

EXHIBIT 2020

U.S. Patent No. 3,636,987

[54] **ADJUSTABLE WEAVING LOOM**
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[22] Filed: Mar. 11, 1970

[21] Appl. No.: 18,606

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[52] U.S. Cl.139/34, 28/15

[51] Int. Cl.D03d 29/00

[58] Field of Search139/34, 33, 29, 33.5; 28/15, 28/2; 66/4

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[57] **ABSTRACT**

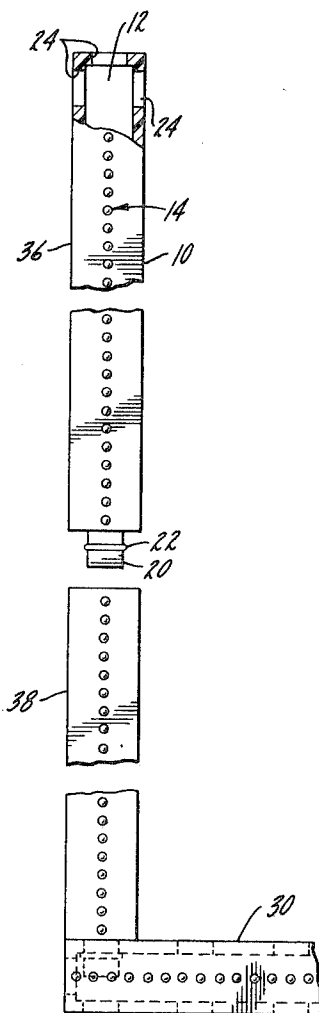
An adjustable weaving loom made up of a plurality of loom sections, each of which has a top surface with a plurality of generally equally spaced upstanding knobs. The loom sections are held together by socketlike joints in which a projection on one loom section is inserted into an opening on an adjacent loom section. The cross section of the projection and opening are such that relative turning movement between the two sections is prevented.

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3 Claims, 4 Drawing Figures



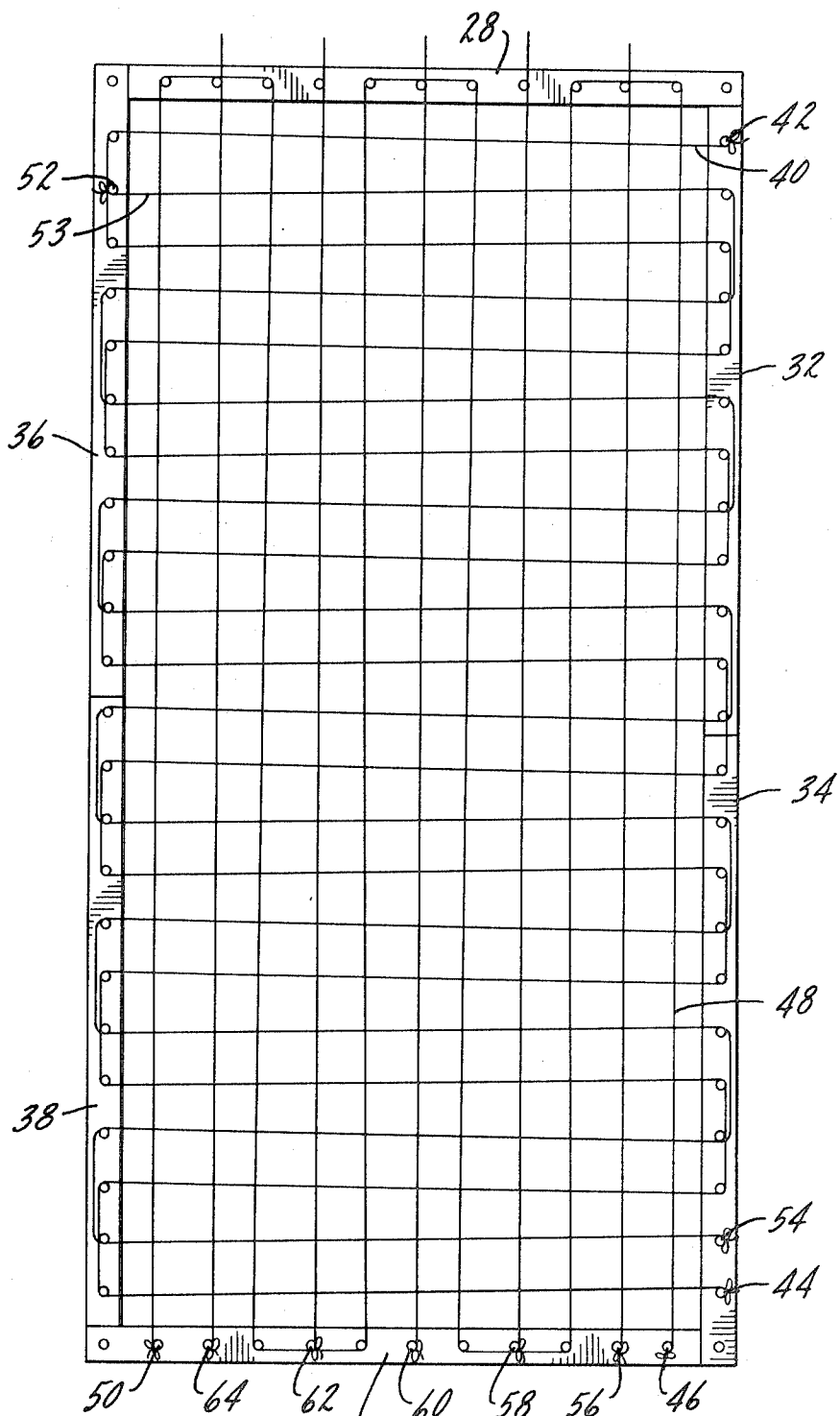


FIG. 1.

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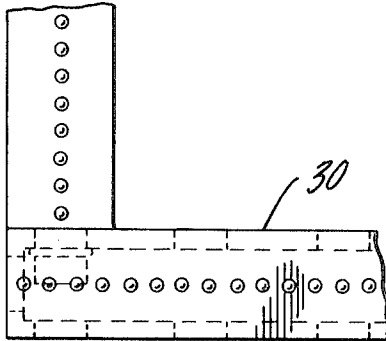
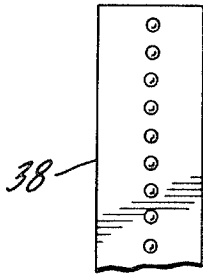
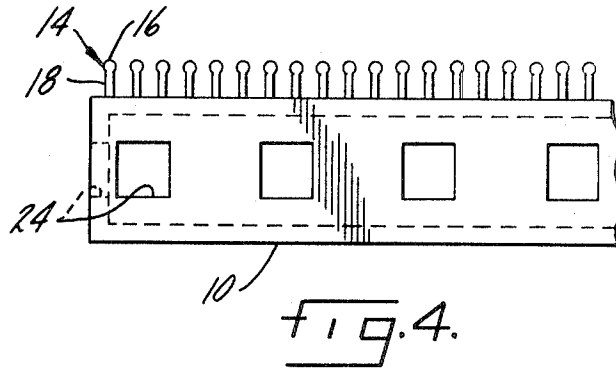
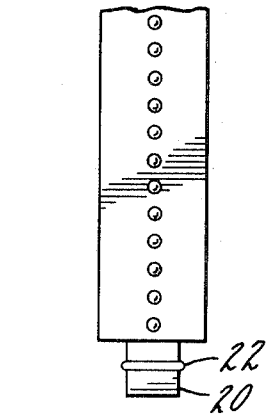
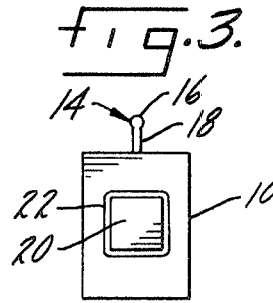
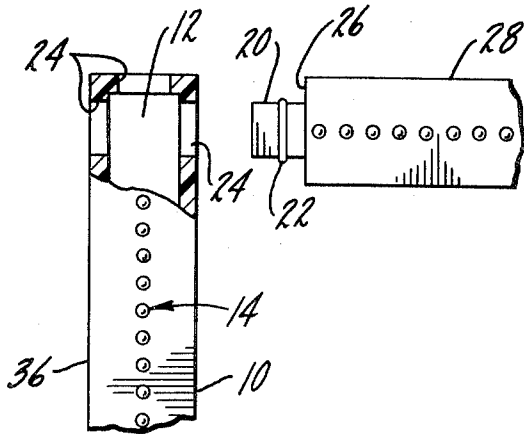


fig. 2.

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ADJUSTABLE WEAVING LOOM

SUMMARY OF THE INVENTION

The present invention relates to adjustable weaving looms and has particular relation to a simply constructed reliably operable weaving loom providing positive means of interconnecting adjacent loom sections.

Another purpose is an adjustable weaving loom which may be made out of hollow plastic sections.

Another purpose is a weaving loom of the type described in which each loom section has a projection and a plurality of spaced openings for use in assembling the loom sections into variably sized and shaped weaving looms.

Another purpose is an adjustable weaving loom of the type described which provides for positive interconnection of loom sections.

Other purposes will appear in the ensuing specification, drawings and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is illustrated diagrammatically in the following drawings wherein:

FIG. 1 is a top plan view of an adjustable weaving loom assembled into one configuration,

FIG. 2 is an enlarged partial top plan view illustrating the means for attaching loom sections together,

FIG. 3 is an end view of a loom section, and

FIG. 4 is a partial side view of a loom section.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention relates to an adjustable weaving loom of the type which may be used to weave sections of fabric. The fabric may be used, for example, in garments, bedspreads, etc. Yarn may be utilized on the weaving loom in a number of different ways to provide a particular weave, pattern or fabric. However, one particular weaving method has been found to be highly advantageous. Of importance is the actual construction of the loom and the manner in which it is adjustable to form various sizes and shapes of fabric sections.

Turning first to FIGS. 2, 3 and 4, a loom section is indicated at 10 and may have a hollow interior 12 and a plurality of generally equally spaced upstanding knobs or the like 14, illustrated in detail in FIG. 4. As is conventional in weaving looms, the knobs 14 may have an enlarged head 16 sitting on a post 18. Although the knobs are described as generally equally spaced, obviously they may be otherwise for particular weaving operations. Each loom section may be molded from plastic, although this is only one example of many possible materials.

The loom section 10 may include a projection 20 at one end. A bead 22 extends circumferentially about the projection. Each of the loom sections 10 may include a plurality of openings 24 which extend into or are in communication with the hollow interior 12. Note that the space between the bead 22 and the end surface 26 is generally the same as the wall thickness of the loom section. Thus the bead will pass through the opening 24 and will be positioned in the hollow area 12 when the projection 20 is fully inserted into a mating opening 24. The bead will firmly hold the loom sections together and will prevent accidental withdrawal. If the loom sections are formed of a plastic which is distortable and/or compressible, the loom sections can be snapped together, easily withdrawn, but yet cannot be accidentally separated during use of the loom.

As illustrated, the projections 20 and the openings 24 are generally square in cross section. This is advantageous, but not essential to the invention. What is important is that the loom sections be capable of being snapped together so that after they are joined, there can be no relative rotation between the

two sections. A square cross section accomplishes this purpose, as does a rectangular cross section. Other cross-sectional configurations having straight sides are also useful. Again, what is important is to provide a cross section such that the loom sections cannot be rotated relative to each other, as this would be a serious drawback during an actual weaving operation.

As illustrated particularly in FIG. 4, there are a plurality of openings 24 along the sides of each loom section. Thus, almost any size and shape of loom may be made out of the loom sections. An endless variety of sizes and shapes is possible with loom sections in which there are openings along both sides and at the ends. Normally, there will only be a single projection on each loom section, although in some applications it may be desirable to have several projections.

FIG. 1 illustrates one possible use of the loom sections 10. There is a single section across the top and bottom, illustrated at 28 and 30. There are a pair of loom sections 32 and 34 along the right side and a second pair of loom sections 36 and 38 along the left side. The top of loom section 32 has a projection which is inserted into the side of loom section 28. The left end of loom section 28 has a projection which is inserted into the side of loom section 36. In like manner, the remaining loom sections are fastened together.

In a particularly useful weaving operation, a yarn 40 is first tied on a knob 42. The yarn is then laid back and forth across the loom, skipping a knob at each side. The opposite end of the yarn 40 is finally tied at the lower end of the loom on knob 44. The second layer of yarn 48 may begin at knob 46 and runs transversely to the first layer, with the end of the second layer being tied to knob 50. In like manner, a third layer of yarn runs transversely to the second layer beginning at knob 52, with the yarn 53 again being run back and forth over the knobs. In this instance the yarn runs about the knobs which were skipped on the first layer of yarn. The yarn 53 is tied on knob 54 which is just above knob 44. Lastly, single strands of yarn may be interwoven, with such single strands being parallel to the second layer and being tied at the bottom, as on knobs 56, 58, 60, 62 and 64. The upper ends of the single layers of yarn may be loose.

The above illustration discloses a highly advantageous weaving method, however, obviously the invention should not be limited to any particular fabric or any particular manner of making a fabric.

I claim:

1. In an adjustable weaving loom, a plurality of hollow loom sections, each loom section having a top surface with a plurality of spaced upstanding knobs, and

cooperating joint means on said loom sections for use in removably attaching said loom sections together to form a closed weaving loom including a projection and opening on each loom section arranged to cooperate with projections and openings on other loom sections, the projection and opening on each loom section each having a plurality of generally straight sides, with each projection and opening having generally the same cross section to prevent relative rotation between loom sections, a circumferentially extending bead on each projection spaced from the end of the projection and spaced from the loom section a distance generally equal to that of the wall thickness of the hollow loom sections such that the projections will be held within their corresponding openings.

2. The structure of claim 1 further characterized in that each projection and opening are generally square in cross section.

3. The structure of claim 1 further characterized in that each loom section includes one projection and a plurality of openings, with the projection being generally at one end of the loom section.

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