April 4, 1967 R. L. ADAM ETAL 3,312,273

DRAPERY TRAVERSING APPARATUS

Original Filed April 2, 1963 2 Sheets-Sheet 1

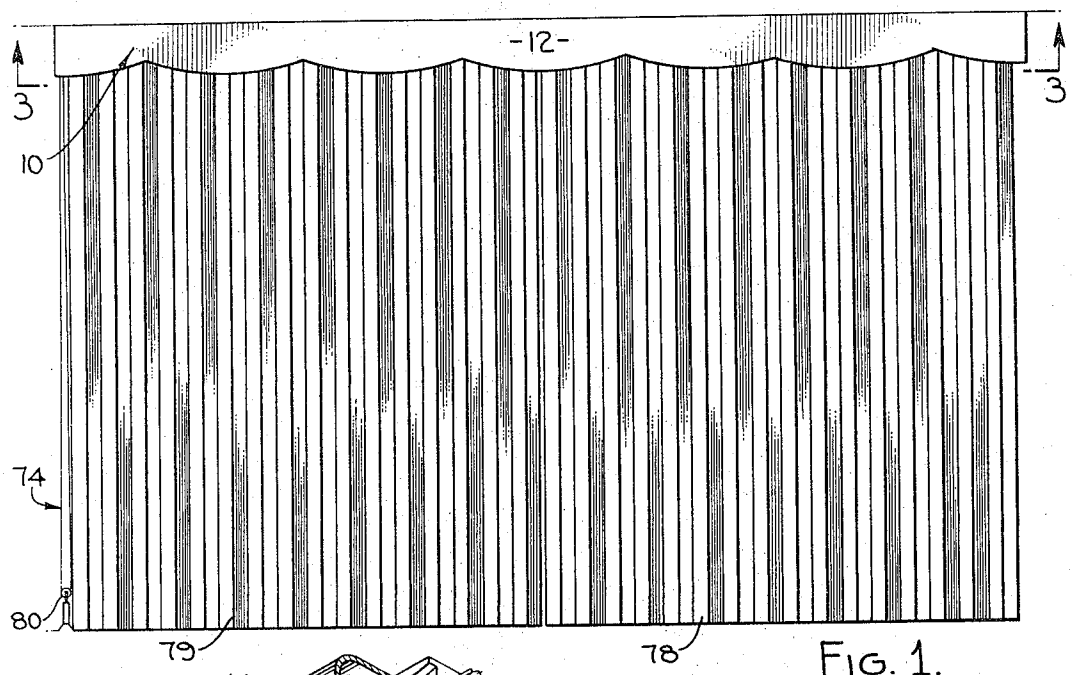


FIG. 1.

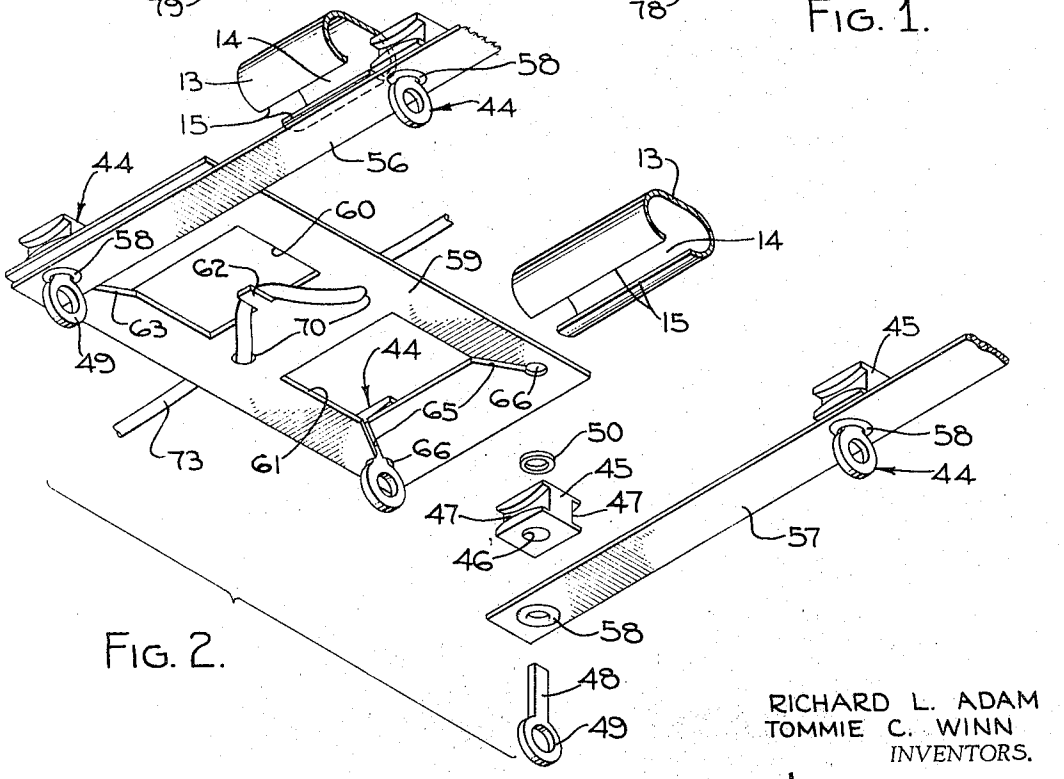


FIG. 2.

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DRAPERY TRAVERSING APPARATUS

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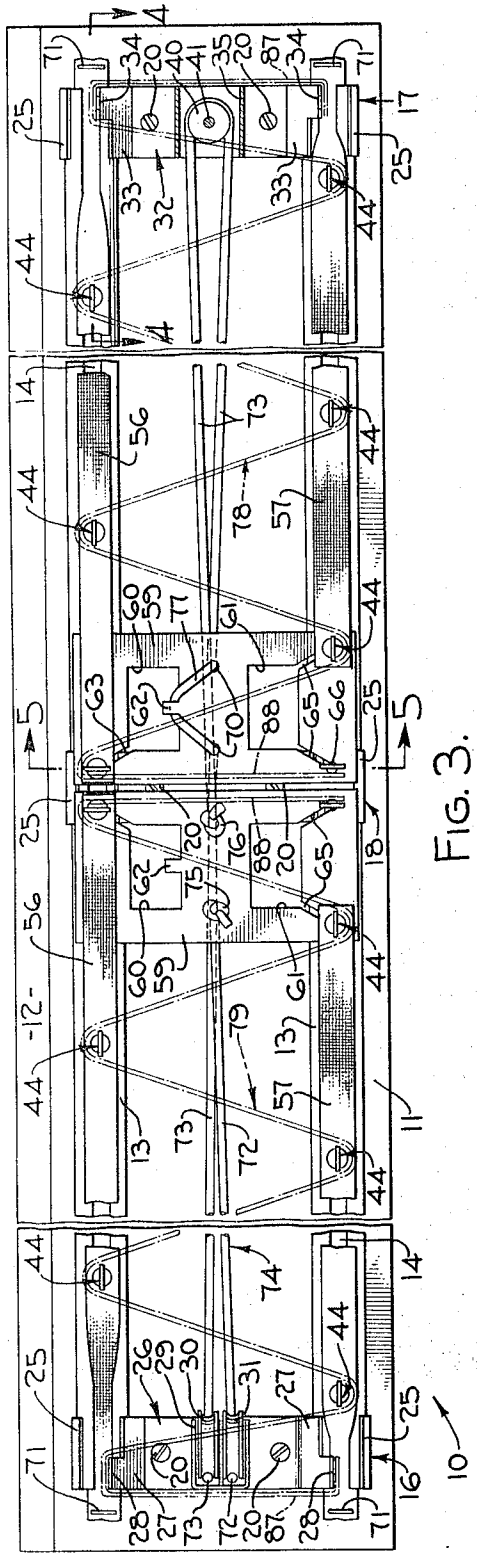


FIG. 3.

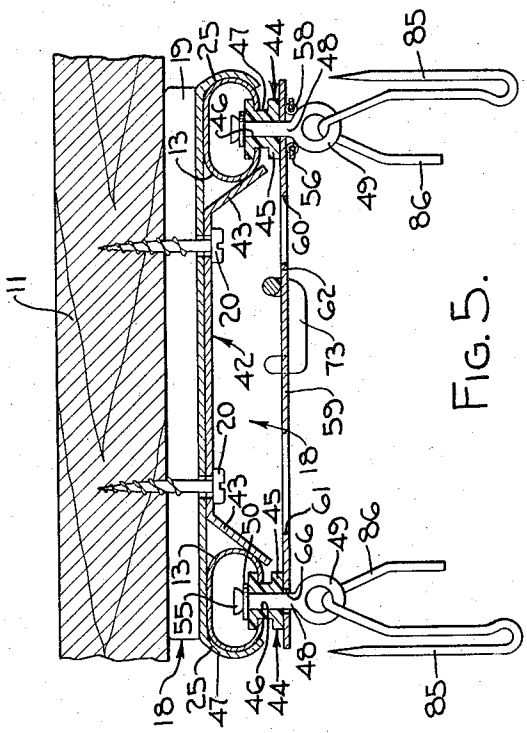


FIG. 5.

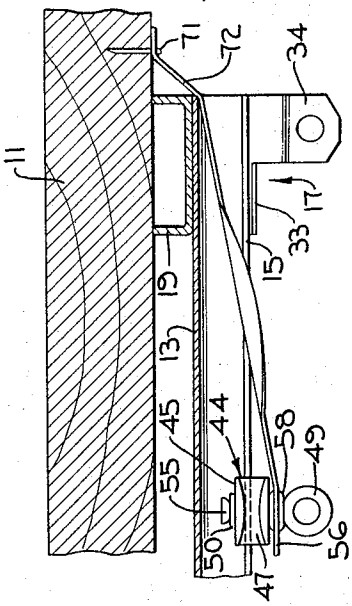


FIG. 4.

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DRAPERY TRAVERSING APPARATUS

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5 Claims. (Cl. 160—345)

This application is a continuation of Ser. No. 270,029, filed Apr. 2, 1963, now abandoned.

This invention relates to the drapery hanging art and particularly to a drapery traversing apparatus.

It is an object of the present invention to provide such an apparatus which will suspend a drapery in pleated form when it is extended so that when the drapery is compacted by traversing the same, the pleats thereof are folded together.

Another object is to provide such an apparatus which uniformly pleates an unpressed drapery in the manner above indicated whereby it may be hung to form uniform pleats therein without the necessity of pressing and/or pleating said pleats in the drapery.

A further object is to provide such an apparatus which is simple and inexpensive in construction and which is adapted to be applied to windows of any width.

The manner of accomplishing the foregoing objects as well as further objects and advantages will be made manifest in the following description taken in connection with the accompanying drawing in which

FIG. 1 is a diagrammatic front elevational view of a pair of draperies as these appear when suspended by a preferred embodiment of the apparatus of the present invention.

FIG. 2 is a diagrammatic fragmentary exploded perspective view of a pair of guide rails of the invention, and of slide hangers, spacing tapes and a string connecting plate to indicate the functional relation of these elements when they are assembled together in the apparatus of the invention.

FIG. 3 is a diagrammatic fragmentary enlarged bottom plan view of the apparatus of the invention and is taken on line 3—3 of FIG. 1, the drapery being shown diagrammatically in broken lines in this view.

FIG. 4 is an enlarged fragmentary detail sectional view taken on the line 4—4 of FIG. 3.

FIG. 5 is an enlarged detail sectional view taken on the line 5—5 of FIG. 3.

Referring specifically to the drawings, the invention is shown therein as comprising a drapery traversing apparatus **10** which includes a horizontal mounting board **11** which is provided along its front edge with a downwardly extending valance board **12**.

The apparatus **10** also includes a pair of guide rails **13** which are disposed parallel with and are mounted on the bottom face of the mounting board **11** and are slightly shorter than said board. Rails **13** are preferably tubular in character and each of these rails is provided with a longitudinal slot **14** having edges **15**. The guide rails **13** are supported at their opposite ends on the board **11** by end clamps **16** and **17** and at the middle of said rails by middle clamp **18**. Each of these clamps includes a channel base member **19** which is apertured to receive screws **20** which extend through the clamp and into the board **11** to secure said clamp to said board, and has arcuate lips **25** which are bent downwardly from opposite ends of the base member **19**.

Clamp **16** also includes a lower clamp member **26** which is apertured to receive the screws **20** and has wings **27**, bent downwardly obliquely from its opposite ends, which wings cooperate with the arcuate lips **25** of the base member **19**, when the screws **20** are tightened,

to rigidly clamp the guide rails **13** in the clamp **16**. Extending outwardly and downwardly from lower ends of clamp wings **27** are drapery attaching ears **28** each of which is apertured to facilitate these ears being connected to an end portion of a drapery being hung from the apparatus **10**. Embodied with the clamp member **26** and centrally disposed thereon to extend downwardly therefrom is a double pulley frame **29** in which pulleys **30** and **31** are rotatably mounted on a transverse horizontal axis as shown in FIG. 3.

Right end clamp **17** includes a channel base member **19** and a pair of screws **20** and has a lower clamp member **32** which has perforations properly spaced to receive the screws **20** so that clamp wings **33**, extending obliquely outwardly and downwardly from member **32**, press against the guide rails **13** and cooperate with the arcuate lips **25** of the base member **19** of clamp **17** so as to cause the latter to rigidly clamp the guide rails **13**. The wings **33** have outwardly and downwardly extending drapery attaching ears **34** which are apertured to facilitate their being connected to a right end portion of a drapery which the apparatus **10** is provided for suspending. Formed integrally with the lower clamp member **32** and extending downwardly from a middle portion thereof is a pulley frame **35** in which a single pulley **40** is housed and mounted on a vertical shaft **41** for free rotation in said frame.

The middle clamp **18** includes one of the channel base members **19** and a pair of the screws **20** and a lower clamp member **42** having wings **43** which cooperate with the arcuate lips **25** of said base member **19** to rigidly confine the guide rails **13** in the middle clamp **18** when the screws **20** of the latter are tightened as shown in FIG. 5.

The apparatus **10** also includes a multiplicity of slide hangers **44** which are slidably suspended from each of the guide rails **13** between the middle clamp **18** and each of the end clamps **16** and **17**. Each slide hanger **44** includes a plastic slide body **45** having a central vertical aperture **46** and slide grooves **47** formed in opposite side edges of said body. Each hanger **44** also includes an eye-pin **48** having an eye **49**, said pin extending upwardly through aperture **46** and through a washer **50** and having its upper end swedged as indicated at **55** to complete the assembly of said slide hanger.

Tapes **56** and **57** are provided which may be made of fabric or of any other suitable flexible material and which are perforated at suitable intervals, said perforations being shod with metal eyelets **58**. The eye-pins **48** of certain slide hangers **44** are extended through these eyelets prior to the assembly of said slide hangers so that when the swedging **55** is completed, these slide hangers are permanently assembled in this relation with the tapes **56** and **57**. The swedging operation above referred to is accomplished in a manner to leave a substantial amount of end play of the pin **48** in the slide body **45** of the hanger. This end play is provided to facilitate the assembly of the innermost slide hangers **44** on the tapes **56** and **57** with a string attaching plate **59** so as to hold these two slide hangers **44** in a fixed horizontal relationship with each other throughout the operation of the apparatus **10**. There are two of these plates in said apparatus and each of them, as shown in FIG. 2, is rectangular in shape and when assembled with the apparatus **10**, the dimension of greatest length of the plate is disposed crosswise of the apparatus as shown in FIG. 3. Each plate **59** has two relatively large rectangular holes **60** and **61**. Hole **60** has a lug **62** extending into said hole from one edge thereof, the purpose of which will be made clear hereinafter. Extending from one corner of hole **60** approximately along a diagonal of the plate **59** is a narrow slot **63** which

terminates in a round hole 64. Extending in a similar manner from outer corners of rectangular hole 61 are narrow slots 65 which terminate in round holes 66. Formed on a line across the middle of each of the plates 59 is a pair of spaced small holes 70.

As shown in FIG. 2 the eye-pins 48 have a flattened rectangular cross section and the narrow slots 63 and 65 are dimensioned so as to receive the eye-pins 48 flatwise while the round holes 64 and 66 are of a diameter which will permit the eye-pins 48 to be turned therein. In assembling the inner endmost slide hangers 44 of the tapes 56 and 57 on the plates 59 the eye-pins 48 of these hangers are extended through the slots 63 and 65 into the holes 64 and 66 at diagonally opposite corners of the plates 59 and a slide hanger 44 which is not connected with either of the tapes 56 or 57 is then assembled with each of the plates 59 by extending the eye-pin 48 of that hanger through the other of the narrow slots 65 and into the round hole 66 at the outer end of said slot.

With the three slide hangers 44 thus assembled with each of the two string attaching plates 59, and prior to the attachment of the lower clamp member 26 to the clamp 16 or the lower clamp member 32 to the clamp 17, the slide bodies 45 of these slide hangers are slipped into the outer ends of the longitudinal slots 14 of the guide rails 13 and shifted along these rails until these string attaching plates 59 meet at the mid points of said rails as shown in FIG. 3. The other slide hangers 44 are, of course, slipped into the outer ends of slots 14 as this movement proceeds until the slide bodies 45 of all of the hangers 44 assembled with each of the tapes 56 and 57 have been slipped into the slots 14 of said guide rails and are trapped therein as shown in FIGS. 3, 4 and 5. With the plates 59 held in their central abutting positions as shown in FIG. 3, the tapes 56 and 57 are tightened by pulling on their outer ends and these outer ends of said tapes are then secured to the horizontal mounting board 11 of the apparatus by driving staples 71 through said tapes and into said board.

The assembly of left end clamp 16 and right end clamp 17 is now completed by securing the members of these clamps tightly together by screws 20. This results in drapery attaching ears 28 and 34 of the lower clamp members 26 and 32 forming stops limiting outward endwise movement of the slide hangers 44 along the guide rails 13. Opposite end portions 72 and 73 of a draw string 74, which may be made of conventional braided cord, are inserted from beneath through the pulley frame 29 around the pulleys 30 and 31 respectively. String end portion 72 is then extended downwardly from above through one of the holes 70 in the left-hand string attaching plate 59 and a knot 75 formed therein. The other end portion 73 of draw string 74 is then extended downwardly through one of the holes 70 in the right-hand string attaching plate 59 and upwardly through the other hole 70 in said plate and after being fed through the pulley frame 35 and around pulley 40 this string end portion is returned and fed downwardly from above through the remaining open hole 70 in left-hand string attaching plate 59 and a knot 76 formed therein. The loop 77 formed in the draw string 74 between the holes 70 in the right-hand string attaching plate 59 is then looped upwardly and caught over the string lug 62 of that plate as shown in FIG. 3.

The apparatus 10 as above described has now been assembled in readiness to be mounted on a wall with the board 11 disposed horizontally so that a pair of draperies 78 and 79 may be hung from said apparatus. When the apparatus 10 is so mounted the middle portion of the operating draw string 74 hangs as a loop from the pulleys 30 and 31, as shown in FIG. 1, this loop being short enough so that it does not touch the floor. If desired, an idle pulley 80 may be assembled with the draw string 74 and the pulley 80 may be mounted on the floor so as to keep the draw string 74 taut throughout its length.

Operation

Any suitable means may be employed for securing upper edge portions of the draperies 78 and 79 to the eyes 49 and drapery attaching ears 28 and 34 of the left-hand and right-hand halves of the apparatus 10 as shown in FIG. 3. In this view the two draperies are shown by broken lines with a configuration they will have when attached to the apparatus 10 as above indicated. The means preferably used for this purpose is shown in FIG. 5 and comprises drapery pin hooks 85 having eye hooks 86 formed integral therewith. Each of the pin hooks 85 is thrust upwardly into the drapery material until the latter is caught thereon and the eye hook associated with said pin hook is then inserted through one of the eyes 49 of a slide hanger 44 or through one of the drapery attaching ears 28 or 34 formed on the lower clamp members 26 and 32.

As illustrated in FIG. 3 the suspending of draperies 28 and 29 in this manner from the apparatus 10 divides the draperies into a series of flat folds located at uniform angles relative to each other, and this is accomplished without the necessity of pressing or pleating the draperies to produce such uniform folds. It is also to be noted from this view that outer end portions of said draperies are secured permanently in a position to produce outer end folds 87 which are normal to the longitudinal axis of the board 11. In a similar manner inner end portions of the respective draperies 78 and 79 are secured to the inner slide hangers 44 associated with the string attaching plates 59 so as to form inner end folds 88 on said draperies which are constantly normal to the longitudinal axis of the mounting board 11.

From the above description it is manifest that pulling on end portion 72 of draw string 74 draws the two string attaching plates 59 apart and causes equal and symmetrical traversing of the two draperies 78 and 79 towards the opposite ends of the apparatus 10, this operation concluding with these two draperies folded into the same uniform folds into which they are divided by their attachment through drapery hooks 85 to the attaching ears and eyes of the apparatus. It is also clear that when the apparatus 10 is operated to reverse the compacting action above described and extend said draperies to bring these together at the middle of the apparatus, this is readily effected by merely pulling upon end portion 73 of the draw string 74. At the conclusion of the latter operation, the tapes 56 and 57 on both sides of the middle of the apparatus 10 are drawn taut and the slide hangers 44 assembled with these tapes are thus held in correctly spaced relation to produce uniform folds in the two draperies 78 and 79 which are hung from said apparatus.

It is to be understood that the apparatus 10 may be made in any length and that wherever a single middle clamp 18 is inadequate for supporting the guide rails 13 between the left and right end clamps 16 and 17, a plurality of the clamps 18 may be provided at suitable spaced intervals throughout the length of the rails 13. It is also to be understood that the invention is applicable to hanging a single drapery, instead of a pair of draperies in which case only one of the slides 59 would be employed and this would be actuated by the draw string to extend the single drapery so as to cover the entire area to be draped.

While only a single preferred embodiment of the invention is disclosed herein, it is to be understood that various changes and modifications may be made in this without departing from the spirit of the invention or from the scope of the appended claims.

What is claimed is:

1. In an apparatus for hanging and traversing an unpleated, unreinforced piece of tapestry fabric to invest the same with uniform pleat-like folds, the combination of: rail mounting means; a pair of horizontal parallel guide rails mounted on said means and spaced apart ap-

proximately the full depth horizontally of said pleat-like folds; a multiplicity of hangers running freely on each of said rails; a pair of flexible tapes, each tape serially connecting the hangers on one of said rails to determine the maximum distance each adjacent pair of said hangers may be spaced apart on said rail, the ends of said tapes at a particular pair of corresponding ends of said rails being anchored to said rail mounting means so that said tapes position the hangers on each rail in respectively uniformly offset relation to the hangers on the other rail when both said tapes are pulled taut away from the ends thereof which are anchored; and means extending downwardly from said hangers for engaging the upper edge of said fabric at suitable uniformly spaced points along said edge to connect said edge at one alternate set of such points to the hangers on one rail and at the other alternate set of such points to the hangers on the other rail, said fabric being folded at said points into uniform pleat-like folds with each hanger coinciding with one of said points, said folds being expanded and said fabric extended when said tapes are pulled taut, and being collapsed and said fabric compressed when said hangers and tapes are compacted toward the anchored ends of the latter.

2. A combination as recited in claim 1 wherein: two plural groups of hangers are provided on said rails on opposite sides of midpoints therein and; two plural sets of flexible tapes are provided connecting the individual hangers of said respective plural groups of hangers, the outer end of each of said tapes being anchored to said mounting means; two string attaching plates connected respectively to the innermost hangers of said respective plural sets of hangers whereby said plates are in close proximity at said rail mid-points when said tapes are taut; and means for connecting said drawstring means to said

plates to optionally simultaneously shift said plates into their maximum proximity as aforesaid, or to simultaneously shift the same apart to effect a maximum separation of said plates.

3. A combination as recited in claim 2, wherein: each of said plates is connected to at least one of the hangers running on one of said rails and to at least two of the hangers running on the other of said rails.

4. A combination as recited in claim 3, wherein: each of said hangers has an eye-pin with the eye thereof extending downwardly, said tapes having perforations, connections between said tapes and said hangers being effected by the hanger pin of a hanger extending through one of said perforations between the pin-eye and body of said hanger; and drapery pin hook means for connecting said drapery to said eye.

5. A combination as recited in claim 4, wherein: said plates have transversely disposed open-ended slots in which said pins of certain of said hangers are received to assemble said plates and hangers as aforesaid, said rails retaining said hangers and plates in assembled relation.

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