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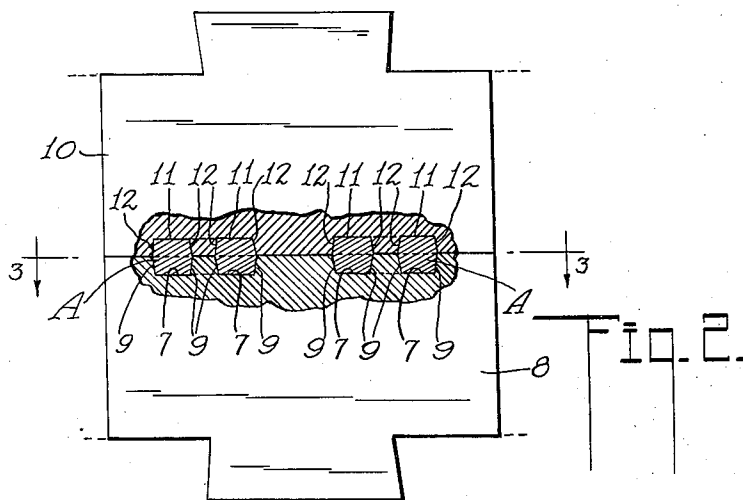
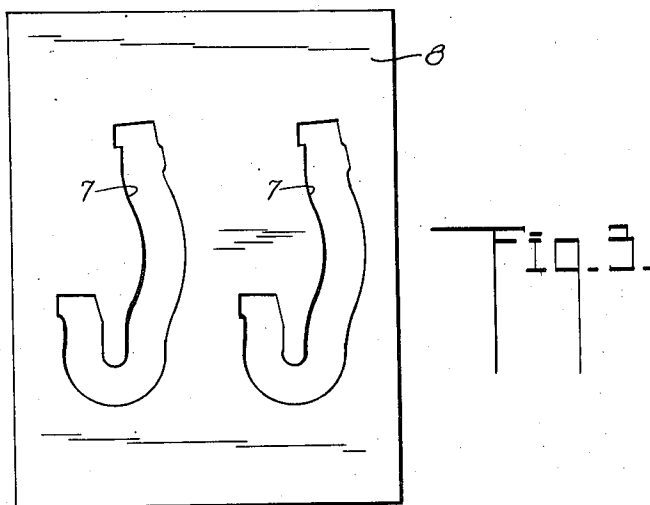
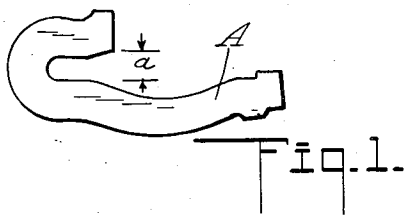
F. A. MACDONALD

2,197,223

DIE FOR RESIZING RAIL ANTICREEPERS

Filed Jan. 15, 1938

2 Sheets-Sheet 1



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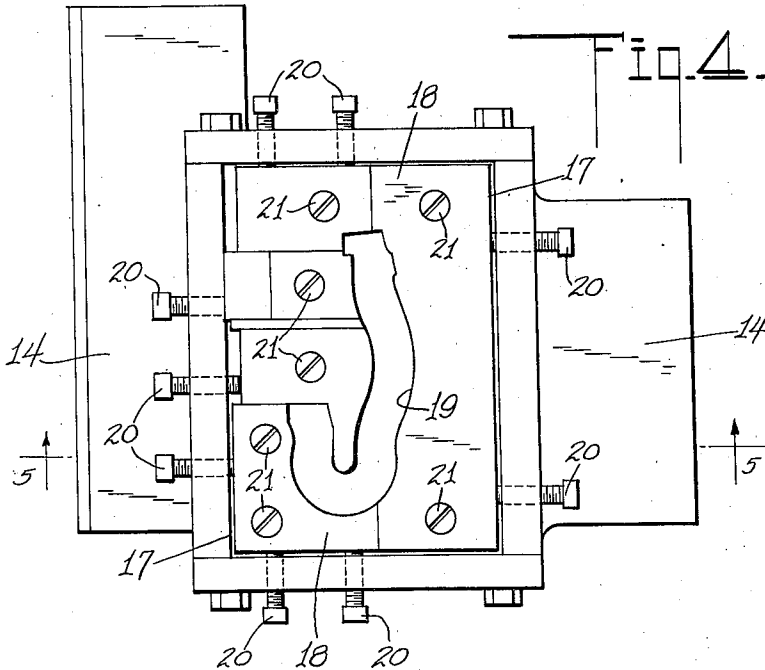
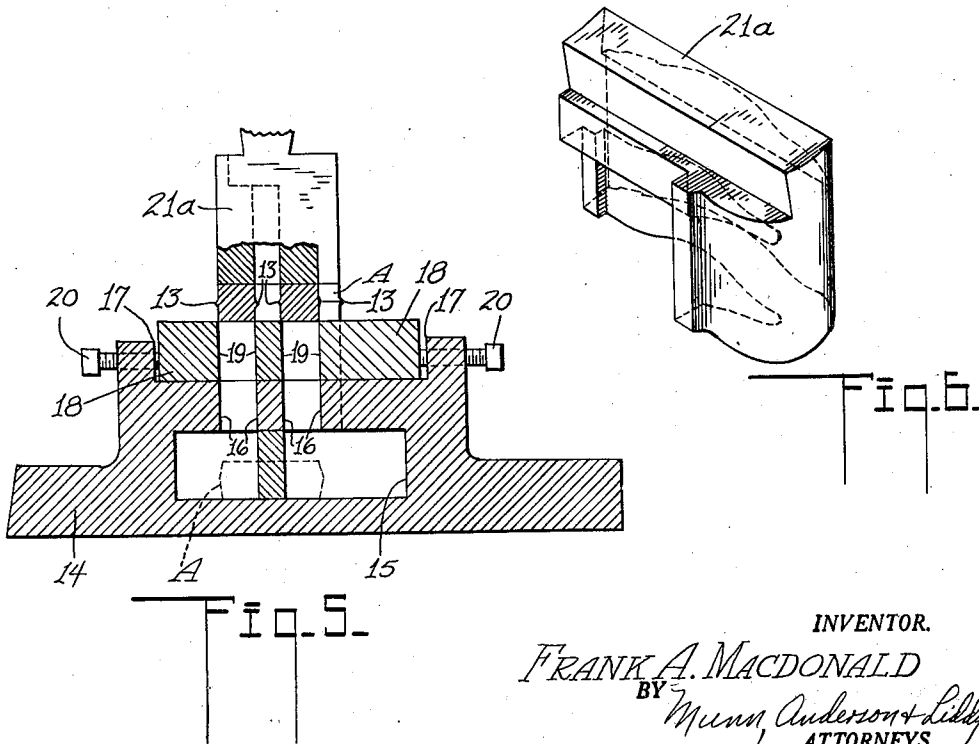
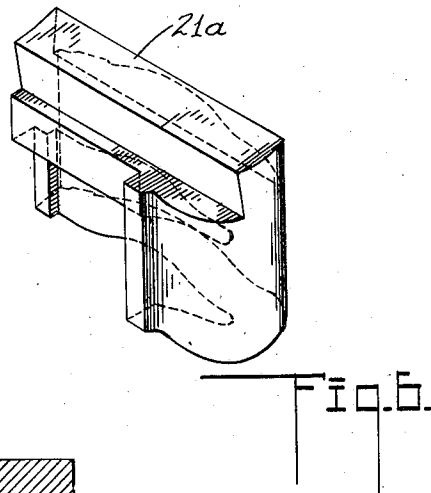
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DIE FOR RESIZING RAIL ANTICREEPERS

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2 Sheets-Sheet 2



INVENTOR.

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UNITED STATES PATENT OFFICE

2,197,223

DIE FOR RESIZING RAIL ANTICREEPERS

Frank A. Macdonald, San Francisco, Calif., assignor to Kortick Manufacturing Company, San Francisco, Calif., a corporation of California

Application January 15, 1938, Serial No. 185,167

2 Claims. (Cl. 78—60)

My invention relates to improvements in dies for resizing rail anticreepers, and it consists of the combinations, constructions and arrangements hereinafter described and claimed.

It has been the practice to place anticreepers on rails and to cause these creepers to abut the rail ties so that the creeping of the rails will be reduced to a minimum. These anticreepers are designed to fit a standard rail such as, for example, an eighty-five pound rail.

Recently new engines have been placed on railroads which travel at a substantially increased speed over other locomotives, and it is necessary to increase the weight of the rails in order to withstand this increased speed of the rolling stock. For example, the rails are being changed from eighty-five pounds to one hundred pounds, and this of course increases the cross-sectional area of the rail. The anticreeper used on rails of eighty-five pounds cannot be used on rails of one hundred pounds. Hundreds of thousands of these eighty-five pound anticreepers therefore must be replaced by new anticreepers which can be attached to a one hundred pound rail. Various experiments have been tried for altering an eighty-five pound anticreeper to a one hundred pound anticreeper without success.

The principal object of the present invention is to provide a pair of dies whereby the eighty-five pound anticreeper can be changed to a one hundred pound anticreeper, and thus save the cost of destroying all of the old anticreepers and substituting new ones therefor. Although I have used the numbers "eighty-five pounds" and "one hundred pounds" I do not wish to be confined to them, because it is possible to alter the anticreepers to other dimensions.

The lower die has a recess in the shape of the larger anticreeper size. This recess will partially receive the eighty-five pound anticreeper and will maintain it in proper position beneath the top die. The anticreeper is heated prior to placing it in the recess. The top die has a recess corresponding to and cooperating with the recess in the lower die so that when the two dies are brought together, they will cause the heated metal of the anticreeper to flow into the form of the die cavity provided by the two recesses and take upon itself new and slightly larger dimensions, but retain substantially its original shape.

A trimming die is used for removing any flashing formed on the rail anticreeper during the enlarging process. The process or method is set forth and claimed in my co-pending applica-

tion on a method of altering rail anticreepers, Serial No. 78,649, filed May 8, 1936.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings, forming a part of this application, in which

Figure 1 illustrates an anticreeper enlarged by the dies;

Figure 2 is a front elevation of the upper and lower dies used for altering the shape of the anticreeper, and a portion of this figure is broken away;

Figure 3 is a plan view of one of the dies as seen at 3—3 in Figure 2;

Figure 4 is a plan view of the trimming die;

Figure 5 is a section along the line 5—5 of Figure 4, showing the altered rail anticreeper positioned ready to be forced through the trimming die; and

Figure 6 is an isometric view of the upper trimming die.

In carrying out my invention I show in Figure 1 a standard type of a one-hundred pound rail anticreeper indicated generally at A. This rail anticreeper has been increased in length, and the shape has been altered slightly from an eighty-five pound rail anticreeper in accordance with the showing of my co-pending application.

The rail anti-creeper has an inherent spring quality sufficiently strong to frictionally grip a rail base (not shown) and therefore can be held against movement along the rail base. The anticreeper contacts with a rail tie (not shown) and prevents the creeping of the rail.

Figure 1 shows the rail anticreeper A after being altered. In altering the device from an eighty-five pound rail anticreeper to a one hundred pound rail anticreeper, the width of the slot *a* is increased and the overall length of the device is increased. The thickness of the device is less.

I will now describe the various steps taken in altering the rail anticreeper. The device A first is heated to a forging heat, and then is placed in a recess 7 formed in a lower die 8, see Figures 2 and 3. In these figures I show two similar recesses 7 for re-shaping two of the devices A. It is obvious that the number of recesses in a single die may be altered at will. The recesses 7 are of the shape which the device is to take. The depth of the recess 7 is equal to a little less than one-half of the thickness of the rail anticreeper be-

fore it is altered. The side walls of the recess 7 shown at 9 are provided with the proper draft.

The upper die 10 that cooperates with the lower die 8 is also provided with complementary recesses 11. These recesses are of the same shape as the recesses 7, and also are provided with side walls 12 of the proper draft.

The lower die 8 is mounted in a support not shown, and the upper die is secured to a drop forging hammer not shown. The rail anticreeper after being heated to the proper temperature, is placed in the recess 7 and the shape of the device is so close to that of the recess 7 that the recess will act as a retaining means for holding the device against accidental displacement.

The upper die 10 is now allowed to drop with sufficient force to press the device into the two recesses 7 and 11 that now constitute the forming die. This operation changes the device to the size shown at A in Figure 1. The elongation of the device is made possible by a slight reduction in the cross sectional area of the metal. This is due to the fact that the die cavity or recess is slightly oversize in length and undersize in depth as compared with the original eighty-five pound rail anticreeper. The result is that the heated anticreeper when subjected to the force of the drop hammer, is flowed into the new die cavity and assumes its changed form. A certain amount of flashing indicated at 13 in Figure 5 is formed around the sides of the device where the two dies 8 and 10 meet.

The next operation is to remove this flashing, and I show a trimming die for this purpose, in Figures 4, 5, and 6. The base 14 of the trimming die shown at Figure 5 is provided with a compartment 15 for receiving the trimmed device A indicated by the dotted lines in this figure. Immediately above the compartment 15, the base 14 is formed into a slot 16 that takes the same general shape of the device A. The base 14 is also provided with a depression 17 for receiving the trimming die indicated generally at 18. Figure 4 shows the trimming die 18 shaped to provide a slot 19 of exactly the same shape and size as the device A.

The die 18 consists of a number of parts that may be adjusted by means of set screws 20, and then may be held in place by means of other screws 21, or other suitable fastening means. In this way wear can be taken up.

The device A with the flashing is placed on the die 18 so that it may be forced through the slot 19 of the trimming die. The upper die 21a, used for forcing the device A through the trimming die, is shown in Figures 5 and 6. The isometric view in Figure 6 illustrates how the lower end of the upper die 21a takes the same shape as the device A and is designed to force the device A through the trimming slot 19 and on down past the opening 16, and into the compartment 15. The die 21a is secured to a trim press, not shown, or other suitable means, and is moved with sufficient force to cause the device B to be trimmed of its flashing as the device is moved through the trimming die 18.

The trimmed device A then is removed from

the compartment 15 and is heat treated to harden it to a sufficient hardness. The device now is ready to be used on a larger type railroad rail.

It should be noted that parts of the lowermost die 8 actually cooperate with the heated anticreeper in establishing and maintaining its position beneath the top die. If this were not true, the creepers might be misplaced on the lower die, and the top die 10 is striking its blow would not only reshape the creeper in a wrong manner, but the machinery would also be damaged because of the excessively large flashing between the dies and outside of the die cavity. The shape of the lower die will act as a positioner for the heated creeper and will cooperate with the upper die to extend the length of the creeper and reduce its cross section. The coming together of the two dies will actually cause the heated material of the creeper to be flowed into the new die cavity. The creeper will take upon itself new and slightly larger dimensions, but will retain substantially its original shape.

The cost of converting a rail anticreeper, is such that a substantial saving can be made by the railroads in reclaiming anchor clips that are now being thrown away as useless.

While I have shown only the preferred form of my invention, it should be understood that various changes or modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A pair of cooperating dies for altering the dimensions of a rail anticreeper, each die having a recess slightly larger in shape than the anticreeper to be altered, that is, it is oversized in length and undersized in depth so that when the dies are brought together with a rail anticreeper therebetween, the metal in the anticreeper will be flowed into the new shape defined by the two aligned recesses, the recess in one of the dies acting as a positioning means for the anticreeper which is to be altered, and the recesses in both dies being provided with sufficient draft to aid in the flowing of the metal and to permit the ready removal of the anticreeper from the die cavity.

2. A pair of cooperating dies for increasing the length of the anticreeper and for enlarging the slot entrance to the hook-shaped end of the creeper, each die having identical and cooperating recesses shaped for receiving and positioning the old anticreeper, each recess having an elongated portion longer than the elongated portion of the creeper and having a hook-shaped portion with a greater space between the end of the hook and the elongated portion than between similar portions in the creeper, the combined height of the two recesses being slightly less than the thickness of the creeper to be altered, the walls of the recesses having sufficient draft to aid in flowing the metal of the creeper into the new shape defined by the cooperating recesses and to permit the ready removal of the altered anticreeper from the die cavity.

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