

April 25, 1933.

C. A. SCHRANZ

1,905,653

PLUG FOR STEAM PLATENS AND OTHER METALLIC ARTICLES

Filed May 8, 1931

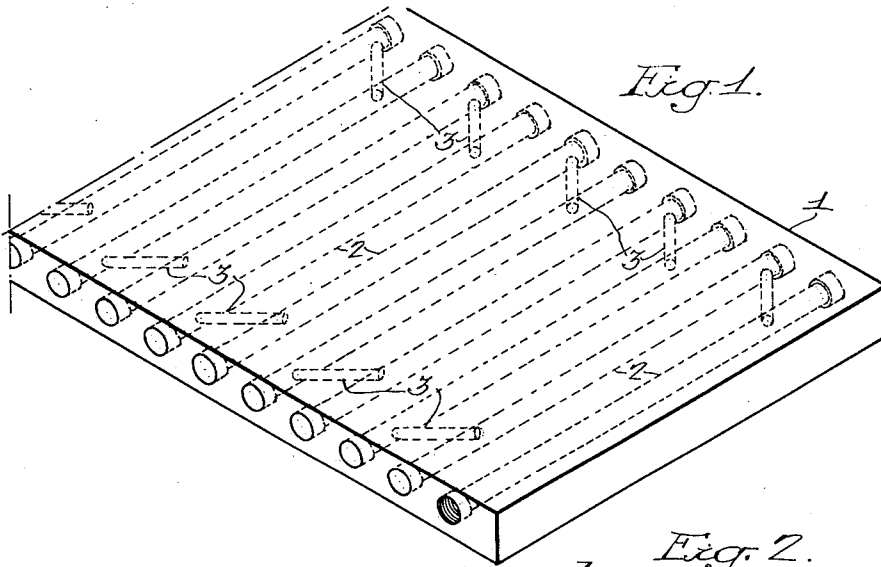


Fig. 1.

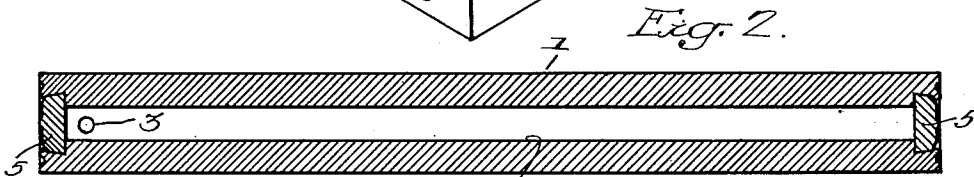


Fig. 2.

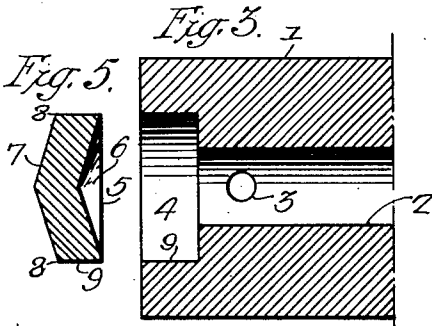


Fig. 3.

Fig. 5.

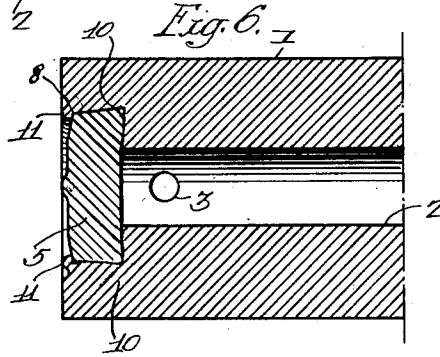


Fig. 6.

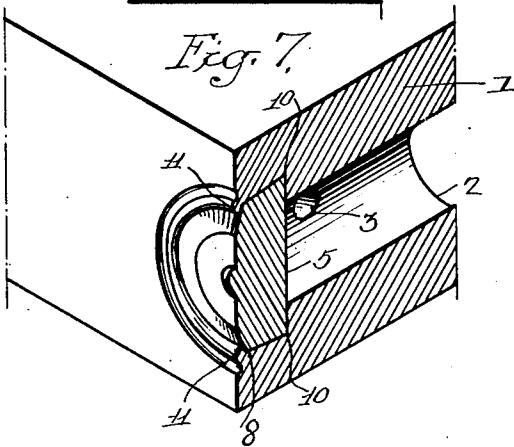


Fig. 7.

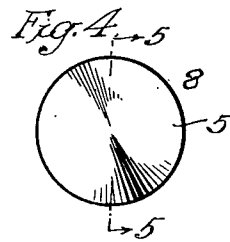


Fig. 4.

Inventor:
Charles A. Schranz
by his Attorneys

James M. Schranz

UNITED STATES PATENT OFFICE

CHARLES A. SCHRANZ, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO WALTER WOOD (TRADING AS R. D. WOOD & COMPANY), OF PHILADELPHIA, PENNSYLVANIA

PLUG FOR STEAM PLATENS AND OTHER METALLIC ARTICLES

Application filed May 8, 1931. Serial No. 536,064.

My invention relates to certain improvements in plugs for closing openings in metallic objects and the invention particularly relates to improvements in steam platens used with hydraulic and power presses for the manufacture of rubber, bakelite and other plastic products.

The invention can also be used with presses for making laminated glass, and while the invention is particularly adapted for closing steam channels in platens, it will be understood that the invention can be used for closing passages or other openings in metallic objects where the plug is of a metal harder than that of the metallic object.

One object of the invention is to provide plugs for the ends of holes in a platen or other object which are either drilled or otherwise formed and which will not become loose or leak steam due to expansion or contraction of the metal or the mechanical defects of the plug.

A further object of the invention is to make the plug of a metal harder than the metal of the platen or other object so that when the plug is forced into the channel or other opening the plug will displace the metal of the platen and imbed itself in the platen.

A further object of the invention is to so design the plug that when the plug is forced into the opening in the platen, a portion of the metal of the platen will extend over the plug forming an additional means for preventing leaks. This overlapping portion of the metal can be also used for caulking the plug in the case of a defect.

In the accompanying drawing:

Fig. 1 is a perspective view of a portion of a steam platen illustrating my improved means for closing the channels in the platen;

Fig. 2 is a transverse sectional view through one of the steam channels in the platen and showing the plugs applied in accordance with my invention;

Fig. 3 is an enlarged sectional view of a portion of a platen, showing the steam channel counterbored to receive the plug;

Fig. 4 is an end view of the plug;

Fig. 5 is a sectional view on the line 5-5, Fig. 4;

Fig. 6 is an enlarged view showing the plug in position in the platen after being forced therein by pressure, which pressure flattens the plug; and

Fig. 7 is an enlarged sectional perspective view showing a portion of a platen, the plug being in position and the outer edge of the counterbore flanged over the plug.

In the present instance, 1 is a steam platen having a series of steam passages 2 therein, the alternate steam passages on each side being connected by cross channels 3, the channels on one side of the platen alternating with those on the opposite side so that the steam will circulate through the platen. As shown in Fig. 3, the steam passages 2 in the platen 1 are counterbored as at 4 to provide a seat 12 for the plug 5, shown in Figs. 4 and 5. This plug in the present instance is in the form of a conical disk and is of harder metal than the platen. The plug has a conical recess 6 in one side and a corresponding conical projection 7 on the opposite side. The edges 8 of the plug conform to the inner walls 9 of the counterbore 4 and the plug is of the same diameter as the counterbore, so as to fit neatly therein.

When pressure is applied, by a suitable die, on the plug, the plug will be forced against the seat 12 with such force that it will imbed itself in the seat as shown in Fig. 6, and as it is straightened out the edges 10 of the plug will be forced into the metal of the wall 9 of the counterbore, as clearly shown in Fig. 6. The die which forces the plug in the counterbore, is preferably of less diameter than the plug, as shown by dotted lines in Fig. 6, so that the inner portion 10 of the plug will be forced into the wall of the counterbore at a greater depth than the outer end of the plug, so that the periphery of the plug is tapered, when driven in position, and the walls of the counterbore conform to this taper, making it impossible for the steam pressure to dislodge the plug after it is once forced into position.

It will be noticed that the thickness of the

plug is slightly less than the depth of the counterbore, so that the outer edge 8 of the plug will be forced into the metal of the platen below the outer surface thereof. The die is so shaped that when pressure is applied to force the plug into the position shown in Figs. 6 and 7, the outer edge of the counterbore will curl over the plug, as shown at 11 and this flange tends to form additional means not only for holding the plug in position, but also provides additional means to prevent leakage. The plugs, which are made of harder metal than the platen, are machined to a conical shape from a solid steel bar, but it will be understood that they can be otherwise shaped without departing from the essential features of the invention. It has been found that steam platens with the plugs made in accordance with my invention will not be affected by expansion or contraction due to temperature changes caused by heating or curling of the platen, and the plug remains tight at all times.

I claim:

The combination of a metallic object having a channel therein, the end of the channel being counterbored, forming a seat for a plug; and a plug of metal harder than the metal of the object and of substantially frusto-conical form having its base contacting the seat formed by the counterbore and its sides impacted in the metal of the object.

CHARLES A. SCHRANZ.

35

40

45

50

55

60

65