

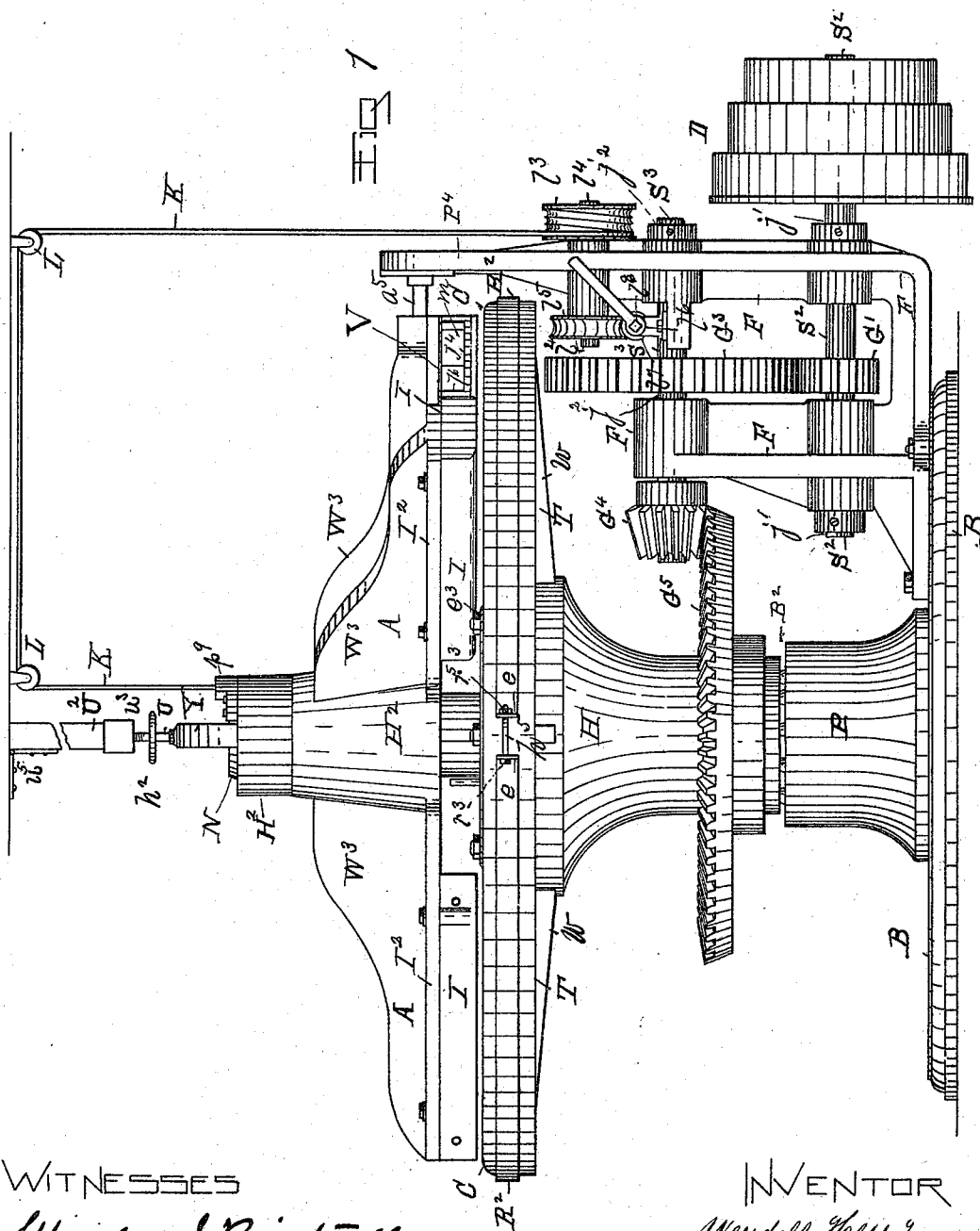
(No Model.)

6 Sheets—Sheet 1.

W. HESS, Jr.
IRONING MACHINE.

No. 570,397.

Patented Oct. 27, 1896.



WITNESSES

Charles S. Brintnall
O. B. Coe

INVENTOR

Wendell Hess Jr.
by W. E. Hagan atty

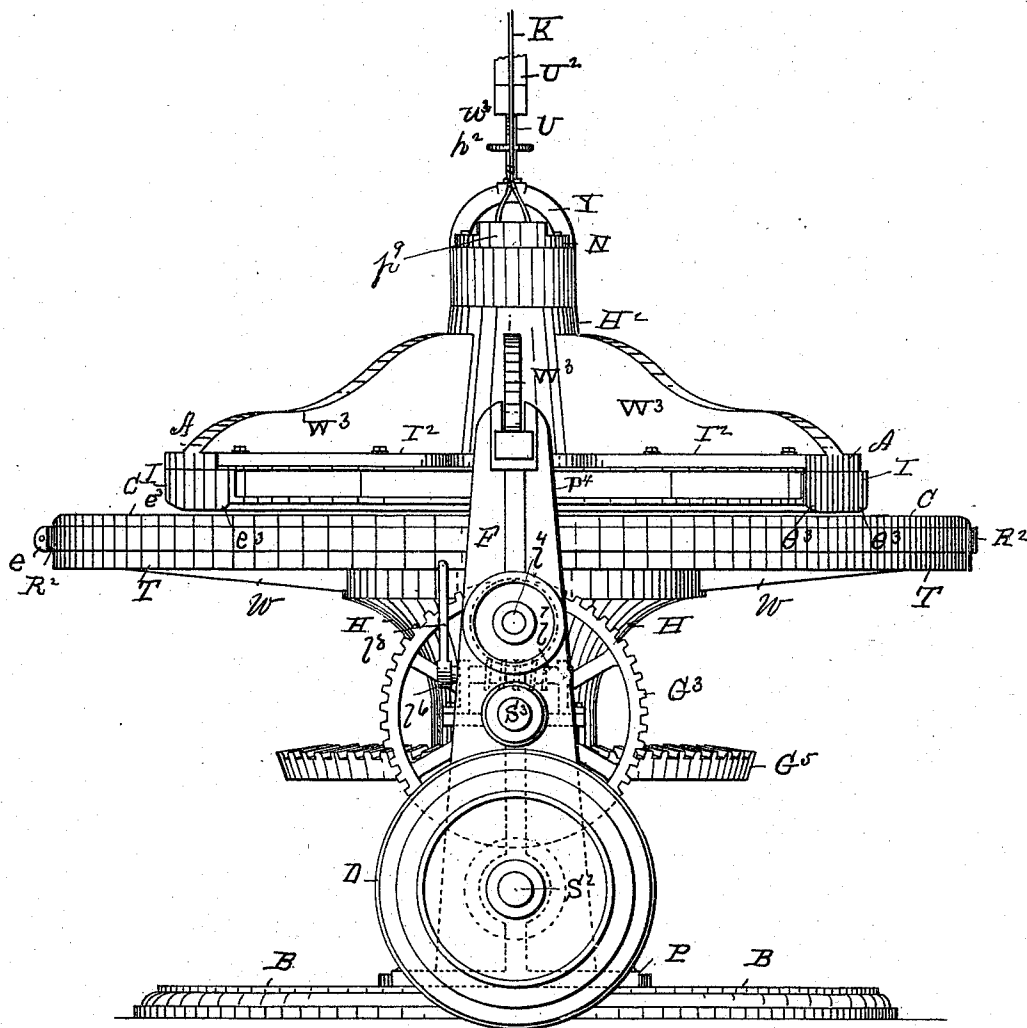
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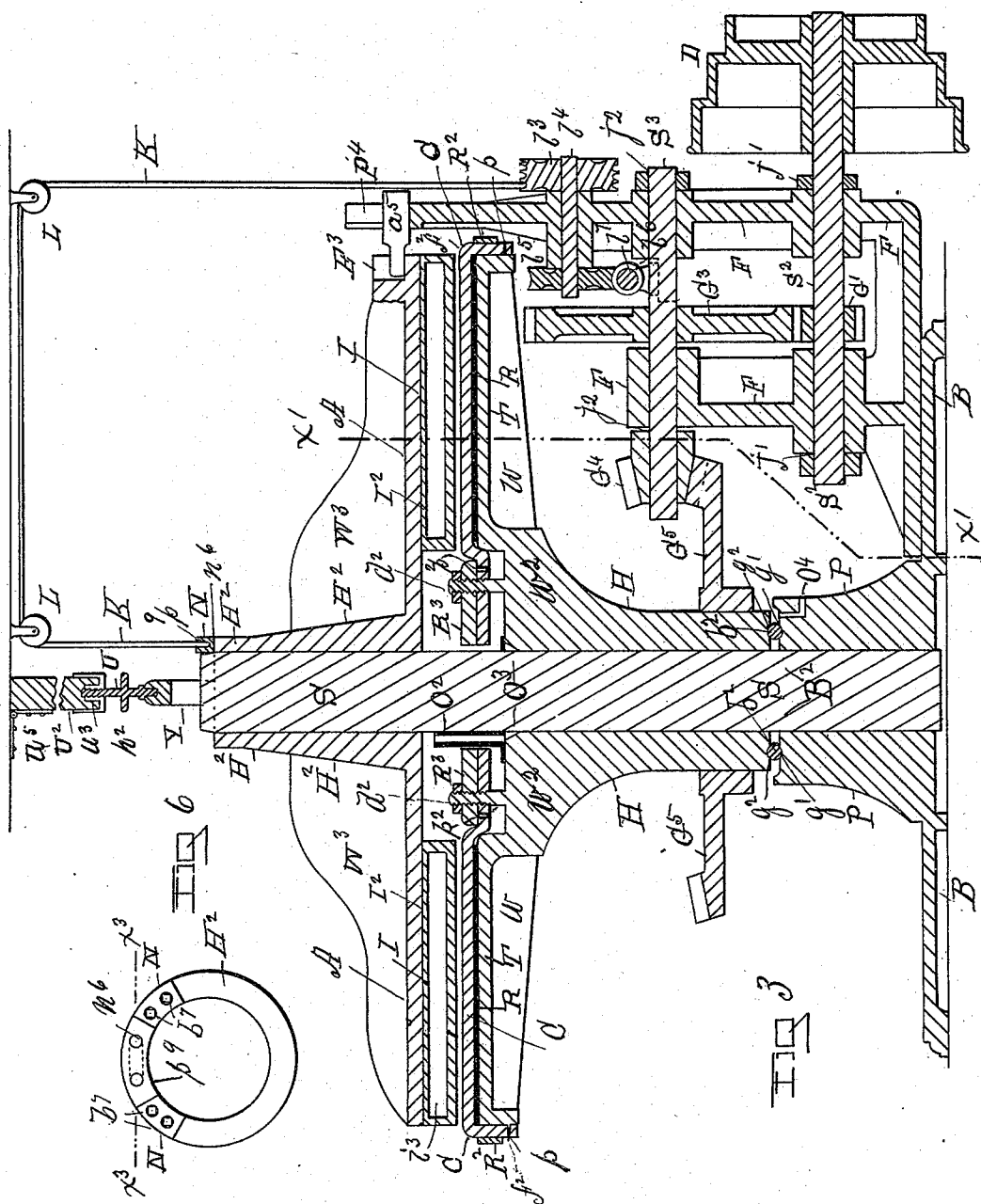
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William A. Sweet

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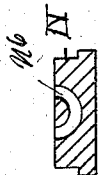


FIG 7

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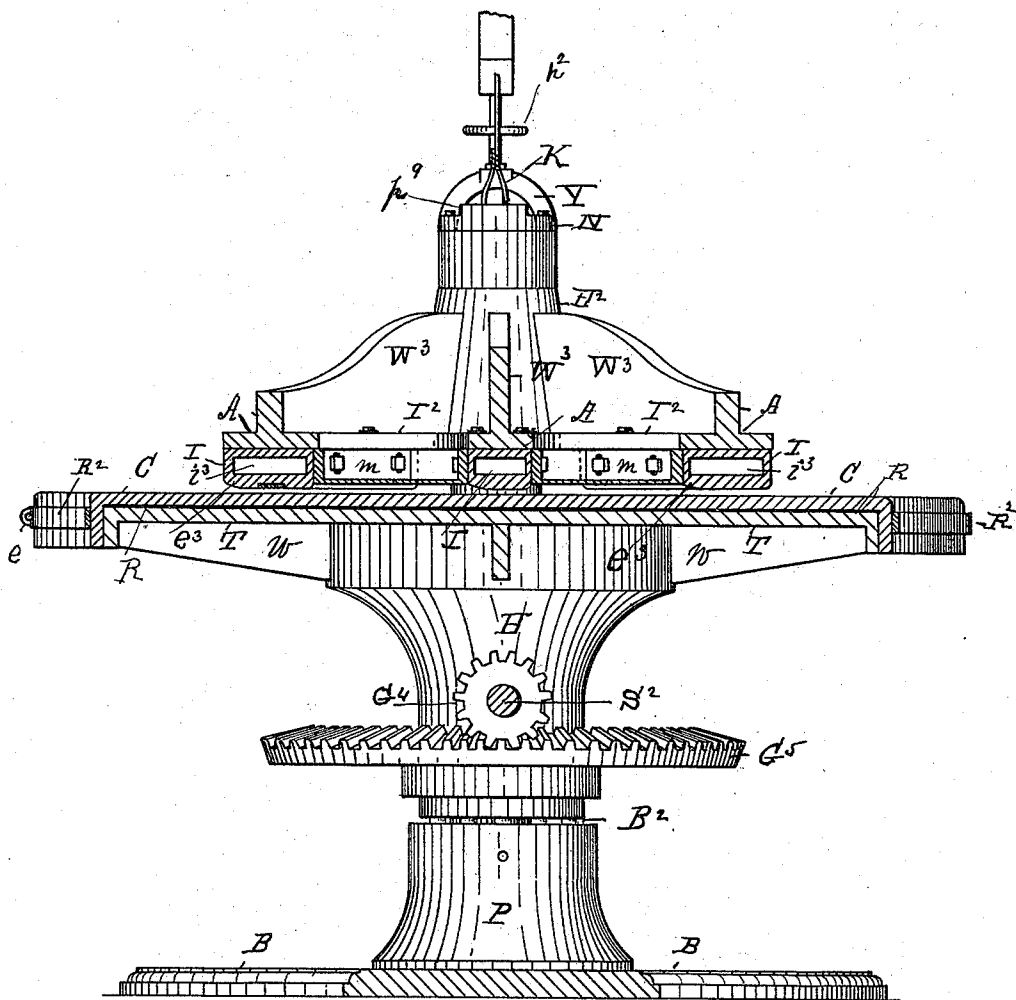
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FIG 4

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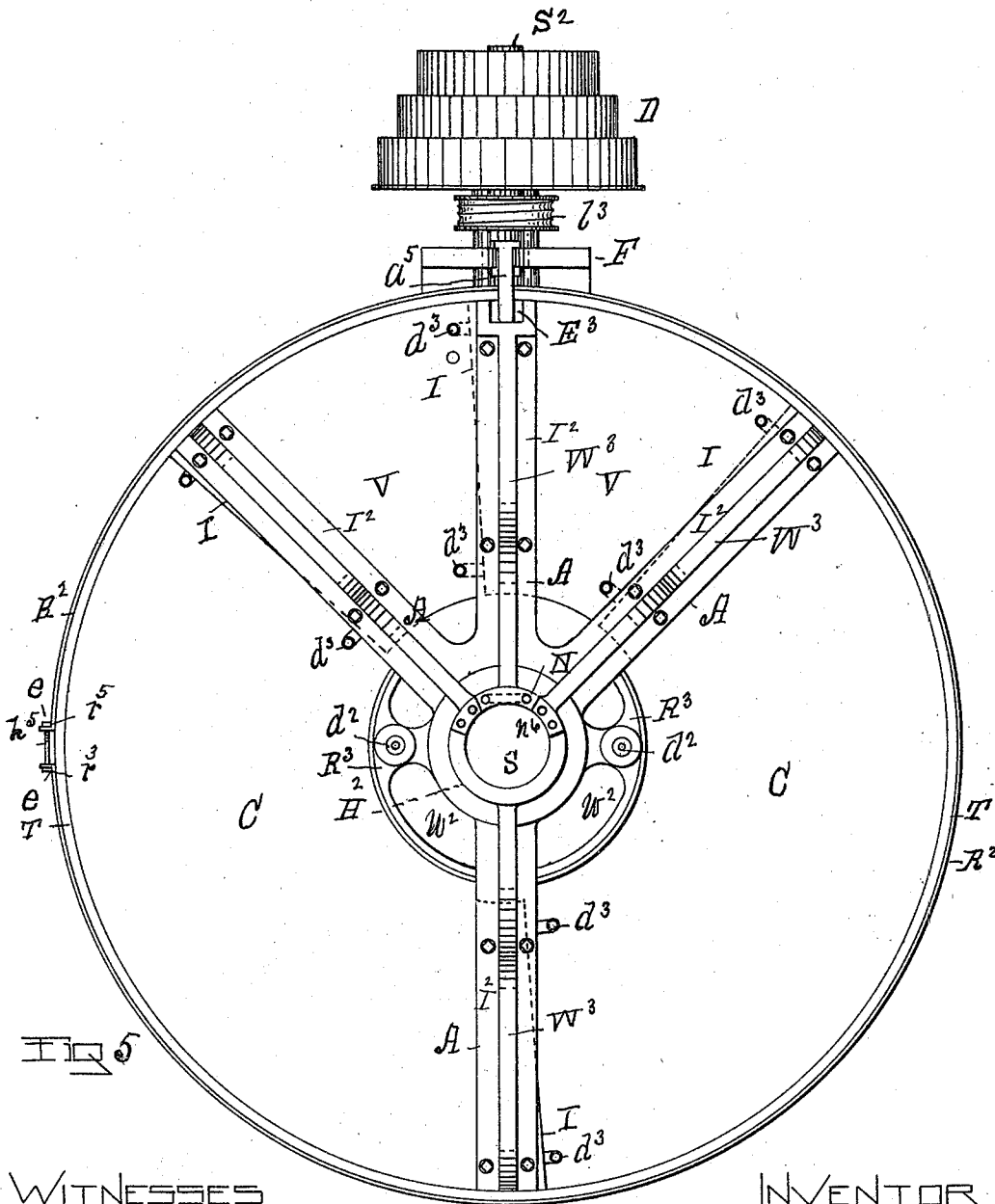
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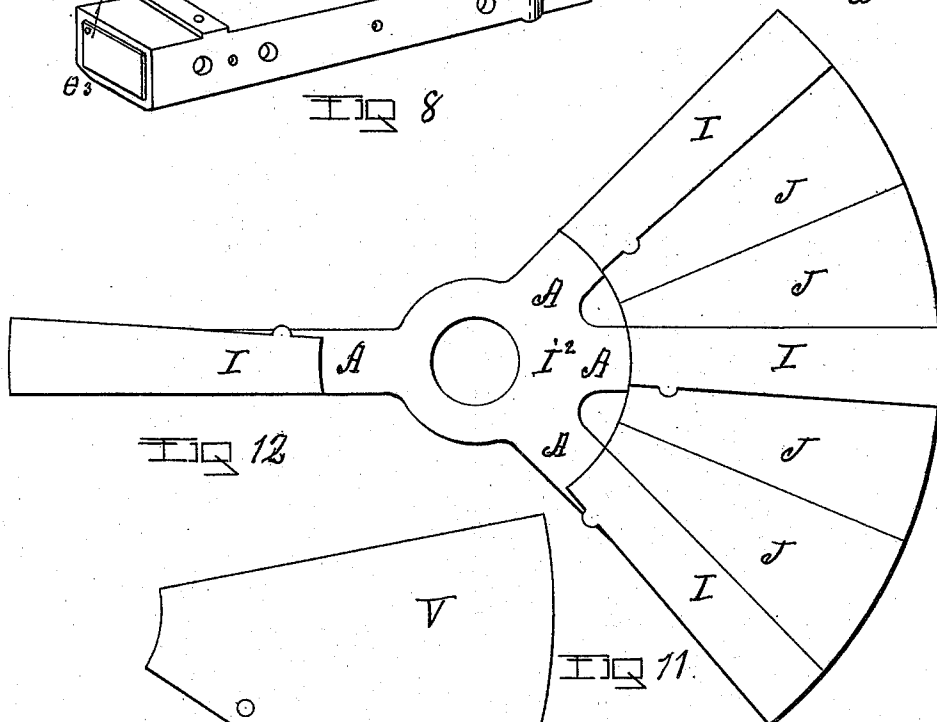
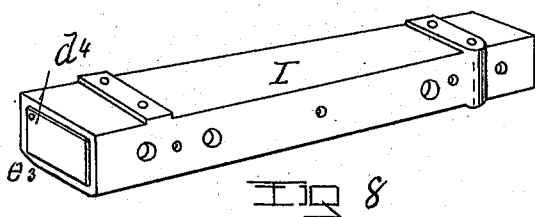
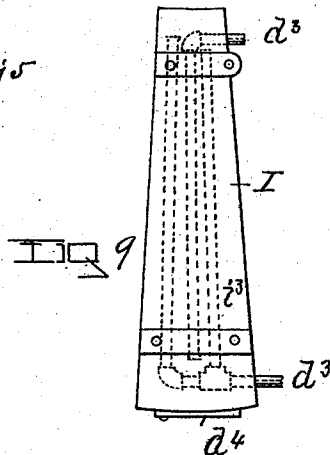
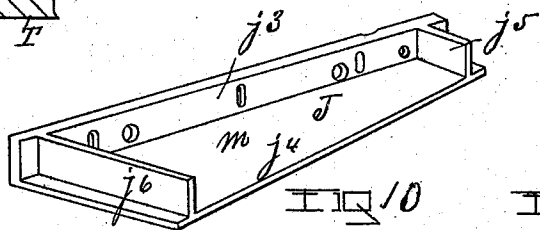
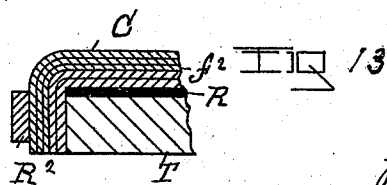
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W. HESS, Jr.
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Patented Oct. 27, 1896.



WITNESSES

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UNITED STATES PATENT OFFICE.

WENDELL HESS, JR., OF TROY, NEW YORK.

IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 570,397, dated October 27, 1896.

Application filed May 25, 1895. Serial No. 550,591. (No model.)

To all whom it may concern:

Be it known that I, WENDELL HESS, Jr., of the city of Troy, Rensselaer county, State of New York, have invented new and useful
5 Improvements in Ironing-Machines, of which the following is a specification.

My invention relates to improvements in machines for ironing apparel articles; and the object and purpose of my invention are to
10 better adapt this class of devices to the uses for which they are designed, by the combination, in a manner hereinafter to be more fully described, with a revolving table having a flat upper surface provided with an
15 elastic covering, of a holder or carrier provided with radially-arranged stationary arms having attached to their under surface irons having flat ironing-surfaces, with the said
20 irons adapted to be interiorly heated, and arranged to make an ironing contact with articles placed upon the bed as rotated, said
25 irons being provided with intermediately-placed heating-chambers deriving heat from the sides of the irons and imparting it to the
30 goods being ironed. By my improvements and the use of a flat ironing-surface upon the bed and a flat ironing-surface upon the under surface of the irons as the table and ironing-bed are rotated the ironing pressure upon
35 the articles is produced in circular lines of direction, by which the tendency to crowd ahead of the irons any slack there may be in the fabric, and thus produce wrinkles in the latter, is avoided, and by means of the heating-chambers formed between the irons I am
40 enabled to iron the articles when heavily dampened, an essential condition when a finish without gloss is desired.

Accompanying this specification to form a
45 part of it there are six plates of drawings containing thirteen figures illustrating my invention, with the same designation of parts by letter reference used in all of them.

Of the illustrations, Figure 1 is a side elevation of my improved ironing-machine, with one of the heating-chambers shown in cross-section. Fig. 2 is another elevation of the same machine, taken at that side at which
50 power is applied. Fig. 3 is a vertical section taken centrally from end to end. Fig. 4 is a cross-section taken on the line $x'x'$ of Fig. 3. Fig. 5 is a top view of the iron

holder or carrier and the table, with the adjusting mechanism above the top of the stud on which the table turns removed, showing
55 the tops of the heating-chambers between the irons. Fig. 6 is a top view of the central stud, the hub of the carrier or holder, and a semicircular plate connected to the top of the iron-holder hub, to which plate a cord is
60 attached to raise the iron holder or carrier when desirable. Fig. 7 is a section taken on the line x^3x^3 of Fig. 6. Fig. 8 is a perspective of one of the irons shown as detached. Fig. 9 is a top view of one of the irons, showing
65 the gas and air supply pipes, with the latter where within the irons indicated by dotted lines. Fig. 10 is a perspective of one of the plates forming a half of the bottom and ends and one side of one of the heating-
70 chambers, which when in position are between the irons where radially placed in a series. Fig. 11 is a top view of one of the gore-form plates which, in connection with two of the plates shown at Fig. 10, produce one of
75 the heating-chambers between the irons, the cover-plate and that shown at Fig. 10 being illustrated as detached. Fig. 12 is a view of the under surface of the holder or carrier, showing the arms attached radially thereto,
80 and also the heating-chambers between the irons, with the holder or carrier shown as detached from the stud on which it is placed when in use. Fig. 13 is a cross-section of a
85 part of the table-covering and table, with the covering shown in larger proportion than in the other figures.

The several parts of the apparatus thus illustrated are designated by letter reference,
90 and the function of the parts is described as follows:

The letter B designates the base of the machine, on which the working parts are supported, and the letter P designates a pedestal which is upwardly projected from the base.
95

The letter g' designates a ball-bearing groove which is formed in the upper surface of the pedestal P, and the letter S designates a stud which is vertically projected upwardly from the base B to pass through the pedestal
100 P and the hub H, formed on the under side of the revolving table T. The lower end of the hub H has formed in its bottom surface the annular ball-bearing groove g^2 , which is

vertically in line with the annular groove g' in the top of the pedestal P, these two annular grooves as thus arranged, in connection with the balls b^2 , forming the ball-bearing B^2 on which the ironing-table turns.

The letter D designates a driving-pulley on the shaft S^2 , which at $j'j'$ is journaled in the frame F, and the letter G' designates a geared pinion arranged to turn with the shaft S^2 , and this pinion meshes into a gear-wheel G^3 , arranged to turn with the shaft S^3 , having its bearings at j^2j^2 in the frame F.

The letter G^4 designates a beveled pinion on the inner end of the shaft S^3 , which pinion meshes into a beveled gear-wheel G^5 , secured to the downwardly-projected hub H of the table T, by which connection the latter is actuated to turn on the stud S, with the hub resting on the ball-bearing B^3 .

The revolving table T has radially-arranged webs W on its under surface between the hub and the outer edge of the table, and on its upper surface it is circularly recessed at w^2 , as shown at Fig. 5. The letter C designates a covering arranged upon the upper surface of the table T, to produce thereon an elastic ironing-bed. This covering is preferably made from a sheet of rubber R of such thickness as will give to it a proper elasticity, and over this rubber there is placed a covering of felt f^2 , which overlaps the outer and inner edges of the rubber, the latter being cut to coincide with the outer edge of the table and the inner edge of the recess formed centrally in the latter. The outer overlapping edge of the felt f^2 is turned down over the rubber edge and the edge of the table, to be secured on pins p , outwardly projected from the perimetral edge of the latter.

The letter R^2 designates a flat ring which is passed down over the outer overlapping edge of the felt, and the outturned ends $e e$ of this ring are provided with a tightening threaded bolt h^5 , having a head at one end and a gripping-nut at the other, whereby as the nut is screwed up the ends of the ring R^2 are drawn together, so as to tightly hold the covering on the pins, the head of the bolt being designated at r^3 and the nut at r^5 .

The letter R^3 designates another cover-securing ring, which is provided with pins p^2 on its under surface, and this ring is passed down over the stud S, so as to have its pins p^2 engage with the felt edge where overlapping the rubber R at the edge of the circular recess w^2 . The letters d^2 designate bolts which are passed upwardly from the bottom of the recess w^2 to pass through the overlapping felt and also through the ring R^3 , and the upper ends of these bolts are threaded and provided with nuts, which when screwed down on the bolts force the ring R^3 and connected felt down into the recess w^2 , to thus secure the felt firmly to the table and to give it a taut surface.

The letters I^2 designate the iron holder or carrier, its function being to hold the irons in

position, and it is made with the upwardly-extended hub H^2 , arranged to encircle the stud S, and this holder or carrier is provided with radially-arranged arms A A A A, which are laterally projected outwardly from said hub, and the letters W^3 designate webs connecting said arms with the hub.

The letters I designate irons, each of which is provided with an interior inclosure or chamber i^2 , in which gas mixed with air is burned as supplied by pipes $d^3 d^3$, and the letters d^4 designate end doors through which access is had for lighting the gas to be burned therein, as shown at Fig. 8. These irons are preferably made with slightly-rounded side edges e^3 , and they are each attached to the under side of one of the radial arms A, as shown at Fig. 5, and these irons are each preferably made to taper inwardly from the outer ends, as to width.

The letters m designate heating-chambers which are placed between the irons radially arranged in a series of three of the latter at one side of the holder or carrier. These heating-chambers are each produced by means of the two plates J J, each of which latter has one vertical side j^3 , a bottom plate j^4 , and an inner end vertical plate j^5 , and an outer vertical end plate j^6 , although, if desired, what are shown as two of the plates J may be cast in one piece. When formed, as shown, in two parts, each pair of these plates J is arranged between the middle and outer iron of the series by connecting the vertical side plate j^3 of one of the plates J with the inner side of the outer iron of the series and the vertical side of the other plate J of each heating-chamber to the outer side of the middle iron of the series, so as to bring the outer and inner end plates of each of the plates J, as well as the edges of the bottom plates, in contact alinement with the bottom plates immediately above, but not in contact with the bed. The plates J, when their edges are brought in contact, form the inclosure m , which is top-covered by one of the plates V. As thus made the heat radiating from the irons is utilized to dry the articles being ironed and to allow of their being heavily dampened when inserted, which is advantageous.

While I prefer to thus arrange the irons at one side of the holder or carrier in a series of three, with an iron attached to the holder or carrier arm diametrically opposite to the series of irons and with the irons of the latter provided with heating-chambers and the iron arranged on the arm diametrically opposite to the series without a heating-chamber, I do not limit my use of the series of irons radially arranged to the number which I illustrate and describe, for the number may be varied, provided there is a space left between the irons of the series and the one upon the opposite side of the holder or carrier whereat articles may be placed upon and removed from the bed.

The letter N designates a curved plate which

by means of bolts b^7 connects to the top of the hub H^2 of the iron holder or carrier, as shown at Figs. 3, 4, 5, and 6, and this plate N has an upward projection p^9 on one of its sides, in which there is formed an eye n^6 for attachment to said plate of a rope K , and from where this rope is thus connected it passes over the pulleys L L to a revolving drum L^3 , arranged on the shaft L^4 , and the letter L^5 designates a gear-wheel on the inner end of the latter shaft, operated by a worm-gear L^7 on the shaft L^6 , the latter having a crank L^8 , by which mechanism, when desired, the iron holder or carrier may be raised from off the bed.

The letter Y designates a yoke, the lower ends of which are oppositely attached to the top of the hub H^2 , and this yoke at its upper end is recessed to receive a pressure-bar U , which between its ends is provided with a hand-wheel h^2 , and at its upper end u^3 it is arranged to screw into the lower end of the bar U^2 , depending from the ceiling of the room in which the machine is placed, and by which construction, as the presser-bar U is turned by its hand-wheel to press upon the yoke, it will from this engagement force downwardly the iron holder or carrier, so as to make it bear more heavily upon the covering of the table T and articles being ironed thereon. This bar U^2 is at u^5 hinged to the ceiling of the room, by which construction, when it is desired to raise the iron carrier or holder by means of the rope and pulleys before described, this bar U^2 may be swung up and out of the way.

The letter O^2 designates an oil-duct, and O^3 an annular recess formed in the interior surface of the hub H , which is supplied with lubricant from said duct, and from which lubricant will descend to the ball-bearing B^2 , and the letter O^4 designates a duct leading from the ball-bearing to carry off any excess of lubricant.

The letter P^4 designates a post which is upwardly projected as a part of the frame F , and the letter a^5 designates a horizontal arm which is extended inwardly from this post to enter a recess E^3 , formed in the outer edge of the iron holder or carrier I^2 , and the function of this arm a^5 and recess E^3 , as relatively placed, is to prevent the holder from being turned by the action of the table.

As thus constructed and arranged to be operated, with the table revolving and the irons heated, as before described, the articles to be ironed are laid upon the table in such a position relatively to the irons that the latter will all in succession pass over the articles before the latter are removed from the table, with all of the irons of the series employed acting upon the articles before the latter are removed, thus subjecting the articles to the ironing-work of several irons at one revolution of the table. When being ironed the articles lie flat upon the bed, and from the elastic character of the covering on which the

articles rest the surfaces are uniformly finished. The function of the heating-chambers m , formed between the irons, is to retain the heat (passing from them by radiation) in contact with the side surfaces of the irons, and to maintain the temperature of the latter, and to utilize the heat (which would otherwise be wasted) to dry the articles being ironed when heavily dampened, the latter condition being a desirable one to produce a smooth finish without gloss. As the heating-chambers between the radially-arranged irons would perform the same function if made as I illustrate and describe them or in some equivalent manner to utilize heat in the same way, I do not limit my invention to the precise form which I show and describe, making it a condition, however, that any modification of them must enable them to operate in substantially the same manner.

I am aware that a horizontal ironing-bed has been provided with frustum-form irons which were actuated to reciprocatingly roll and alternately slide over articles on a stationary bed; but this older device differed from mine in the fact that I employ a flat bed in connection with flat irons, with the bed rotating circularly in a horizontal plane beneath radially-arranged stationary arms having irons on their under surface, by which the frictional movement is that of two flat surfaces operating upon the articles in an arc-form direction, thus preventing the accumulation of any slack there may be in the fabric which would occur were one flat and one rounded surface employed, and which accumulation would tend to produce wrinkles in the ironed articles.

I am also aware that steam-heated chambers have been employed to dry articles being ironed, but which construction differed from that shown herein, in which the heat radiated from the sides of the irons (which would otherwise be wasted) is employed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for ironing apparel articles, the combination with a holder having radial arms A , each provided with an iron on its under surface having a flat ironing-face with slightly-rounded side edges; of a table provided with an elastic covering and operated to be rotated beneath said holder with the under flat surface of the irons in contact with apparel articles placed thereon; and gore-shaped heating-chambers m , arranged between said irons by which the heat coming from the sides of the irons may be utilized to dry the articles being ironed, substantially in the manner as and for the purposes set forth.

2. The combination with a series of stationary irons I , each adapted to be heated interiorly substantially as described of a heating-chamber m arranged between said irons and connected thereto to receive heat radiated

from the sides of said irons; and the table T, having an elastic covering C, and operated to be rotated beneath and in contact with the under surface of said irons substantially in the manner as and for the purposes set forth.

3. The combination with the stationary iron-holder I², having the radial arms A, of the irons I, adapted to be heated interiorly substantially as described, and each attached to the under side of one of said arms; of the gore-form hot-air chambers *m*, arranged between said irons and connected thereto; and the table T, having the covering C, adapted to be rotated with its surface in contact with the under surface of said irons when passing beneath them substantially in the manner as and for the purposes set forth.

4. The combination with the table T, having an elastic covering C, and provided with means to be rotated with continuous motion in a horizontal plane substantially as described; of a stationary holder or carrier I², arranged above said bed, provided with radial arms A; irons I, having flat under surfaces attached to the under side of said arms; and heating-chambers arranged between said

irons, adapted to be heated by the latter, substantially in the manner as and for the purposes set forth.

5. The combination with the circular table T, having the pins *p*, projected from its perimetral edge, and the centrally-arranged recess *w*², provided with upwardly-projected bolts *d*², of the rubber covering R, cut to coincide with the outer edge of the table, and the edge of the recess; a covering of felt *f*², overlapping the perimeter of the table, the rubber and the edge of said recess; the ring R³, provided with passages for said bolts and having the downwardly-extended pins *p*², and the clamping-ring R², having the ears *e*, *e*, and a tightening-bolt *h*³, constructed and arranged substantially in the manner as and for the purposes set forth.

Signed at the city of Troy, New York, this 13th day of May, 1895, before the witnesses whose names are hereto written.

WENDELL HESS, JR.

Witnesses:

W. E. HAGAN,

CHARLES S. BRINTNALL.