

[54] CARPET STRETCHER PIVOT BRIDGE

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[58] Field of Search 254/57-63

[57] ABSTRACT

A device to provide a strong, mobile, and properly aligned pivot point, from which to stretch carpet, with a carpet stretcher.

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5 Claims, 6 Drawing Figures

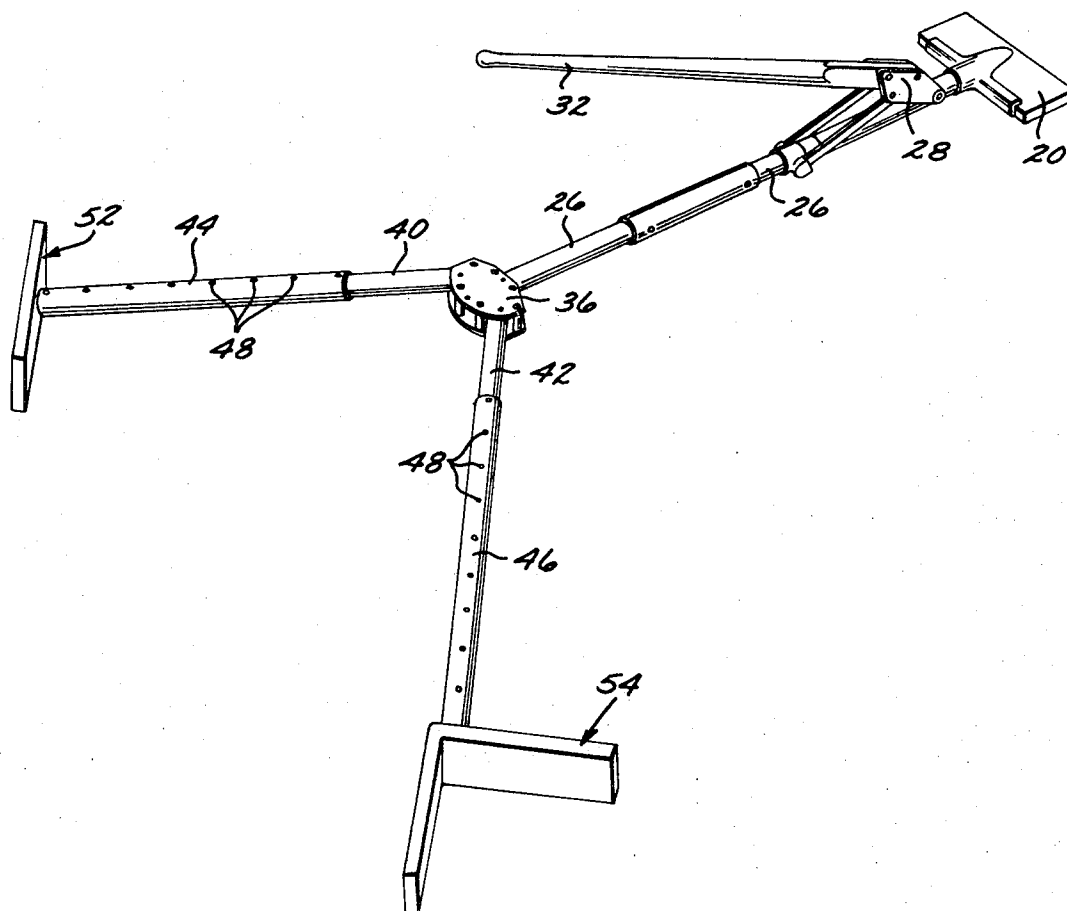


FIG. 1

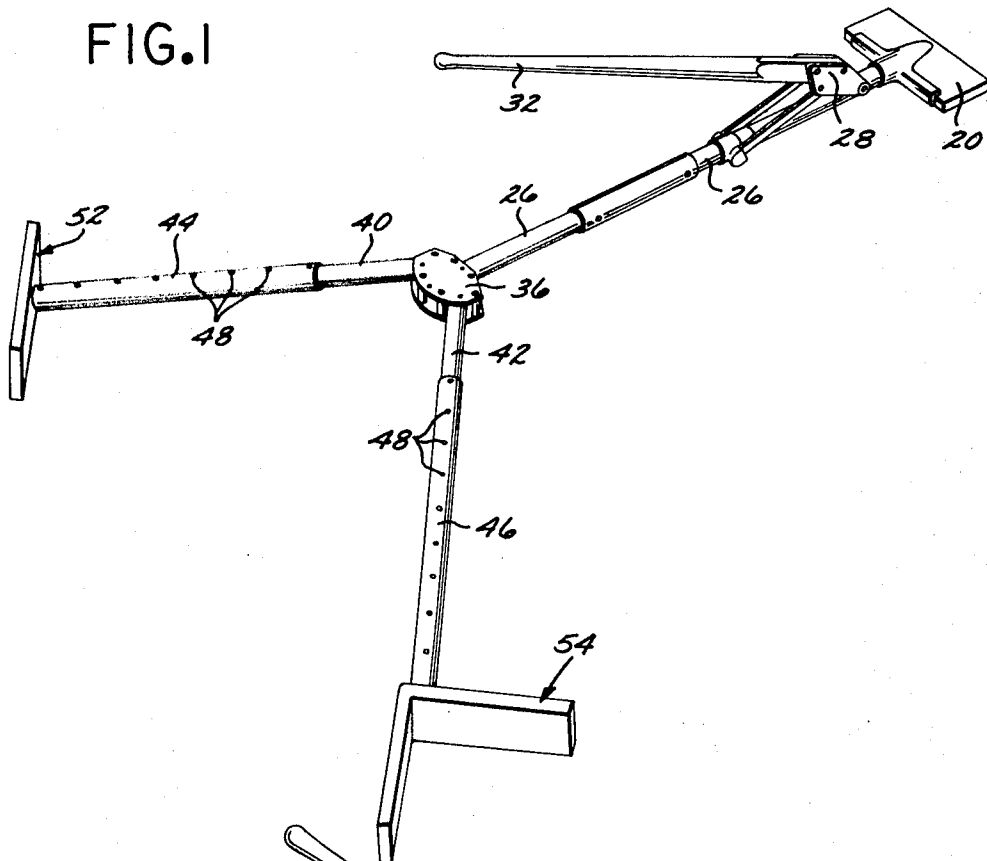
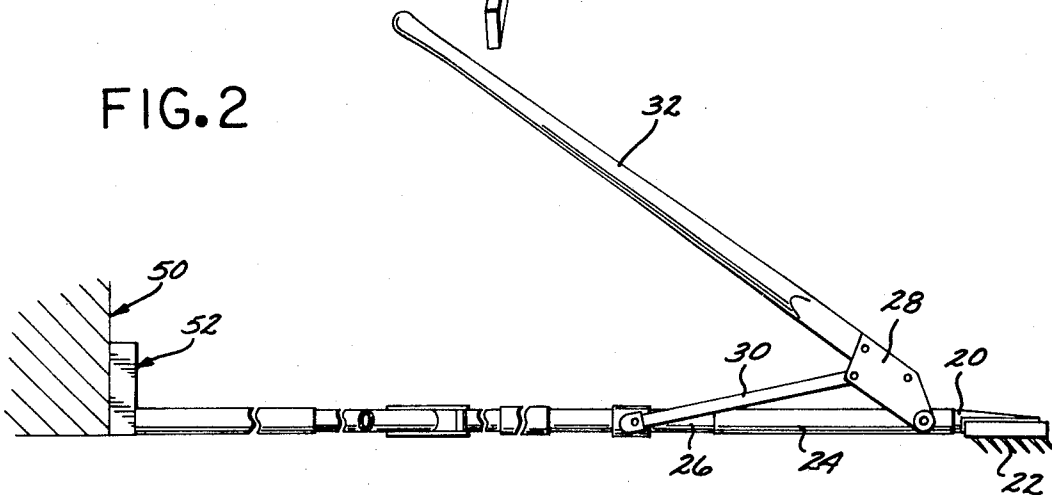


FIG. 2



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FIG. 3

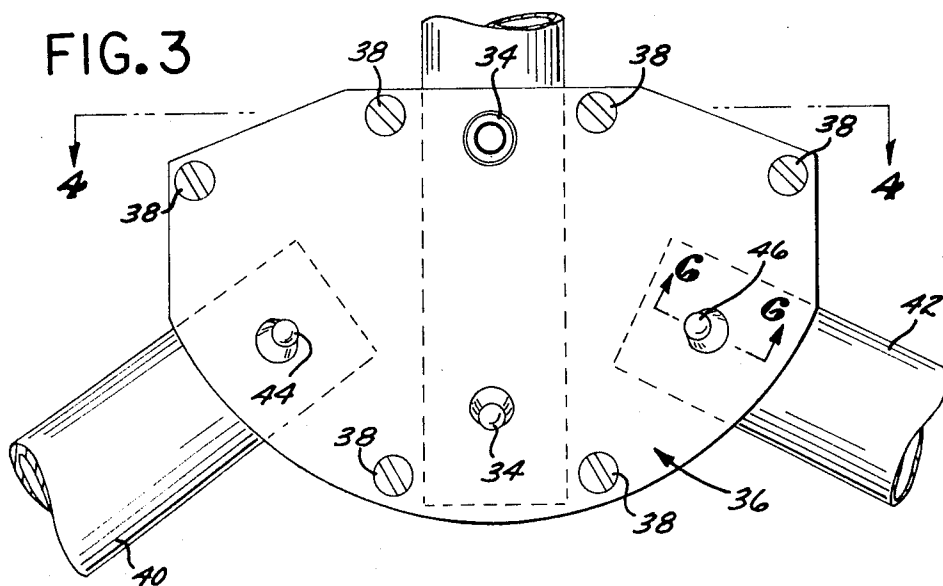


FIG. 4

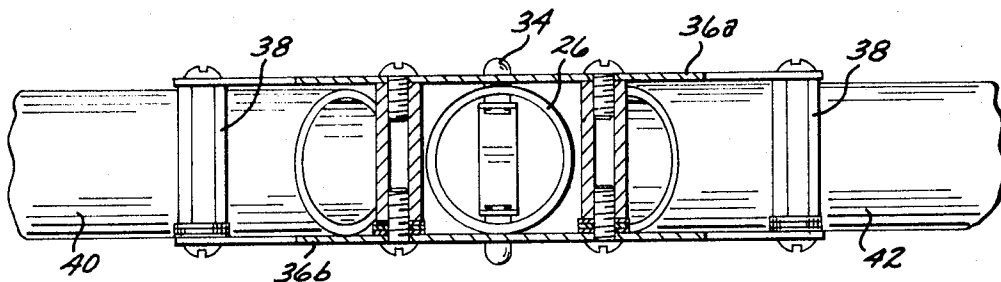


FIG. 5

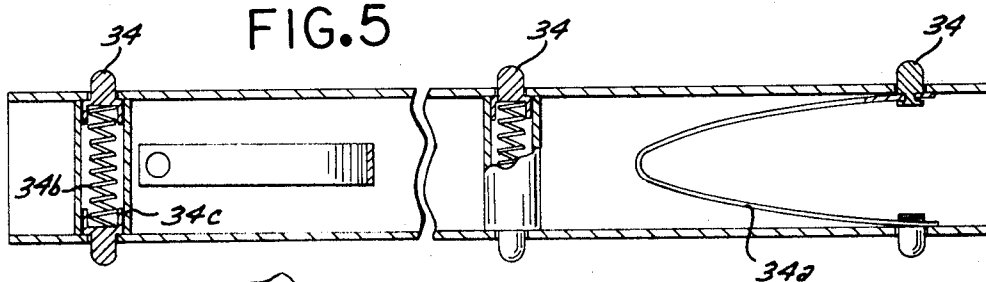
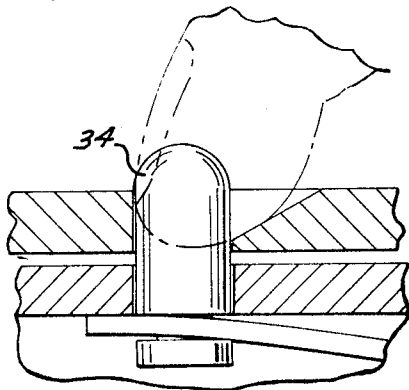


FIG. 6



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CARPET STRETCHER PIVOT BRIDGE

BACKGROUND OF THE INVENTION

Prior to this invention stretching carpet, in big areas and hallways, was a slow and cumbersome job, often requiring a large expenditure in men and materials.

Devices that were used to stretch carpet were a combination of planks, stretched pipes, and nails. The nails were used to break up the area into smaller ones and to hold the stretch. Planks and pipes were then laid out from whatever point was available and held in place by two to 10 men, until one man at the front could stretch and nail across the width of the section. The entire apparatus was then moved and set up again.

Accordingly, it is a primary purpose of this invention to provide a strong, mobile, pivot point. The pivot bridge may be handled by only one man and reset in a matter of seconds. It allows the proper stretching of larger sections or areas by its ideal placement, superior strength, and negligible weight.

SUMMARY OF THE INVENTION

The pivot bridge system includes a mechanical power stretcher, telescoping stretcher pipe, the pivot bridge, and two adjustable, pivoting legs of stretcher pipe. The legs pivot in a plane parallel to the force exerted by the stretcher head and the feet are placed against opposing side walls or other vertical surfaces.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view of the system and its component parts as seen in a typical set up.

FIG. 2 is a side elevation view of the system showing one leg braced against a wall and how force is applied.

FIG. 3 is an enlarged scale top plan view of a pivot bridge as used in FIG. 1, showing the interconnecting component parts, partially in ghost, and fragmented as they extend outwardly therefrom.

FIG. 4 is a cross-sectional view taken through 4-4 in FIG. 3 showing the connectors and positioning of the parts within the pivot bridge.

FIG. 5 is a sectional view taken through a required adapter/leg section showing both types of spring connector mechanisms, and their positioning. The connector mechanisms mate the horizontal holes on the stretcher to the vertical holes in the pivot head. They also fit the two holes in the head to stabilize it relative to the stretcher.

FIG. 6 is an enlarged detailed view taken through 6-6 in FIG. 3 showing the specially formed finger pocket adjoining a spring mounted connector release button.

DESCRIPTION OF THE INVENTION

The carpet stretcher machine illustrated as an embodiment of this invention is provided with a gripper head 20 which includes a plurality of teeth 22 extending outwardly and generally down at an angle from its bottom surface. The teeth 22 are positioned pointing generally toward the direction in which force on a carpet edge being installed is exerted, and are of sufficient length and number to firmly engage a carpet when this device is used.

The gripper head 20 is connected to an extension member 24 which is slidably mounted in a tubular neck 26 for axial extension therefrom. In order to extend the gripper head 20 relative to the tubular neck 26, an ex-

tension lever 28 is pivotally connected to the extension member 24. In turn, lever link 30 is pivotally connected between the extension lever 28 and the forward portion of the tubular neck 26. A lever handle 32 protrudes upwardly from the extension lever 28. It is so positioned that, when pressed downwardly, it forces the gripper head 20 out from the tubular neck 26 to cause the teeth 22 to firmly engage and stretch a carpet edge. The gripper head 20 is released by lifting on the lever handle 32.

The tubular neck 26 is comprised of a number of sections for adjustment of length which are telescoped together and held in place by spring mounted pins 34 which snap through mating holes in the telescoped portions of the respective sections. At the end of the tubular neck 26, remote from the stretcher gripper head 20, the neck 26 is connected by spring mounted pins 34 to a pivot bridge 36 by a modified adaptor pipe as in FIG. 5. Several forms of the springs used to provide outward resiliency for the pins 34 are shown in the detailed drawings. As shown in FIG. 5 a band-type spring 34a connects the pins 34 and a coil-spring 34b mounted within a pin tube 34c secures a pin 34 at each of its opposite ends. Both band and coil spring types form button assemblies which are compatible and interchangeable in use.

The pivot bridge 36 is specially structured to withstand the stress and strain to which it is subjected and still function effectively in accordance with the requirements of this invention. It is formed, in the embodiment of this invention illustrated, as comprised of an upper plate 36a and a lower plate 36b, each of which are somewhat half-moon in shape, spaced parallel apart from each other slightly greater than the outside diameter of the smaller internal tubular neck 26. Vertical adjustment of the space between the two plates is possible in order to accommodate makes and models of stretcher components other than the form illustrated in the drawings.

In order to withstand the stress to which plates 36a and 36b may be subjected, they are normally made of 1/8 inch thick steel plate. These plates are cut 6 inches by 9 inches, and then trimmed to eliminate unnecessary weight and sharp corners without impairing their structural integrity. Thus, as shown they are somewhat half-moon in shape. To hold the plates together and properly space them apart, three-eighths inch bolts 38 are secured between them.

That is, a leg 40 and a leg 42 are pivotally secured for movement in a substantially common plane in opposite sides of the bridge 36 by spring release mating pivot pins 44 and 46, respectively. In turn, the end of neck 26 remote from its connection which gripper head 20 is secured via an adaptor pipe centrally between the bridge plates 36a and 36b and generally extends outwardly in the same plane in which legs 40 and 42 pivot.

Thus, the six securing bolts 38 in the bridge 36 as illustrated, are spaced apart near the peripheral edges of the bridge plates 36a and 36b with a pair on the opposite sides of both the front and back edges of the centrally positioned connected portion of neck 26.

The bolts 38 are positioned on either side of the points of stress, and as close as possible to the points of stress without restricting the necessary, and substantial movement of the legs mounted thereon for pivotal movement. The spacing of the bolts is just enough to allow the legs to be disengaged by pressing the button (as shown in FIG. 6) on one side of the assembly to re-

lease the spring and twisting the leg to disengage the opposite side. To engage the legs, the end to be pivotally connected is inserted into the pivot bridge at a 30° to 45° angle, and then twisted to a vertical position as the buttons on each end of a bolt 38 are snapped into mating holes.

In the form shown, best viewed in FIG. 1 of the drawings, each of the pivotally mounted legs 40 and 42 are tubular pipes and provide a base for telescoping legs 44 and 46, respectively, which are slidably mounted on them. A plurality of holes 48, spaced longitudinally in the telescoping legs 44 and 46, and capable of being aligned with a locking hole, respectively, in legs 40 and 42, provides a means for receiving a resiliently mounted pin of the type previously described as a connector mechanism, to lock the telescoping legs together. Since this pin can be quickly released by pressing down on it, the telescoping legs can be slid back and forth relative to each, so as to extend to any desired length. Then, the hole 48 in the telescoping leg which is nearest the locking hole is aligned with it and the resiliently mounted pin (which is mounted in the hole in the inside leg) is snapped through the hole 48 to lock the legs together. More telescoping leg sections (not shown) can be added as required.

In order to engage a flat wall surface such as 50 in FIG. 2, telescoping leg 44 is provided with a flat foot 52 at its free end which can be a short section of two by four board. Another variation of a foot adapted for securely engaging a corner or edge is the angled foot 54 formed by two sections of two by four boards joined together at right angles. The use of a flat foot or an angled foot is determined by the particular surface which is to be engaged.

Thus, in use, the teeth 22 on the gripper head 20 are engaged with a portion of a carpet edge to be stretched for installation. Opposing wall surfaces, posts, or other suitable, solid, generally vertical structures are selected as abutting surfaces against which the feet of the legs are placed. The legs, and neck as required, are extended to the desired position for bracing the device while in use.

Because of the special construction of this invention, the extended pipes forming the leg and neck is so well balanced with the bridge head that the tendency of the pipes to bow under stress is minimized. Also, the pivot bridge allows for the preferred angle of stretch not readily feasible previously. With the pivot bridge used in accordance with this invention, it is possible to stretch off of two opposing blank walls, between two posts, a post and a blank wall, or doors in a hall as examples of bracing surfaces.

Hence, because of its special structure, the pivot bridge and the associated assembly is relatively lightweight. Yet, it can withstand the tremendous stress

forces on it, when used to stretch carpet, and still maintain its structural integrity.

Although a particular form of this invention has been shown in the drawings and described in detail in this specification, it is not intended that this invention be limited strictly to the form shown which is illustrative of an embodiment of this invention. Rather, all variations of the structure comprehended by the spirit of the described invention and defined by the claim is meant to be covered.

I claim:

1. A carpet stretching machine including a stretcher gripper head adapted to engage a carpet, a pivot bridge, an axially extendable neck member interconnecting said gripper and said pivot bridge and a pair of longitudinally adjustable legs pivotably mounted in said pivot bridge for movement in a plane substantially parallel with the stretching force of said gripper head when engaged with a carpet, each of said legs being provided with feed adapted to brace against a wall or other generally vertical surface when in use wherein said pivot bridge is provided with means for mounting said legs for pivotal movement on opposite sides of said bridge from one another and said neck member is mounted to extend from between said legs outwardly in a direction generally away from the direction of extension for bracing of said legs.

2. A carpet stretching machine as defined in claim 1 wherein said pivot bridge is formed by a pair of spaced parallel plates, said neck member and said legs are mounted between said plates, and a plurality of fastening members extend between said plates to secure them together, said fastening members being positioned closest to the points of greatest stress in the plates of said pivot bridge without restricting the pivotal movement of said legs when in use.

3. A carpet stretching machine as defined in claim 2 wherein said neck member and said legs are mounted between said plates by pins which include resiliently mounted button assemblies for quick insertion and release.

4. A carpet stretching machine as defined in claim 3 wherein said neck member is mounted to extend through the center portion of said pivot bridge, said legs each are mounted for pivotal movement on opposite sides of the mounted position of said neck member in the pivot bridge and said fastening members are securing bolts spaced apart generally near the peripheral edges of said pivot bridge.

5. A carpet stretching machine as defined in claim 4 wherein pairs of said securing bolts are located on the opposite sides of the centrally mounted portion of said neck near both the front and back edges of said pivot bridge.

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