

No. 700,459.

Patented May 20, 1902.

H. A. TWIGG.
EDGE IRONING MACHINE.

(Application filed May 13, 1901.)

(No Model.)

4 Sheets—Sheet 1.

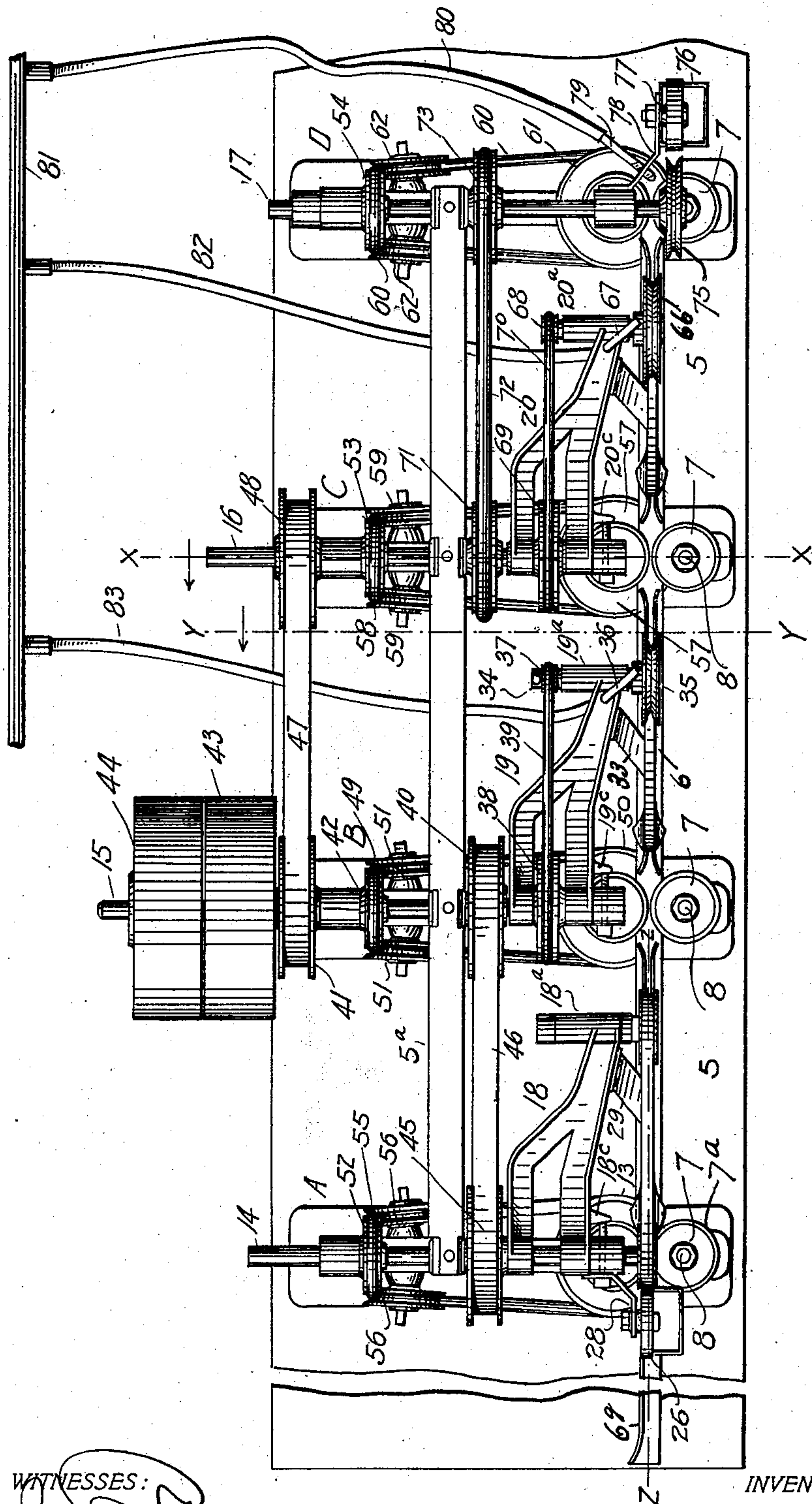


FIG. 1.

WITNESSES:

J. J. O'Connell
A. C. Shick

INVENTOR.

Henry A. Twigg.

ATTORNEY.

No. 700,459.

Patented May 20, 1902.

H. A. TWIGG.
EDGE IRONING MACHINE.
(Application filed May 13, 1901.)

(No Model.)

4 Sheets—Sheet 2.

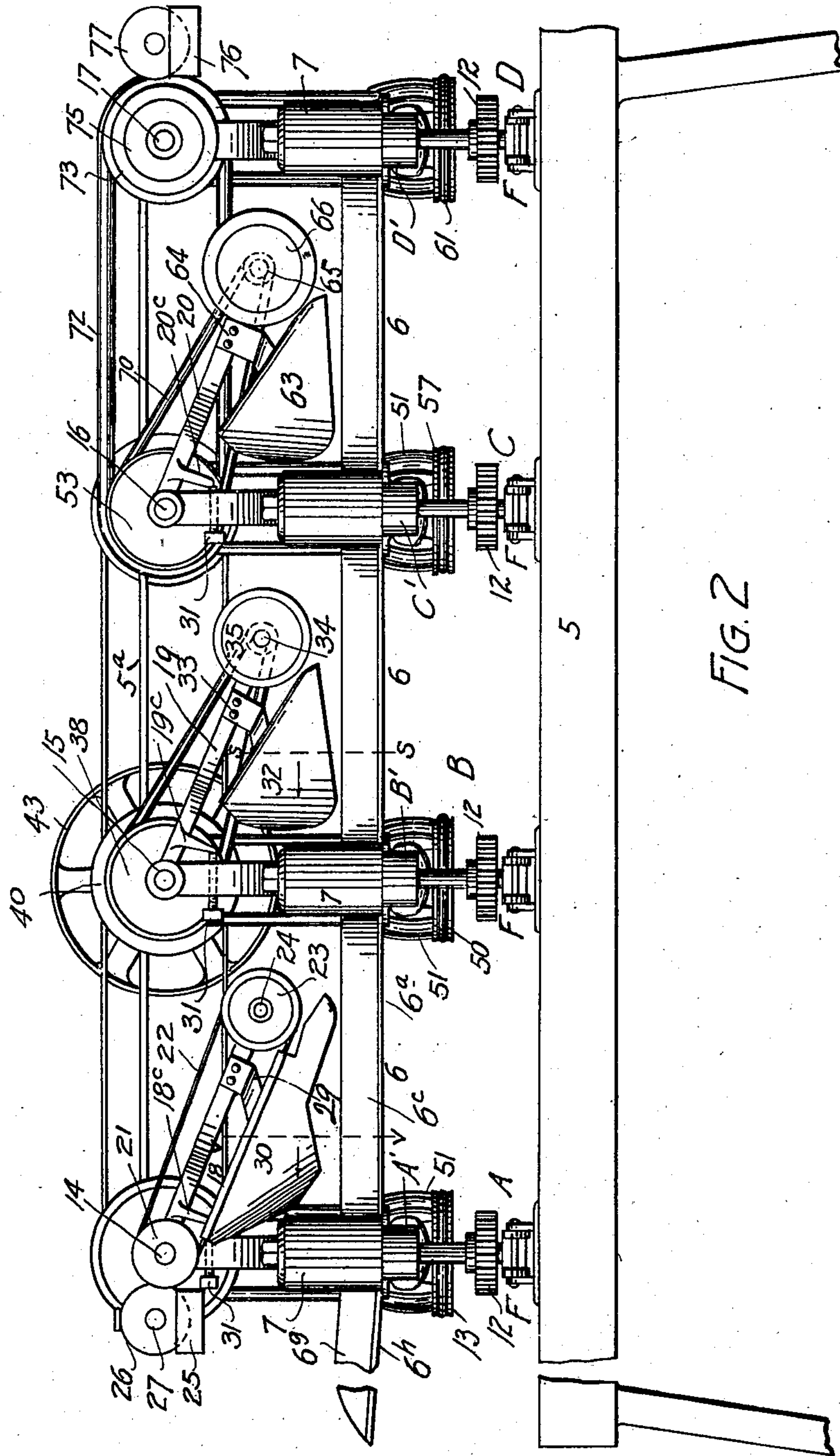


FIG. 2

WITNESSES:

D. J. Belland.
D. C. Shick.

INVENTOR.

Henry A. Twigg

By
Attorney

ATTORNEY.

No. 700,459.

Patented May 20, 1902.

H. A. TWIGG.
EDGE IRONING MACHINE.

(Application filed May 13, 1901.)

(No Model.)

4 Sheets—Sheet 3.

FIG. 4.

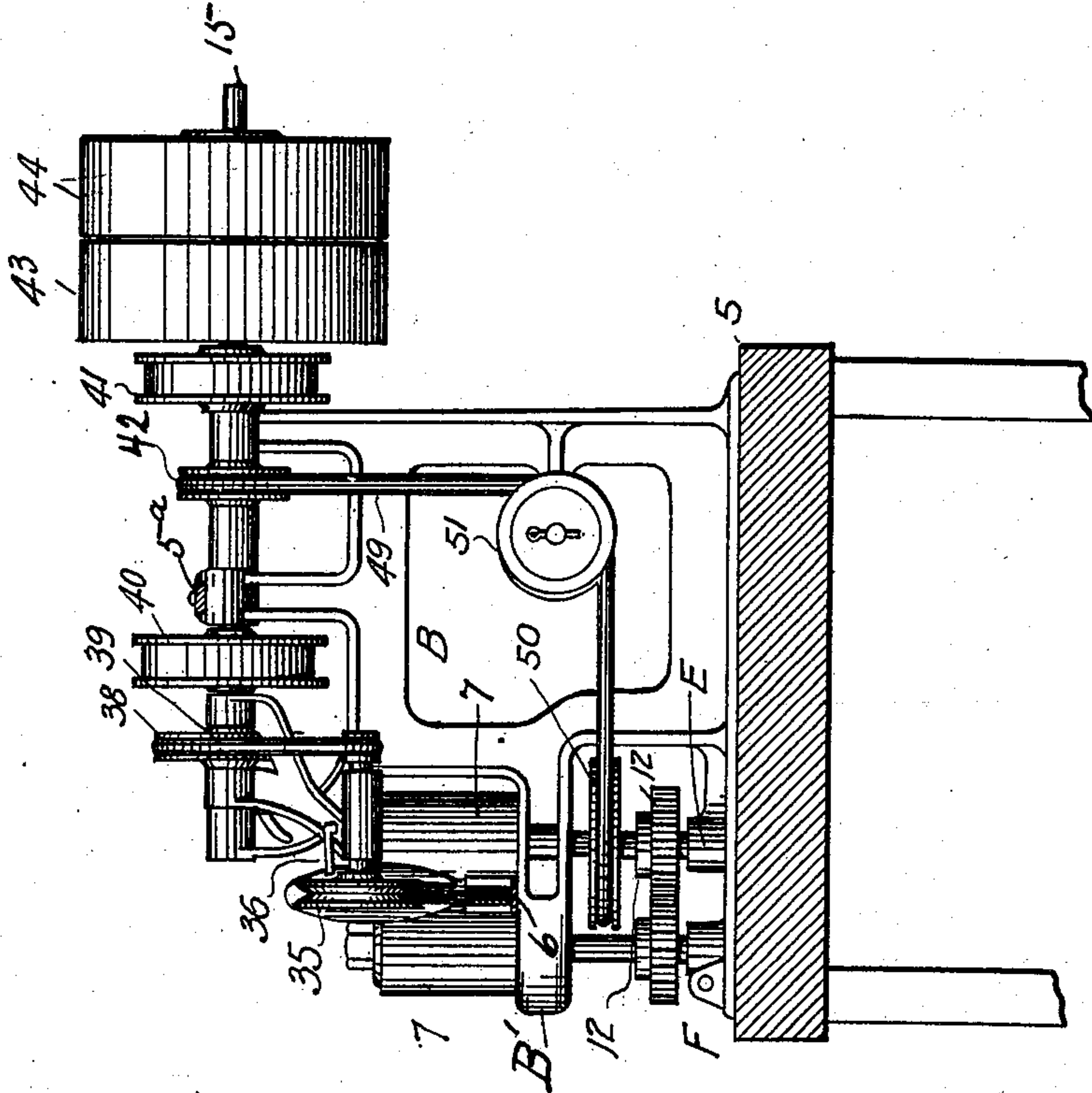
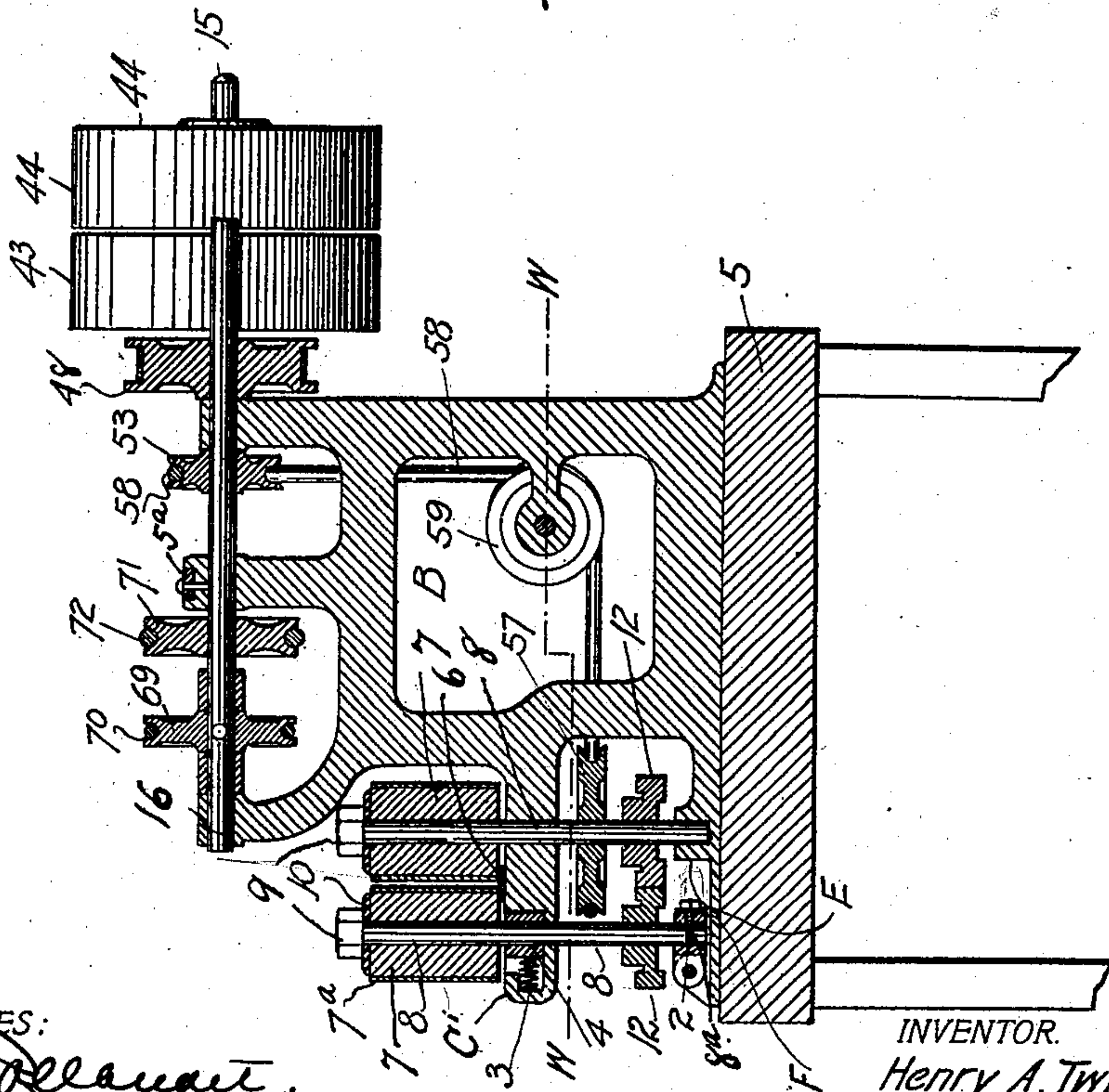


FIG. 3.



WITNESSES:

J. J. Dillman
A. C. Shick

INVENTOR.

Henry A. Twigg

BY *A. C. Shick* ATTORNEY.

H. A. TWIGG.
EDGE IRONING MACHINE.
(Application filed May 13, 1901.)

(No Model.)

4 Sheets—Sheet 4.

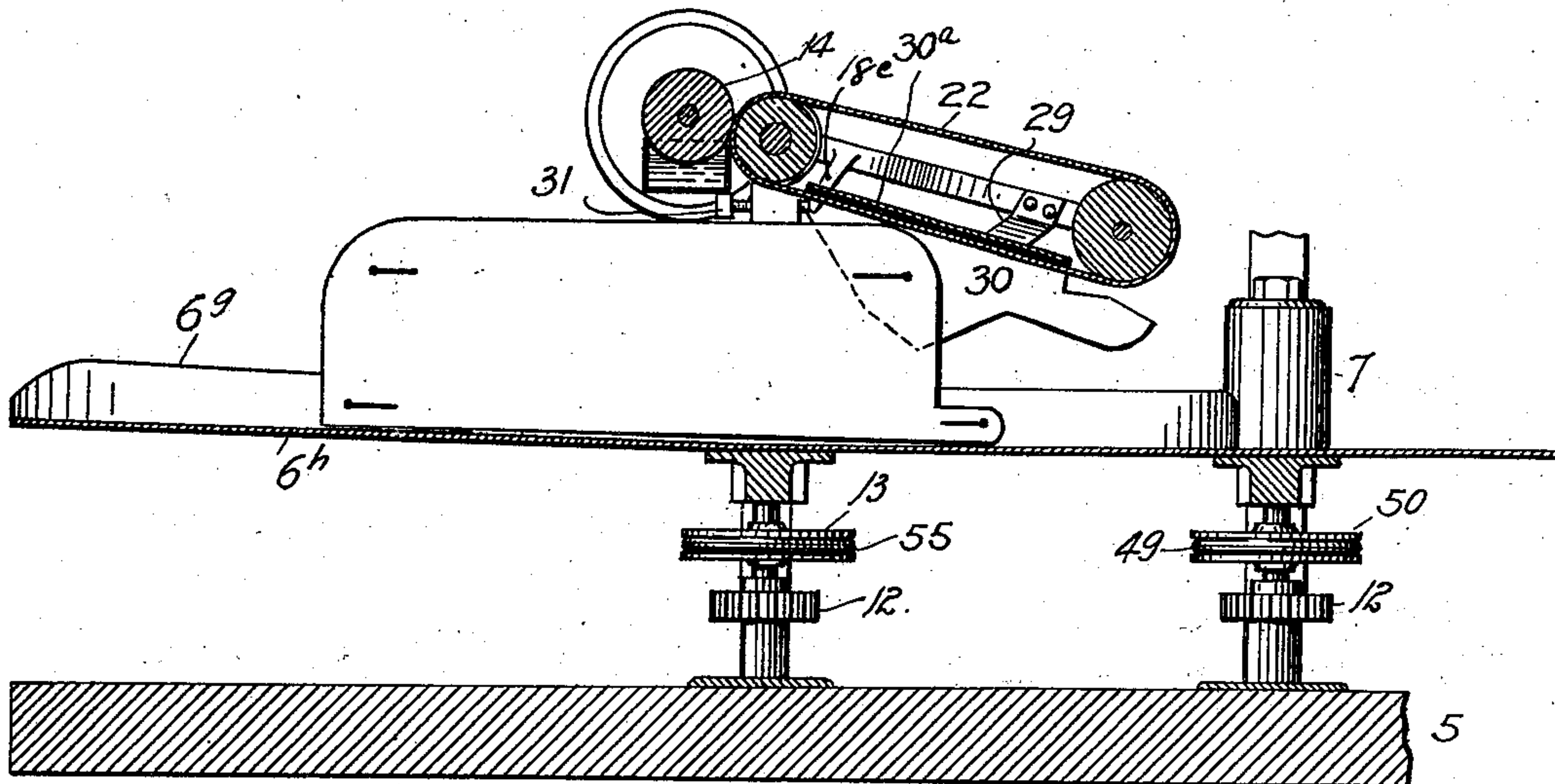


FIG. 5

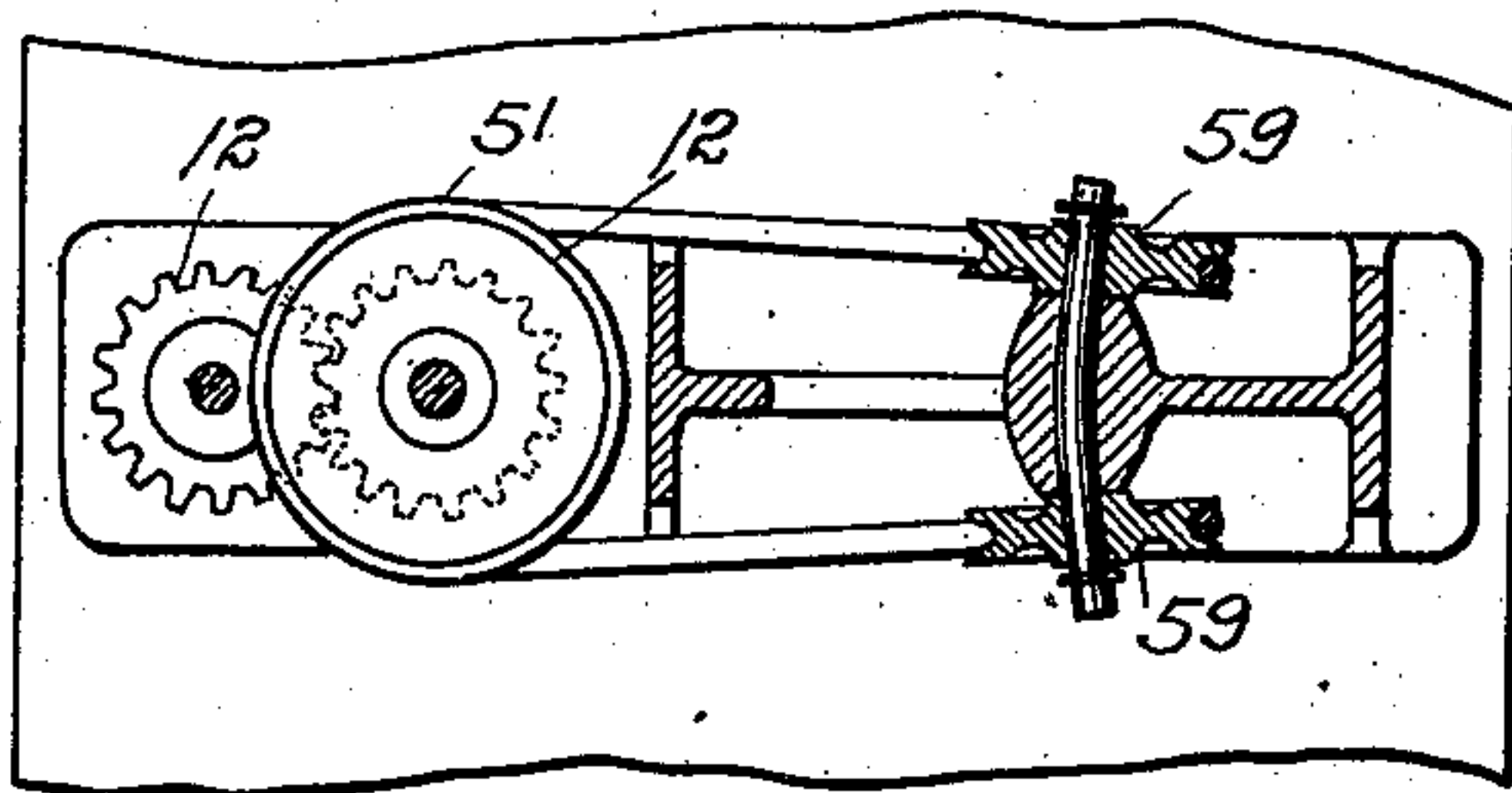


FIG. 6

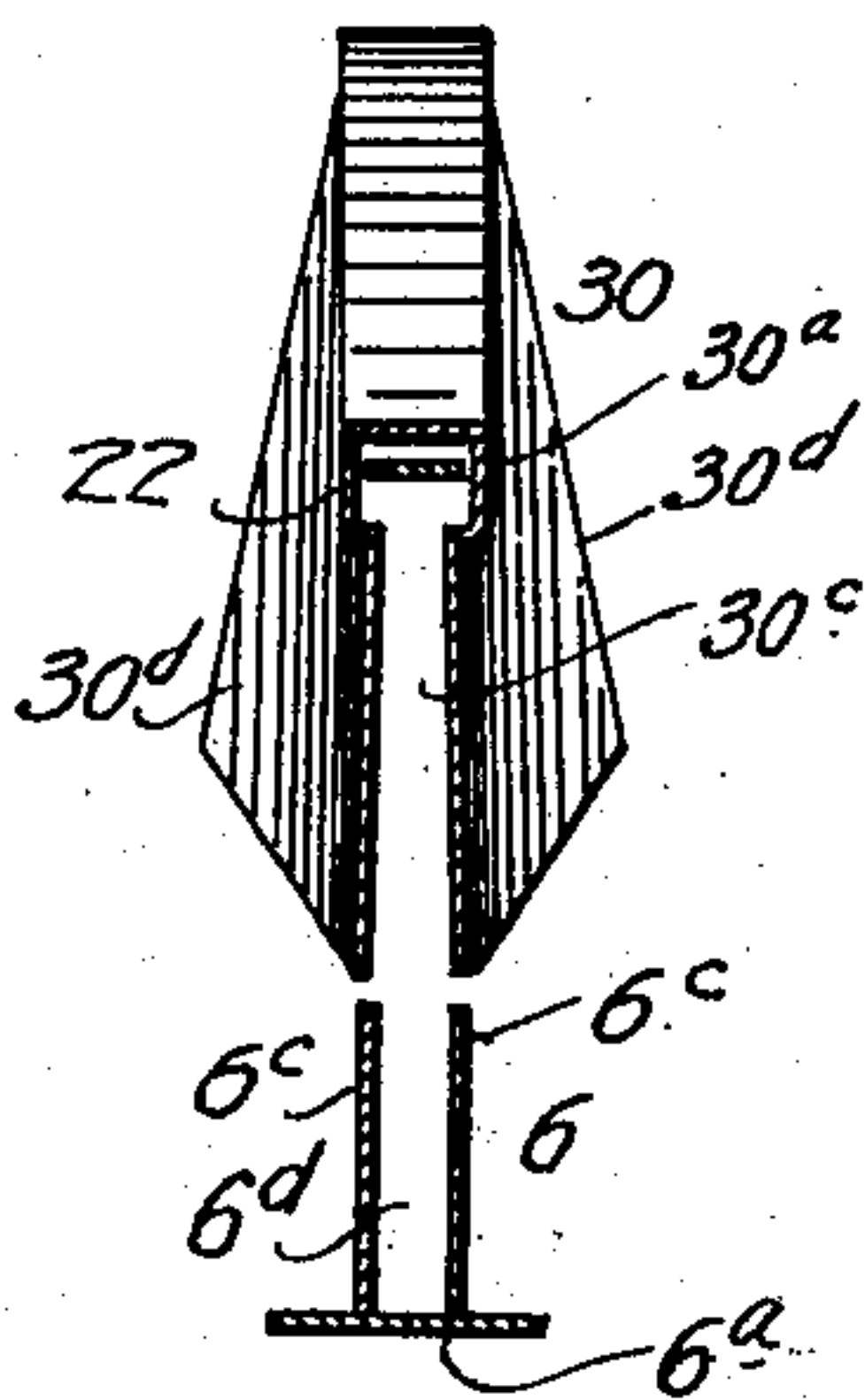


FIG. 7

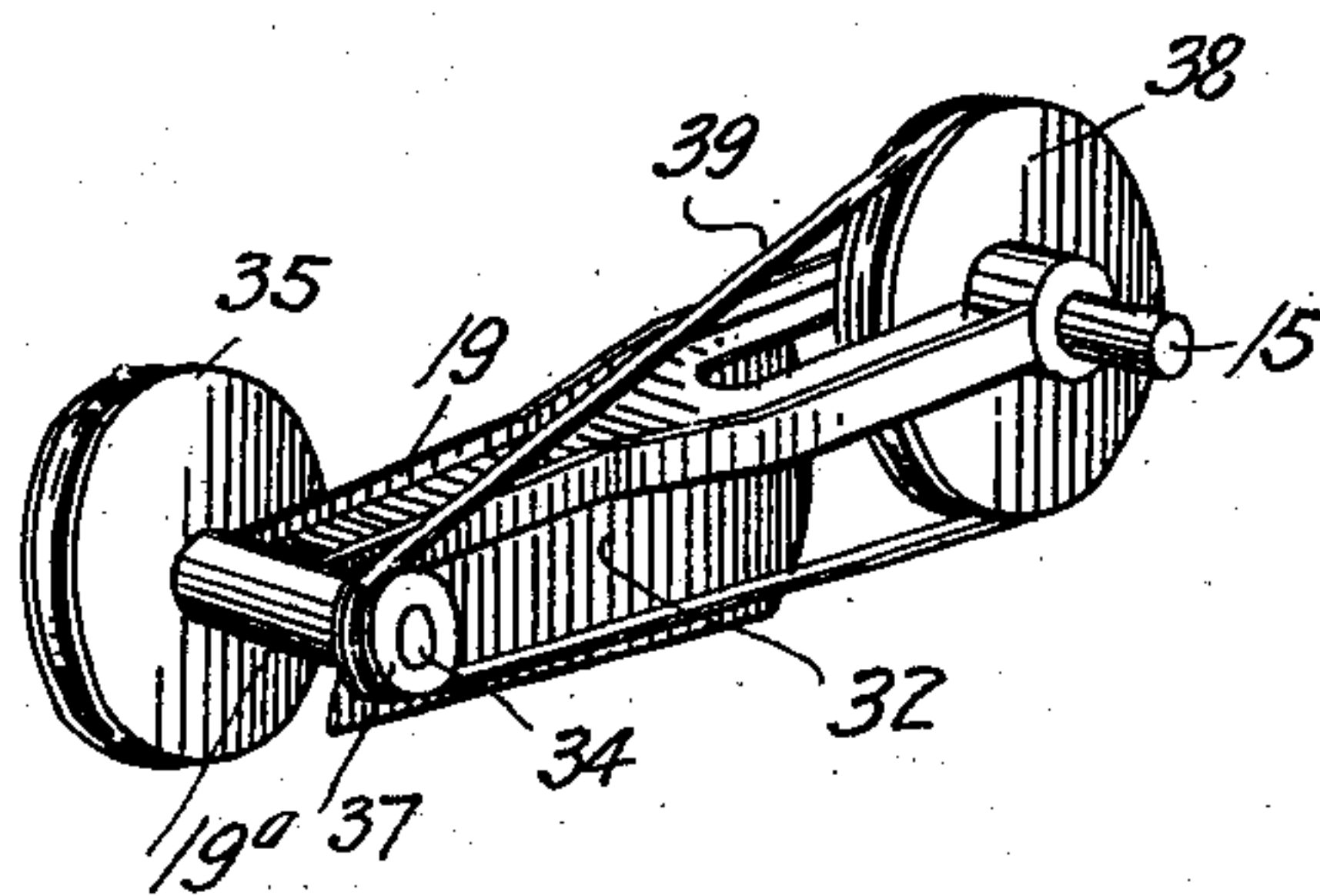


FIG. 9

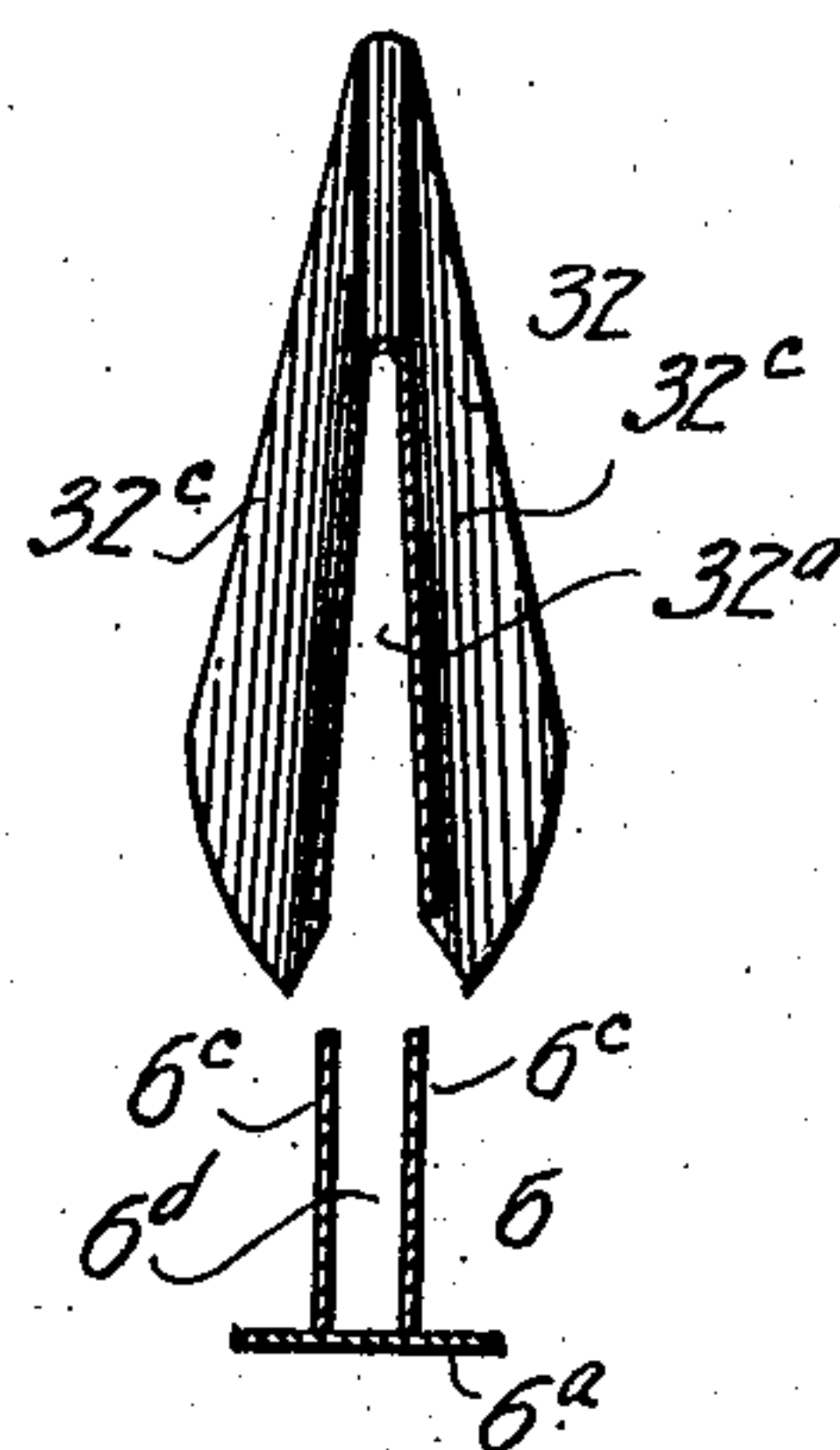


FIG. 8.

WITNESSES:
[Signature]
D. C. Shick

INVENTOR.
Henry A. Twigg
BY *[Signature]* ATTORNEY.

UNITED STATES PATENT OFFICE.

HENRY A. TWIGG, OF DENVER, COLORADO.

EDGE-IRONING MACHINE.

SPECIFICATION forming part of Letters Patent No. 700,459, dated May 20, 1902.

Application filed May 13, 1901. Serial No. 59,899. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. TWIGG, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Edge-Ironing Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in machines for ironing the edges of collars and cuffs, my object being to provide a machine of this class which shall be more especially adapted for use in laundries, where large quantities of collars and cuffs are handled.

My further object is to provide a machine which shall be thoroughly automatic in action and comparatively simple in construction; and to these ends the invention consists of the features, arrangements, and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a top or plan view of my improved machine. Fig. 2 is a side elevation of the same. Figs. 3, 4, and 5 are sections taken on the lines *xx*, *yy*, and *zz*, respectively, of Fig. 1. Fig. 6 is a section taken on the line *ww*, Fig. 3. Fig. 7 is a section taken on the line *vv*, Fig. 2. Fig. 8 is a section taken on the line *ss*, Fig. 2. Fig. 9 is a perspective view of a gravity-yoke or swinging arm carrying an ironing-wheel.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a suitable base upon which are mounted and made fast four upright metal frames, preferably composed of cast-iron and connected at the top by a longitudinal bar 5^a. These frames are suitably separated and, as shown in the drawings, are substantially of the same construction and form the supporting means for the operating parts of the machine's mechanism. The construction of these frames is clearly illustrated in Figs. 3 and 4. Fig. 3 shows a frame in sec-

tion, and Fig. 4 a frame in elevation. Since for convenience of description it becomes necessary to distinguish these frames from each other, they will be respectively designated by the letters A, B, C, and D, beginning at the left referring to Figs. 1 and 2 and designating them in order.

At one side of the machine and secured to projections A', B', C', and D' of the several frames is a guide 6, composed of a bottom plate 6^a and two upright flanges 6^c, forming a track or way 6^d, through which the collar or cuff passes during the edge-ironing operation. The bottom plate 6^a is continuous; but there are breaks in the upright flanges 6^c at each frame to permit feed-rollers 7 to act on the article—that is to say, the collar or cuff—during the ironing operation, whereby the said article is made to travel continuously the entire length of the guide-track 6. There are four pairs of these feed-rollers, one pair being located at each frame. The said rollers are fast on vertical spindles 8, journaled in the frames. The central portion of one spindle engages a plain opening in the frame projection, while its lower extremity engages a rigid bearing E on the lower part of the frame. The other feed-roller spindle engages a bushing 4, inserted in an opening formed in the projection of the frame and supported by a shoulder formed thereon. On one side of this bushing a recess is formed in the frame, in which is located a coil-spring 3 to allow the spindle to move outwardly, thus giving the roller a certain degree of yielding capacity when for any reason it may be necessary. This is important, since the articles passed through the rollers are not always of the same thickness. The lower extremity of the yielding spindle engages a hinged foot-box F, which coöperates with the spring 3 to give the spindle and the roller the yielding function. The device 2—as a screw, for instance—passes through the box F into a circumferential groove 8^a formed in the yielding spindle. This device supports the spindle from below and at the same time allows it to turn freely. The rollers are faced with canvas 7^a or other suitable fibrous covering. The body of the rollers may be composed of wood or other suitable material. Each roller is held in place from above by a nut 9, screwed upon

the upper extremity of the spindle and engaging a washer 10. The distance between the several pairs of feed-rollers is such that one pair will catch the cuff or collar before the latter is released by the other pair. The spindles of each pair of rollers are provided with meshing gears 12, and one of the spindles of the pair of rollers farthest to the left in Figs. 1 and 2 is provided with a pulley 13 for operating purposes.

Journalled in the upper parts of the several frames A, B, C, and D are horizontal shafts 14, 15, 16, and 17, respectively. Upon each of the shafts 14, 15, and 16 is mounted a yoke or arm. These yokes, while substantially of the same construction, will be designated by the reference characters 18, 19, and 20, respectively. Fast on one extremity of the shaft 14 is a pulley 21, around which passes a belt 22, composed of some soft material adapted to readily absorb water. This belt also passes around a pulley 23, fast on the shaft 24, journalled in a bearing 18^a, formed on the free extremity of the yoke 18. Mounted on the frame immediately to the left (see Figs. 1 and 2) of the pulley 21 is a small water-containing receptacle 25, into which dips a wheel 26, journalled on a shaft or spindle 27, supported by a bracket 28, attached to the upper part of the frame A. When the machine is in operation, the water-wheel 26 engages the belt 22 and keeps the latter constantly moistened with water, for a purpose hereinafter explained.

Attached to the lower part of the yoke 18 by means of an arm 29 is a guide-shoe 30, whose upper portion 30^a is formed into a runway for the belt 22 and whose lower portion forms a guideway 30^c for the collar or cuff. The forward extremity of the shoe, or that farther to the left in Figs. 1 and 2, has its sides outwardly flared, as shown at 30^d. The guide-shoe 30 is closed above the belt (see Fig. 7) to limit the upward movement of the latter when engaged from below by the article to be ironed. The pulley 23 normally occupies a position considerably below the pulley 21, whereby the belt and the upper edge of the shoe are downwardly inclined from the front toward the rear. For convenience of description the part of the machine farther toward the left in Figs. 1 and 2 is termed the "front" and the opposite extremity the "rear" in this specification. The guideway 30^c of the shoe is located directly above the similar way 6^d of the guide 6. As the collar or cuff is fed into the machine it is carried by the feed-rollers through the guide-shoe 30 and a portion of the guide-track 6, whereby its upper edge is brought into contact with the absorbent belt 22 and properly moistened for ironing purposes. The yoke 18 is permitted a vertical swinging or oscillating movement on the shaft 14 as an axis to allow the mechanism to accommodate itself to both collars and cuffs, as well as collars and cuffs of different widths, whereby the moistening-belt 22 will always engage the upper edge of the

article and perform the function stated regardless of its width. It will perform the required function upon the narrowest collar and the widest cuff equally well. The normal position of the yoke 18, as well as the yokes 19 and 20, may be regulated at will by a set-bolt 31, passing through a threaded opening formed in the upper part of the frame and engaging a lug or projection formed on the yoke. The set-bolt of each yoke is designated 31, while the lugs engaged by the different set-bolts are designated by the characters 18^c, 19^c, and 20^c, respectively. The wider the article passed through the machine the higher will the forward extremity of the yoke be raised in order to allow the said article to pass. After leaving the moistening-belt the article is caught by the pair of feed-rollers next in the rear and carried through the guide-track—that is, into a wedge-shaped guide-shoe 32, having a guideway 32^a and whose forward extremity is outwardly flared, as shown at 32^c. This shoe 32 is secured to the yoke 19 by an angle-arm 33.

The forward extremity of the yoke 19 is provided with a bearing 19^a, in which is journalled a shaft 34, on which is mounted and made fast an ironing-wheel 35, having a grooved or V-shaped periphery adapted to engage the upper edge of the collar or cuff as it passes through the machine. The guideway 32^a is closed at the top of the shoe, whose upper edge is inclined downwardly from the front toward the rear to facilitate the raising of the yoke as the collar or cuff passes through the guide-shoe. As the article passes under the ironing-wheel 35 the latter, which is heated to the required temperature, as hereinafter explained, acts on the moistened edge of the same and performs the intended function. The wheel 35 is heated by the flame from a lighted gas-jet issuing from a tube 36 and directed against the wheel on the inside. The inner extremity of the shaft 34 or that remote from the wheel 35 is provided with a small pulley 37, which is connected with a larger pulley 38 by a belt 39. The pulley 38 is fast on the shaft 15, which is the driving-shaft of the machine. This driving-shaft carries two flanged pulleys 40 and 41, a smaller grooved pulley 42, a loose pulley 43, and a fast pulley 44, which may be connected with a line-shaft for operating the machine. The pulley 40 is connected by a belt 46 with a pulley 45, fast on the shaft 14. The pulley 41 is connected by a belt 47 with a pulley 48, fast on the shaft 16. The pulley 42 is connected by an endless belt 49 with a horizontal pulley 50, fast on one of the spindles of the second pair of rollers 7, counting from the front end of the machine. The belt 49 engages in its course two idle guide-pulleys 51, journalled in the frame B below the pulley 42. The shafts 14, 16, and 17 are respectively provided with pulleys 52, 53, and 54. The pulley 52 is connected by an endless belt 55 with a horizontal pulley 13, fast on a spin-

dle of one of the first pair of feed-rollers. This belt engages idle guide-pulleys 56 in its course. The pulley 53 is connected by a belt 58 with a horizontal pulley 57, fast on a spindle of one of the third pair of feed-rollers. This belt engages guide-pulleys 59 in its course. The pulley 54 is connected by a belt 60 with a horizontal pulley 61, engaging guide-pulleys 62 in its course. After leaving the ironing-wheel 35 the article is caught by the third pair of feed-rollers and carried to a guide-shoe 63, which is connected with the yoke 20 by an angle-arm 64 and is substantially of the same construction as the shoe 32.

15 The forward extremity of the yoke 20 is provided with a bearing 20^a, in which is journaled a shaft 65, upon which is made fast an ironing-wheel 66, having a grooved periphery and shown larger in diameter than the wheel 35. This wheel 66 may, however, be of the same diameter as the wheel 35; but the groove of its periphery is shaped somewhat differently from the groove of the wheel 35. The groove of the wheel 35 is more narrow, since it is intended to engage the sides of the article for a short distance adjacent the edge, while the wheel 66 is intended to engage the edge only of the article. This wheel 66 is kept hot by the flame from a jet of gas issuing from a tube 67 and directed against the wheel. This wheel engages the article after it leaves the wheel 35 and completes the ironing operation, the article being discharged from the machine by the fourth pair of feed-rollers. The inner extremity of the shaft 65 is provided with a small pulley 68, connected by a belt 70 with a larger pulley 69, fast on the shaft 16. The shaft 16 is also provided with a fast pulley 71, which is connected by a belt 72 with a pulley 73, fast on the shaft 17.

From the foregoing description the operation of my improved machine will be readily understood. Power being applied to the pulley 44, the shaft 15 is rotated, and from this shaft power is transmitted to all the other moving parts of the machine by virtue of the system of belts, pulleys, and gears hereinbefore described. The parts of the machine being in motion, the article whose edge is to be ironed or smoothed is placed upon a forward extension 6^b of the guide 6. This extension 6^b is provided with one upright flange 6^c, and the article is moved therefrom to engagement with the first pair of rollers 7. These rollers feed the article readily to the guide-shoe 30 and to engagement with the moistening-belt 22, after which the next pair of feed-rollers catch it and carry it to the guide-shoe 32, whence it passes to the first ironing-wheel 35. After leaving this wheel it is fed by the third pair of feed-rollers 7 to the guide-shoe 63 and thence to the ironing-wheel 66, which completes the ironing operation.

Upon the shaft 17 at the rear end of the machine is mounted and made fast an ironing-wheel 75, similar to the wheels 35 and 66. This wheel 75, however, does not engage

the articles in their continuous passage through the machine, but is employed in smoothing edges of articles which are of peculiar shape and cannot be passed through the mechanism employed on articles of ordinary make. Adjacent this wheel 75 is mounted a small water-containing receptacle 76, in which turns a wheel 77 and which is faced with absorbent material for moistening the edge of articles to be ironed on the wheel 75. The receptacle 76 may be supported on the frame in any suitable manner. The spindle of the wheel 77 is supported by an arm 78, attached to the frame. The wheel 75 is heated by a flame from a gas-tube 79, connected with a branch conduit 80, leading from a main pipe 81, from which lead branches 82 and 83 to the burner-tubes 67 and 36, respectively. The tubes 67 and 36 pass upwardly from below through openings formed in the yokes 20 and 19, respectively.

Having thus described my invention, what I claim is—

1. The combination with a suitable framework, of a guide-track having vertical flanges forming a way adapted to receive edgewise the article to be ironed, means for causing the article to travel along the track in a plane substantially vertical, and a vertically-adjustable edge-ironing wheel arranged to engage the article during such movement, and means for adjusting said wheel.

2. In an edge-ironing machine, the combination of a supporting guide-track provided with a way adapted to support the article to be ironed in a substantially vertical plane, vertical feed-rollers located adjacent the track and arranged to cause the article to be ironed, to travel along said track, a vertically-adjustable edge-ironing wheel located in the plane of the track-guideway, means for adjusting said wheel, and a movable support for the said wheel whereby the latter may accommodate itself to articles of varying width.

3. In a machine of the class described, the combination of a guide-track, provided with upwardly-projecting flanges having breaks at intervals, feed-rollers located at said breaks and arranged to cause the article to travel along the guide-track, and an edge-ironing wheel located in the plane of the guide-track.

4. In an edge-ironing machine, the combination of a track having a guideway adapted to support the article to be ironed in a substantially vertical plane, automatic means for causing the article to travel along said track, a vertically-adjustable moistening device located in the plane of the guide-track, and a vertically-adjustable edge-ironing device located in the same plane, and suitable means for adjusting the moistening and edge-ironing devices.

5. In an edge-ironing machine, the combination of a track having a vertical guideway, means for causing the article to be ironed to travel along said guide-track in a plane substantially vertical, a vertically-adjustable

moistening-belt arranged in the plane of the track-guideway, vertically-adjustable edge-ironing means also located in the plane of the said guideway and arranged to engage the edge of the article after it leaves the moistening-belt, and means for adjusting the moistening-belt and the edge-ironing means.

6. In an edge-ironing machine, the combination of a guide-track constructed and arranged to support the article to be ironed in a substantially vertical plane, a vertically-oscillating yoke, a pulley carried by said yoke and located in the plane of the guide-track, an endless moistening-belt passed around said pulley, and suitable edge-ironing means located in the rear of the moistening-belt.

7. In a machine of the class described, the combination of a supporting-guide for the article to be ironed, means for causing the article to travel along said guide, an oscillating yoke occupying an inclined position, its free extremity being lowermost, a pulley mounted on the free extremity of said yoke, an endless moistening-belt passing around the pulley, and a guide-shoe connected with the yoke and forming a runway for the moistening-belt.

8. In a machine of the class described, the combination of a supporting-guide for the article to be ironed, means for causing the article to travel along said guide, a swinging arm, a pulley mounted on the free extremity of said arm, a moistening-belt passing around said pulley, a guide-shoe connected with the swinging arm and surrounding the belt forming a runway therefor, the guideway of the shoe being open from below to allow the article to engage the belt which is supported from above by the guide-shoe.

9. In a machine of the class described, the combination of a supporting guide-track having vertical flanges forming a guide for the article to be ironed, means for causing the article to travel along said track in a substantially vertical plane, an adjustable, vertically-oscillating yoke-arm, a pulley mounted on the free extremity of said arm in the plane of the article to be ironed, and a belt passed around the pulley in the plane of the track-guideway.

10. In a machine of the class described, the combination of a supporting guide-track, means for causing the article to travel along said track in a plane substantially vertical, an endless moistening-belt traveling in the plane of the article to be ironed, said belt being vertically adjustable, means for adjusting the belt, a liquid-receptacle, and a wheel dipping into said receptacle and arranged to engage the belt for moistening purposes.

11. The combination with a suitable frame, of a supporting guide-track, means for causing the article to travel along said track in a plane substantially vertical, an adjustable, vertically-oscillating arm, and an edge-ironing wheel mounted on said arm in the plane of the article to be ironed.

12. The combination with a suitable frame,

of a supporting-track mounted thereon, means for causing the article to travel along said track, an oscillating yoke-arm, an edge-ironing wheel mounted on the free extremity of said arm, and a guide-shoe connected with said arm, its upper part being closed and normally downwardly inclined from the front toward the rear, to facilitate the raising of the yoke-arm to accommodate itself to articles of different width.

13. The combination with a suitable frame, of a supporting guide-track mounted thereon, an oscillating yoke-arm mounted on the frame, a guide-shoe connected with said arm in the plane of the guide-track, and an edge-ironing wheel mounted on the yoke in the plane of the track.

14. In an edge-ironing machine, the combination with a suitable frame, of a guide-track mounted thereon, said track being constructed and arranged to support the article to be ironed in a plane substantially vertical, a vertically-oscillating yoke-arm also mounted on the frame, a set-bolt threaded in the frame and engaging the yoke-arm for purposes of adjustment, and an edge-ironing wheel mounted on said arm in the plane of the article on the track.

15. In an edge-ironing machine, the combination with a suitable frame, of a guide-track mounted thereon, said track being constructed and arranged to support the article to be ironed in a substantially vertical plane, two vertically-adjustable edge-ironing wheels mounted in the plane of the article on the guide-track, one in front of the other, and having their edge-ironing peripheries differently fashioned for the purpose set forth, and means for adjusting the edge-ironing wheels.

16. In an edge-ironing machine, the combination with a frame, of a supporting guide-track mounted thereon, said track being constructed and arranged to support the article to be ironed in a plane substantially vertical, and a pair of vertical feed-rollers cooperating with the track, spindles upon which the said rollers are mounted, a hinged box for one of the spindles, a bushing through which the last-named spindle passes, and a spring engaging said bushing and cooperating with the hinged box to allow the roller to yield in the performance of its function.

17. In an edge-ironing machine, the combination with a suitable frame, of a supporting guide-track mounted thereon, feed-rollers arranged in pairs along said track, an endless moistening-belt arranged in the plane of the guide-track, a guide-shoe forming a runway for said belt, an edge-ironing wheel located in the plane of the track, an oscillating yoke-arm upon which said wheel is mounted, and a guide-shoe located in the plane of the track and wheel and cooperating with both.

18. In an edge-ironing machine, the combination with a suitable frame, of a guide-track mounted thereon, said track being constructed and arranged to support the article to be

ironed in a plane substantially vertical, vertical feed-rollers arranged along said track, an endless moving belt located in the plane of the article on the track, edge-ironing wheels
5 also located in the plane of the article on the track, and suitable means for operating the feed-rollers, the belt and the ironing-wheels.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY A. TWIGG.

Witnesses:

D. C. SHICK,
MARY C. LAMB.