Feb. 16, 1932. W. BENDER 1,845,738

BOARD FOR BOARD DROP HAMMERS

Filed Oct. 2, 1930

Fig. 1.

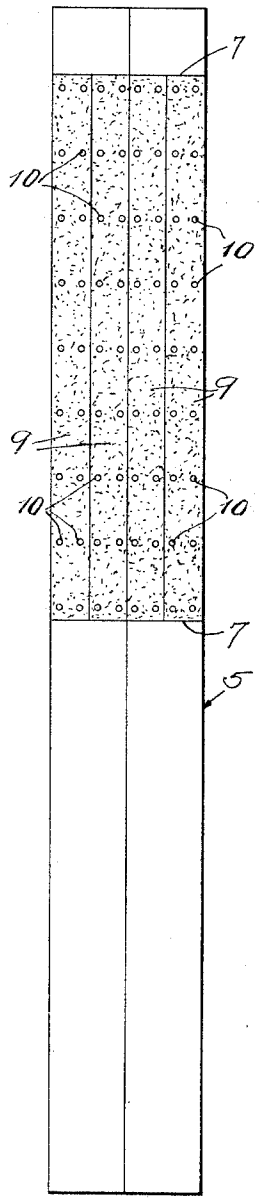
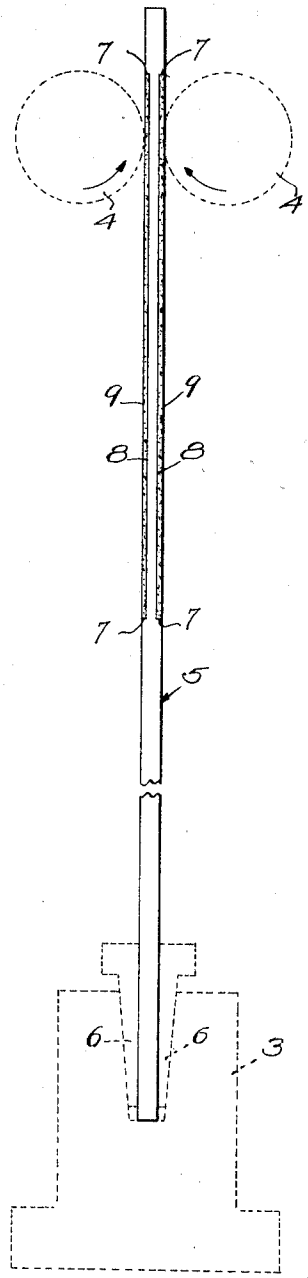


Fig. 2.



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UNITED STATES PATENT OFFICE

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BOARD FOR BOARD DROP HAMMERS

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This invention relates to certain novel improvements in boards for board drop hammers and the like, and among the salient objects of the invention are to provide a board embodying a friction surface highly resistant to wear and which will be uniform in friction characteristics and wear resistant qualities throughout the area thereof; which will not readily glaze, char, or lose its friction characteristics; and which will be highly resistant to the stresses and strains impressed thereon during use thereof.

In the selected embodiment of the invention illustrated in the accompanying drawings

Fig. 1 is a front elevation of one form of my invention; and

Fig. 2 is a side elevation of the form of the invention shown in Fig. 1.

Drop hammers such as are used in drop forging embody a die in which the article to be forged is arranged and a forging member or hammer, such as that indicated by 3 in the accompanying drawings, is arranged above this die and moves toward and engages the die to forge the article arranged therein. The hammer is raised away from the die and it is then released from the raised position. The weight of the hammer and the distance moved determine the force of the blow struck thereby on the article in the die. The hammer 3 is raised away from the die by forcing constantly rotating rollers 4, 4 into engagement with a board 5 extended upwardly from the hammer, the frictional engagement between the rollers and the board 5 being depended upon in this operation, and after the hammer has been raised in the desired amount the rollers are retracted from engagement with the board and the hammer therefore falls toward the die. It has been customary in the art to use a one-piece board, or built-up sectional boards, of hard wood, and to secure the lower end of the board in an opening in the upper end of the hammer by means of wedges 6, 6. In actual use such boards are subjected to severe abuse and they are very short-lived, sometimes lasting only a few hours and seldom more than fifteen days. The weight and operation of the hammer subjects the board to strains, stresses and shocks, and the engagement of the lifting rollers with the board, their operation thereon, and the frictional heat produced thereby tends to indent the board and give it wavy surfaces, and chars, cracks and glazes the board and renders it inefficient frictionally. Of course some boards will resist the abuse of service more than others, but this has been found to be largely a matter of chance, and since failures occur unexpectedly and irregularly, considerable time is lost in making replacements. I have overcome these difficulties by providing the board with a lining, coating or layer of composition friction material on each side thereof to form the contact surfaces for the lifting rollers. I prefer that this friction material shall be made of a heat-resisting, non-wearing, non-compressible composition, one example of which is set forth in Letters Patent No. 1,761,057, dated June 3, 1930, but other molded, woven fabric, or similar material may be used. This material can be conveniently applied in the form of strips or layers, indicated by 9, 9 of suitable size which are fastened by rivets 10, or by bolts, screws, cement, or other suitable means, to the sides of the board. I prefer to provide the board with recesses 8, 8 to receive the composition material, and this material is seated in the recesses with its ends abutting the end walls 7 of the recesses. The rollers are constantly rotated, and in the operation of the hammer they are thrust inwardly into engagement with the board to lift it, and are then retracted to release the board and permit the hammer to drop. In the lifting movement there is considerable end thrust on the board, and this end thrust will be received by the composition elements. Since these elements abut the end walls of the recesses, they will be prevented from moving relative to the board proper, and this will also prevent shearing of the fastening devices.

The composition friction material will be of uniform consistency throughout the area thereof, and thus uniform friction surfaces will be presented to the lifting rollers and the wear on the material will be uniform. Furthermore, the composition friction mate-

rial is non-compressible, and therefore grooves or indentations which were formed in wooden boards by the action of the lifting rollers will not be formed in this material. Moreover, by reason of the innate characteristics of the friction material or elements the likelihood of glazing or other deterioration is eliminated, and thus a highly satisfactory, long-lived device is provided which will expedite the operation of drop hammers and the like. Since the lifting rollers operate on the composition friction material, metal may be used in place of wood which will also strengthen and prolong the life of the board.

In the foregoing description I have set forth a selected embodiment of my invention, but it is to be understood that this is capable of variation and modification and I therefore do not wish to be limited to the precise details set forth but desire to avail myself of such changes and alterations as fall within the purview of the following claim.

I claim:

A board for drop hammers and the like comprising a metal strip having longitudinally-extending recesses in its opposite faces to receive friction material, elongated strips of non-compressible composition friction material disposed longitudinally in said recesses flush with the outer faces of the strip and extending the length thereof and having its end walls abutting the end walls of the recesses, and means securing said material within the recesses within the boundaries thereof.

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