June 2, 1936. D. S. BARROWS 2,043,090

STRIKING CASTINGS

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Fig. 1

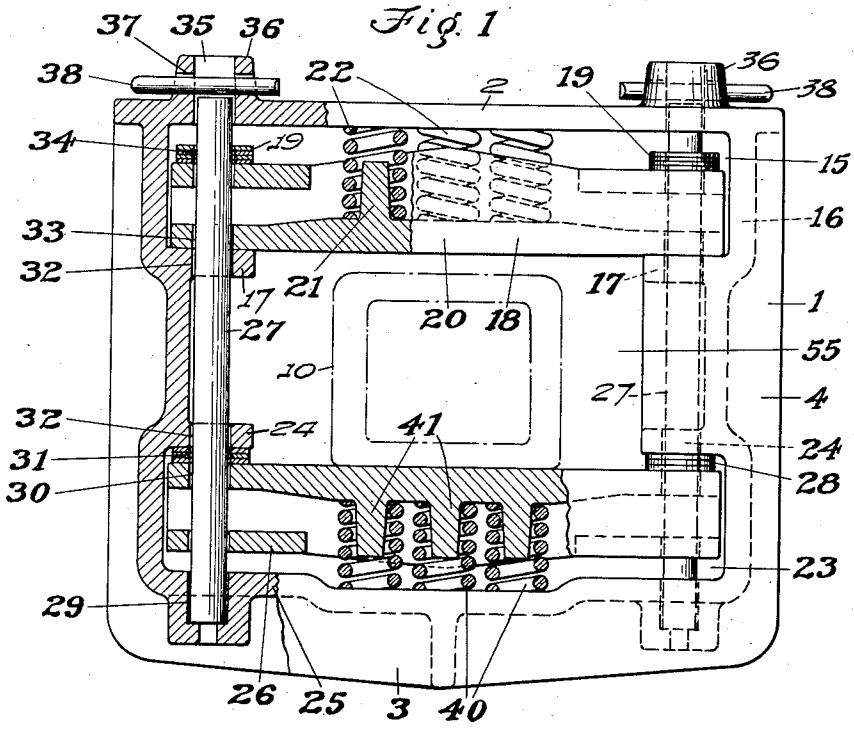
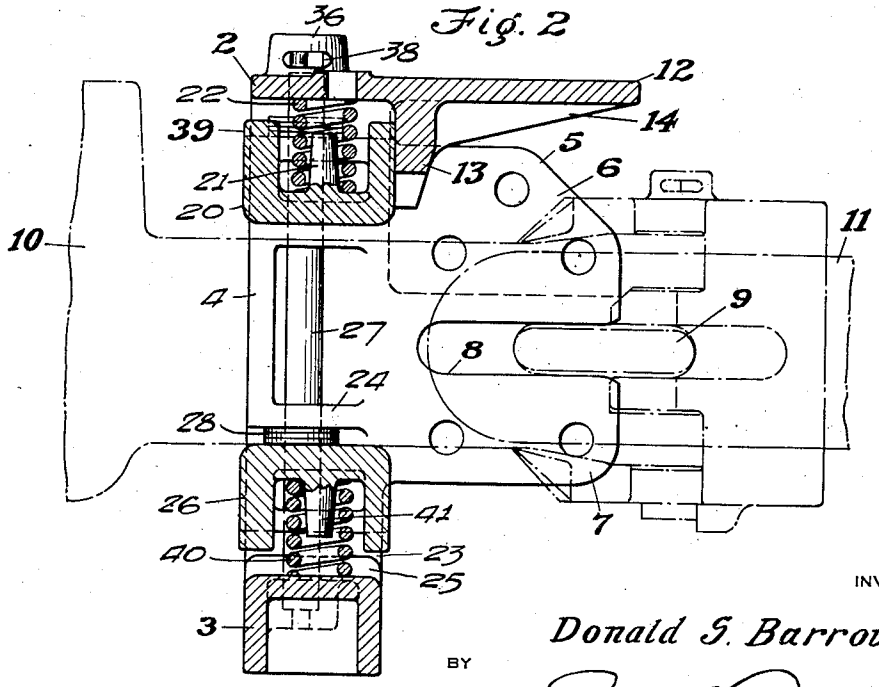


Fig. 2



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Fig. 3.

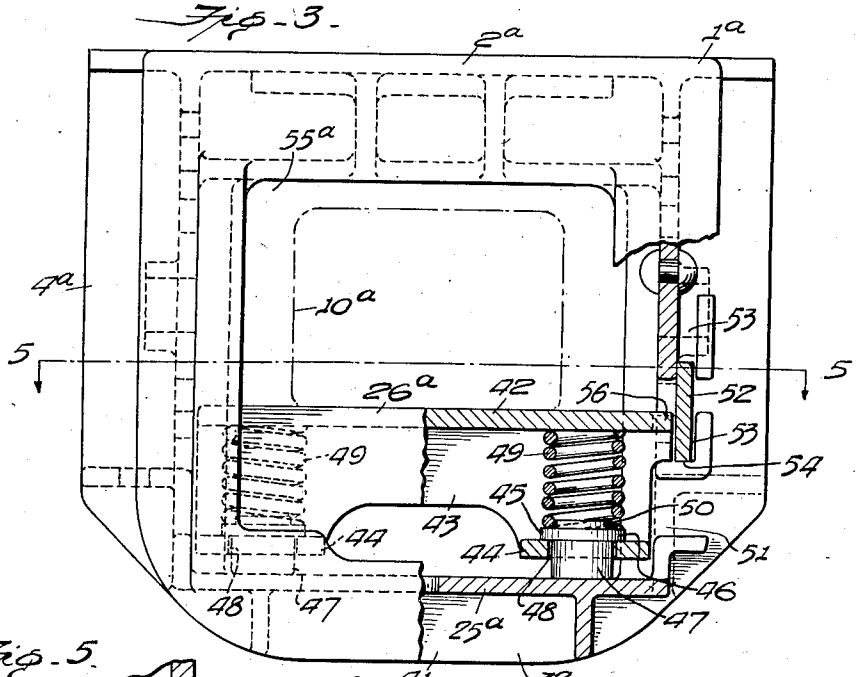


Fig. 5.

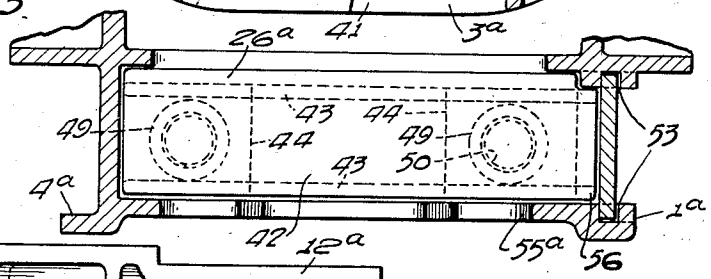
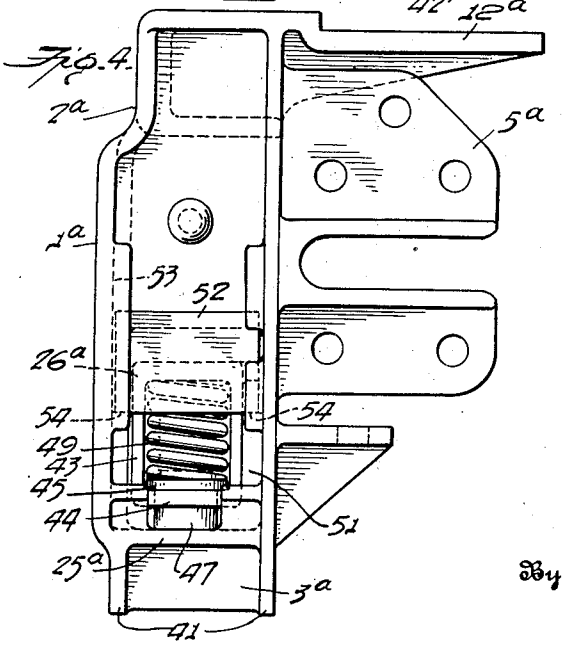


Fig. 4.



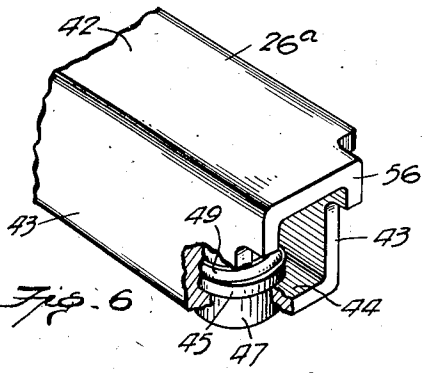


Fig. 6

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Patented June 2, 1936 2,043,090

UNITED STATES PATENT OFFICE

2,043,090

STRIKING CASTINGS

Donald S. Barrows, Rochester, N. Y., assignor to The Symington Company, Rochester, N. Y., a corporation of Maryland

Application April 10, 1931, Serial No. 529,209

13 Claims. (Cl. 213—60)

This application is a continuation in part of my application Serial No. 326,133, filed December 14, 1928 for draft rigging.

This invention relates to combined striking castings and, more particularly, to one having a resiliently supported wear block, or blocks, for permitting vertical movement of an associated coupler.

The principal object of my invention, generally considered, is to provide a combined striking casting and coupler carrier member suitable for use with a swivel butt coupler and adapted to resiliently support bottom, or top and bottom, wear blocks or members of such a size that, upon removal, the butt of a swivel butt coupler may be readily applied or withdrawn.

Another object of my invention is to provide a combined striking casting and coupler carrier member suitable for use with a swivel butt coupler and adapted to resiliently support top and bottom blocks preferably simultaneously retained by common fastenings, and of such a size that, upon removal, the butt of a swivel butt coupler may be readily inserted or withdrawn.

A further object of my invention is the provision of a combined striking casting and coupler carrier or sill tie member comprising a coupler supporting or wear block resiliently mounted above the carrier member, one side of said casting being apertured for endwise insertion of said block, said aperture being normally closed by a vertically slidable retainer held in locking position by gravity.

Other objects and advantages of the invention relating to the particular arrangement and construction of the various parts will become apparent as the description proceeds.

Referring to the drawings illustrating my invention, the scope whereof is defined by the appended claims:—

Figure 1 is a front elevation showing, partly in vertical section, one embodiment of my combined casting with resiliently supported carrier and striking blocks, the stem of the associated coupler being diagrammatically illustrated in dot-and-dash lines.

Figure 2 is a central longitudinal sectional view of the combined casting and blocks illustrated in Figure 1.

Figure 3 is a view corresponding to Figure 1, but showing a modification.

Figure 4 is a side elevational view of the embodiment of my invention illustrated in Figure 3.

Figure 5 is a horizontal sectional view on the line 5—5 of Figure 3, looking in the direction of the arrows.

Figure 6 is a fragmentary perspective view of the coupler carrier or wear block used in connection with the embodiment shown in Figures 3, 4 and 5.

Referring to the drawings in detail, like parts being designated by like reference characters, and first considering the embodiment of my invention illustrated in Figures 1 and 2, there is shown a combined striking casting and sill tie member 1 with a coupler striking or stop portion 2, a coupler carrier iron or sill tie portion 3, and vertical side or connecting portions 4. Said side portions are preferably formed with rearwardly extending ear or web portions 5 adapted for connection to the associated center or draft sills (not shown). Said web portions are preferably bifurcated or formed with upper and lower sections 6 and 7, respectively, leaving notches 8 therebetween, said notches normally registering with corresponding slots in the associated sills for the reception of the usual form of draft key 9 for supporting and connecting an associated coupler or drawbar 10 to a yoke 11. For strengthening the webs of the sills around the slots therein rearwardly of the sections 6 and 7, partial cheek plates (not shown) may be provided to supplement said sections which form, in effect, the forward portions of cheek plates.

The striking portion 2 is preferably formed with a rearwardly extending web or flange 12 adapted for connection with the sill cover plate (not shown). Said web or shelf portion is preferably strengthened by a depending web or flange 13 and rearwardly extending tapering webs or ribs 14 which gradually decrease in depth and merge into the web 12.

The upper ends of the side portions 4 are, in the present embodiment, formed with pockets 15 defined by the uppermost web of the striking portion 2 and the vertical webs 16 of the side portions 4 which are preferably offset outwardly at said pockets, as illustrated particularly in Figure 1, and horizontal portions or flanges 17 extending inwardly from the webs 16 and the depending flange or web portion 13 previously described. Normally disposed in the pockets 15 is a striking or wear block 18, the ends of which rest on the horizontal portions 17, and the front web of which normally extends slightly beyond the front edge of the striking portion 2, whereby, on buff, the associated coupler 10 normally engages the wear

block 18, which relieves the striking portion 2 of wear.

The pockets 15 are preferably larger in vertical dimension than the wear block 18, whereby vertical adjustment and movement of said block is permitted, said adjustment being desirably effected by positioning shims or washers above or below said block, as desired. Said wear block 18 is desirably formed box-shaped in section, or as a hollow beam substantially rectangular in cross-section. The upper web of said beam is preferably omitted at the central or intermediate portion thereof, and the lower web correspondingly strengthened, as indicated at 20, and provided with a boss or bosses 21 for receiving and positioning resilient means, such as one or more coil springs 22, which maintain the block 18 in normal position while permitting vertical movement thereof upon corresponding movement of the associated coupler 10.

A similar construction is desirably provided above the sill tie or coupler carrier portion 3, the lower ends of the sides 4 for that purpose being provided with pockets 23 preferably of approximately the same size as the pockets 15 and defined by slightly offset portions of the webs 16 and overlying horizontal portions 24, extending from said webs, and the upper web 25 of the sill tie portion 3. A lower or carrier wear block 26 has its ends normally received in the pockets 23, and said block, for convenience, is preferably, but not necessarily, constructed of the identical size and shape of the block 18, both of said blocks being preferably retained in position by common fastening or connecting means 27.

As in connection with the block 18, the pockets 23 are preferably formed larger than the ends of the block 26, and washers 28, or other adjusting means, are desirably provided for regulating the normal height of the carrier block 26. The connecting means in the present embodiment takes the form of vertical pins or rods 27 received in pockets 29 in the sill tie portion 3 or upper web 25 thereof, registering apertures 30 in the carrier block, 31 in the washers or liners 28, 32 in the portions 24 and 17 of the sides 4 of said casting, 33 in the wear block 18, 34 in the washers or liners 19, and 35 in the top of the combined casting or striking portion 2 thereof.

For securely locking the rods or pins 27 in place, the striking portion 2 of the casting is preferably formed with upstanding collars or bosses 36 around the apertures 35, which are provided with horizontal registering apertures 37 for receiving cotters or other retaining devices 38, whereby undesired removal or loss of the pins 27 and associated blocks 18 and 26 are prevented. In order to allow for wear, the front webs or flanges 39 of the interchangeable blocks 18 and 26 are preferably made thicker or heavier than the corresponding rear webs or flanges, as illustrated particularly in Figure 2. Although the springs 40 supporting the block 26 are disposed about depending lugs or bosses 41, as in connection with the block 18, they are desirably made heavier or more springs are used than in connection with said upper block, because, as will be understood, said springs 40 are subjected to greater stress than the springs 22 because they normally serve to support the coupler or drawbar. Said supporting springs 40 are preferably positioned under initial compression which may be secured by the simple expedient of letting the weight of the coupler down on the carrier. The block 18, if it is desired that the springs 22 be under initial compression, would have to be forced into place. It will be understood that I do not wish to be limited to having the top springs 22 under initial compression.

Referring now to the embodiment of my invention illustrated in Figures 3 to 6, inclusive, a construction is there shown involving a combined casting 1^a having a striking portion 2^a, a sill tie portion or coupler carrier member 3^a, and vertical side or connecting portions 4^a. The side portions 4^a are preferably formed with rearwardly extending ear or web portions 5^a, as in the preceding embodiment. The striking portion 2^a is preferably formed with a rearwardly extending web portion 12^a, reinforced as in the preceding embodiment. In the present embodiment, the striking portion is formed generally box-shaped in section so as to function without the necessity of a separable and movable striking block, as in the first embodiment.

The sill tie portion or coupler carrier member 3^a preferably has an upper web 25^a, reinforced by side webs or flanges 41, and serving for the support of an associated coupler carrier wear block 26^a. Said block, in the present embodiment, comprises an upper supporting web 42 and depending side flanges or webs 43, the end portions of which are joined by lower webs 44 forming a wear block inverted U-shape in section at its center or intermediate portion, and box-shape in section adjacent its end portions.

For resiliently supporting the block 26^a, two supporting plugs 45 are desirably provided with upper flanges 46 normally resting on the lower webs 44 of the carrier block and with the body portions or downward extensions 47 passing through apertures 48 in said webs 44 into supporting engagement with the webs 25^a of the coupler carrier member 3^a. Springs 49 are normally disposed between the tops of said plugs and the bottom face of the upper web 42 of the block, said springs being preferably centered by bosses 50 on said plugs. The desired initial compression of the springs to carry the normal load of the coupler or drawbar 10^a, exclusive of any additional vertical load caused by relative coupler movement under pull or buff, is desirably obtained by inserting the springs last, and with the aid of tongs or the like forcing them into the position shown in Figure 3. It will be seen that the construction provides for downward movement of the wear block 42 an amount represented by the extension of the portions 47 of the plugs beyond the lower webs 44, assuming that the springs will not be compressed solid by such additional compressive movement.

To provide for the insertion and retention of the block 26^a in place, one of the side portions 4^a of the casting 1^a is desirably apertured, as indicated at 51, to permit endwise insertion of said block, said block, after insertion, being desirably retained in position by means of a locking member or plate 52 desirably slidably mounted in grooves 53 in the sides of the casting 1^a and normally resting in locking position on ledges or shoulders 54 on said side 4^a of the casting. When in lower or locking position, as shown in Figure 3, said plate or retainer 52 lies close to the adjacent end of the block 26^a or an extension 56 thereon, thereby retaining said block in place and limiting lateral movement thereof, as will be understood. It will be seen that the retainer stays in locked position under the action of gravity and may be readily released by merely raising by

hand, when the block 26a may be readily inserted or withdrawn.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I have devised forms of striking castings and sill tie members with a movable block or blocks permitting vertical angling of an associated coupler or drawbar about a connecting key. The width of the coupler receiving openings 55 and 55a is desirably sufficient to allow for the expected horizontal angling of said drawbar or coupler, the movement of the resiliently supported block or blocks being sufficient to permit the expected vertical angling.

Although I have shown preferred embodiments of my invention, it will be understood that modifications may be made within the spirit and scope of the appended claims.

I claim:—

1. A combined casting comprising portions serving respectively as a striking casting and sill tie member, a wear block removably held in place above the sill tie member, said block being spaced from the striking portion for receiving the stem of a coupler therebetween and held in place by means engaging an end portion thereof, said block being hollow and generally rectangular in section with its lower web omitted adjacent the central portion, spring centering means enclosed in said block, and coil spring means encircling said centering means and resiliently supporting said block.

2. A combined casting comprising portions serving respectively as a striking casting and coupler carrier portion, a hollow wear block disposed above the coupler carrier portion, said block being spaced below the striking portion for receiving the stem of a coupler therebetween, means engaging an end thereof for holding said block in place, said block being rectangular in section at its end portions and inverted U-shape in section at its central portion, spring centering means associated with said block, and spring means held in proper position by said centering means for resiliently supporting said block.

3. A combined casting comprising portions serving respectively as a striking casting and sill tie member independently movable, wear blocks respectively disposed adjacent the striking portion and above the sill tie member, movable independently of each other and spaced to receive the stem of an associated coupler therebetween, resilient means respectively disposed directly above the space for receiving the coupler stem for urging the striking casting block downwardly and directly below the space for receiving the coupler stem for urging the sill tie block upwardly, and means, disposed on either side of said space, for connecting said blocks to the casting and allowing for vertical movement thereof.

4. A combined casting comprising portions serving respectively as a striking casting and sill tie member, said casting being formed with pockets adjacent the upper and lower portions thereof, top and bottom wear blocks with portions respectively received in said pockets and simultaneously retained by common fastenings, said blocks being spaced to receive the stem of an associated coupler therebetween, and resilient means disposed between said fasteners and associated with said blocks for resiliently maintaining them in place while permitting movement thereof upon vertical angling of the coupler.

5. A combined casting comprising portions serving respectively as a striking casting and sill tie member, said portions being spaced to permit the insertion and removal of the butt of a swivel butt coupler, those portions of the casting connecting the striking and sill tie portions being pocketed, wear blocks with portions received in said pockets and spaced to receive the stem of the coupler therebetween, said blocks being adjustable vertically to correct the coupler height and maintain the top clearance at a practical minimum, and springs associated with said wear blocks for urging them into normal positions while permitting movement away from each other to allow for vertical angling of the coupler, said springs directly engaging webs of the wear blocks adjacent the central portions thereof.

6. A combined casting comprising portions serving respectively as a striking casting and sill tie member, wear blocks comprising top, bottom and side webs and with portions receivable in pockets respectively disposed adjacent the top and bottom of said casting, said top block serving as a coupler stop member or striking wear block, and the bottom block serving as a coupler carrier block, said top and bottom blocks being interchangeable and formed with spring centering lugs respectively on bottom and top webs thereof and housed between the side webs, and coil springs surrounding said lugs and engaging adjacent portions of the combined casting for urging said blocks toward one another.

7. A combined casting comprising portions serving respectively as a striking casting and sill tie member, a wear block held in place adjacent the striking portion, said block being spaced above the sill tie member for receiving the stem of a coupler therebeneath and held in place by pins at its ends, said block being generally hollow and rectangular in section with the upper web omitted adjacent the central portion thereof, a spring centering lug extending upwardly from the lower web adjacent said central portion, and a spring surrounding said lug and disposed between said lower web and the upper portion of the combined casting for resiliently urging said block to its lowermost position.

8. A combined casting comprising portions serving respectively as a striking casting and sill tie member, a wear block removably held in place above the sill tie member, said block being spaced from the striking portion for receiving the stem of a coupler therebetween and held in place by pins extending through the end portions thereof, said block comprising upper, lower and side webs and being generally rectangular in section with its lower web omitted adjacent the central portion thereof, and its upper web formed with a depending spring centering lug adjacent the central portion of said block, and a coil spring encircling said lug and resiliently supporting said block.

9. A combined casting comprising portions serving respectively as a striking casting and sill tie member, side portions connecting said striking casting and sill tie portions, one of said side portions having an aperture, a hollow wear block normally supported by means of said sill tie portion and insertable through said aperture, and means housed in said block for resiliently supporting it.

10. A combined casting comprising portions serving, respectively, as a striking casting and sill tie member, side portions connecting said striking casting and sill tie portion, one of said

side portions having an aperture defined by grooved portions at the sides thereof, a hollow wear block insertable through said aperture and normally supported by means of said sill tie portion, means housed in and resiliently supporting said block, and a plate normally closing said aperture when in lowered position for holding said wear block in place and with its side edge portions slidably received in said grooved portions, and adapted to be raised to allow insertion or removal of said block.

11. A combined casting comprising portions serving, respectively, as a striking casting and sill tie member, side portions connecting said striking casting and sill tie portions, a wear block normally supported above said sill tie portion, said block having an upper web, adapted to be engaged by an associated coupler, and side webs forming a device generally inverted U-shaped in section, portions of said side webs adjacent the ends of the block being connected by other webs extending therebetween and disposed beneath said upper web, said connecting webs and adjacent portions of said upper and side webs defining pockets, and coil springs with associated supporting means having portions encircled by said springs, housed, at least in part, in said pockets, and providing for holding the springs pre-compressed to a desired extent.

12. In combination, a wear block having an upper web, adapted to be engaged by an associated coupler, and side webs forming a device generally inverted U-shaped in section, portions of said side webs adjacent the ends of the block being connected by other webs extending therebetween and disposed beneath said upper web, said connecting webs and adjacent portions of said upper and side webs defining pockets, and coil springs with associated supporting means having portions encircled by said springs, housed, at least in part, in said pockets.

13. In combination, a combined integral casting comprising an upper portion formed with a front web positioned for direct engagement by the horn of an associated coupler and a flange extending rearwardly therefrom to overlie the stem of said coupler, side portions depending from the ends of said upper portion and a sill tie portion joining the lower ends of said side portions, a hollow wear block disposed between said upper and sill tie portions, and means housed in and resiliently supporting said block by acting on abutments formed on lower portions of said casting.

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