

Jan. 6, 1953

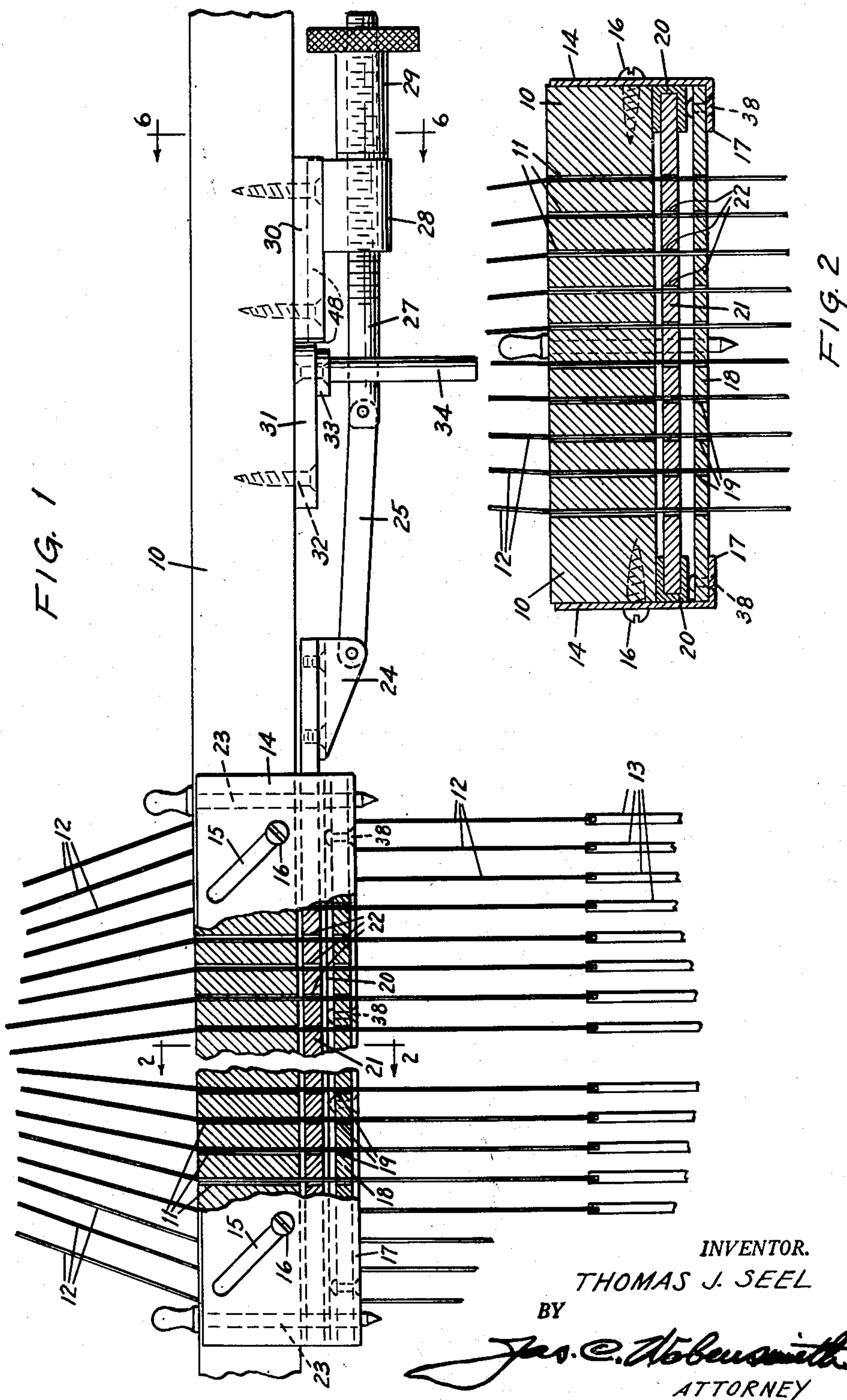
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2,624,369

JACQUARD LOOM HARNESS

Filed July 30, 1951

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

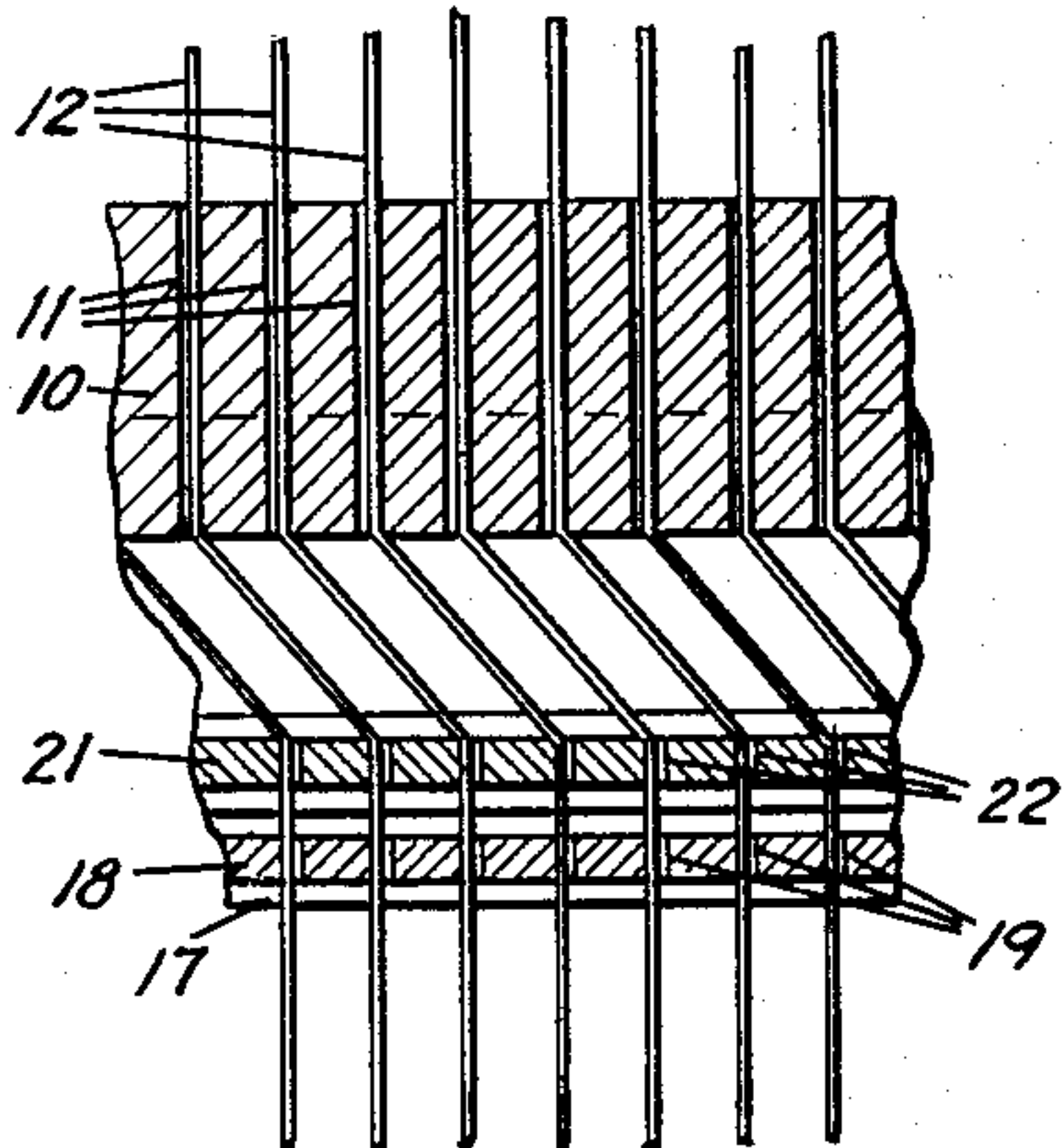


FIG. 3

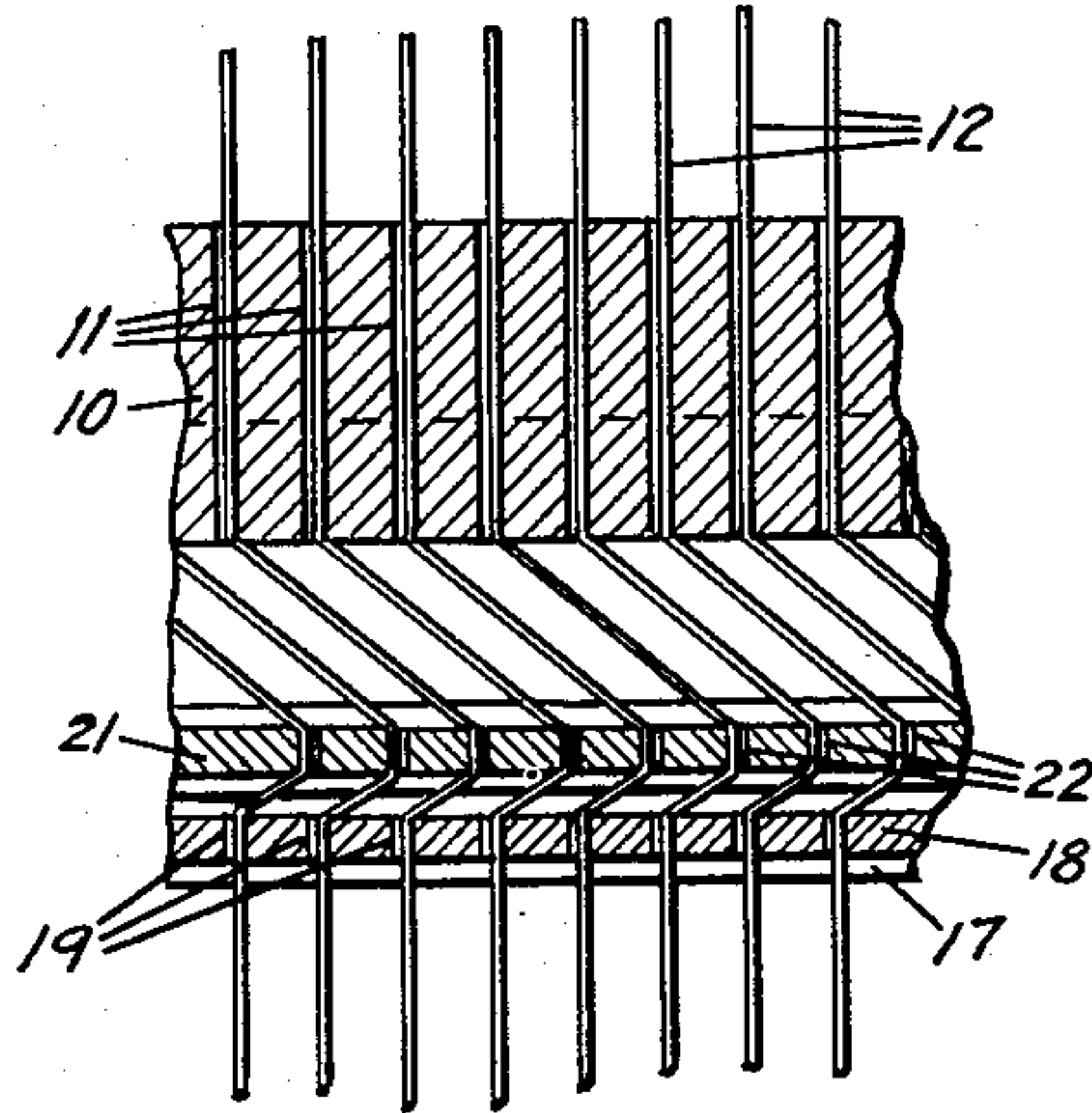


FIG. 4

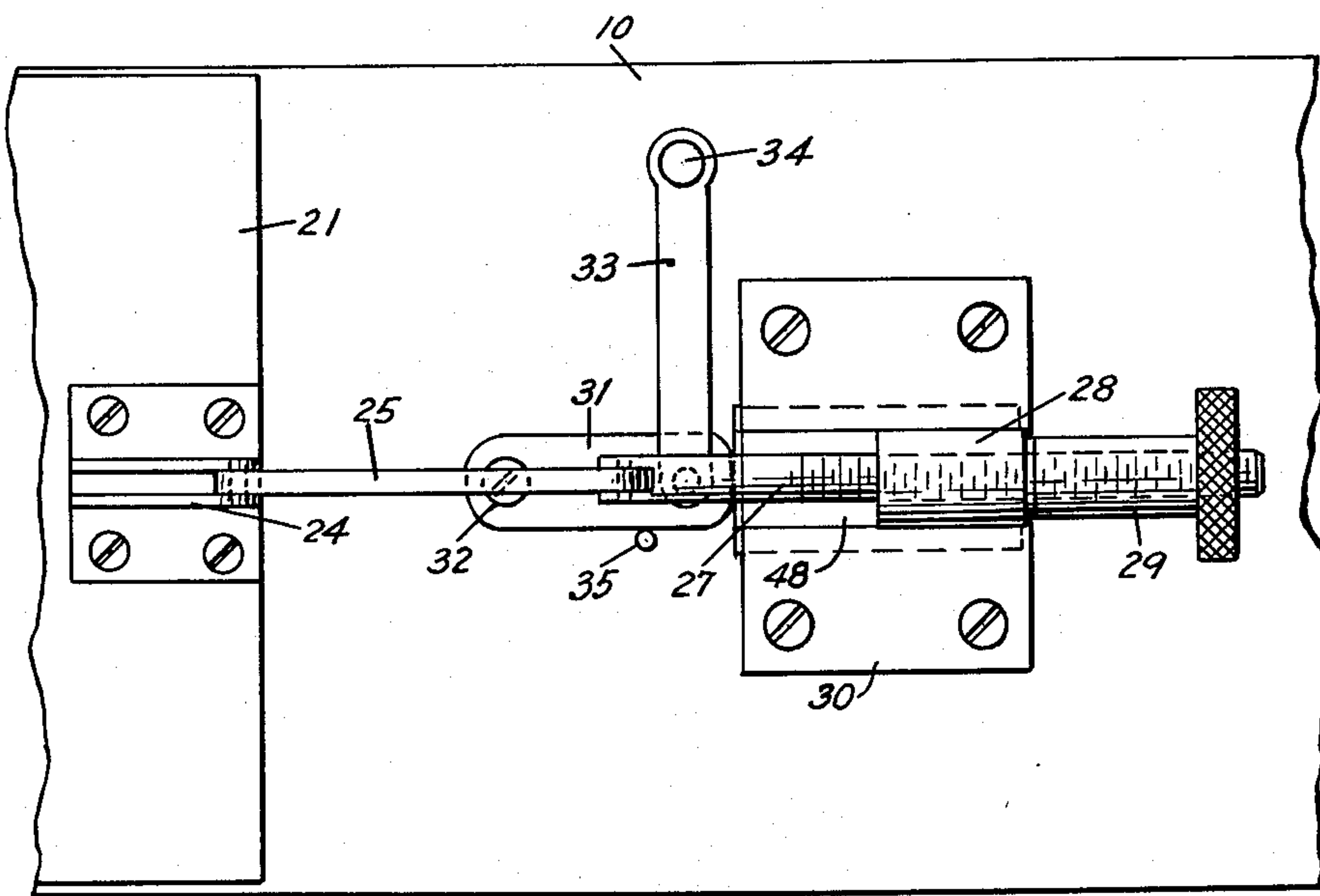


FIG. 5

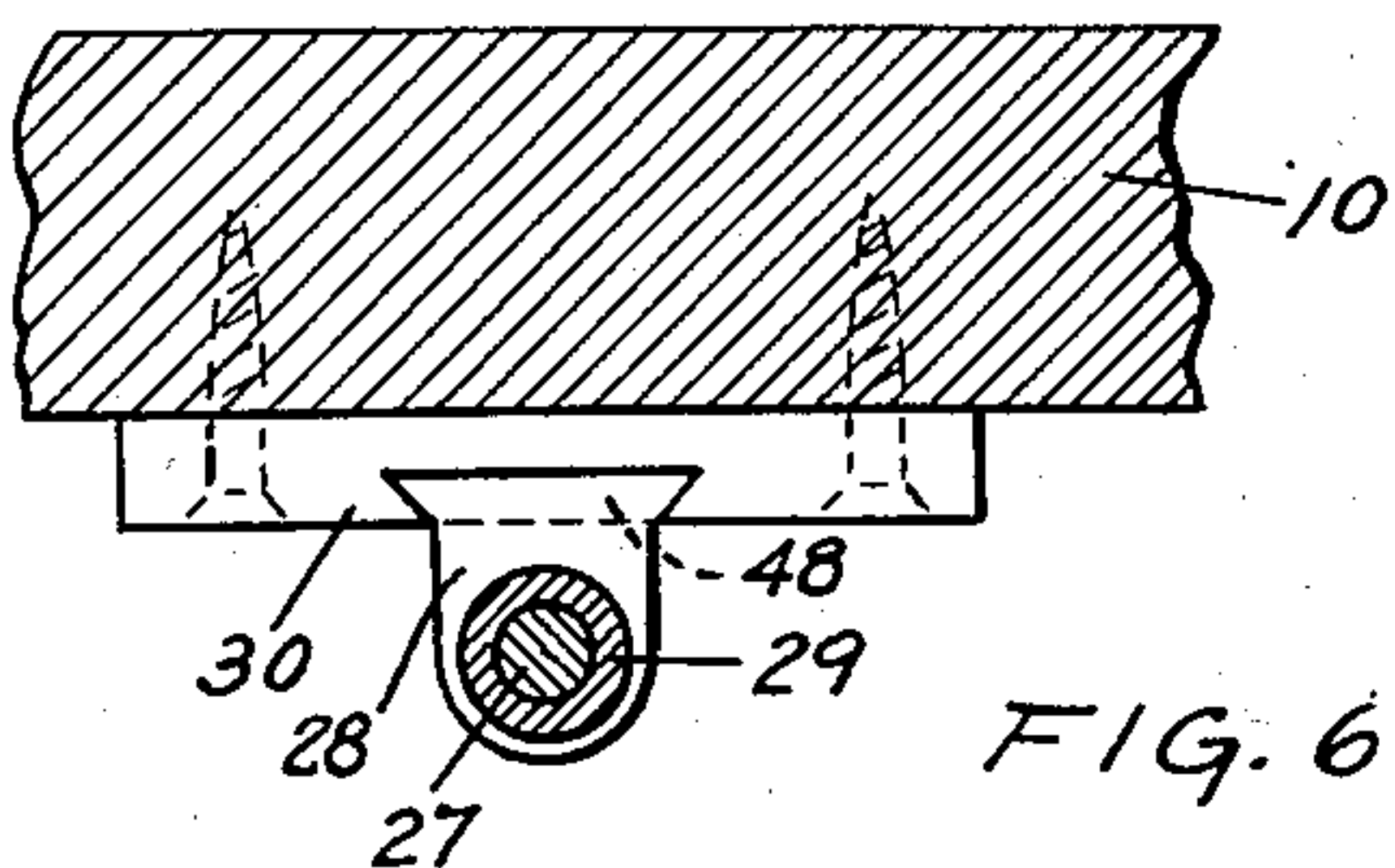


FIG. 6

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JACQUARD LOOM HARNESS

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This invention relates to Jacquard loom harness, and it relates more particularly to means in such harness for preventing twisting of the harness cords and the resulting winding of the warp ends around the heddles at the eye portions thereof.

It is, of course, well known that when changes in the humidity of the atmosphere occur from time to time, and particularly when a Jacquard loom is standing idle, or when the entering of a new warp is being done, a change in the atmospheric moisture content will cause the harness cords to twist in varying degrees, with the result that some of the warp ends will be wound around their respective heddles, causing the same to bind and thus interfere with the proper shedding and freedom of the feed.

In some instances, breakage of the warp ends will occur and in other instances defects in the weave are caused. These objections are more pronounced in connection with the use of the heddles made of thin, flat strips of metal or wire, as the necessary untwisting will not take place as readily with such heddles as with the older forms in which the heddles were of round cross-section.

The principal object of the present invention is to provide means for securing the harness cords of Jacquard looms in such manner as to prevent twisting of the heddles and the resultant winding of the warp ends thereon.

A further object of the invention is to provide means of the character aforesaid which will greatly facilitate the entering of the warp in that the eye portions of all of the heddles will be kept faced in substantially the same direction.

A further object of the invention is to provide, in mechanism of the character aforesaid, means for quickly releasing the aforesaid cord securing means in the event of improper starting of the loom when said cords are being held against twisting as herein set forth.

The nature and characteristic features of the present invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part hereof, in which:

Figure 1 is a view partly in side elevation, and partly in section, of a comber-board of a Jacquard loom having cord securing means associated therewith embodying the main features of the present invention;

Fig. 2 is a transverse section thereof taken on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary sectional view illus-

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trating certain of the parts of the device of the present invention in position for partially locking the harness cords.

Fig. 4 is a similar view with the parts in position for locking the harness cords more fully;

Fig. 5 is an underneath plan view of a portion of the mechanism shown in Fig. 1; and

Fig. 6 is a transverse section taken on the line 6—6 of Fig. 1.

It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes may be made in the structure disclosed without departing from the spirit of the invention.

Referring to the drawings, in the particular embodiment of the invention therein shown, 10 is a comber-board, of any preferred style, such as are commonly used in Jacquard looms, the same being provided with a plurality of vertically extending holes 11, through which pass the harness cords 12 from the lower ends of which the pattern forming heddles 13 are suspended.

The heddles 13 may be of the ordinary types commonly used in Jacquard looms, and each heddle of course has a lingo (not shown), secured to the lower end thereof, and is provided with the usual warp eye (not shown) intermediate its ends.

On each side of the comber-board 10 there is mounted a side plate member 14. The side plate members 14 are each provided with a series of cam slots 15 for a purpose to be presently explained. The cam slots 15 each have a screw 16 extending therethrough which is mounted in the comber-board.

The lower edge portion of each side plate member 14 is bent inwardly to form a ledge 17 which serves as a support for a plate member 18. The plate member 18 may be secured to the ledges 17 by rivets 38, or other suitable fastening devices.

The plate member 18 is provided with a series of holes 19 which, during the normal operation of the loom, register with the holes 11 in the comber-board 10. The harness cords 12 extend through the holes 19 in the plate member 18.

The side plate members 14 are also provided, on the inner faces thereof, with channel members 20 which serve to support another plate member 21 disposed between the lower plate member 18 and the lower face of the comber-board 10. This plate member 21 is also provided with a series of holes 22 which, during the nor-

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mal operation of the loom, register with the holes 11 of the comber-board 10 and through which the harness cords 12 also extend.

Locking members, such as pins 23 extend through the comber-board 10, and through each of the plate members 18 and 21, and these pins 23 serve to prevent shifting of the plate members 18 and 21 with respect to the comber-board 10 during the normal operation of the loom.

The intermediate plate member 21 is provided, at one end thereof, with a bracket 24 to which one end of a link 25 is pivotally connected. The other end of link 25 is pivotally connected to one end of a threaded bolt member 27 which is slidably mounted in a bracket 28. The bracket 28 is ordinarily held in a fixed longitudinal position, but is adapted to be freed for longitudinal movement, in a manner and for a purpose to be presently explained. Upon the outer end of the bolt member 27 a nut 29 is threaded.

The bracket member 28, in which the bolt member 27 is slidably mounted, has a base portion 48 which is slidably mounted in a plate member 30 which is secured to the under face of the comber-board 10, and said bracket member 28 is normally held against longitudinal movement by means of a latch or dog 31, which is pivoted, by means of a screw 32, on the under face of the comber-board 10, in such position as normally to obstruct the movement of the base portion 48 of the bracket member 28 which is slidably mounted in the plate member 30 as aforesaid. The latch or dog 31 is provided with a link 33 pivoted thereto and extending to one side of the comber-board. The link 33 is provided with a handle 34 for the operation of the latch or dog 31. A stop pin 35 serves to locate the latch or dog 31 in the locking position.

The operation of the device as above described may now be explained.

Whenever the loom is to stand idle for a period of time during which atmospheric changes are likely to occur, or whenever a new set of warp is to be entered through the heddle eyes, the locking pins 23 are first removed, after which the nut 29 is advanced on the bolt 27 causing the intermediate plate member 21 to be moved sideways in the loom. When the plate member 21 is thus moved sideways by the manipulation of the nut 29 on the bolt 27, the lower plate member 18 will be carried along with the same by reason of the combined tension of the harness cords. This action will continue, until the harness cords are brought to the condition shown in Fig. 3 of the drawings, putting a distinct bend or offset in each of the harness cords which will serve to bind said harness cords against rotation below the comber-board, and this notwithstanding any twisting moment which may be applied thereto by reason of changes in the moisture content of the atmosphere.

However, in some instances, it will be found that a single shift of but one of the plate members, with respect to the comber-board, may not be sufficient to accomplish the intended purpose, and hence in such cases the intermediate plate member may be shifted still further as indicated in Fig. 4 of the drawings, which will not only serve to increase the initial offset, but will also introduce another offset, but in the reverse direction, in each of the harness cords.

It will be found that when the plate members are manipulated as aforesaid, the harness cords will each be effectively prevented from twisting, and the heddle eyes will all be maintained in a sufficiently uniform facing direction. This will

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not only serve to prevent winding of the warp ends around the heddles, but will also greatly facilitate the entering of the warp whenever it becomes necessary to substitute a new warp for one which has run out.

When it is desired to put the loom into operation, the nut 29 is again manipulated, in a reverse direction, to permit the plate members to be returned by the tension of the harness cords to the proper operating positions, that is, with the holes in both plate members in register with the holes in the comber-board. After the plate members 18 and 21 have been returned to their proper positions for the normal operation of the loom, the locking pins 23 may then be inserted to hold the plate members 18 and 21 against undesired shifting with respect to the comber-board while the loom is operating.

However, should the loom be inadvertently started when the plate members 18 and 21, or either of them, are shifted with respect to the comber-board, said plate members 18 and 21 may be quickly released by pulling on the handle 34 which, through the link 33, will cause the dog or latch 31 to be shifted angularly to release the base portion 48 of the bracket member 28, against which the nut 29 abuts, and which is then free to be longitudinally slidable in the plate member 30. The plate members 18 and 21 will then be returned to the normal or unlocked position by the tension of the harness cords.

I claim:

1. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through which the harness cords pass, and means for preventing twisting of the harness cords when the loom is standing idle comprising a device adjacent the comber board through which the harness cords extend, said device being shiftable to offset and thus bind the harness cords.

2. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through which the harness cords pass, a plate member disposed adjacent the comber-board having a plurality of holes through which the harness cords also pass, which holes register with the holes of the comber-board during the normal operation of the loom, means for shifting said plate member thereby to offset and thus bind the harness cords adjacent the comber-board and thereby prevent twisting of said harness cords.

3. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through which the harness cords pass, a plate member disposed adjacent the comber-board having a plurality of holes through which the harness cords also pass, which holes register with the holes of the comber-board during the normal operation of the loom, means for shifting said plate member thereby to offset and thus bind the harness cords adjacent the comber-board and thereby prevent twisting of said harness cords, and means for locking the plate member against shifting during the normal operation of the loom.

4. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through

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which the harness cords pass, a plate member disposed adjacent the comber-board having a plurality of holes through which the harness cords also pass, which holes register with the holes of the comber-board during the normal operation of the loom, means for shifting said plate member thereby to offset and thus bind the harness cords adjacent the comber-board and thereby prevent twisting of said harness cords, and means for quickly releasing the means for shifting the plate member.

5. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through which the harness cords pass, a pair of plate members disposed adjacent the comber-board each having a plurality of holes through which the harness cords pass, which holes register with the holes of the comber-board during the normal operation of the loom, and means for shifting at least one of said plate members thereby to offset and thus bind the harness cords adjacent the comber-board and thereby prevent twisting of said harness cords.

6. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through which the harness cords pass, a pair of plate members disposed adjacent the comber-board each having a plurality of holes through which the harness cords also pass, which holes register with the holes of the comber-board during the normal operation of the loom, means for shifting at least one of said plate members thereby to offset and thus bind the harness cords adjacent the comber-board and thereby prevent twisting of said harness cords, and means for locking the plate members against shifting during the normal operation of the loom.

7. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through which the harness cords pass, a pair of plate members disposed adjacent the comber-board each having a plurality of holes through which the harness cords also pass, which holes register with the holes of the comber-board during the normal operation of the loom, means for shifting at least one of said plate members thereby to offset and thus bind the harness cords adjacent the comber-board and thereby prevent twisting of said harness cords, and means for locking the plate members against shifting during the normal operation of the loom comprising removable bolt members passing through the comber-board and through said plate members.

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8. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through which the harness cords pass, a pair of plate members disposed adjacent the comber-board each having a plurality of holes through which the harness cords also pass, which holes register with the holes of the comber-board during the normal operation of the loom, means for shifting at least one of said plate members thereby to offset and thus bind the harness cords adjacent the comber-board and thereby prevent twisting of said harness cords, and means for quickly releasing the means for shifting the plate members.

9. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through which the harness cords pass, a pair of plate members disposed adjacent the comber-board each having a plurality of holes through which the harness cords also pass, which holes register with the holes of the comber-board during the normal operation of the loom, means for shifting said plate members each to a different extent, thereby to offset and thus bind the harness cords adjacent the comber-board and thereby prevent twisting of said harness cords.

10. In Jacquard loom harness including a plurality of heddles, and harness cords at the lower ends of which the said heddles are carried, a comber-board having a plurality of holes through which the harness cords pass, a pair of plate members disposed adjacent the comber-board each having a plurality of holes through which the harness cords also pass, which holes register with the holes of the comber-board during the normal operation of the loom, means for shifting said plate members, each to a different extent, thereby to offset and thus bind the harness cords adjacent the comber-board and thereby prevent twisting of said harness cords, and means for locking the plate members against shifting during the normal operation of the loom.

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