

No. 692,347.

Patented Feb. 4, 1902.

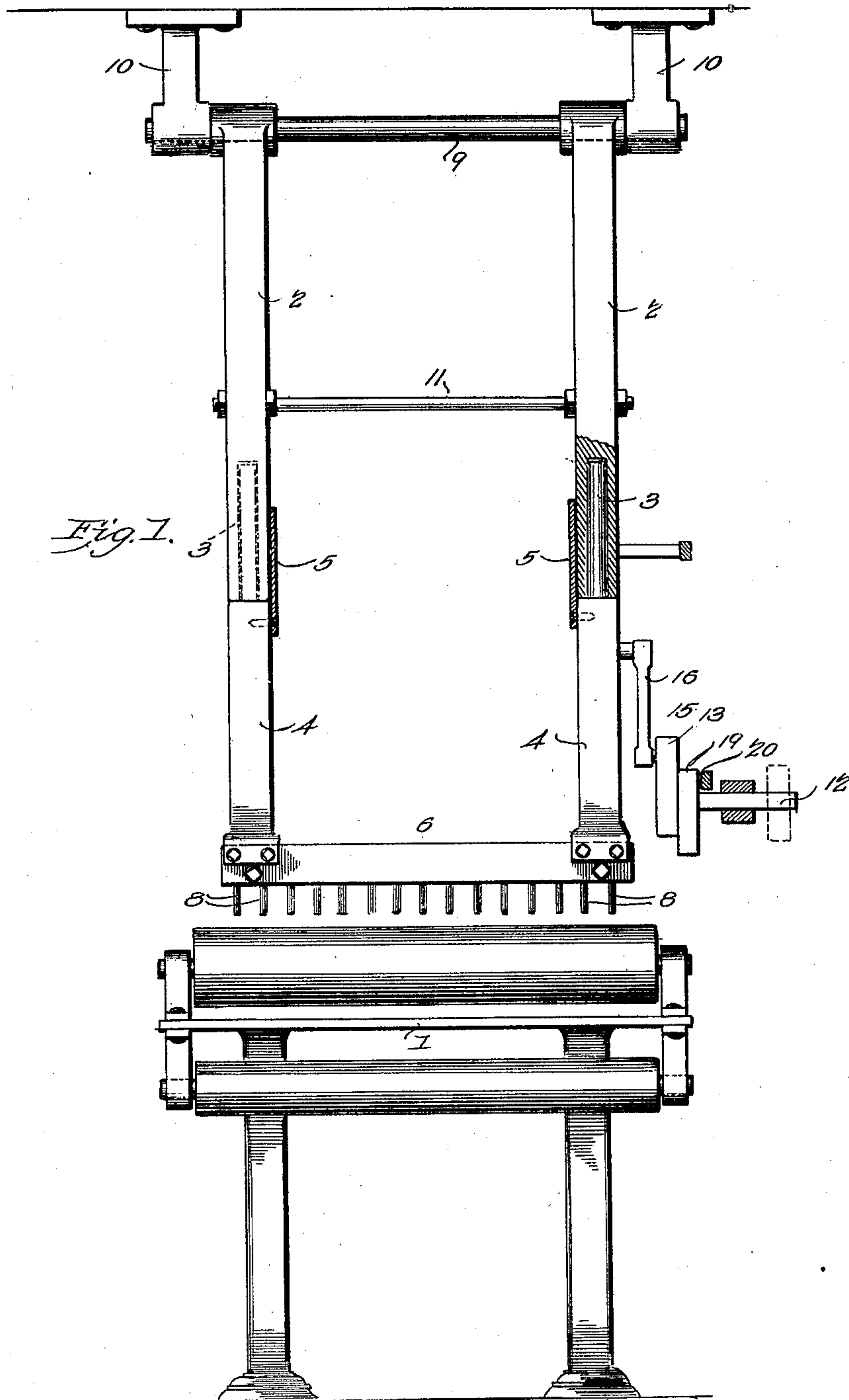
G. O. REDPATH.

COMB FOR SPACING THE MESH OF WOVEN FABRICS.

(Application filed Apr. 29, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
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Attorneys

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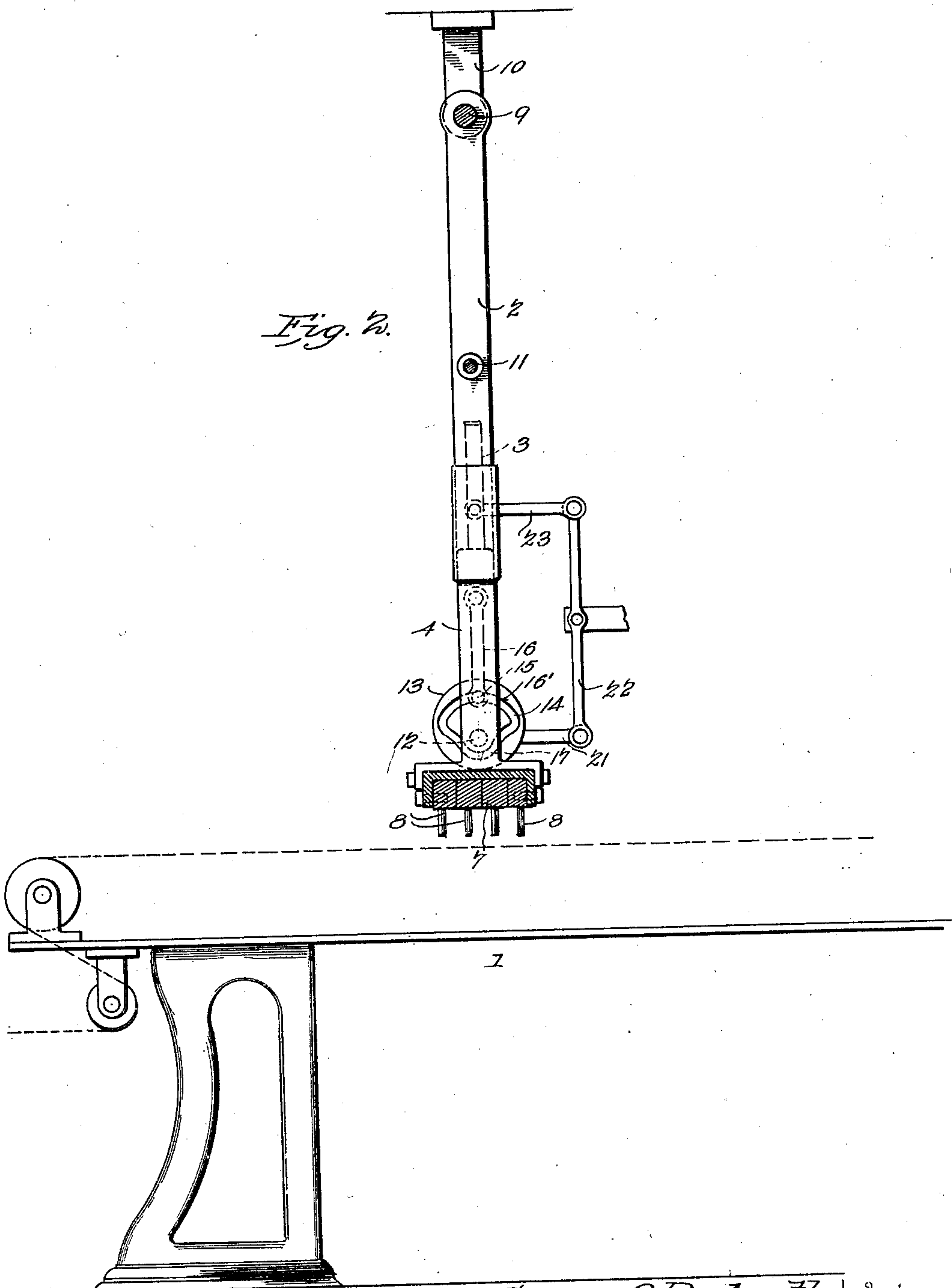
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# UNITED STATES PATENT OFFICE.

GEORGE O. REDPATH, OF FRANKFORT, KENTUCKY.

## COMB FOR SPACING THE MESH OF WOVEN FABRICS.

SPECIFICATION forming part of Letters Patent No. 692,347, dated February 4, 1902.

Application filed April 29, 1901. Serial No. 57,984. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE O. REDPATH, a citizen of the United States, residing at Frankfort, in the county of Franklin and State of Kentucky, have invented a new and useful Comb for Spacing the Mesh of Woven Fabrics, of which the following is a specification.

This invention relates to a comb for spacing the mesh of woven fabrics; and the object of the same is to provide a self-operating device of this class which will be actuated in timed relation to other weaving mechanism or the like to properly and regularly space the meshes of open woven fabrics, whereby the delay and expense of having operatives perform and control said operation are entirely dispensed with and a fabric can be more expeditiously completed.

The invention, broadly stated, contemplates a swinging comb-support carrying a comb at its lower extremity and preferably having a plurality of comb-teeth in alinement to operate in conjunction with more than one mesh, if desired, and thereby complete the fabric in sections with expeditious advantages.

The invention further consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed and subject to a wide range of modification within the scope of the invention.

In the drawings, Figure 1 is an end elevation of a support or table, showing the improved comb operatively suspended thereover. Fig. 2 is a side elevation of the parts shown by Fig. 1, showing the comb device partially in section. Fig. 3 is a detail view showing the relation and construction of the operating-cams.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a table or support having suitable means in connection therewith for guiding and properly directing a fabric thereover under proper taut tension, and at a proper point in the length of said table or support a comb device is operatively suspended thereover, and comprises opposite side bars 2 or the like, having portions 3 of upwardly-projecting arms 4 telescopically

mounted in the lower extremities thereof and provided with guide strips or plates 5 to prevent irregular movement of the said arms in lowering from or extending upwardly into the said bars 2. The arms 4 are secured by any suitable means to the opposite extremities of a comb-head 6, in which a series of comb-sections 7 are removably disposed, each section having a plurality of properly alined and spaced teeth 8. In the present instance four comb-sections are shown; but this number may be increased or decreased at will. In the present instance also the upper extremities of the bars 2 are shown movably suspended by a cross shaft or bar 9, held in hangers 10, that may be secured to any suitable overhead support therefor, and to give the said bars a certain amount of rigidity and prevent them from laterally spreading or becoming distorted an intermediate tie-rod 11 or the like is employed.

The comb device must have a depressing, elevating, and swinging movement in opposite directions longitudinally of the table or support imparted thereto, the swing movement in opposite directions being effected when the teeth of the comb-sections are in engagement with the meshes of the fabric to properly space the strands. As one of many forms of mechanism for accomplishing these operations, the accompanying drawings show a transverse shaft 12, which is actuated in timed relation to other correlative mechanism with which the comb device may be used—as a weaving or loom organization, for example—the said shaft being set in motion at proper predetermined intervals to actuate the comb device set forth. On either one or both extremities of the said shaft a cam 13 is secured to rotate therewith and has a groove 14 therein engaged by a projection 15 on the lower end of a link 16, which is movably attached to the lower portion of the adjacent bar 2 at its opposite upper end, the attachment of the upper end of said link being such that it will have a slight play. The groove 14 of the cam 13 is of such contour that when the projection 15 engages the portion 16' thereof the arms 4 will be elevated to their full extent, and when said projection engages the portion 17 the arms will be low-



ered to their full and necessary adjustment, the intermediate portion 18 of the cam allowing the projection to have an instant of rest while the comb is swung in opposite directions by the mechanism that will now be set forth. On the same shaft is a second cam 19, with which the projected end 20 of a link 21 engages, the said second cam having a suitable groove that will cause the latter link to be longitudinally reciprocated in opposite directions. The groove in the cam 19 is so arranged in relation to the groove in the cam 13 that just as the lowering operation of the latter is completed the groove of the cam 19 will operate the parts engaging therewith to longitudinally reciprocate the comb in opposite directions, all as clearly indicated by Fig. 3. The opposite end of the link 21 is movably connected to the lower extremity of a suitably-supported rock-arm 22, which has its upper extremity connected by a link 23 to the adjacent side bar 2, above the point of attachment of the link 16 to the same bar. These operations of the comb device through the medium of the mechanism set forth will space the fabric meshes in a manner precisely like the operation in tediously arriving at the same result by hand operation, and the many advantages arising from this self-operating device will be obvious to any acquainted with this art. In this said operation of the comb the head 6 is first lowered by the cam 13 into the meshes of the fabric thereunder, and the cam 19 then imparts to said head a reciprocating movement in opposite directions longitudinally of the fabric to space the meshes and properly arrange the weft and diagonal strands. After this longitudinal reciproca-

tion the head 6 is elevated clear of the fabric by the cam 13.

Having thus described the invention, what is claimed as new is—

1. A comb for spacing the mesh of woven fabrics having telescopic suspending devices which are mounted to have a swinging movement, and means for imparting vertical and horizontal reciprocating movements in opposite directions to said devices.

2. A comb for spacing the mesh of woven fabric comprising a head with teeth therein, means for suspending said head, and mechanism for imparting a horizontal reciprocating motion thereto in opposite longitudinal directions.

3. A movably-suspended comb for spacing the mesh of woven fabrics, and means for imparting up-and-down and swinging movements in opposite directions thereto.

4. A comb for spacing the mesh of woven fabric, comprising a head with teeth therein, and a swinging suspending means for said head whereby a horizontal reciprocating movement may be imparted to said head in opposite longitudinal directions.

5. A comb for spacing the mesh of woven fabric, comprising a head having teeth therein, and a swinging suspending mechanism for said head.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEO. O. REDPATH.

Witnesses:

D. E. SQUIRES,  
CHAS. S. HYER.