

(No Model.)

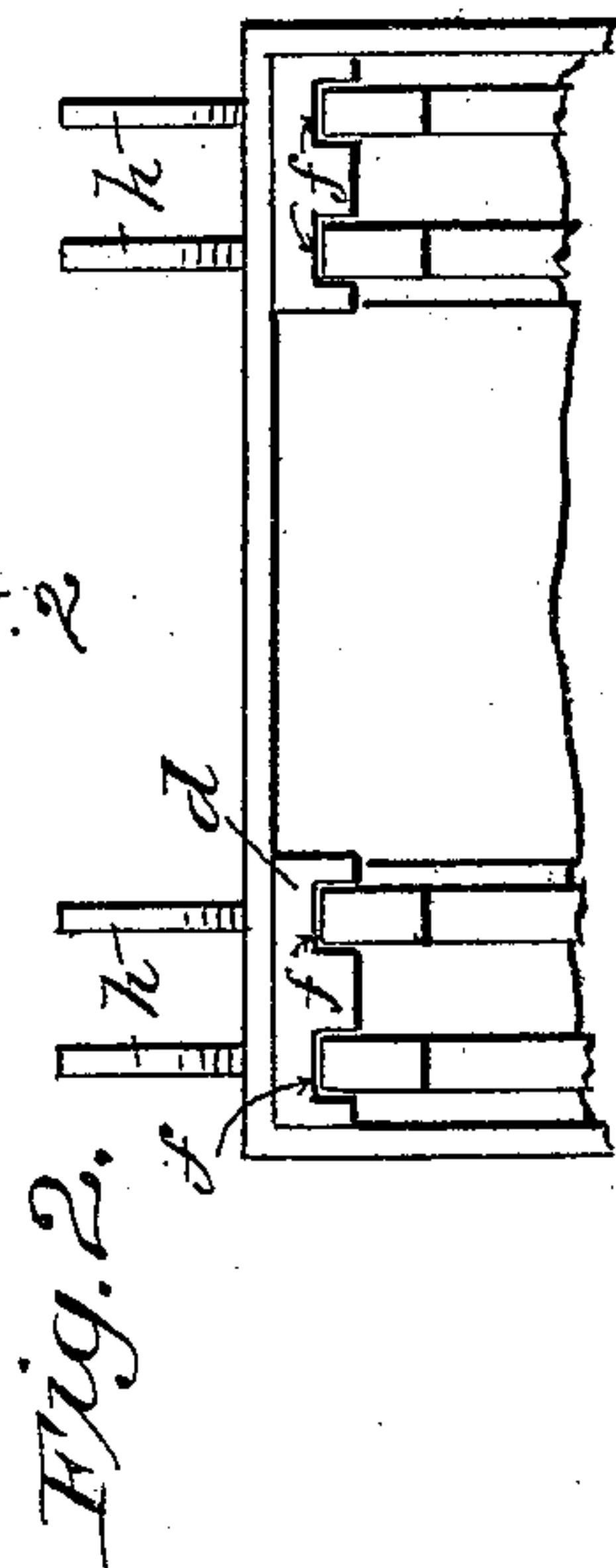
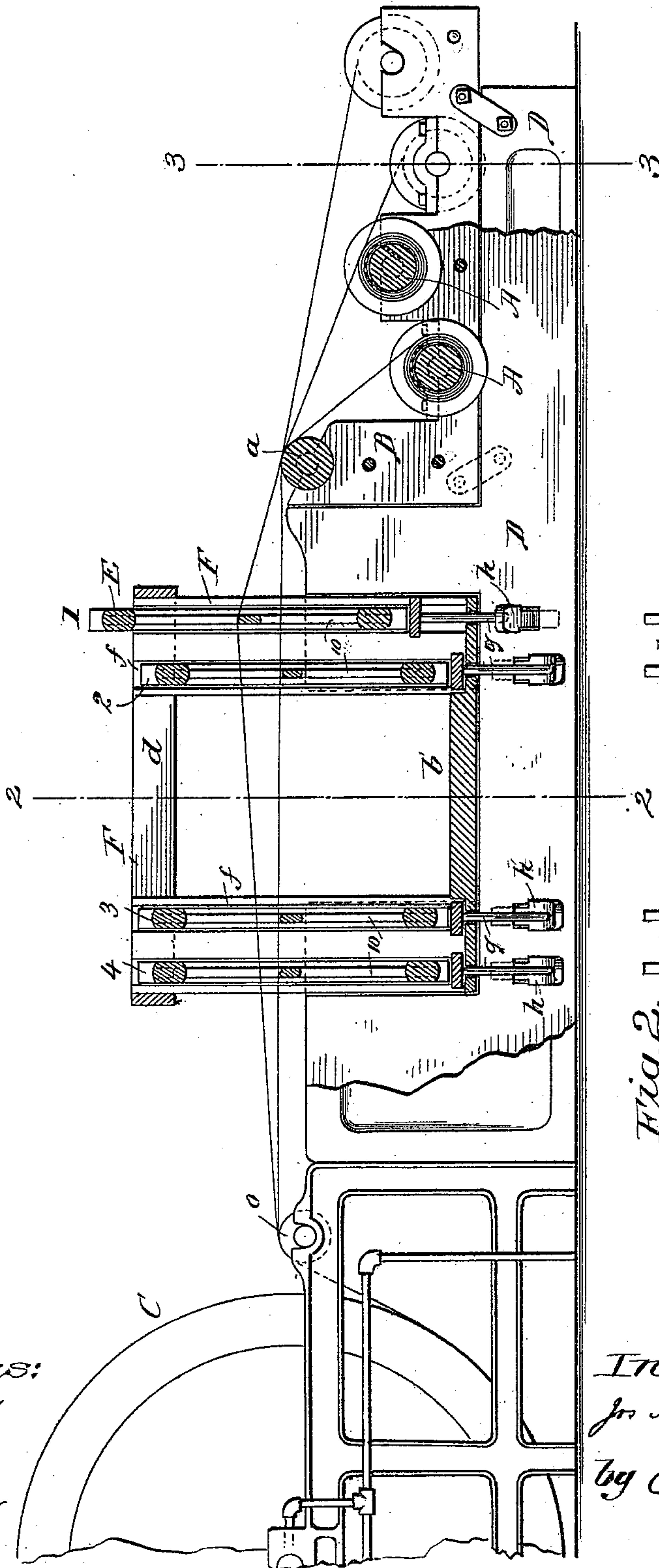
4 Sheets—Sheet 1.

J. M. SIMONEAU.
LEASING MECHANISM FOR WARP DRESSERS.

No. 438,563.

Patented Oct. 14, 1890

Fig. 1



Witnesses:
J. B. Gaffney
Wm. S. Bellows

Inventor
J. M. Simoneau,
by *Chapman C.*
Atty's.

(No Model.)

4 Sheets—Sheet 2.

J. M. SIMONEAU.
LEASING MECHANISM FOR WARP DRESSERS.

No. 438,563.

Patented Oct. 14, 1890.

Fig. 3.

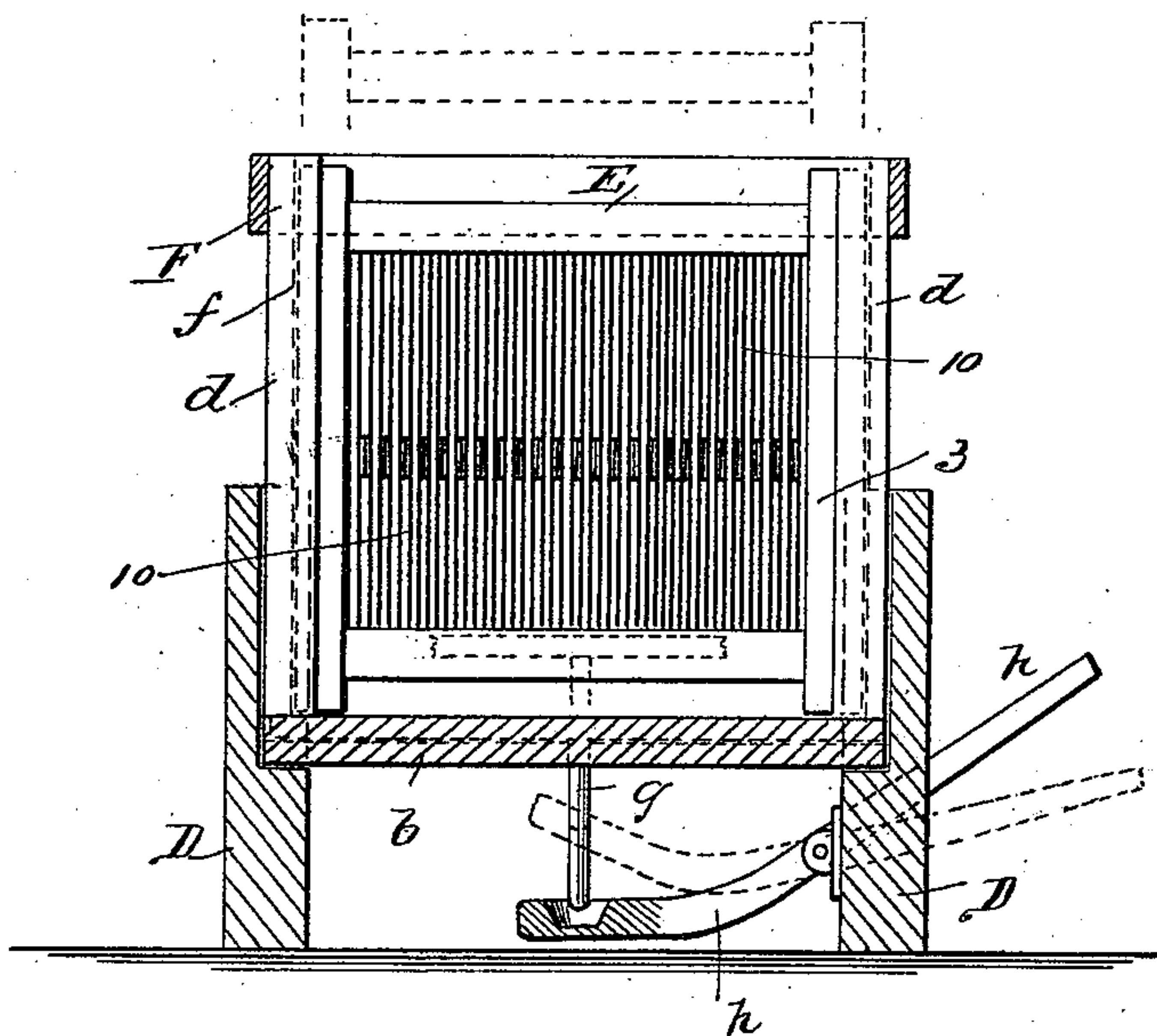


Fig. 5.

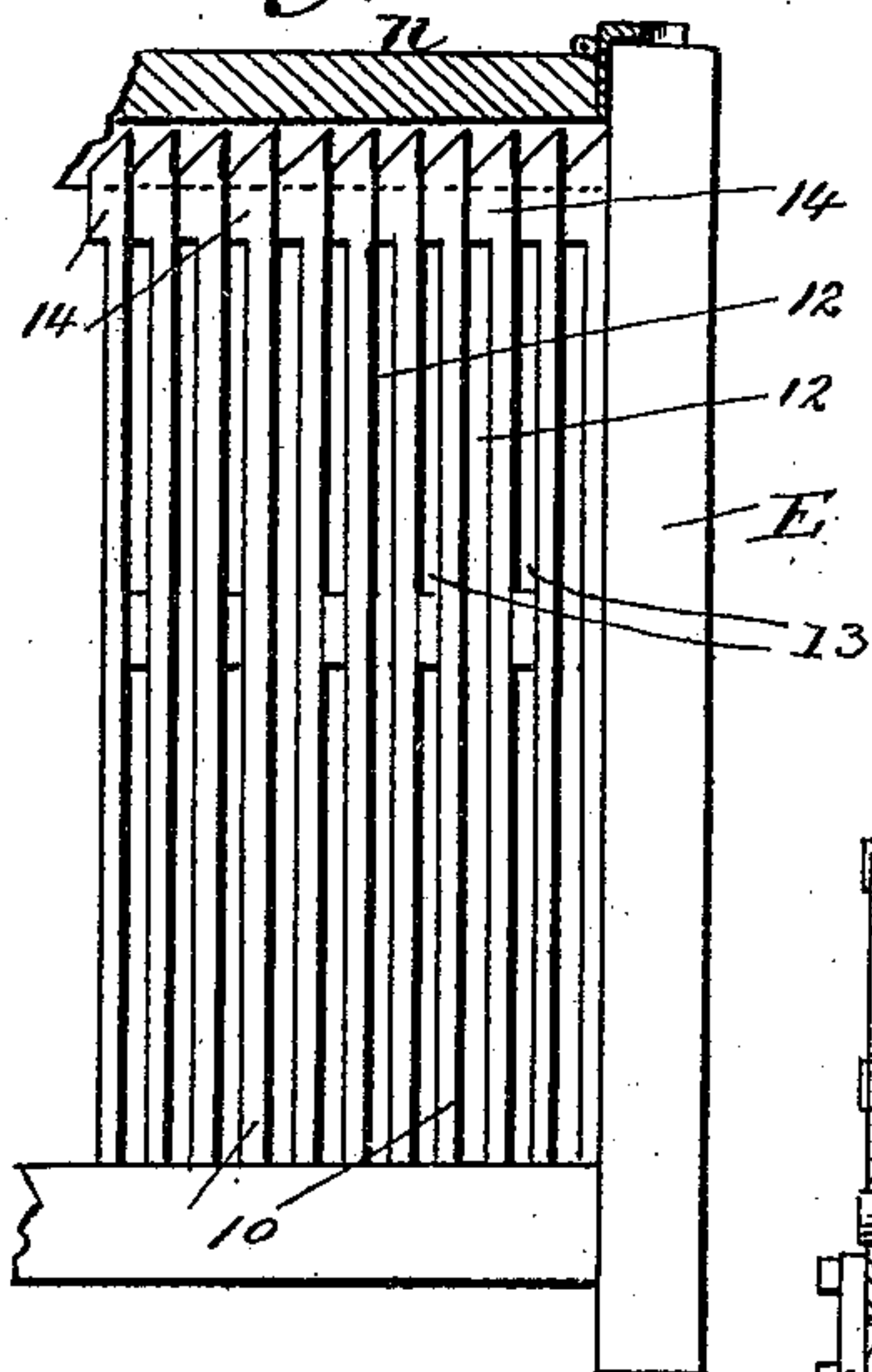
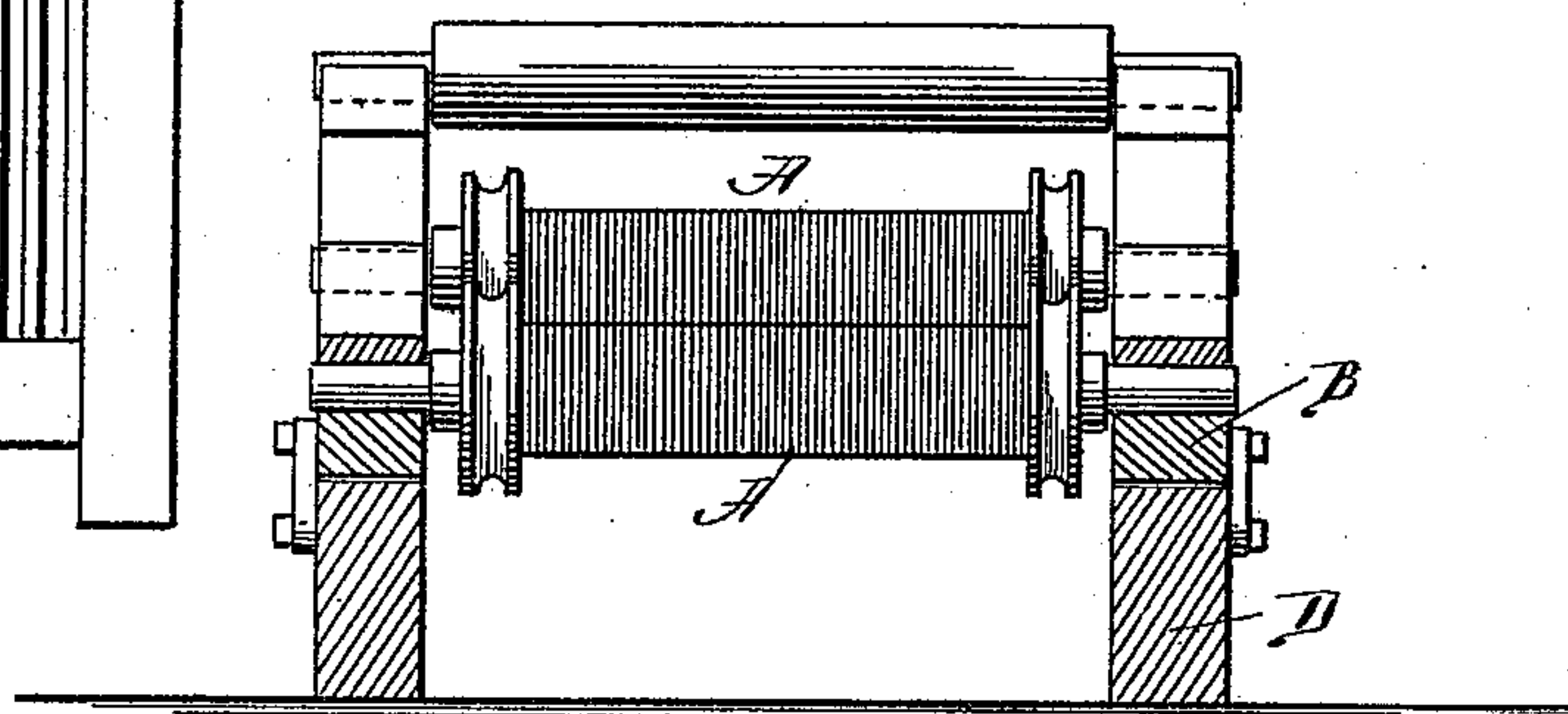


Fig. 4.



Witnesses:

J. P. Garfield
Wm. L. Bellamy

Inventor:

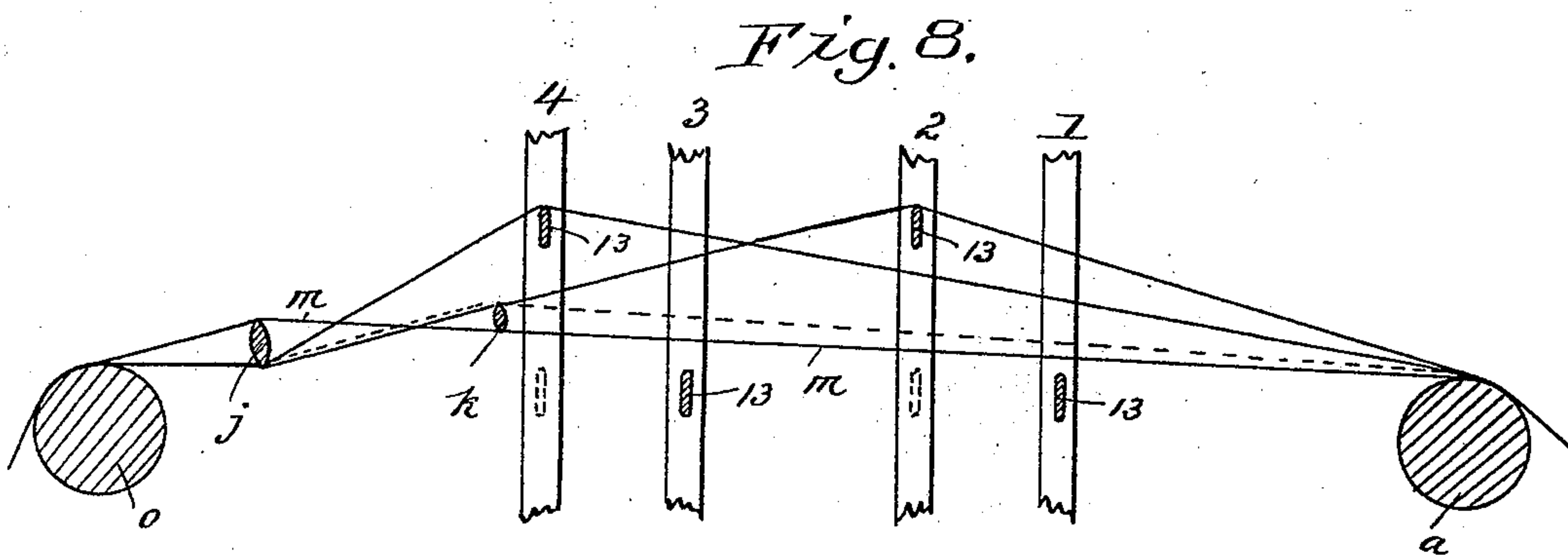
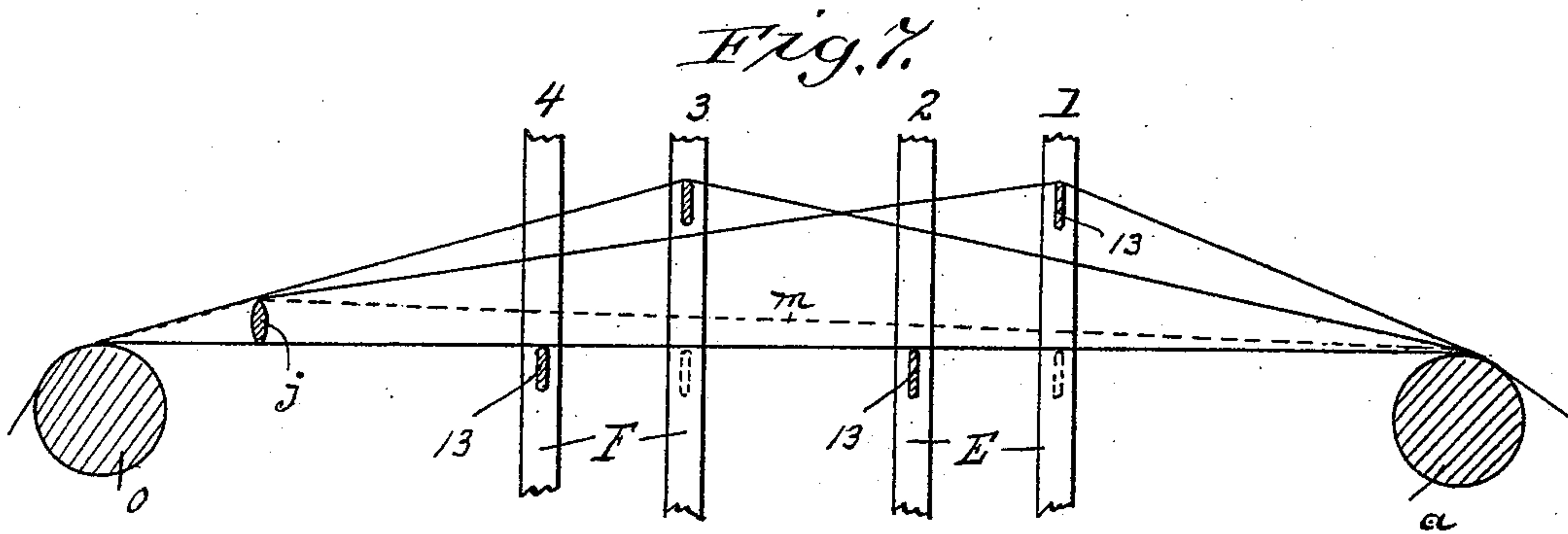
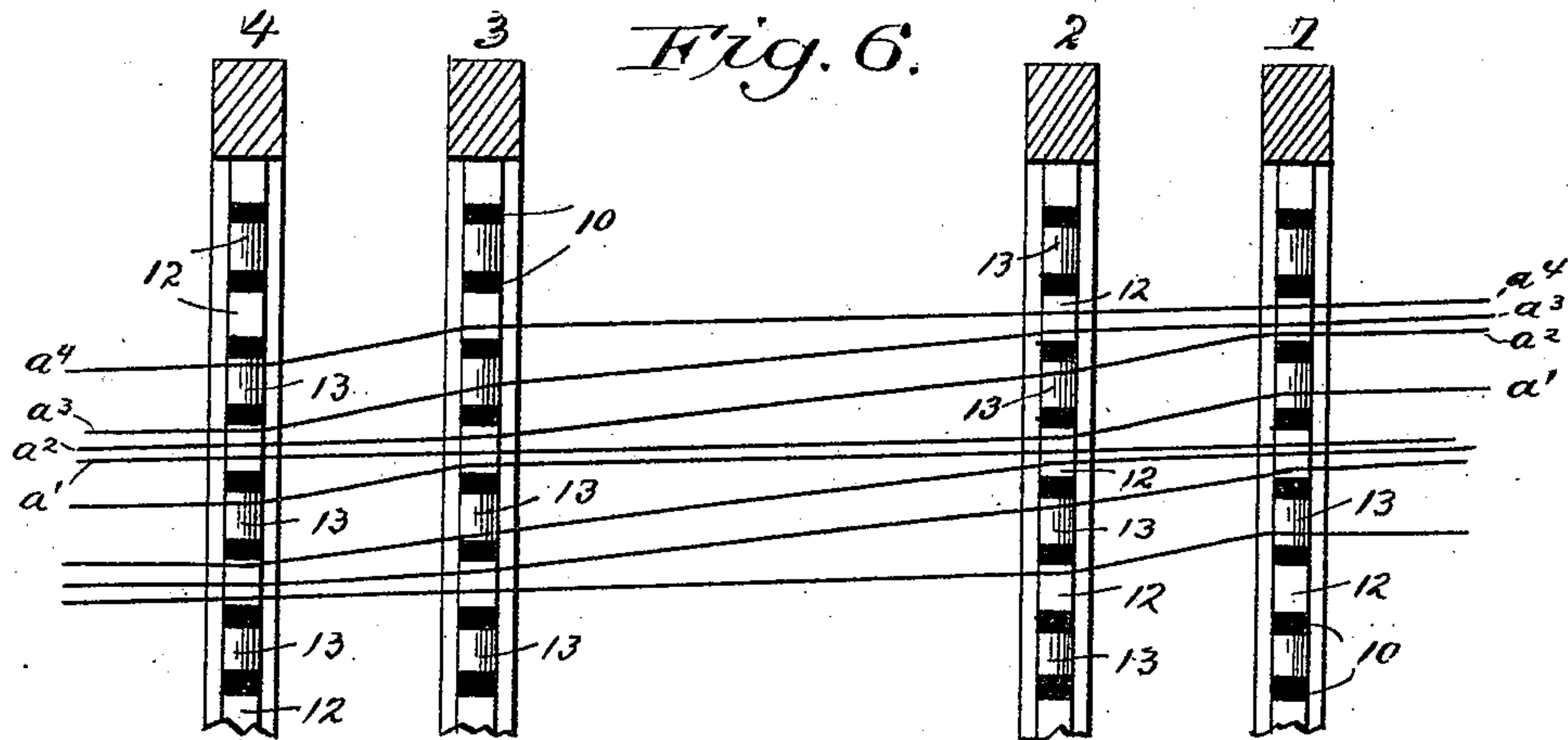
Joseph M. Simoneau
by Chapman & Co.
Attys.

J. M. SIMONEAU.

LEASING MECHANISM FOR WARP DRESSERS.

No. 438,563.

Patented Oct. 14, 1890.



Witnesses:

J. P. Garfield
Wm. S. Bellows

Inventor

Joseph M. Simoneau,
by Chapin & Co.
Attys.

(No Model.)

4 Sheets—Sheet 4.

J. M. SIMONEAU.

LEASING MECHANISM FOR WARP DRESSERS.

No. 438,563.

Patented Oct. 14, 1890.

Fig. 9.

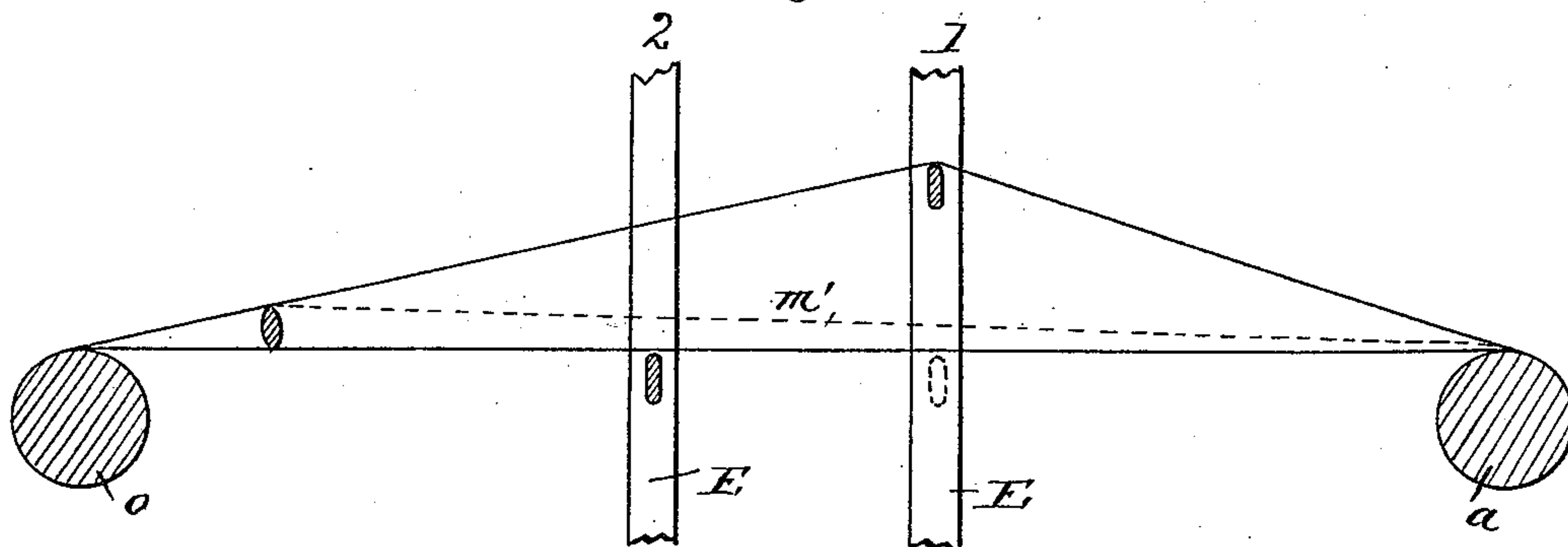
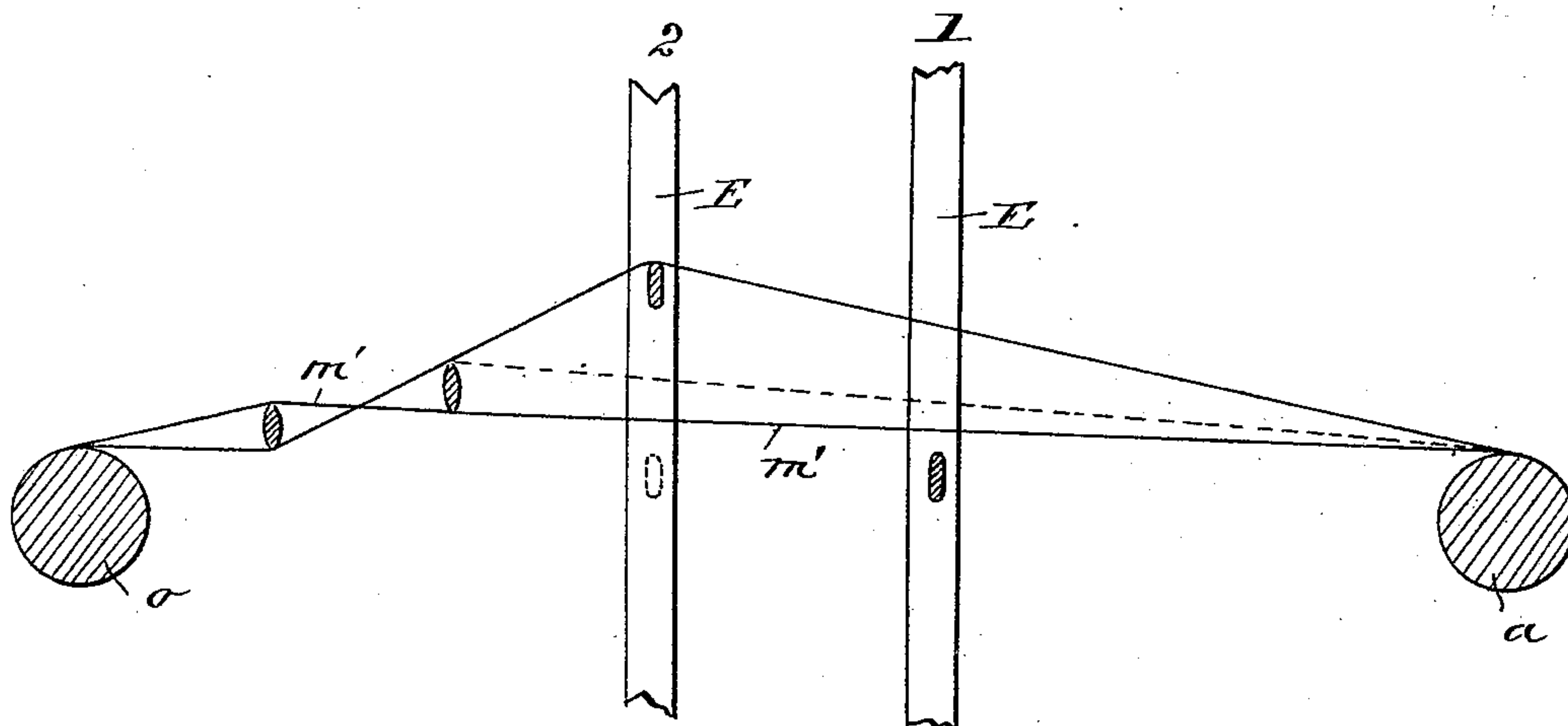


Fig. 10.



Witnesses:

J. O. Garfield
H. J. Bellamy

Inventor:

Joseph M. Simoneau,
by Chapin & Co.
Attys.

UNITED STATES PATENT OFFICE.

JOSEPH MC. SIMONEAU, OF WARE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO EDWARD P. MORSE, OF SAME PLACE.

LEASING MECHANISM FOR WARP-DRESSERS.

SPECIFICATION forming part of Letters Patent No. 438,563, dated October 14, 1890.

Application filed February 10, 1890. Serial No. 339,929. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MC. SIMONEAU, a citizen of the United States, residing at Ware, in the county of Hampshire and State of Massachusetts, have invented new and useful Improvements in Leasing Mechanism for Warp-Dressers, of which the following is a specification.

This invention relates to improved devices or mechanism used in conjunction with a warp-dressing machine or slasher for securing a lease or decussative arrangement of the warp threads or yarns before the same pass through the dressing rolls or slasher, so that by the insertion of proper lease-retaining cords or rods, which may pass through the dresser or slasher with the yarn, when the leased section of the warp-yarns has come near to the warp-beam it may be cut, leaving the yarn in two equal separated portions, the yarns of the one portion alternating and still retaining their X-like relations, so that when the said yarns are taken on the warp-beam to the loom they may be due to their leased condition readily run in through the harnesses by the "running-in hand."

The object of this invention is to provide a device or mechanism which has advantages as follows: First, it is of simple construction and of easy operation; secondly, it possesses a capacity for manipulating and controlling a number of yarns largely in excess of what I have hitherto understood to be customary and possible in leasing devices, and, thirdly, the mechanism is so equipped in relation to the set of section-rolls in conjunction with which it operates and with the slasher or dresser that it may be readily removed with said section-rolls from its proximity to the slasher or dresser, whereby a new set of section-rolls and a similar leasing device therefor may be substituted, so that new work may be immediately brought to the slasher, necessitating no delay or loss of time by the latter; and the invention consists in the construction and combination of parts, all substantially as will hereinafter more fully appear, and be set forth in the claims.

In the accompanying drawings, Figure 1 is

a side elevation and partial vertical section 50 of a set of section-rolls, the lease-forming devices, and a part of the dresser or slasher. Fig. 2 is a plan view of a portion of the removable lease-forming devices. Fig. 3 is a vertical cross-section on line 2 2, Fig. 1. Fig. 4 is a vertical cross-section on the line 3 3, Fig. 1, with both warp-beams in elevation. Fig. 5 is a detail view in illustration of an improved construction of reed, which is advantageously adapted for use in this leasing mechanism. Fig. 6 is a view in the nature of a diagram indicating an enlarged plan or horizontal cross-section of the reed-frames, showing the relations of the open spaces between certain of the reed-rods, with the yarn-engaging abutments between other of the reed-rods, and the relations of the yarns with each other and with said open reed-spaces, and with said spaces having yarn-engaging abutments, shoulders, or blocks. Fig. 7 is a vertical sectional view along the run of the warp-yarns through the reeds, showing certain of said reeds as in a position occupied thereby in one part of their lease-forming movements. Fig. 8 is a similar view to Fig. 7, showing another pair of the reeds as in the position occupied thereby in another part of the lease-forming operation. Figs. 9 and 10 show the manipulations of the lease-forming devices when the same comprise but two reed-frames.

In the drawings, A A represent a set of "section" or yarn supply rolls, mounted in suitable bearings of a removable frame B, said frame being supported upon or in proximity to a main frame D, which is also available for the reeds 1, 2, 3, and 4, said frame D being in proximity to or an extension of the frame of the dresser or slasher C, which may be of any suitable construction and operated upon any approved principle.

a o are guide-rolls for the yarn, one a between the section-rolls and the reeds and the other o between the reeds and the slasher. The sizing apparatus of the slasher may be located between the said roll o and the large drum, partly shown at the extreme left of Fig. 1.

All the reeds E, particular ones of which

are designated by the numerals 1, 2, 3, and 4, as to their positions, are mounted in a supplemental or "reed" frame F, which fits into openings of and is supported and steadied by the common or extension frame D. Said reed-frame comprises a supporting-bottom *b*, and suitable side and end beams or walls *d*, in the sides of which are vertical guideways *f* for the reeds 1, 2, 3, and 4.

In relation to the foot-rail of each reed is provided an elevating device, here shown as consisting of vertical "push-up" rods *g*, which are engaged by levers *h*, respectively provided therefor, which levers are suitably fulcrumed on and extended laterally outside of the extension-frame D for being readily swung. The reed swung up by the action of the lever falls to the bottom of the reed-frame F by its own gravity.

Each reed consists of a rectangular frame, having between the upper and lower bars or rails thereof the series of vertical reed-rods 10, with spaces 12 between them, said spaces being usually intended to freely admit of the side-by-side disposition of at least three, and often more, threads or yarns, and the alternate spaces between the reed-rods are immediately of their vertical extent divided by a suitable filling-in block, cross-pin, or other suitable form of yarn-engaging abutment or shoulder 13, the essential, under whatever specific construction employed, being a reed having suitable alternating yarn-engaging abutments in given horizontal lines, substantially as shown, and relatively intermediate open spaces which extend above and below said line of yarn-engaging abutments.

The yarns from the section-rolls may be "run in" through the reeds in any suitable manner, and in Fig. 6 the arrangement of the yarns relatively to each other and to the engaging abutments of the reeds is illustrated.

Where four reeds are employed, each yarn-abutment 13 thereof engages every fourth yarn. The next three yarns pass freely through the open reed-section next to said abutment, each of said three yarns being engaged by an abutment of one of the other reeds, respectively, therefor. For instance, noting the view, Fig. 6, the yarn α^4 has a free passage through or non-engagement with reeds 1, 2, and 3, but is engaged with the abutment of reed 4. Yarn α^3 has a free passage through reeds 1, 2, and 4, and an engagement with reed 3. Yarn α^2 has a free passage through reeds 1, 3, and 4, engaging reed 2, and yarn α^1 has an engagement with reed 1 and a free passage through reeds 2, 3, and 4, the open reed-spaces through which three yarns of each set of four pass being in a plane next to but just one side of the reed, respectively, engaging the fourth yarn, and then the successive yarns from the section-rolls are run through the other reed-spaces successively in reduplication of the arrangement already described, and it will be seen that by raising, say, reed 1, every fourth yarn will be raised, or by raising reeds 1 and 3

every other yarn will be raised, or half of the yarn, leaving the other half in horizontal lines, and where four reeds are employed to form the lease the operation may be carried out as follows, reference being had to Figs. 7 and 8: Reeds 1 and 3 are lifted, carrying up half the yarns, which are the alternate ones of all the yarns run through the four reeds, and a separator slide rod or strip *j*, having a suitable width or height, is inserted in advance of all the reeds (and between them and the foremost guide-roll *o*) in the shed formed by the said half of the yarn and the other relatively intermediate half which has not been raised, and then the reeds 1 and 3 are permitted to drop to their lowermost position, leaving the yarns which had been raised thereby still forming a slight shed or one of small height extending from the top of said separator-slide back to the rear guide-roll *a*, and this position of said yarns which had been raised is also indicated in said Fig. 7 by the dotted line *m*, and also in Fig. 8 by the line *m*. Now, reeds 2 and 4 are lifted, carrying up the other half of the yarns, (which alternate with the said first-raised half,) as indicated by Fig. 8, and a decussation is formed by said yarns *m*, which extends under said separator-slide *j* in its course from the forward guide-roller and upwardly across the lower half of the yarns to the reed-abutments of said reeds 2 and 4 with which said last-raised yarns respectively engage, and as these last-raised yarns cross the first manipulated yarns somewhat in advance of reed 4 a separator-slide *k* is inserted in the shed next to the said reed 4, and then when reeds 2 and 4 are also dropped the discussative arrangement, which is substantially or which constitutes the lease, is still maintained, and by replacing the said separator-slides *j* and *k* by cords or other flexible separators the so relatively-disposed parts may be run through the slasher or dresser and up near to the warp-beam, when the portions of the yarn to the rear of both of said separating-cords is severed, and the leased arrangement may then, if desired, be the better secured by knotting or tying the separated alternate ends, as usual.

When the number of yarns to be leased is of such a low number that two reeds only need be employed, the operation, as is obvious, is substantially the same as has been described, it being understood that the two reeds under the conditions above set forth serve to carry the greater number of yarns as the occasion necessitates; but the movements of pairs in conjunction are to all intents and purposes the same as of a single reed. Therefore, noting Figs. 9 and 10, wherein are shown reeds 1 and 2, every other yarn-engaging reed 1 while the relatively intermediate or alternate yarns are engaged by reed 2, on raising reed 1, as shown in Fig. 9, half of the yarns are lifted, forming a shed between them and the lower half, and a separator-slide is inserted well forward of reed 2, and reed 1 is

permitted to drop, there still remaining a slight but sufficiently clearly-defined shed, as indicated by the line *m'* in Figs. 9 and 10. Then raising reed 2 the other half of the yarn

5 is raised, forming the decussation or cross-shed in advance of reed 2 and between it and the first-inserted separator-slide, as clearly indicated in Fig. 10, and the second separator inserted, as also shown in said Fig. 10.

10 It is plain that after a lease decussation has been formed in advance of the reeds in the manner already described by then similarly manipulating the reeds, forming sheds extending therefrom to the rear of said reeds,

15 and by the proper insertion of separator-slides, another lease decussation may be formed at the rear of the reeds. This lease will be often found advantageous when it is desired to run in new or different kinds of

20 yarn from different section-rolls through the reeds, for by cutting the yarns at the rear of the said rear lease the ends of the new yarn may be readily spliced with or twisted upon the lease-forming ends of the yarns which

25 still remain by a portion thereof through the reeds. This capability largely facilitates the work, for the running in of the ends anew through the reeds is found to be much slower and more tedious than twisting on or splicing

30 the yarn-sections, which are already in their proper relative engagements with the reeds.

In Fig. 5 I have illustrated an improved form of reed to be employed, which consists in forming the reeds alternately with open

35 spaces throughout their length and having the relatively intermediate spaces provided with the middle abutments, as has been already mentioned, but forming the upper end of each

40 reed-rod 10 with a shoulder or angular projection 14, which extends toward and to a contact with the next adjacent reed-rod, but which is not confined to said next adjacent

45 reed-rod. The top of each reed-rod shoulder inclines downwardly across the width of said shoulder, meeting the face of the next adjacent reed-rod somewhat below its upper end.

Therefore in running in the yarns between the reed-rods, instead of hooking them through the spaces intermediately of the length of the

50 reed, the yarns are carried in between the ends of the reed-rods, which may spring apart sufficiently to permit of their entrance, the said inclined top surfaces of the reed-rods and their shoulders permitting the easier and

55 more convenient entrance of the yarns, and the said shoulders serve to maintain the proper separation of the rods the one from the other, maintaining them all uniformly and preventing their collapsing or binding

60 upon the yarn. It is preferred to employ a removable cap *n* to cover or inclose the upper ends of the reed-rods, and also to steady and render more rigid the reed in its entirety.

From the construction indicated in the drawings, Figs. 1 and 3, it will be readily seen that the reed-holding frame F may be, with the reeds therein, bodily removed from the com-

mon frame D, the levers remaining in said common frame, and with said reed-carrying frame also may be removed the supporting- 70 frame B and bearings for the section-rolls, to be replaced by a new set of section-rolls carried on a frame respectively therefor, having also combined therewith a series of lease-forming reeds and reed-carrying frame. The reed- 75 carrying frame and the section-roll supports are independently removable, so that by forming a lease between the reeds and the section-rolls and severing the yarns at the rear of the lease on removing the section-rolls and re- 80 placing the same by other section-rolls, as some occasions may require, and twisting the ends of the new yarns onto the ends of the leased yarns in the reeds the work may be proceeded with as before, it being unneces- 85 sary under this method of procedure to equip with every set of section-rolls a separate set of lease-forming reeds, although usually it is intended so to do, as by this plan the slasher or dresser may be kept constantly at work, it 90 of course being understood that the slasher or dresser consists of a mechanism of much greater expense than the leasing devices, it at the same time having a capacity for dressing perhaps all the yarn which might be supplied 95 to it from all the section-rolls in the factory, however great their number may be. It is therefore deemed expedient to keep the dresser or slasher always at work, and it is the aim in the preparation of the yarn at the 100 slasher or dresser to avoid long waits at the times of preparing to run through new series of yarns.

What I claim as my invention is—

1. The combination, with a slasher or dresser 105 provided with an extension-frame, of a set of reeds, each reed of the set comprising a series of reed-rods having spaces and abutments in the arrangement above specified, and a carry- 110 ing-frame for said reeds having guideways in which said reeds are vertically movable, said reed-frame being removably supported on said extension-frame of the slasher, and a bearing- 115 support for section-rolls, which is also adapted to be removably connected to and supported by said extension-frame, for the purpose set forth.

2. The combination, with a slasher or dresser provided with an extension-frame, of a reed-guiding frame which has at its opposing sides 120 vertical ways and at its bottom vertically-movable and independent reed-supports, a set of reeds, each reed thereof comprising a series of reed-rods having spaces and abutments in the arrangement specified and resting on said sup- 125 ports and constrained to move in said vertical ways, and a separate lever for each reed-support fulcrumed on said extension-frame and having an engagement with its respective reed-support, all whereby each reed may be raised 130 and lowered independently of another, for the purpose set forth.

3. In a lease-forming mechanism, substantially as described, a set of reeds, each of

which comprises a series of reed-rods suitably supported on an outer frame, which rods are spaced or separated from each other and open to their top ends, whereby entrance to
5 said spaces may be had thereat, and every reed-rod having at its upper end an extension or shoulder 14, projecting against but unsecured to the next adjacent reed-rod, the alternate spaces in each reed being provided
10 intermediate of the lengths thereof and below the said shoulders with yarn-engaging abutments, and the relatively intermediate spaces being free or unobstructed with respect to their middle portions and below said shoulders, for the purpose set forth.

4. In a lease-forming mechanism, substantially as described, a set of reeds, each of which comprises a series of reed-rods suitably supported on an outer frame, which rods are
20 spaced or separated from each other and

open to their top ends, whereby entrance to said spaces may be had thereat, and every reed-rod having at its upper end an extension or shoulder 14, projecting against but unsecured to the next adjacent reed-rod, and the
25 top of each extension or shoulder being obliquely formed, the alternate spaces in each reed being provided intermediate of the lengths thereof and below the said shoulders with yarn-engaging abutments, and the relatively intermediate spaces being free or unobstructed with respect to their middle portions, and the movable cap *n* for covering and
30 steadying the upper extremities of the said reed-rods, for the purpose set forth.

JOSEPH MC. SIMONEAU.

Witnesses:

WM. S. BELLOWS,
G. M. CHAMBERLAIN.