

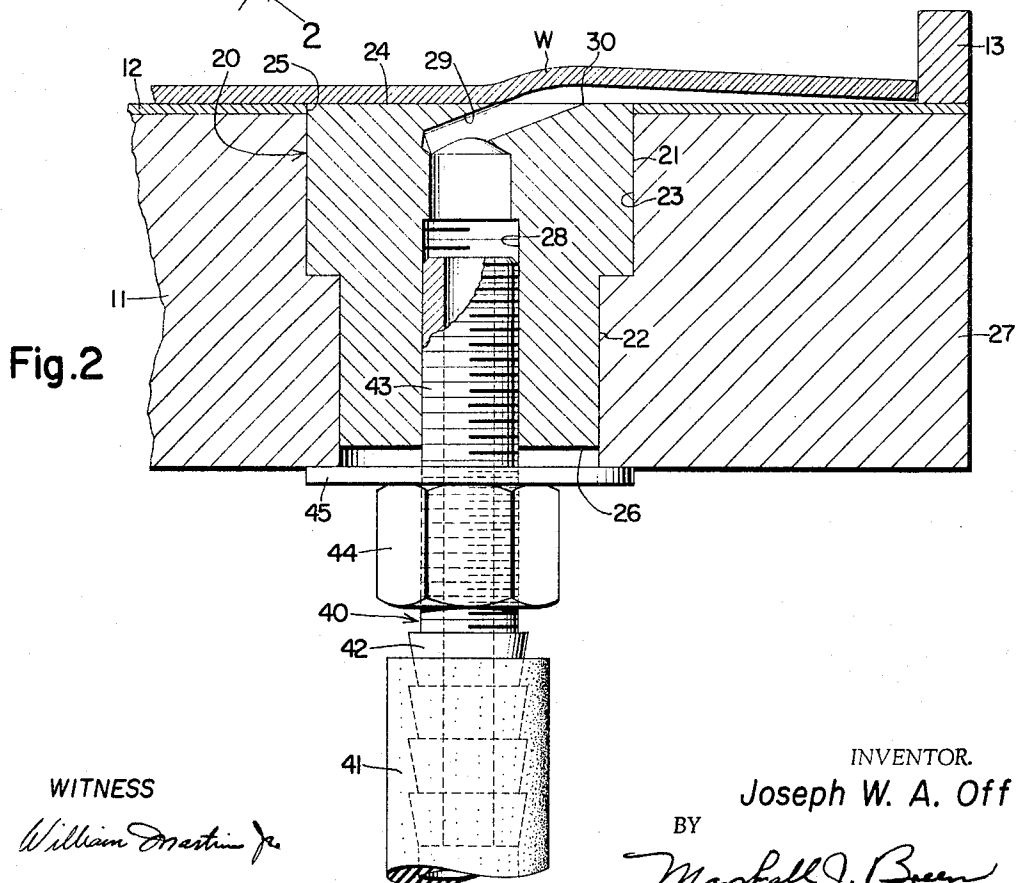
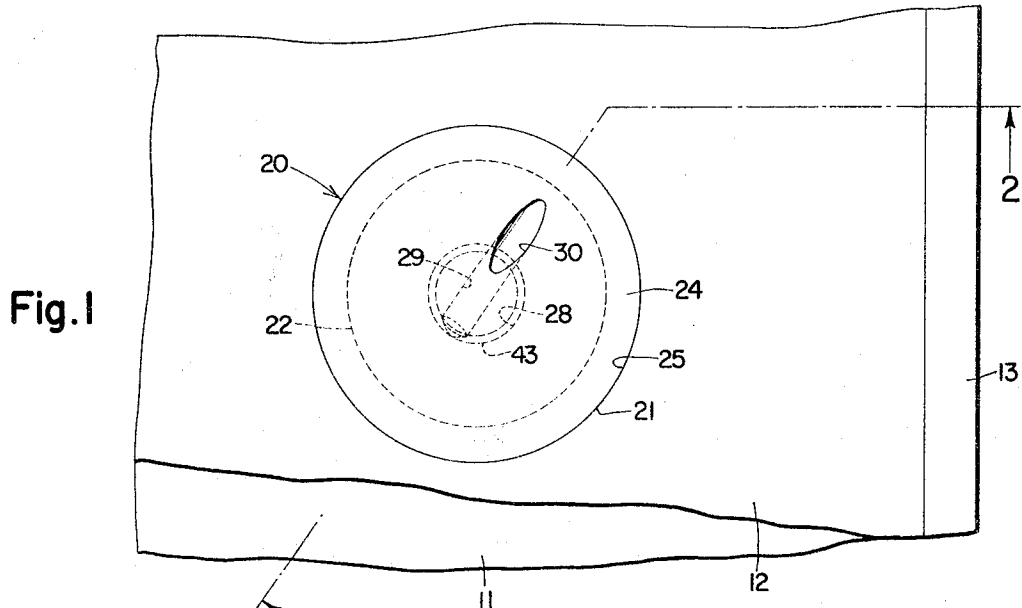
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WORK FABRIC TRANSPORTING DEVICES

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WORK FABRIC TRANSPORTING DEVICES

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2 Claims. (Cl. 271-74)

This invention relates to devices for transporting fabric panels in controlled or guided condition and is particularly adapted to the delivery of fabric panels into a position for a subsequent sewing, folding or stacking operation or the like.

It is an object of this invention to provide a novel and effective nozzle for the direction of a fabric delivering stream of compressed air relatively to a fabric guide trough.

It is also an object of this invention to provide a work guiding device with an air nozzle of the above character which may be secured in place in a novel and effective fashion particularly adapted to convenient selection of the delivery direction of the fabric transporting air stream provided thereby.

With the above and additional objects and advantages in view as will be hereinafter apparent, this invention will be described with reference to the accompanying drawing in which:

FIG. 1 represents a top plan view of a work fabric guiding trough having a fabric transporting nozzle in accordance with this invention applied thereto, and

FIG. 2 is a cross-sectional view taken substantially along line 2-2 of FIG. 1, and including a representation of a work fabric panel being manipulated.

In the drawing, 11 indicates a base or platform supporting a sheet metal trough 12 across which fabric panels are adapted to be directed, although the upper surface of the base 11 might also serve as the fabric guiding surface. At one side the trough may be provided with a raised fabric edge guiding member 13 to orient fabric panels which are moved along the trough for the controlled delivery of the fabric panels for instance to a sewing machine, creaser, stacker, or the like (not shown).

Set into the base 11 is an air nozzle, indicated generally at 20, which is constructed and arranged in accordance with this invention for transporting fabric panels along the trough and preferably into cooperative relation with the edge guiding member 13 thereon.

The air nozzle 20 comprises a cylindrical upper body portion 21 surmounting a cylindrical lower body portion 22 concentric with and of a smaller diameter than the upper body portion 21. The body of the air nozzle is adapted to be accommodated snugly in a counterbored aperture 23 formed in the base 11 with the upper surface 24 of the upper body portion 21 disposed sufficiently proud of the base as to accommodate an aperture 25 in the sheet metal trough 12 and with the upper surface 24 flush the work guiding surface of the trough. The under surface 26 of the lower body portion 22 is preferably disposed slightly above the under surface 27 of the base.

The air nozzle is formed with a blind bore 28 drilled and tapped axially of the air nozzle from the under surface 26 of the lower body portion. An inclined cylindrical conduit 29 is drilled into the upper surface 24 of the air nozzle on an axis inclined relatively to the level of the upper surface 24. As illustrated in FIG. 1, the elliptical orifice 30 of the cylindrical conduit 29 is contained completely within the upper surface 26 of the air nozzle, and the inner end of the conduit 29 opens onto the blind bore 28. It has been found that an inclination of the axis of the conduit 29 relatively to the level of the

upper surface 24 of approximately 20° provides for optimum influence upon most work fabrics, however, this inclination may be changed slightly in the case of particularly sheer or particularly heavy work fabrics.

A conventional connector 40 is used to connect a hose 41 from a supply of compressed air (not shown) to the air nozzle. The hose connector 40 comprises a hollow stud formed with an externally serrated extremity 42 over which the flexible air hose is adapted to be forced, and with an externally threaded extremity 43 which is threadedly engaged in the air nozzle bore 28.

The hose connector 40 also preferably serves to clamp the air nozzle in place in the base 11 and for this purpose a nut 44 on the threaded extremity 43 of the hose connector is used. A washer 45 may be interposed between the nut and the under surface 27 of the base 11.

In operation, compressed air delivered through the inclined conduit 29 and impinging against the underside of a work fabric panel W, as indicated in FIG. 2, will produce a slight upward bulge in the fabric panel which bulge will extend from the conduit orifice 30 and fan out in the direction in which the conduit 29 is inclined. The velocity of the air flow from the conduit and the pressure reduction resulting from this air velocity will depress the fabric panel downwardly against the trough and because of the inclination of the conduit 29 the directionalized air stream issuing therefrom will urge the fabric panel to move bodily in the direction toward which the conduit is inclined.

A multiplicity of air nozzles 20 may be used to act in seriatim on a fabric panel to shift the panel a considerable distance or to impart a compound motion to the fabric panel.

An air nozzle 20 may be arranged at any desired point along the fabric guide trough simply by drilling a counterbored aperture 23 and the trough aperture 25 at the desired point. An air nozzle 20 placed in the counterbored aperture 23 may be aimed to deliver an air stream in any direction and locked in that selected position by tightening the nut 44.

Having set forth the nature of this invention, what I claim herein is:

1. In a fabric guiding device including a supporting base having an under surface and a fabric guiding upper surface associated therewith and fabric edge guiding means extending from said upper surface, a fabric transporting means comprising an air nozzle having a cylindrical body including an upper portion with a top surface substantially normal to said cylindrical body and a lower portion of reduced diameter having a bottom surface, said cylindrical body formed with a blind axial threaded bore entering said bottom surface, and a cylindrical conduit having an axis inclined to the top surface of said upper portion, said conduit defining an elliptical orifice completely within the confines of said top surface and intersecting said blind bore, said base being formed with a counterbored aperture accommodating said air nozzle body with said top surface of said body portion flush with said fabric guiding upper surface of said base and said bottom surface of said body portion slightly above the under surface of said base, a hollow threaded stud threadedly engaging said axial bore in said air nozzle body, a clamp nut threadedly engaging said stud and bearing against the under surface of said base to lock said air nozzle in selected angular position in said counterbore.

2. A fabric guiding device including a supporting base having a fabric supporting surface defining a fabric passageway along which fabric is to be moved from one location to another, fabric transporting means effective to move fabric along said passageway and including at least one air nozzle having its discharge end opening into said fabric supporting surface, said air nozzle having a cylin-

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drical body including an upper portion with a top surface substantially normal to said cylindrical body, an air passageway in the form of an axial blind bore provided in said cylindrical body, a conduit disposed at an inclination to the longitudinal axis of said bore intersecting said bore at its inner end and opening at its other end into the top surface of said nozzle, means securing said nozzle in the supporting base of said fabric guiding device, and means for delivering air to said bore in said nozzle.

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References Cited by the Examiner

UNITED STATES PATENTS

1,007,325	10/1911	Bohme	239—597
1,823,635	9/1931	Williams	239—601
3,136,539	6/1964	Lyman	271—26

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