May 28, 1929. H. C. DORNHECKER 1,715,058

FLOOR TREATING APPARATUS

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Fig. 1.

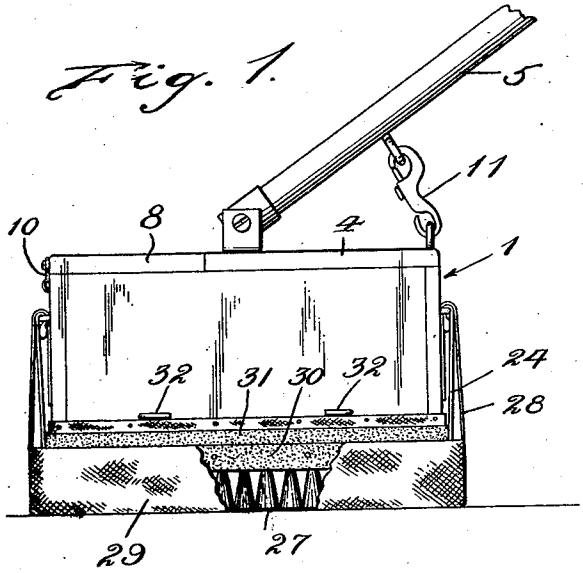
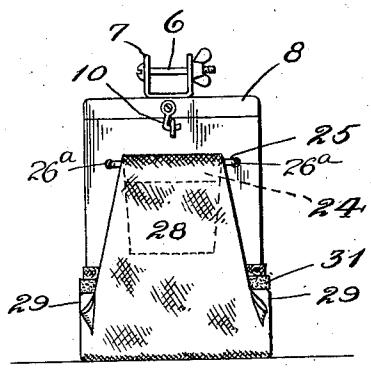


Fig. 2.



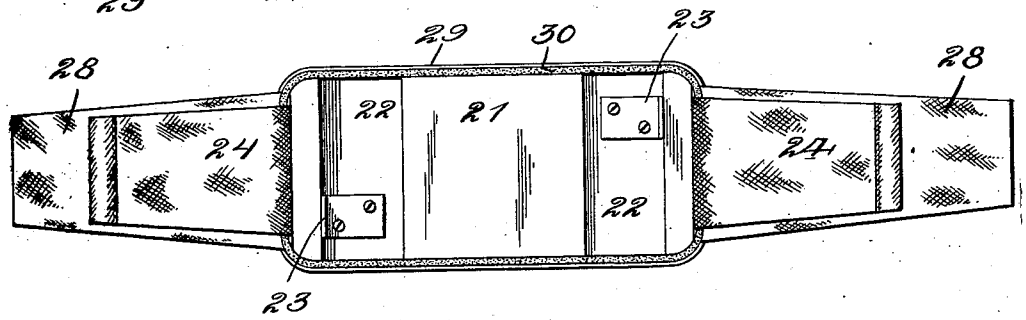


Fig. 3.

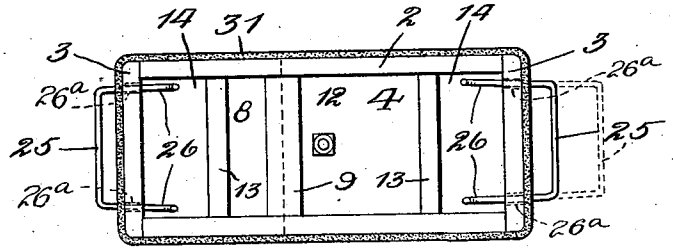


Fig. 4.

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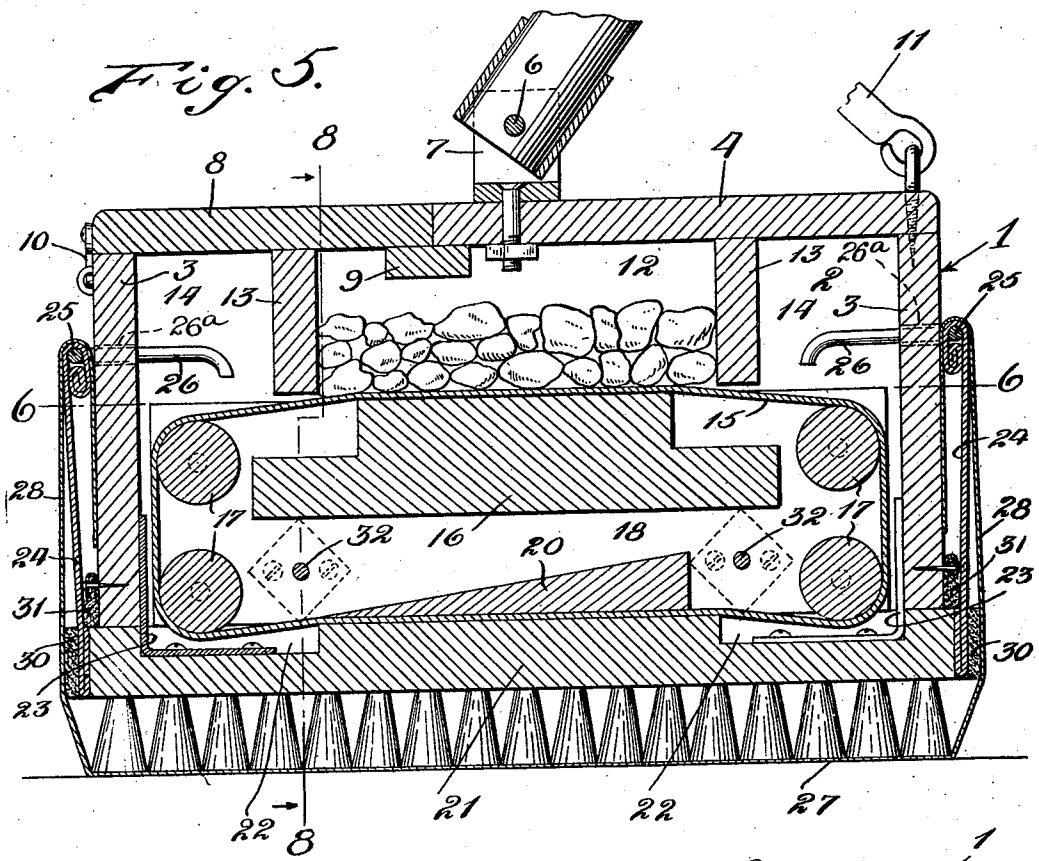
his Attorney

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Fig. 5.



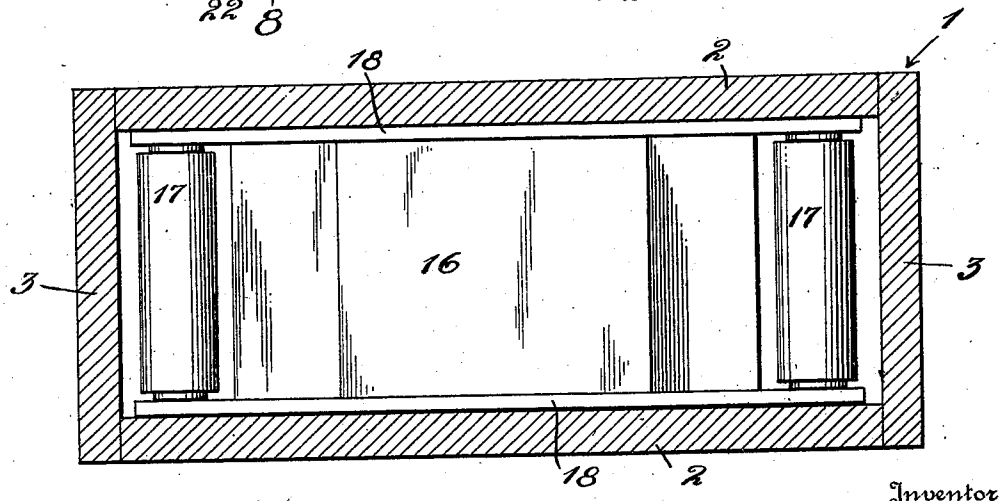


Fig. 6.

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FLOOR TREATING APPARATUS

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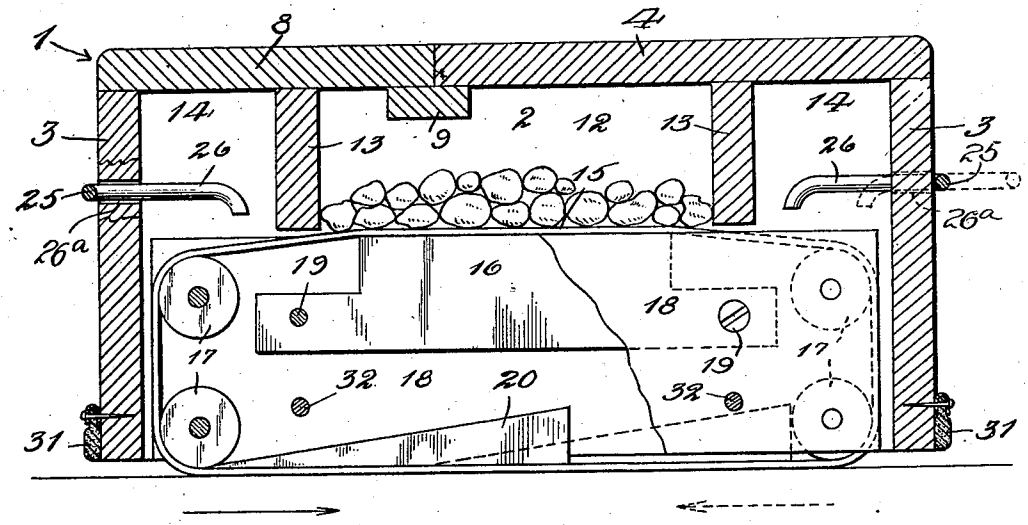


Fig. 7.

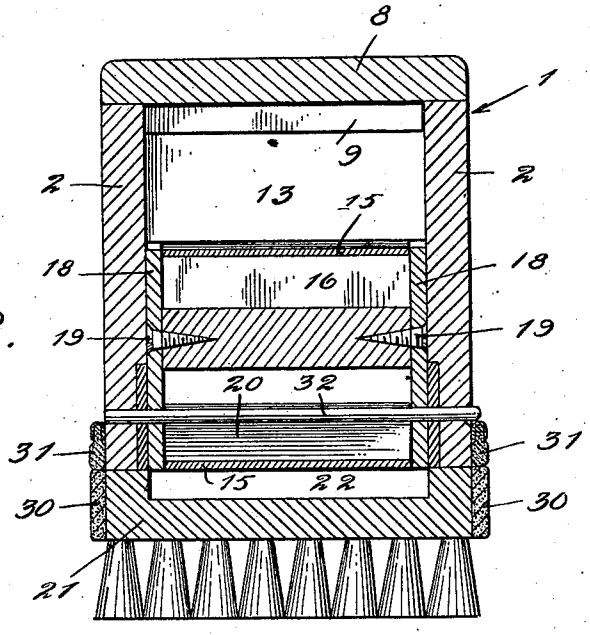


Fig. 8.

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Patented May 28, 1929. 1,715,058

UNITED STATES PATENT OFFICE.

HENRY C. DORNHECKER, OF BALTIMORE, MARYLAND.

FLOOR-TREATING APPARATUS.

Application filed March 14, 1923. Serial No. 625,081.

My invention relates to apparatus primarily designed for use upon floors and involves an association of devices capable of effectually cleansing, waxing and polishing the surface under treatment.

Generally stated, my improved floor cleaning and polishing device has for a principal feature the provision of a plurality of means which can be easily affixed to the device to accomplish the several purposes of the invention, each means being particularly well adapted to detachably fit the device and being provided with comparatively simple connecting parts for readily effecting the attachment and removal of the respective means according to the nature of the work being done.

Particularly stated, the invention has for an object the provision of a compact floor cleaning apparatus involving a detachable brush section, an endless wax applying member to which the wax or other material is in turn applied from a self-contained reservoir, and a detachable polishing member in the nature of a strip of cloth which is preferably affixed to the apparatus over the brush section.

Another object of the invention is to provide a floor treating device of the class described, comprising a casing or housing having mounted therein an endless belt member adapted to intermittently frictionally engage the floor, and means including a wax or other material compartment adjacent said endless belt and from which the wax or other material is withdrawn by the movement of said belt when the device is moved across the floor with the said belt out of frictional engagement therewith, and in rolling contact with the floor.

A further object of the invention is to provide a floor treating apparatus including an endless belt member adapted to contact the floor and movable in one direction as the apparatus is moved in one direction across the surface being treated and provided with means for holding said endless member in fixed relation for frictional engagement with the floor as the apparatus is moved in the opposite direction over the surface under treatment, whereby a substantially uniform application and rubbing of the wax or other material upon the surface to be cleaned or polished is effected.

With these and other objects in view, the invention further consists in the construction, arrangement and combination of parts hereinafter described.

In the drawings illustrating an embodiment of my invention, the scope whereof is pointed out in the claims:

Figure 1 is a view in side elevation with parts broken away, illustrating my improved floor treating apparatus with the flexible polishing member shown stretched around the bottom closure brush section.

Figure 2 is an end view thereof with the operating handle shown removed.

Figure 3 is a top plan view of the apparatus showing the flexible attaching member of the bottom closure section and polishing member in extended position.

Figure 4 is an inverted view looking from the bottom into the interior of the casing with the endless belt member and supporting frame removed.

Figure 5 is an enlarged vertical longitudinal sectional view through the apparatus shown in Figure 1.

Figure 6 is a detail horizontal sectional view on the line 6—6 of Figure 5, through the casing.

Figure 7 is a vertical longitudinal sectional view through the apparatus showing the endless belt member in contact with the surface under treatment, the shiftable member for holding the belt in frictional engagement with said surface being shown in full lines in one position and dotted lines in released position.

Figure 8 is a vertical transverse sectional view on the line 8—8 of Figure 5, showing the apparatus with the brush section contacting the surface under treatment.

Referring to the drawings in which similar reference characters designate corresponding parts in the several views, my improved apparatus comprises, among other things, a box-like casing or housing 1 provided with opposite side walls 2—2 and end walls 3—3. The top 4 is provided for the housing and has connected thereto the operating handle 5. The lower end of the handle 5 is detachably mounted upon a pin 6 extending through upright portions of a U-shaped member 7 secured to the top of the housing. The top 4 is preferably provided with a cover section 8 at one end thereof, said cover section being removable to permit access to the interior of

the housing. The cleat portion 9 serves to retain the inner edge of the cover section adjacent the top 4, and the hook member 10 acts to hold said cover section in place. A link connection in the form of a snap hook 11 is utilized to maintain the handle 5 at the proper inclination when moving the apparatus across the floor. This construction permits the release of the handle, as will be understood.

Formed within the interior of the casing 1 is a compartment or reservoir 12 adapted to receive suitable floor treating material such as wax, for example. The compartment or reservoir 12 is preferably formed between the opposite side walls 2 of the casing and vertically disposed partitions 13 spaced longitudinally of the casing and arranged adjacent the top 4 thereof. Other compartments 14 may be provided intermediate said partitions 13 and the respective end walls 3—3 of the casing. Any or all of these compartments may be utilized to hold any desired material although the intermediate compartment 12 is primarily designed to retain such material as floor wax.

Adjacent the compartment or reservoir 12 and extending beneath the partitions 13 in closely spaced relation therefrom, is an endless belt member 15 formed of cloth or other suitable flexible material capable of receiving the floor treating material and in turn applying the same to the surface of the floor under treatment. The endless belt member is designed to form the bottom of the compartment or reservoir 12 and is periodically movable beneath said compartment whereby the wax or other material can be withdrawn in adhering particles to the surface of the belt for conveyance to the surface being treated. It will be noted that the partitions 13 act to retain the major portion of the floor treating material within the reservoir 12 but that the relatively small opening or space provided between the bottom of said partitions and the upper surface of the belt, permits the discharge and withdrawal of the material when the belt is moved. The endless belt member is maintained across the bottom of the compartment or reservoir 12 by means of a belt supporting member 16, as clearly shown in Figures 5 and 7. The member 16 may be held in a suitable frame 18 by screws 19 and used to determine the relative spacing of the upper surface of the belt from the lowermost edges of the partitions 13, as will be understood.

The endless belt member 15 is supported upon a plurality of rollers 17, said rollers being revolubly mounted in a suitable frame 18 which can be readily inserted through the bottom of the casing 1 and retained therein by retaining pins 32 or other suitable fastening devices. The lowermost rollers 17 are disposed to provide for the extension of the endless belt member beneath the lowermost edges of the walls forming the casing 1, said endless belt projecting through the lower open end of said casing a sufficient distance to permit the movement of the apparatus across the surface under treatment when applying the floor treating material to said surface by means of the endless belt member, as shown in Figure 7.

The endless belt member is adapted to be intermittently held for frictional engagement with the surface under treatment when the apparatus is moved in one direction, the means effecting this holding of the belt being automatically released to permit movement of said belt when the apparatus is moved in the opposite direction. The means which I have shown to effect this periodic holding and release of the endless belt member includes a shiftable member 20 supported upon the inner face of the belt 15 and longitudinally movable within the casing between the lowermost rollers 17. The member 20 is in the form of a wedge, the taper portion of which is adapted to be moved between one of the rollers 17 and said belt for preventing movement of the belt around said rollers, thereby effecting frictional engagement of the belt with the floor or other surface. It will be noted that, upon movement of the apparatus in the opposite direction, the shiftable wedge member 20 will be released by the movement of the belt upon the floor in its free passage around the roller 17, said shiftable member being capable of being moved the full distance between the lowermost rollers 17, as shown in full and dotted lines in Figure 7. The contacting of the relatively straight face of the wedge member with one of the rollers 17, as shown in dotted lines in Figure 7, does not act to prevent the continued free movement of the belt member as the apparatus is drawn across the floor in the direction of the arrow shown in dotted lines in said figure.

The detachable closure section for the box-like casing 1 includes a plate member 21 having projecting therefrom a plurality of bristles or other means capable of forming a brush or scrubbing portion. Cut-away portions 22 are provided in said closure section for permitting the lowermost rollers and belt member to extend therein when said section is applied to the casing 1, as best shown in Figure 5. Suitable upright members 23 are preferably provided on the closure section, said members being herein shown in the form of angle plates and disposed to form a tight fit against the inner faces of the end walls 3—3 of the casing. This construction permits of the principal strains incident to the scrubbing or brushing action being imparted to the walls of the casing which are best able to withstand the same.

Attaching means is provided at each end of the brush-like closure section, said attach-

ing means including upwardly extending flexible members 24, the upper ends of which are designed to be bent around bail-like members 25. The extreme ends of the attaching members 24 are preferably reinforced or thickened to extend beneath the bail member 25 when the latter is pressed against the outer walls of the casing, as best shown in Figure 5.

A bail member 25 is slidably mounted in each end wall and comprises spaced arms 26 passing through holes 26[a] and having their inner ends bent to prevent the complete withdrawal of the bail member. The arms 26 are preferably spring-tensioned against the side of the opening through which they pass, so as to provide frictional contact between the arms and the adjacent contacting portion of the wall. This may be accomplished by flaring the inner ends of the arms 26 when in their innermost position, the withdrawal of the bail member causing said arms to move toward each other and effect frictional engagement.

The flexible polishing member 27 is preferably adapted to be fitted over the brush closure section, the upwardly extending attaching portions 28 being designed to be held against the walls of the casing by the bail members 25. The flexible member is preferably provided with upstanding side wall portions 29 which extend above the brush portion of the closure section and contact the surrounding buffer 30 provided on the closure section. The casing 1 may also be provided with a surrounding buffer 31 which is exposed for use when the apparatus is used with the endless belt member contacting the floor, as shown in Figure 7.

In the use of my invention the surface to be treated may be first thoroughly cleaned with the brush portion of the bottom closure section, whereupon the said closure section can be quickly detached by withdrawing the bails 25 and releasing the flexible attaching members 24. With this section removed the apparatus is positioned upon the floor with the endless belt member in contact therewith. Movement of the apparatus in one direction causes the belt member to freely move across the floor and in so doing convey to the surface under treatment the particles of wax or other material adhering to said belt member. When the apparatus is moved in the opposite direction the slidable member 20 causes the belt to be held against rolling movement and maintains the same in relatively fixed position for frictional contact with the surface being treated. These successive movements of the endless member serves to effectively apply a uniform quantity of wax or other material to the floor. The bottom closure section may now be reaffixed to the casing 1 and the flexible polishing member 27 positioned over said brush section and attached to the casing, whereupon the surface to which the wax has been applied can now be effectively polished by moving the apparatus across said surface.

An apparatus constructed in accordance with my invention provides a simple and particularly effective association of devices cooperatively applied to the casing or housing 1. The advantages in manufacture and assembly will also be obvious, it being apparent that the frame section 18 carrying the rollers and endless belt member can be readily removed for purposes of inspection and repair by withdrawing the retaining pins 32. Various changes in the construction and arrangment of the several parts may be made, and I do not wish to be understood as limiting my invention to the exact embodiment herein shown.

What is claimed is:

1. An apparatus of the class described including in combination, a hollow open bottom casing provided with spaced partitions, and an endless belt member mounted within said casing and movably disposed adjacent said partitions for frictionally engaging the material contained between said partitions, said endless belt member being adapted to extend through said open bottom and to frictionally engage the surface under treatment when the apparatus is moved in one direction and means carried by said belt and adapted to prevent movement thereof when the apparatus is moved in the opposite direction.

2. An apparatus of the class described including in combination, a hollow casing provided with a compartment adapted to receive floor treating material, an endless belt member disposed within said casing and forming one of the walls of said compartment, said endless belt member being adapted to form the bottom wall of said casing for engagement with the surface under treatment whereby the material from said compartment is conveyed and applied to said surface.

3. A floor treating apparatus of the class described including in combination a casing provided with a compartment adapted to receive floor treating material, an endless belt member completely housed within said casing and adapted to form the bottom closure for said compartment, means for supporting said endless member relatively close to the bottom of said compartment, and means frictionally engaging said belt for preventing the movement thereof across the bottom of said compartment when the device is moved in one direction.

4. A floor apparatus of the class described comprising a casing provided with a reservoir adapted to receive floor treating material, means including an endless belt for conveying said material to the surface under treatment, and means supported on said belt for holding the same for frictional engagement

with the surface under treatment when the apparatus is moved in one direction, said means acting to permit the belt to move when the apparatus is moved in the opposite direction.

5. A floor apparatus of the class described comprising a casing provided with a reservoir adapted to receive floor treating material, means including an endless belt for conveying said material to the surface under treatment, and means including a shiftable member supported on said belt adapted to hold the same in frictional engagement with the surface under treatment when the apparatus is moved in one direction, said shiftable member being automatically moved to release said belt from frictional engagement with said surface when the apparatus is moved in the opposite direction.

6. A floor apparatus of the class described comprising a casing provided with a reservoir adapted to receive floor treating material, means including an endless belt for conveying material to the surface under treatment, a plurality of rollers for supporting said belt adjacent said reservoir and without said casing, and means movably interposed between one of said rollers and said belt for holding the belt in frictional engagement with the surface under treatment as the apparatus is moved in one direction, said means being released when the apparatus is moved in the opposite direction for permitting movement of said belt.

7. In a floor treating apparatus, the combination with a casing having an open lower end portion, a closure member for said open end portion, said closure member being provided with a brush portion adapted to contact the surface being cleansed, a plurality of upwardly extending flexible attaching members carried by said closure member, and means including a slidable member mounted to project from said casing for connecting said flexible members to said casing.

8. In a device of the character described, a casing, rollers journaled therein, an endless belt trained about the rollers and having its lower stretch projecting beyond the bottom of the casing, the space above the upper stretch of belt serving as a compartment for containing waxing material, and means within the intermediate portion of the casing supporting said upper stretch of the belt and the weight of the material thereon.

9. In a device of the character described, a casing, rollers journaled therein, an endless belt trained about said rollers and having its lower stretch projecting beyond the bottom of the casing and means slidably mounted upon the lower stretch of the belt operating upon movement thereof in one direction to jam between the belt and one roller for preventing rotation of the latter.

10. In a device of the character described including a rectangular body, a polishing member stretched across the bottom of the body and provided at its ends with flexible members, U-shaped bail members having their arms slidable through the ends of the body, means on the bails for preventing disengagement thereof from the body, and the ends of said flexible members being inserted within and engaged about the bight portions of the bail members.

In testimony whereof I affix my signature.

HENRY C. DORNHECKER.