

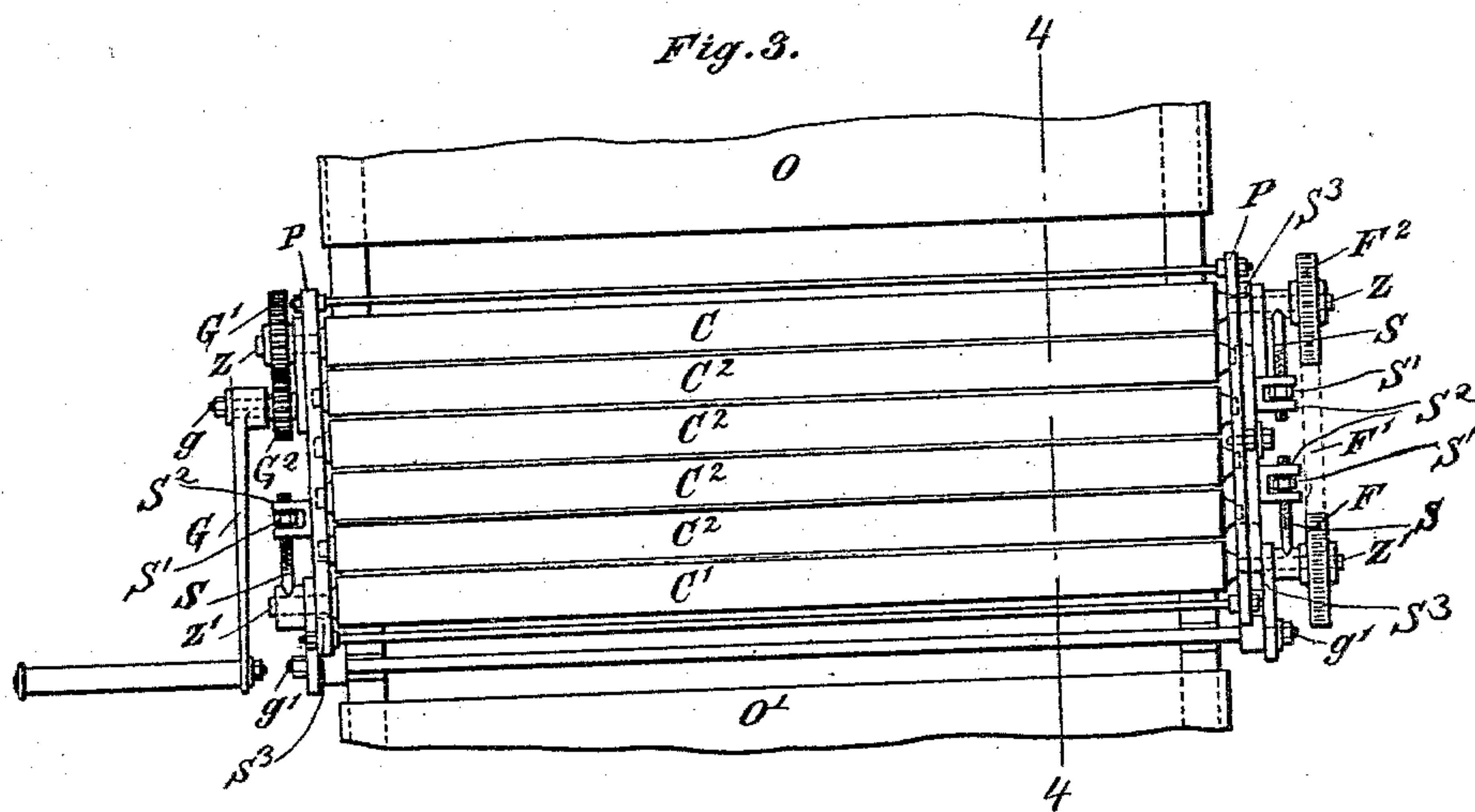
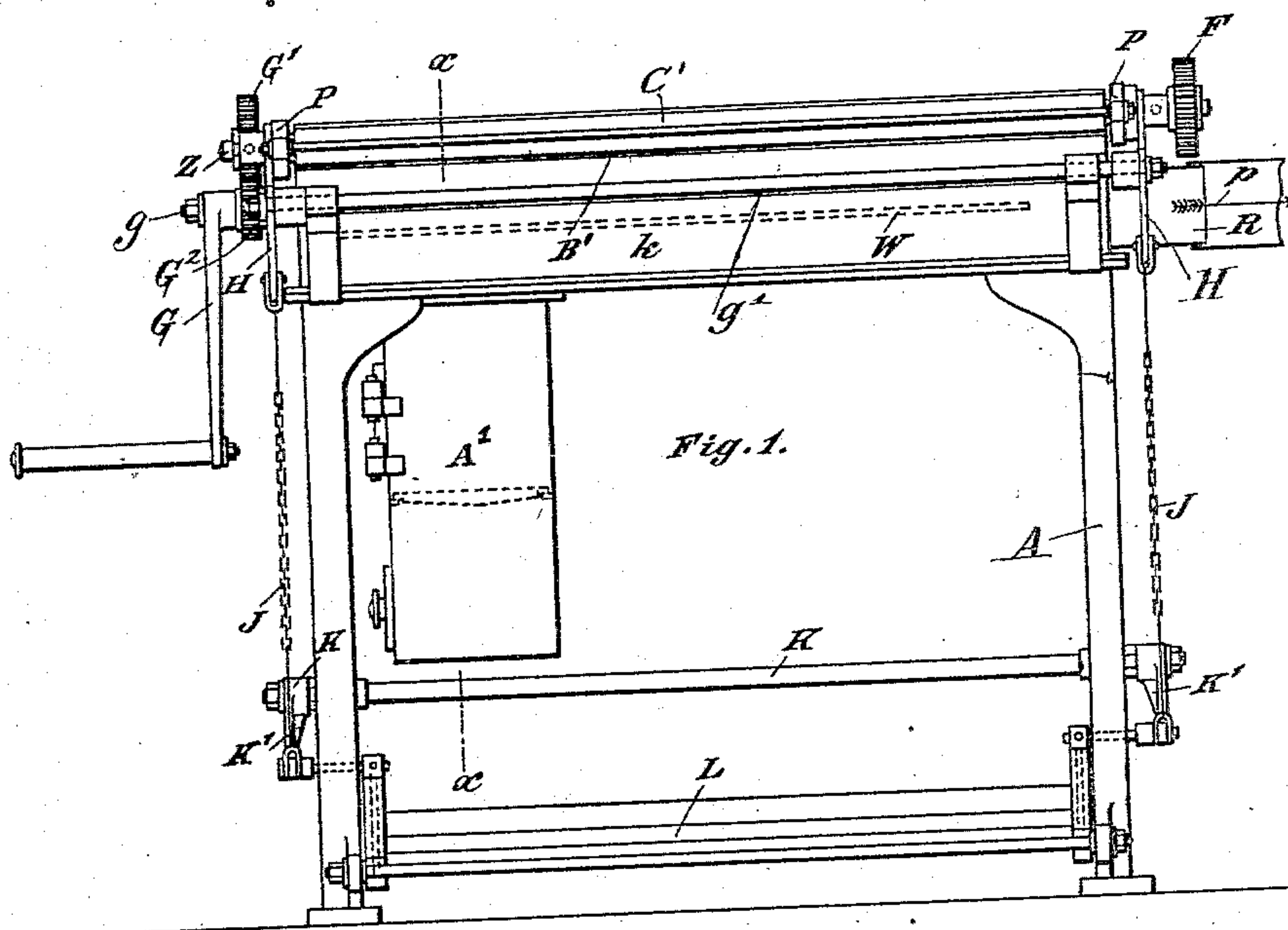
(No Model.)

3 Sheets—Sheet 1.

A. METZGER.
IRONING MACHINE.

No. 553,038.

Patented Jan. 14, 1896.



WITNESSES:
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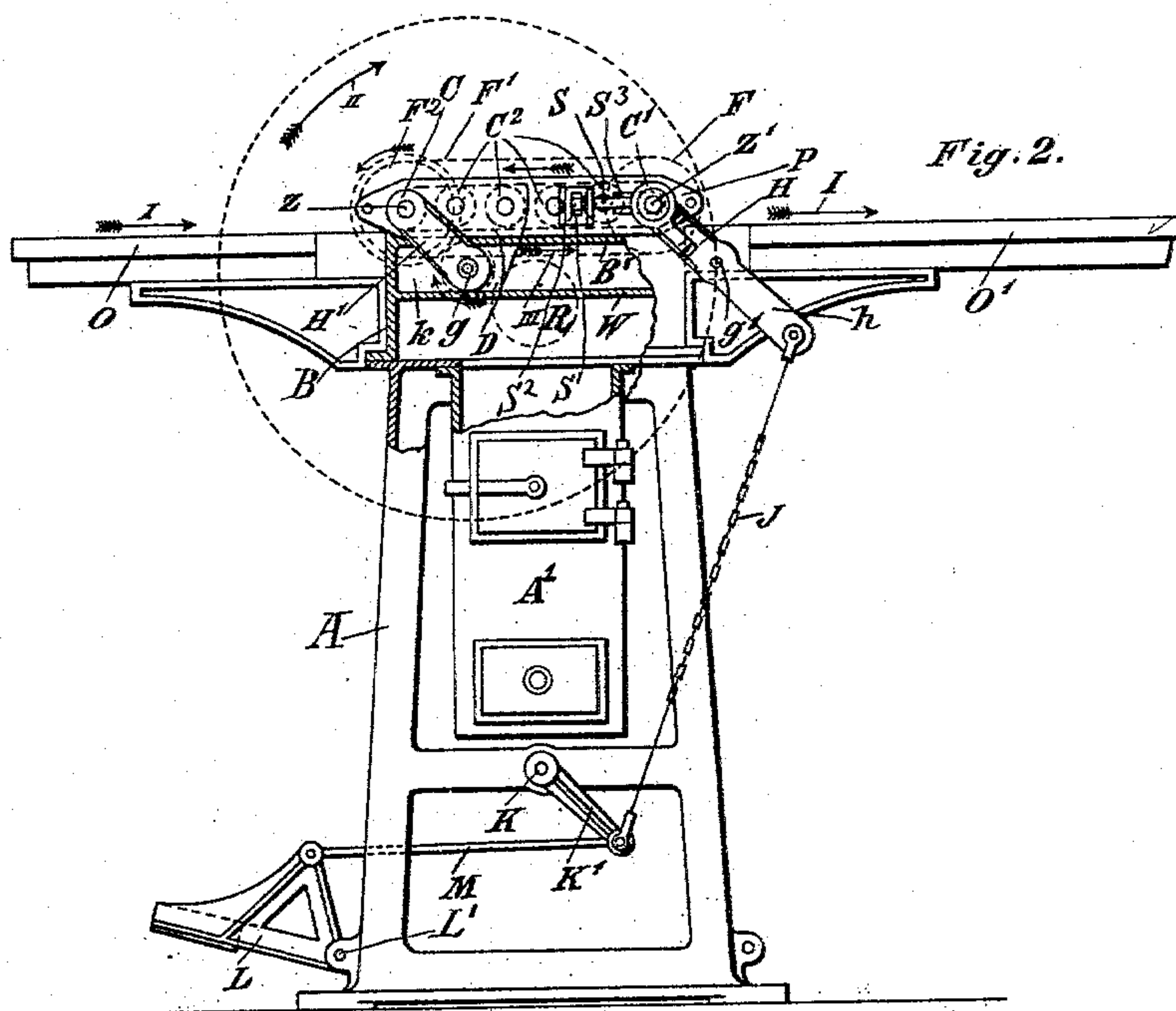
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3 Sheets—Sheet 2.

A. METZGER.
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No. 553,038.

Patented Jan. 14, 1896.



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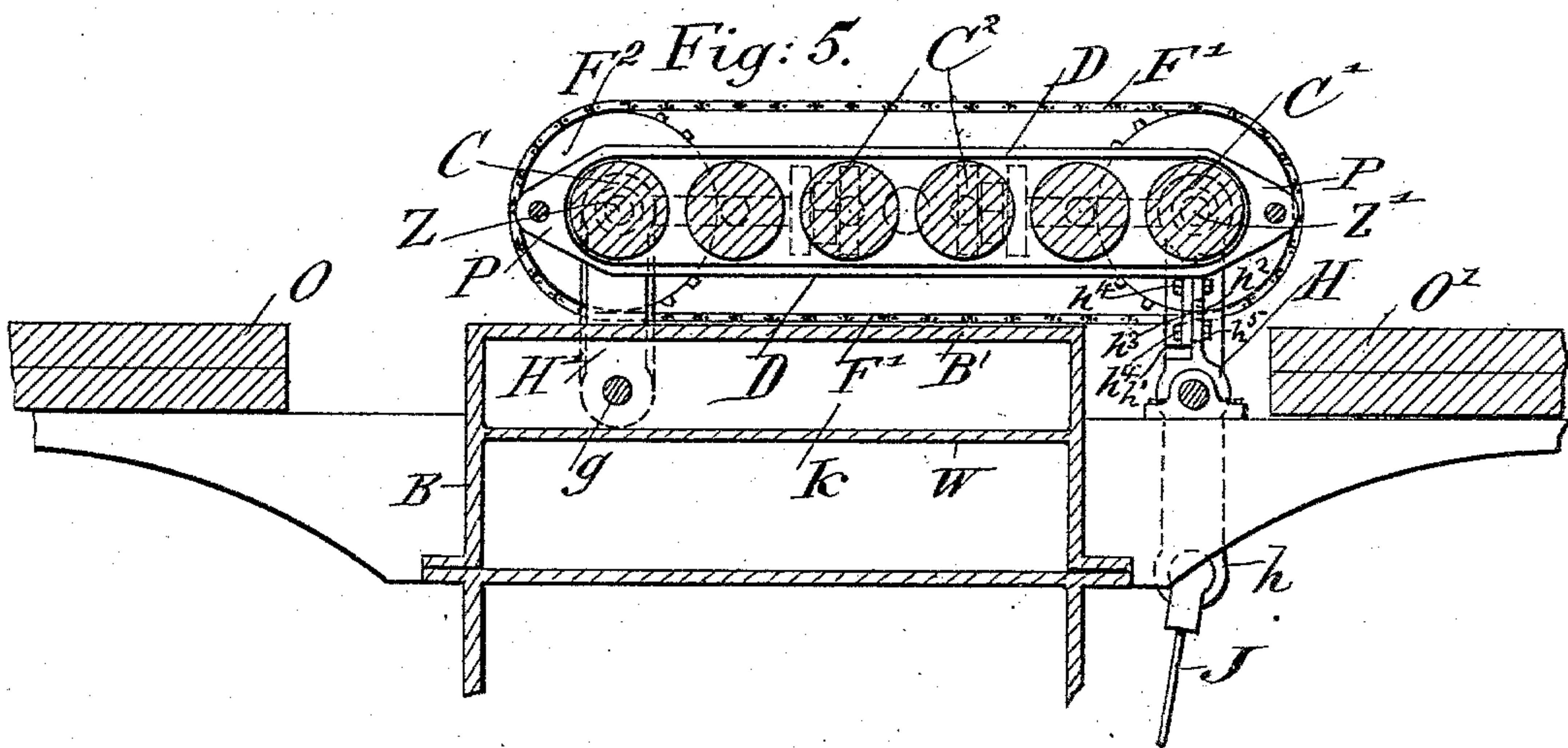
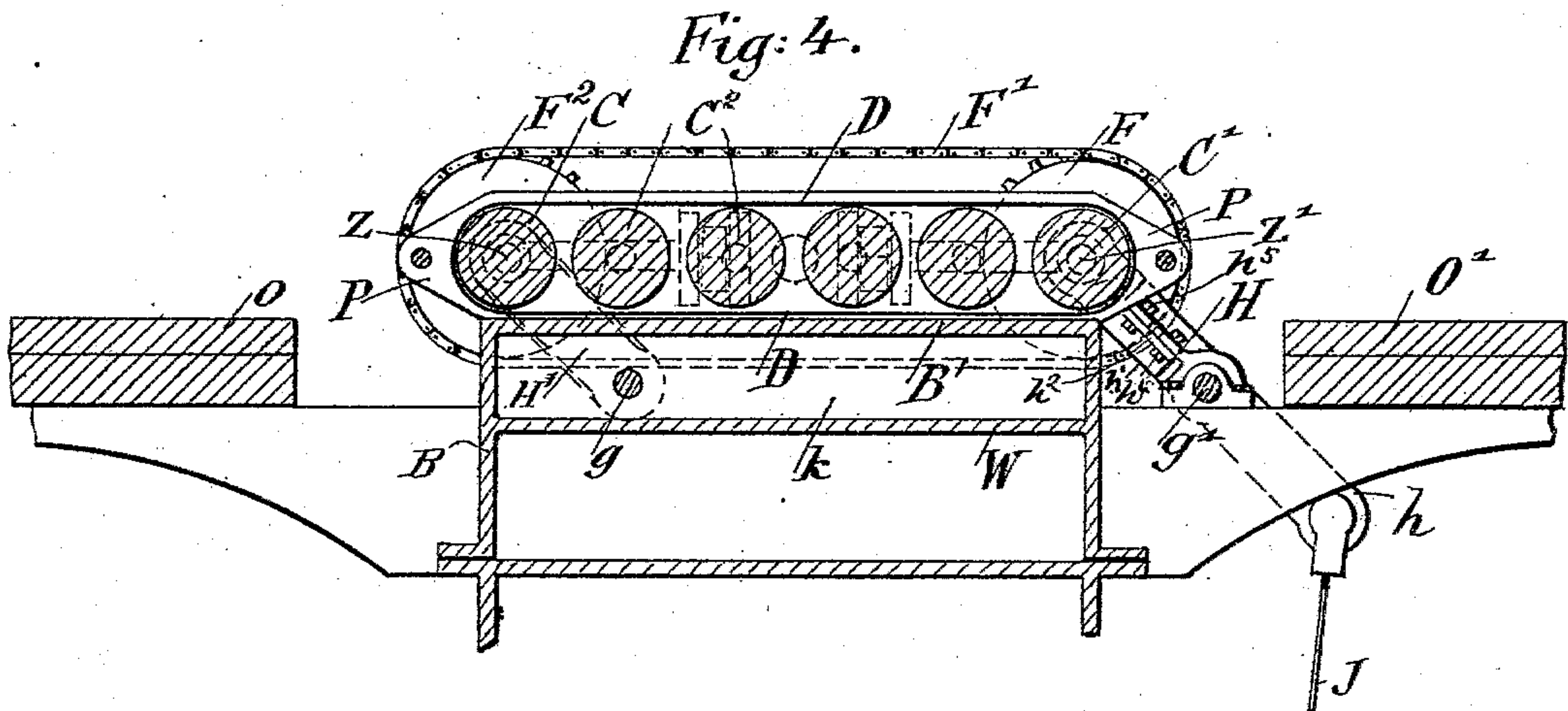
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3 Sheets—Sheet 3.

A. METZGER.
IRONING MACHINE.

No. 553,038.

Patented Jan. 14, 1896.



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UNITED STATES PATENT OFFICE.

AUGUST METZGER, OF HOMBURG, GERMANY.

IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 553,038, dated January 14, 1896.

Application filed July 14, 1894. Serial No. 517,513. (No model.) Patented in England June 5, 1894, No. 10,878; in Belgium June 15, 1894, No. 110,256; in Hungary June 24, 1894, No. 665; in Austria September 3, 1894, No. 44/4,581; in France October 8, 1894, No. 238,904; in Germany December 19, 1894, No. 79,657, and in Canada May 13, 1895, No. 48,936.

To all whom it may concern:

Be it known that I, AUGUST METZGER, a subject of the King of Prussia, Emperor of Germany, residing at Homburg-vor-der-Höhe, Germany, have invented certain new and useful Improvements in Ironing-Machines, (for which I have obtained Letters Patent in Germany, No. 79,657, dated December 19, 1894; in Austria, No. 44/4,581, dated September 3, 1894; in Hungary, No. 665, dated June 24, 1894; in England, No. 10,878, dated June 5, 1894; in France, No. 238,904, dated October 8, 1894; in Belgium, No. 110,256, dated June 15, 1894, and in Canada, No. 48,936, dated May 13, 1895,) of which the following is a specification.

This invention relates to that class of ironing-machines in which the polished ironing-plate is heated and over which the articles to be ironed are passed under the action of pressure-rollers; and the object of the invention is to provide a simple and practical construction having a great working capacity.

My invention consists of certain features of construction and combinations of parts, to be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of my improved ironing-machine. Fig. 2 is a side elevation of the same, partly in section, on line *xx* of Fig. 1. Fig. 3 is a plan view of the central part of the machine, the feeding and collecting tables being broken away and the endless band omitted. Fig. 4 is a section on line 4 4 of Fig. 3, showing the bearing-plate, rollers, and endless band in lowered position; and Fig. 5 is a similar section showing the same parts in raised position.

Similar letters of reference indicate corresponding parts.

On a suitable frame A a suitable device A' is suspended and which may be either a charcoal, coke or gas heater. The heating device is arranged in such a manner that the heating-gases in order to escape into the chimney-flue (not shown) must pass through the chamber *k* of a hollow casting B, which forms a heating-box provided with a polished top or ironing-plate B', and through the tubular

exit-flue R located at one side of said box in the direction of the arrow *p*, as shown in Fig. 1. In this manner the greatest part of the heat generated is absorbed by the polished ironing-plate B', which serves as the ironing-surface of the machine, whereby the polish is imparted to the article being ironed. An endless band D, of felt or other similar flexible material, moves over and in uniform contact with this ironing-plate B', and is driven by means of a pair of rollers C C', which are journaled in the ends of opposite bearing-plates P P, and are rotated by means of a gear-wheel G' mounted on the shaft Z of the roller C, and by a gear-wheel G² which inter-meshes with said gear-wheel G', said gear-wheel G² being mounted on a shaft *g* which is journaled in opposite sides of the frame of the machine and which may be turned by means of a hand-crank G. The side bearing-plates of the said mechanism are supported at one end by means of a pair of arms H', which at their lower ends are pivoted on the shaft *g*, and which at their upper ends receive the ends of the shaft Z of the roller C, and at the other end by a pair of arms H, which arms H at their upper ends receive the ends of the shaft Z' of the roller C', said arms H being fulcrumed intermediately of their ends—that is to say, at or about the mid-length thereof—on a transverse shaft *g'*. The shaft Z' which carries the roller C' is provided at one end with a sprocket-wheel F, over which runs a sprocket-chain F', which also runs over a sprocket-wheel F² arranged at the corresponding end of the shaft Z, which carries the other roller C. Said rollers C C' may be adjusted to and from each other, so that the endless band D may be held at the proper degree of tension by means of suitable shifting devices, consisting of screw-threaded shanks S operated by turn-nuts S', which are arranged between the forks of forked brackets S², said shanks being connected with the bearings of the shafts Z Z' of rollers C C', and said shafts passing through longitudinal slots S³ of the plates P. As shown, shaft Z is provided at one end only with a shifting device.

For the purpose of ironing articles of different thicknesses it is necessary that the

rollers should press upon the same with a certain amount of resiliency, so that they will not press upon the articles too stiffly and in too unyielding a manner. At the same time it is necessary that the rollers should be capable of being brought into close proximity to or of being separated from the ironing-plate B'. Both of these purposes are attained in the simplest and at the same time in the most practical manner by means of the mechanism comprising oscillating arms H H', which hold the rollers in position. The extended lower ends h of the arms H are connected by means of chains J or other suitable connections to the arms K' on the rock-shaft K, draw-bars M, and treadle L pivoted at L' to the lower end of the frame of the machine in such a manner that the arms H and with them the arms H' can be rocked on their shafts g g'. The endless band D can be, by means of these devices, moved to or from the ironing-plate B'; but this movement is accomplished by the arms H H' in such a manner that the said band and the rollers are carried and the same are always maintained in parallel position with respect to said ironing-plate when the parts are in the relative position shown in the drawings.

After the machine has been used for some time the endless band D may require stretching to take up the slack. This is accomplished by the shifting devices S, by which the shaft Z' is moved the required distance away from the shaft Z, but this destroys the parallelism between the arms H H' and also between the endless band and the ironing-plate B'. It is only necessary in this connection that, when the endless band is in contact with the ironing-plate, this contact be uniform throughout the bearing-surface of the endless band, as before. This is permitted by constructing the arms H each of two sections respectively h and h', both of which sections are provided with longitudinal flanges h² h³, through which pass the headed connecting-bolts h⁴ that are retained in place by the nuts h⁵, and one of said sections having longitudinal slots for the passage of the bolts, so that said section h' may be slightly lowered by first loosening the nuts of the bolts, and then tightening the same after the desired adjustment is obtained. While this adjustment enables the endless band to form parallel contact with the ironing-plate, it will be understood that when it is raised off of the plate the parallelism will not exist; but this parallelism is not necessary excepting when the endless band is in contact with the ironing-plate. Mounted in the said bearing-plates P P, between the end rollers C C', which carry the endless band D, are a number of pressure-rollers C², which are of the same diameter as are the rollers C C'. These rollers C², in connection with the end rollers, C C', press the endless band against the ironing-plate B'. When placing these rollers C² in position, care must be taken to arrange them at suitable intervals apart, as

shown in Fig. 2, so that the steam caused by the heat of the ironing-plate B' upon the damp articles and which passes through the endless felt band should not be retained by said rollers, but be allowed to escape freely into the surrounding atmosphere.

In order to prevent the ironing-plate B' becoming overheated, the chamber k which is provided within the heating-box B should have at a suitable distance from the ironing-plate B' a parallel horizontal partition or baffle-plate W, as shown clearly in Fig. 4 and in dotted lines in Fig. 1, which is located midway between the top and bottom of the heating-box, so as to divide it into an upper and lower portion. The hot gases strike against the partition-plate W and are caused to pass from the lower portion of the chamber k through the exit-pipe R and directly into the chimney-flue, while by reason of the fact that the partition-plate ends short of the side wall of the heating-box, from which the exit-pipe extends, some of the gases pass through the opening formed and into the upper portion of the chamber, so that the ironing-plate is not subjected to the high degree of heat of the gases in the lower part of the chamber.

In front of the machine a feeding-table O is fitted to the frame A thereof at approximately the same height as that of the ironing-plate B', and at the opposite side of the machine a discharge and collecting table O' is also fitted. These tables are preferably of the same width as that of the ironing-plate B'.

The construction of the heating device A is of secondary importance so long as care is taken to conduct the hot gases in the manner above stated.

The operation of the machine is exceedingly simple and is as follows: The heating device A is fired, so that the heat arising from the same will be imparted in a sufficient degree to the ironing-plate B'. The articles to be ironed having been prepared upon the feeding-table O, the treadle L is depressed and the rollers and the endless band lifted from off the ironing-plate. The clothes or other articles are now pushed forward from the feeding-table until they are seized by the endless band. The crank-handle G is now turned in the direction of the arrow II, Fig. 2, and the endless band caused to travel in the direction of the arrow III, same figure. The pressure on the treadle L is now released, and the rollers and endless band are allowed to rest upon the article being ironed, so as to press the same uniformly against the heated ironing-plate B', while said article is being drawn rearward by the endless band in the direction of the arrow I until it reaches the collecting-table O'.

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

1. In an ironing-machine, the combination, with a frame provided with an ironing-plate, of oscillating-arms fulcrumed to the frame, bearing plates pivoted to said arms, a pair of

rollers mounted in said bearing-plates, a flexible endless-band arranged on said rollers, means connected with said arms for oscillating the same and moving the endless-band to 5 and from the ironing-plate and means for rotating the rollers, substantially as set forth.

2. In an ironing-machine, the combination with a frame provided with an ironing-plate, of bearing-plates arranged above said ironing-plate, a plurality of rollers mounted within 10 said bearing-plates, an endless-band passing over said rollers, upwardly and downwardly-movable supports for the bearing-plates, rollers and endless-band, said bearing-plates and

endless band being always supported in parallel relation to the ironing-plate when the 15 band is pressed against the same, sprocket-wheels on the ends of the outer rollers, a sprocket-chain passing over said wheels, gear-wheels and means for rotating said rollers 20 through said gear-wheels, substantially as set forth.

Frankfort-on-the-Main, the 20th day of June, 1894.

AUGUST METZGER.

Witnesses:

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JEAN GRUND.