

V. DANISI.
EMBROIDERY FRAME.
APPLICATION FILED OCT. 31, 1919.

1,392,123.

Patented Sept. 27, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

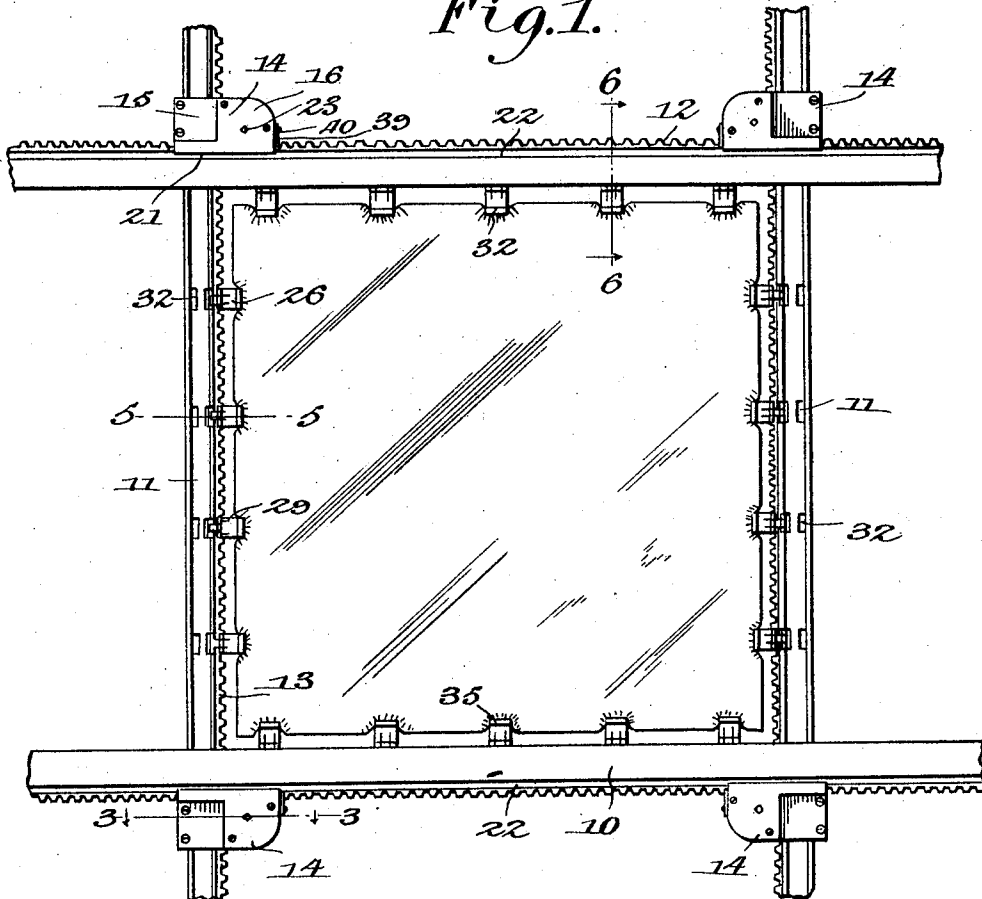
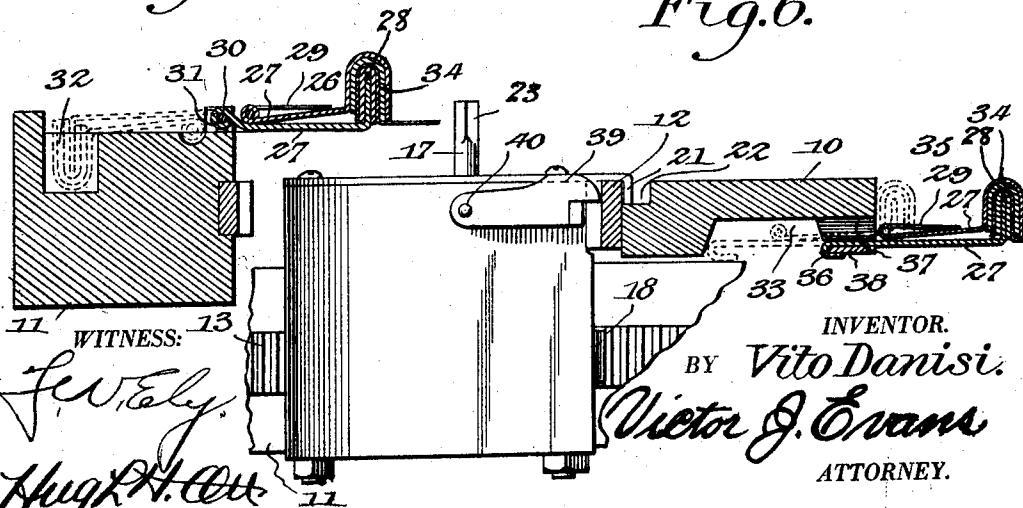


Fig. 5.

Fig. 6.



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2 SHEETS—SHEET 2.

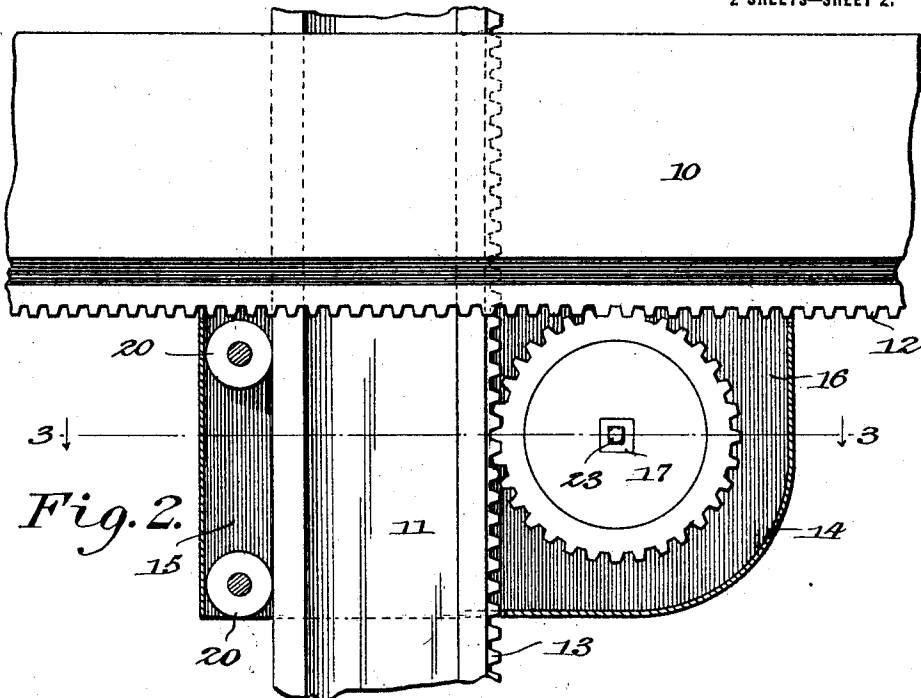


Fig. 2.

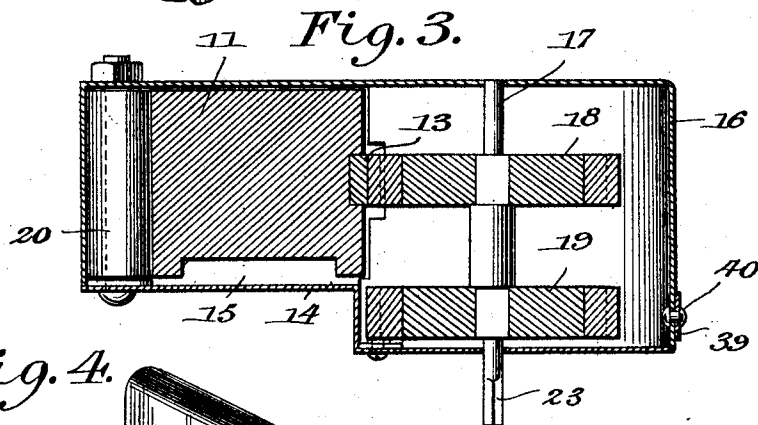
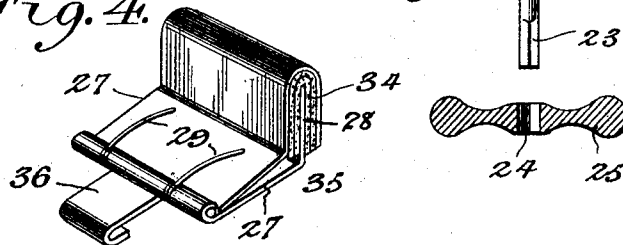


Fig. 3.

Fig. 4.



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EMBROIDERY-FRAME.

1,392,123.

Specification of Letters Patent. Patented Sept. 27, 1921.

Application filed October 31, 1919. Serial No. 334,655.

To all whom it may concern:

Be it known that I, VITO DANISI, a subject of the King of Italy, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Embroidery-Frames, of which the following is a specification.

This invention relates to embroidery frames and more particularly to adjustable frames of this character, together with means for securing and supporting the work thereon.

Some of the principal objects of the invention are; to provide a frame of this class, consisting of relatively adjustable work supporting rails and connecting and actuating means for adjusting the same to adapt the frame for use in connection with work of various sizes; to provide an adjustable frame, the proportions of which may be regulated so that the same may be arranged to conform with work of varying proportions; to provide in connection with an adjustable frame, devices for securing the work to the supporting rails, the said devices being capable of being nested in the rails for permitting free movement of the same when adjusting or changing the proportions of the frame, and to provide simple and effective instrumentalities for carrying out the foregoing objects.

With these and other ends in view, the nature and purpose of which will be more readily understood hereafter, reference is made to the following description, claims and accompanying drawings forming a part of this application.

In the drawings:

Figure 1 is a plan view of a frame constructed in accordance with the present invention, illustrating the same adjusted and supporting the fabric.

Fig. 2 is an enlarged sectional view through one corner of the frame and its respective connecting device and actuating means.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a detail perspective view of one of the securing elements.

Fig. 5 is an enlarged detail sectional view on the line 5—5 Fig. 1, illustrating respectively, in full and dotted lines the several positions of the securing elements.

Fig. 6 is a similar sectional view on the line 6—6 of Fig. 1.

Referring to the drawings by characters of reference, the frame includes the side rails 10—10 and end rails 11—11, arranged in superposed intersecting relation. Each of the side rails has formed or secured to its outer longitudinal side edge, a rack bar 12, and each of the end rails is provided with a rack bar 13, arranged on its inner longitudinal edge. Suitable connecting devices 14 which are preferably constructed of sheet metal are arranged at the corners of the frame, adjacent the points of intersection of the side and end rails and each of said connecting devices is cut away to form an embracing portion 15, through which the end rails 11 are adapted to be operated and guided in their movements. The remainder of the connecting device forms a housing 16, in which is mounted a shaft 17, having keyed thereto superposed pinions 18 and 19, the teeth of the former engaging and coacting with the teeth of the rack bar 13 on the end rail 11, the teeth of the latter pinion engaging with the teeth of the rack bar 12 provided on the side rail 10. Anti-friction rollers 20 are mounted within the embracing portion 15 and are adapted to engage with the opposite outer side edge of the end rail, to serve as a guiding means for effecting operative engagement of the rack teeth with the teeth of the pinion 18. The connecting devices 14 also include means for maintaining active engagement of the teeth of the racks 12 with the pinion 19, and said means comprises a tongue 21 formed on each of the connecting devices, which works in a groove 22, in the side rails 10.

One extremity of the shaft 17 is extended through the connecting device and is squared as at 23 to receive the squared aperture 24 of a manipulating handle 25. From the foregoing construction it will be seen that upon rotating the shafts 17 in either direction, relative adjustments of the side and end bars toward or away from each other, are effected to vary the size of the frame whereby it may accommodate work of various sizes and set up the necessary tension on the work. It is also possible to disconnect the rails from the connecting devices and re-assemble the frame to change the proportion thereof, so that the same may conform to work of varying proportions. This is accomplished by arranging the connecting devices 14 on the end rails 11, in various relatively spaced re-

lation, prior to the introduction of the side rails 10; as the connecting devices and end rails 11 are advanced toward each other, the pinions 18 and 19 will revolve due to their engagement with their respective rack bars and corresponding relative movement between the side rails and end rails will be effected to constantly maintain that proportion until the rails are disconnected and reassembled to vary the same. In other words the proportionate width of the frame with relation to its length is controlled by the distance apart at which the connecting devices 14 are primarily set prior to the introduction of the side rails.

The means for securing the material to be worked upon, to the end rails includes clamping elements 26, each of which comprises a pair of hinged leaves 27—27 provided with substantially off-set portions 28—28 adjacent their free ends, said portions being adapted to interfit to cause the material held therebetween to assume a sinuous position to prevent casual displacement of the same from the clamping elements. A spring 29 normally forces the leaves 27 toward each other for clamping engagement and one of said leaves is provided with an extension, adjacent its hinge which forms a hook 30, said hook being adapted to engage a staple 31, in the cut away portion of the end rail. The clamping elements are arranged as illustrated in full lines in Fig. 5, to support the material but are adapted when not in use to be swung to the position shown in dotted lines whereby the connecting devices 14 may be moved over the same during their adjustments and in order to provide a space for accommodating the off-set portion 28, a recess 32 is provided in the end rail as illustrated. If desired, a suitable lining of chamois 34 or any other suitable material may be applied to the coacting surfaces of the off-set portions.

The clamping elements 35 which secure

the material to the side rail 10 are of substantially the same construction as the clamping elements 26, except for their mode of connection with the side rails. In lieu of a hook and staple as heretofore described, one of the leaves 27 is provided with a substantially longer hooked extension 36, and the side rails are each provided with a channeled portion 37 over which a face plate 38 is secured. When it is desired to secure the material to the side rails, the clamping elements are arranged in the position shown in full lines in Fig. 6, but the same are capable of being moved to an out-of-the-way position, when not in use, as shown in dotted lines in Fig. 6.

Suitable locking devices 39 are pivoted as at 40 to the connecting devices 14 and are adapted to be swung to a position to engage with the rack teeth to maintain the frame in any one of its several adjusted positions.

While there has been shown and described one manner in which the invention may be reduced to practice, the same is merely illustrated and no limitation is made to the precise details of construction but it is to be understood that such changes and alterations as fall within the scope of the appended claim may be resorted to when found expedient.

What is claimed as new is:—

In an embroidery frame, a plurality of relatively adjustable rails constituting a work supporting frame, connecting and actuating devices carried by said rails and co-acting therewith for effecting relative adjustments of the same with respect to each other, clamping elements carried by said rails, and receiving portions formed in said rails adjacent said clamping elements for the reception of the same when thrown to an inactive position.

In testimony whereof I have affixed my signature.

VITO DANISI.