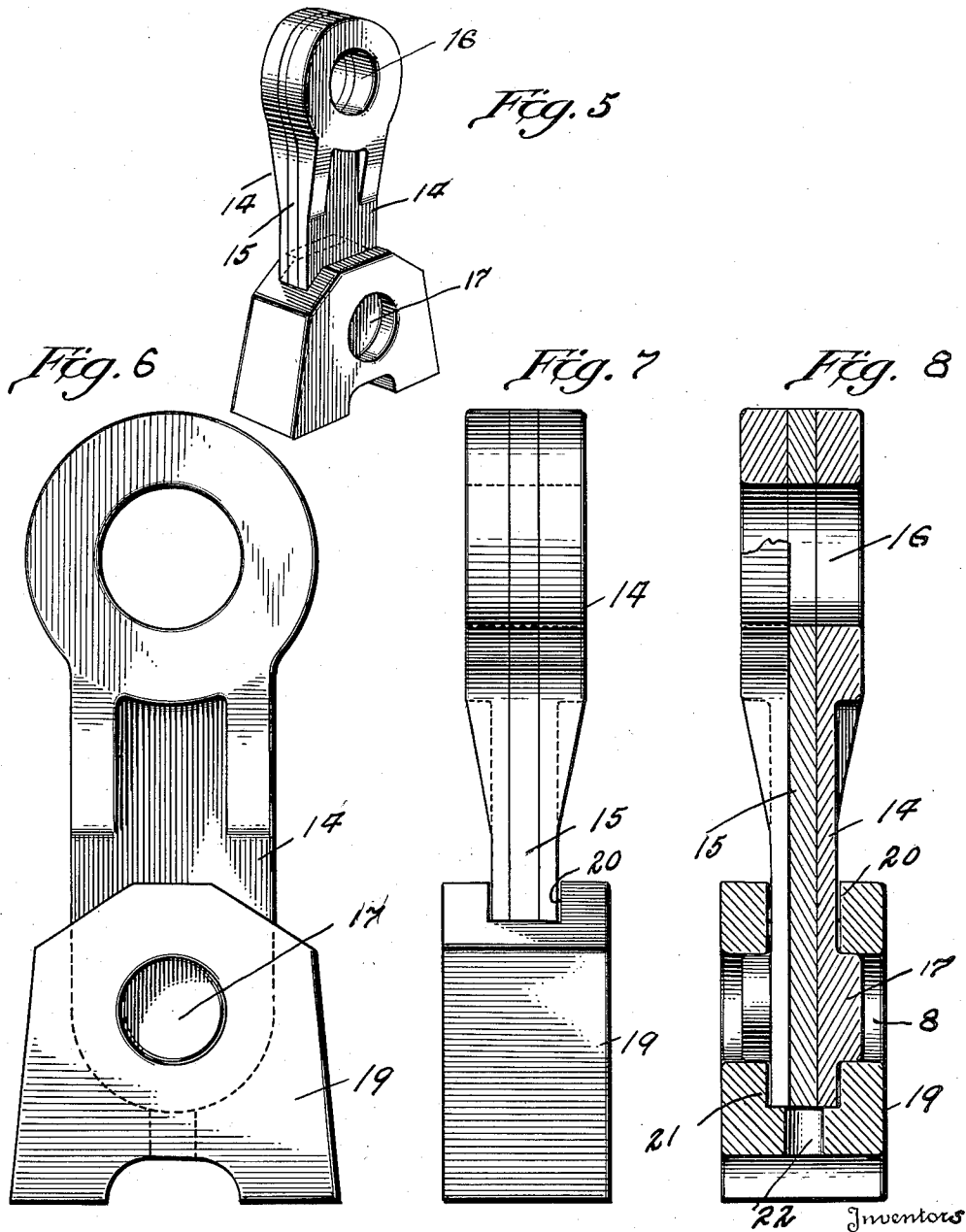
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SECTIONAL HAMMER FOR GRINDING MILLS

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SECTIONAL HAMMER FOR GRINDING MILLS

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2 Claims. (Cl. 83-11)

The invention relates to grinding mills of the rotary pivoted hammer type.

For many years it has been standard practice to employ sectional hammers which essentially embody a shank and a hammer head or tip removably secured to the shank, as by bolts or rivets. Under some conditions of grinding, the tips suffer rapid wear and require to be replaced at frequent and short intervals and this is costly in time, material and labor, and, even when the wear is not consistently rapid, there is objection to the use of bolts, rivets and the like fastenings for that they often break or work loose and so release the tip, thus interrupting the continuity of grinding action if not resulting in serious damage to the mill.

Hence, our invention has as its ultimate object the obviating of the disadvantages aforementioned and the attainment of this object by the intermounting or assembly of the sectional parts of rotary pivoted hammers, that is to say, the shanks and tips, in such way as to dispense with the use of bolts, rivets and other fugitive and extraneous fastenings and in such way that the parts are mated for rapid and facile interlocking and are considerably strengthened to meet the wear and tear of service.

The nature, characteristic features and scope of the invention more readily will be understood from the following detailed description taken in connection with the accompanying drawings, forming a part hereof, wherein

Figure 1 is a perspective view of a pulverizing hammer embodying interlocking shank and tip elements embodying our invention.

Fig. 2 is a side elevational view with the tip partly broken away.

Fig. 3 is a longitudinal sectional view showing the parts in interlocking relation.

Fig. 4 is an edge view.

Fig. 5 is a perspective view of a modified form of sectional hammer.

Fig. 6 is a side elevational view thereof.

Fig. 7 is an edge view and

Fig. 8 is a longitudinal sectional elevational view of the modified structure, Figs. 5, 6 and 7.

In that form of our invention, Figs. 1 to 4, and manifestly, perhaps, the simplest solution of the problem, the hammer embodies two parts, namely, a shank 5 and a replaceable or removable hammer head 6. Shank 5 is an elongated bar formed at one end with an eye 7 for cooperation with means as usual for the pivotal mounting of the hammer on the rotary part of the mill.

The other end of the shank is enlarged by a

T-head 8 defined by lateral offsets 9 with substantially square shoulders 10. The replaceable hammer head or tip 6 is a shell or chambered structure adapted to telescope or be slidably fitted to the shank and mutually to interlock therewith, its cheeks 11 having abutments or shouldered portions 12 which come to rest upon the arms of the T-head of the shank.

The end walls 13 of the tip are of relatively heavy section, the section increasing towards the extremity to resist upsetting or battering over of the end of the tip, the effect of which would make it more or less difficult to remove a worn tip. However, should the tip be jammed, it could be burned off.

It will be understood, therefore, that in both types of hammer construction the shell of the tip or head of the hammer is reinforced; and it is a further merit of the invention that intermediate the thickened or reinforced end walls there is a slot or cavity which is effective to absorb cold flow of metal in service.

Figs. 5 to 8 illustrate a modification of the telescopic mutual interlock. In this embodiment the shank is of sectional form and comprises shank mates 14 and a distance piece, spacer or spreader 15 having registered openings 16 for the usual pivotal connection. The mated shank elements 14 have side bosses 17 to engage corresponding recesses or openings 18 of the telescopic tip 19.

Tip 19 has an entering slot 20 for the mated shank elements and their spreaders and beyond the same is formed a recess 21 to accommodate the terminals of the shank elements, the recess 21 being continued as an opening 22 to admit a punch or other driving tool to start the spreader in the event of tightness when it becomes necessary to remove a worn tip. The boss receiving pockets, likewise, are by preference open to the clear to facilitate the use of a hammer or other implement in ejecting the shank mates preparatory to changing tips.

In assembling the modified structure, the shank mates 14 are entered singly into the tip and, when their bosses are duly lodged, the spreader 15 is inserted between the elements 14 and driven home and thus operates to hold the parts in interlocking relation.

Having described the invention, we claim:—

1. A take-apart hammer for grinding mills, comprising a laminated structure including half shank members and an intermediate core or spreader, and a detachable tip for the shank, said tip being of shell construction and having a slot through which the shank laminations are separated.

rately introducible, the core being introducible along with the shank laminations and effective to establish driving fit thereof with respect to the tip.

- 5 2. A take-apart hammer for grinding mills, comprising a laminated structure including half shank members and an intermediate spacer or spreader, and a detachable tip for the shank, said tip being of shell construction and having a slot

through which the shank laminations are separately introducible, the spreader being introducible along with the shank laminations and effective to establish driving fit thereof with respect to the tip, the tip having end and side openings to permit proper tool manipulation in order to separate the parts. 5

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