

No. 612,762.

Patented Oct. 18, 1898.

A. L. WING & A. NORTON.

IRONING MACHINE.

(Application filed Jan. 20, 1898.)

(No Model.)

5 Sheets—Sheet 1.

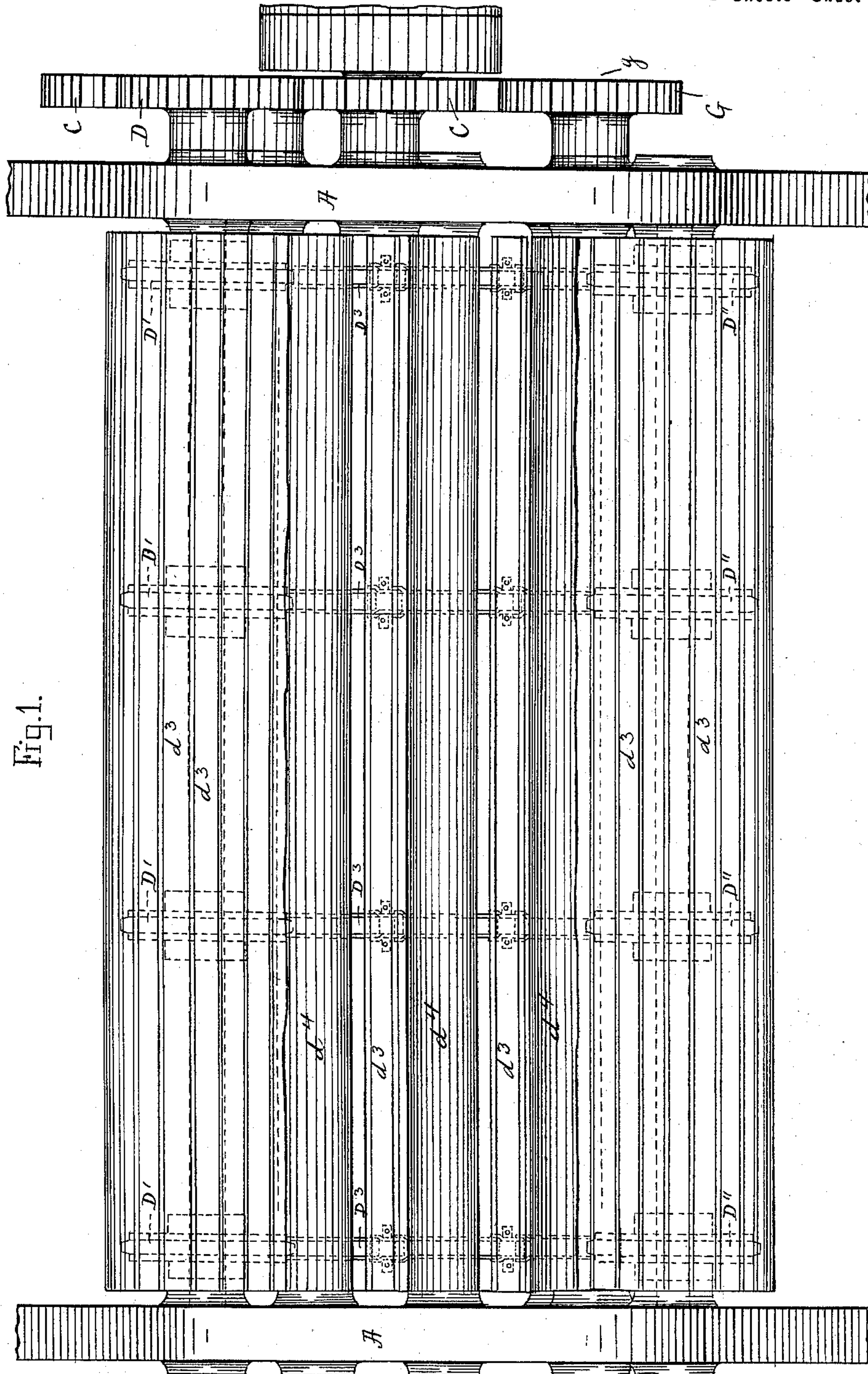


Fig. 1.

Witnesses  
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Harl A. Andren.

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Arthur L. Wing and Andrew Norton  
by Alban Andren atty.

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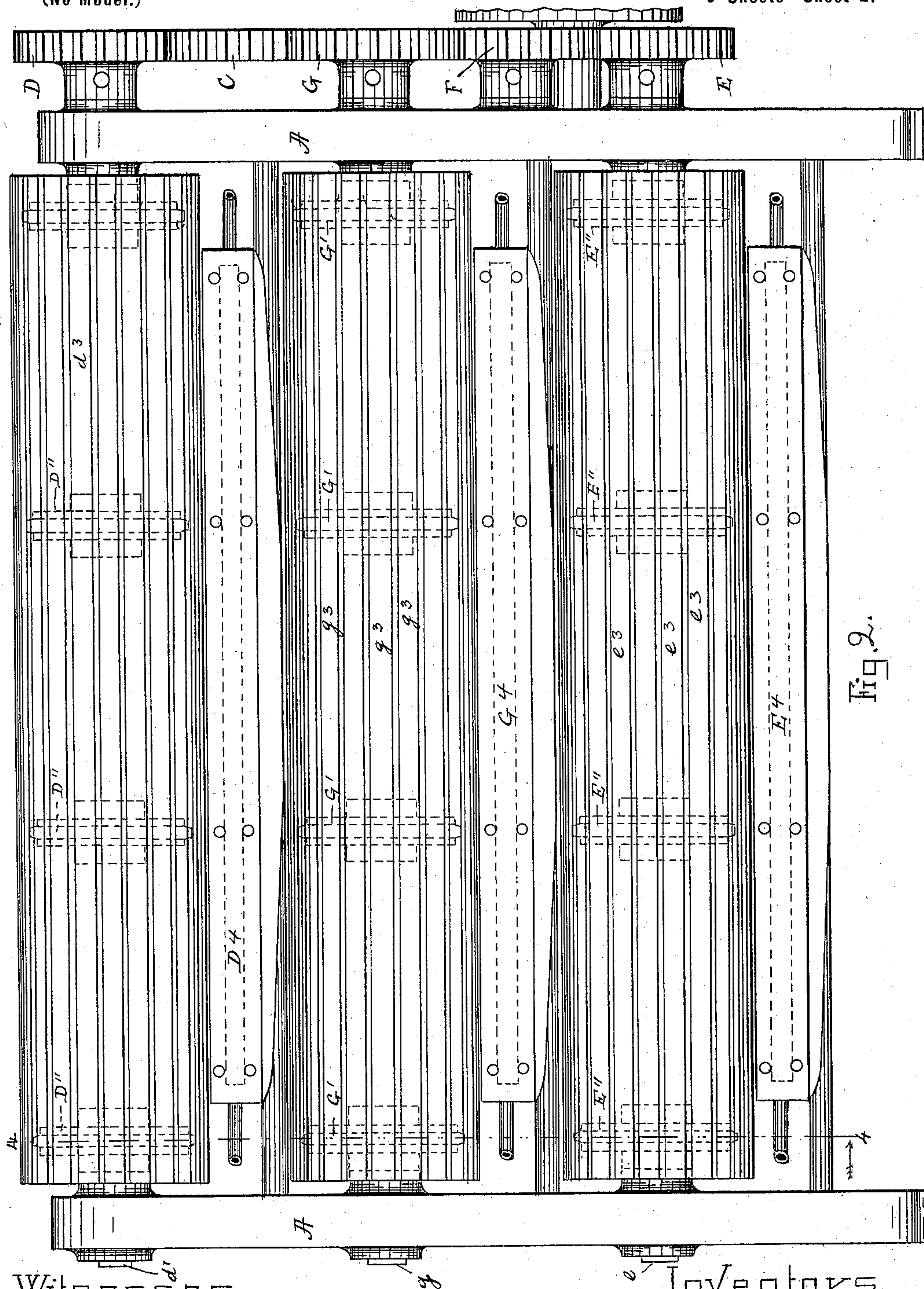
A. L. WING & A. NORTON.

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Witnesses.

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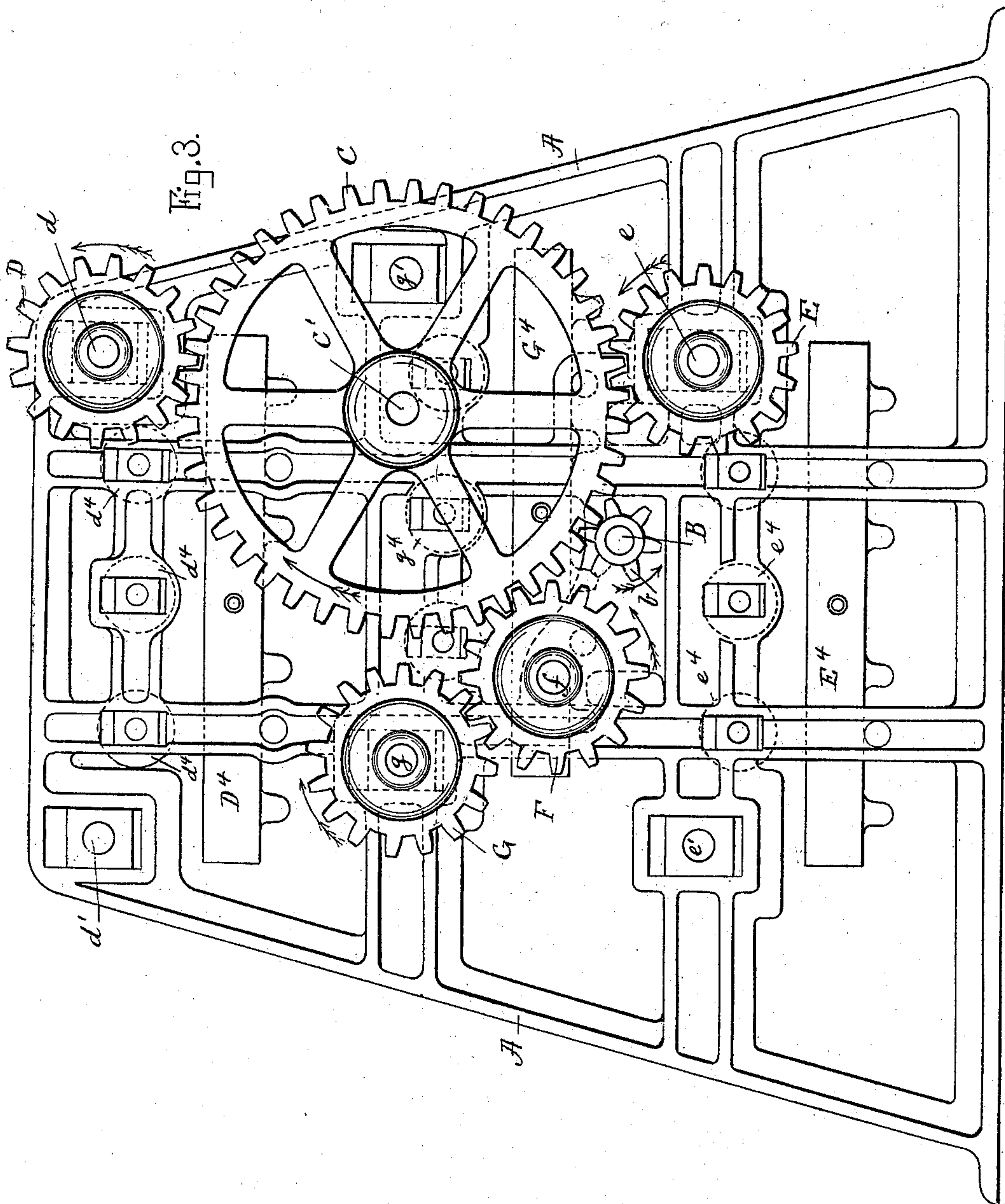
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(No Model.)

5 Sheets—Sheet 3.



Witnesses.

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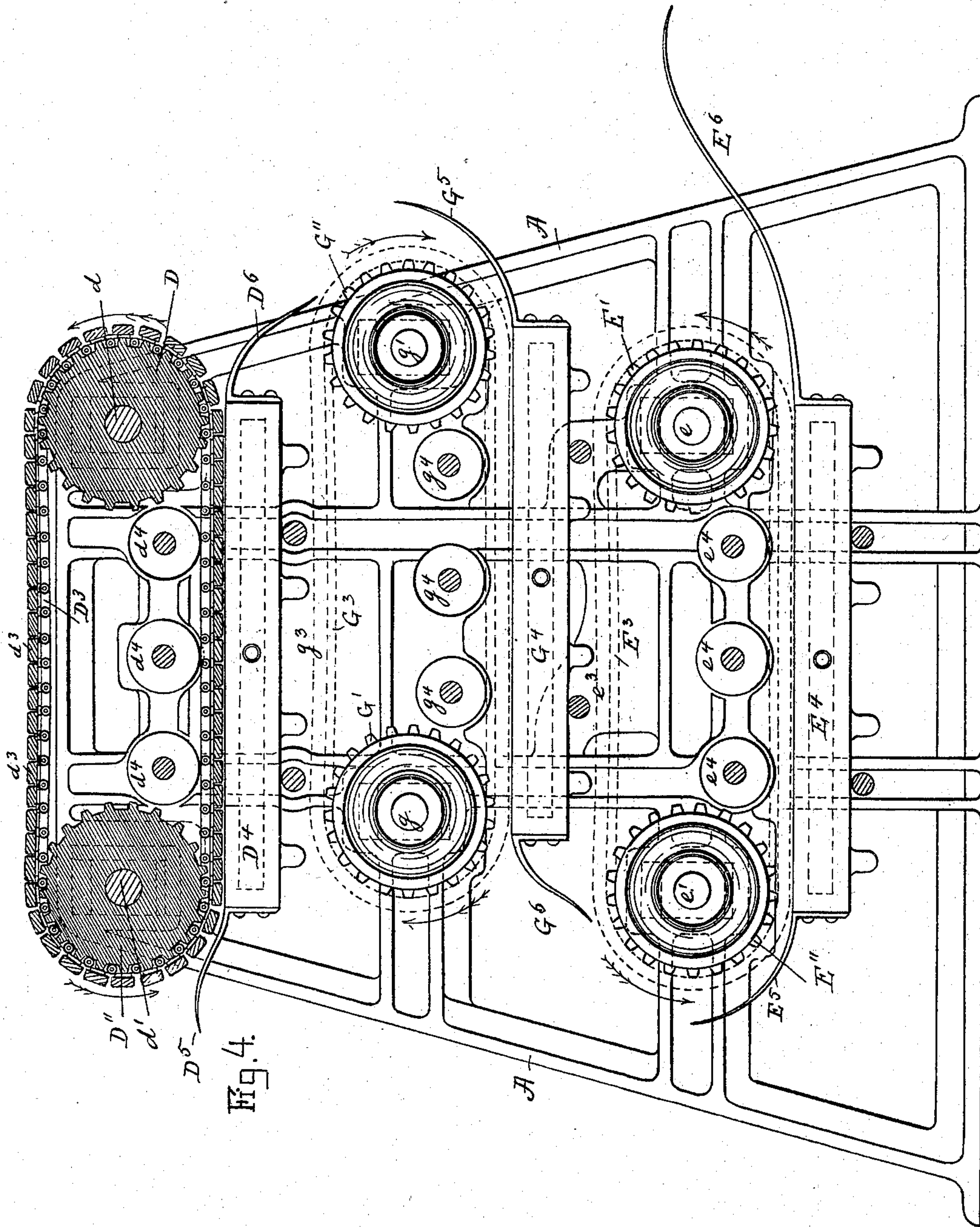
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A. L. WING & A. NORTON.  
IRONING MACHINE.

(Application filed Jan. 20, 1898.)

(No Model.)

5 Sheets—Sheet 4.



Witnesses.

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No. 612,762.

Patented Oct. 18, 1898.

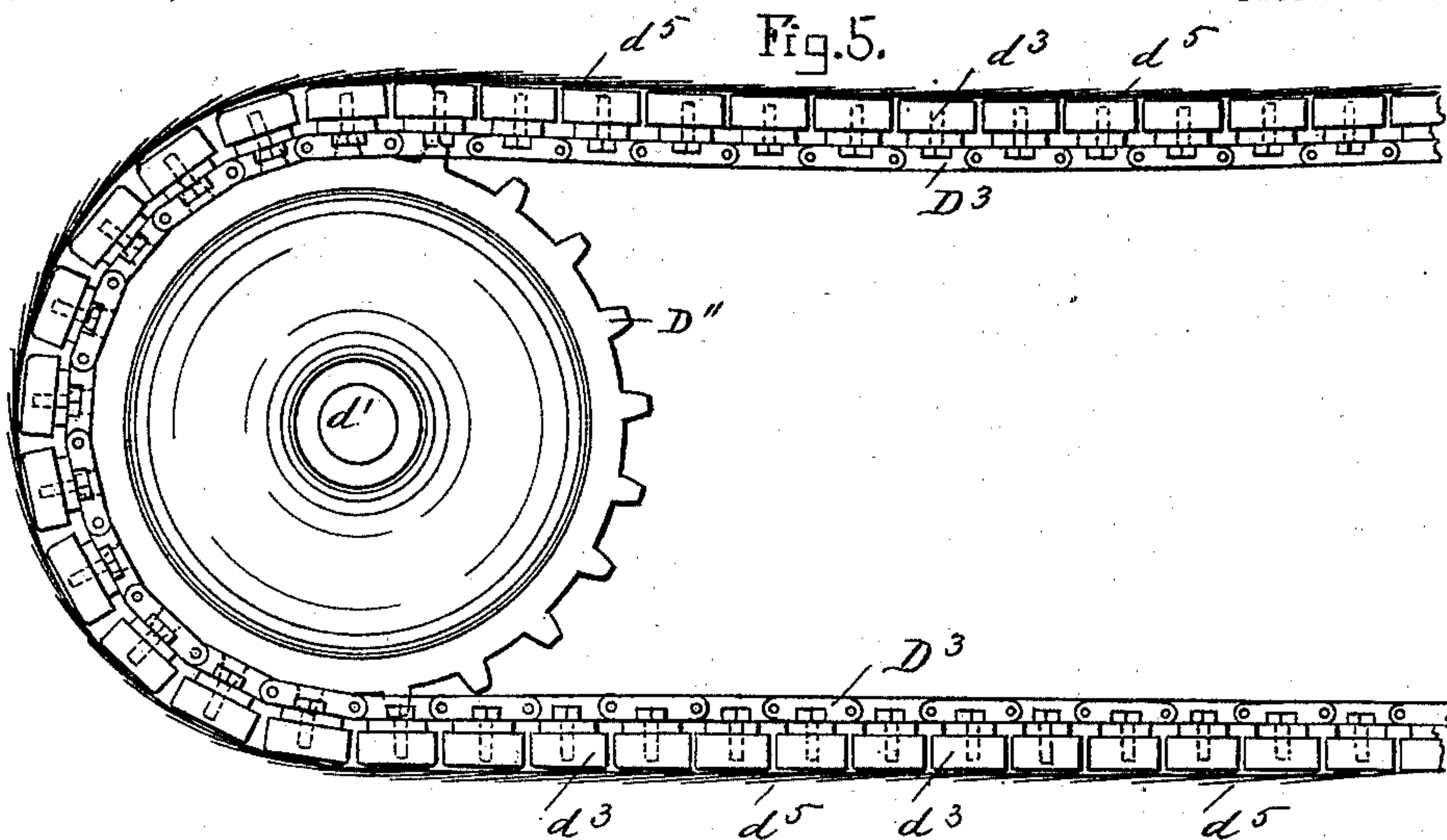
A. L. WING & A. NORTON.

IRONING MACHINE.

(Application filed Jan. 20, 1898.)

(No Model.)

5 Sheets—Sheet 5.



Witnesses.

Lauritz W. Möller.  
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# UNITED STATES PATENT OFFICE.

ARTHUR L. WING AND ANDREW NORTON, OF BOSTON, MASSACHUSETTS.

## IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 612,762, dated October 18, 1898.

Application filed January 20, 1898. Serial No. 667,238. (No model.)

*To all whom it may concern:*

Be it known that we, ARTHUR L. WING and ANDREW NORTON, citizens of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Ironing-Machines, of which the following is a specification.

This invention relates to improvements in mangles or ironing-machines, and it is particularly well adapted for mangling or ironing bedclothes, table-cloths, towels, napkins, or other flat goods that do not require starching, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a top plan view of the machine. Fig. 2 represents a front elevation, and Fig. 3 represents an end elevation, of the same. Fig. 4 represents a cross-section of the machine, partly shown in elevation. Fig. 5 represents a detail side elevation of one of the sprocket-wheels, its chain, and endless apron.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In the drawings, A A represent the end frames, secured together at a proper distance apart by means of suitable stays or braces. In a bearing in one of said frames is journaled the driving-shaft B, preferably driven by belt-power applied to a pulley on said shaft, and to the latter is secured a pinion *b*, the teeth of which mesh in the teeth of a spur-gear C, loosely journaled on a stud C', secured to one of the end frames. The teeth of the spur-gear C mesh in the teeth of the pinions D and E, which are secured to the respective horizontal shafts *d* and *e*, journaled in preferably vertically-movable bearings arranged in the end frames A A, as shown.

F is an intermediate gear driven by the spur-gear C. Said intermediate gear F is journaled on a pin or stud *f*, secured to one of the end frames, and has its teeth meshing in the teeth of a pinion G, secured to a horizontal shaft *g*, journaled in preferably vertically-movable bearings arranged in the end frames A A, as shown.

To the rotary shaft *d* are secured sprocket-wheels D' D', from which a rotary motion is

conveyed to similar sprocket-wheels D'' D'' at the opposite end of the machine, as shown. The sprocket-wheels D'' are secured to a shaft *d''*, journaled in preferably vertically-movable bearings arranged in the end frames of the machine.

D<sup>3</sup> D<sup>3</sup> are endless sprocket-chains by which a rotary motion is conveyed to the sprocket-wheels D'' from the sprocket-wheels D', as shown.

To the sprocket-chains D<sup>3</sup> D<sup>3</sup> is secured an endless apron consisting of lateral metal bars *d<sup>3</sup> d<sup>3</sup>*, secured to the links of the chains in any suitable manner. Below the said endless apron is arranged a stationary flat steam-chest D<sup>4</sup>, between which and the under side of the said apron the cloth to be mangled or ironed is carried. Such flat steam-chest is provided with steam supply and return pipes for the purpose of heating the same to the proper temperature as required during the mangling or ironing process.

Between the top and bottom of the endless apron above described are located a series of vertically-movable gravity-rollers *d<sup>4</sup> d<sup>4</sup> d<sup>4</sup>* for the purpose of holding the under side of the apron as well as the cloth to be mangled or ironed in proper contact with desired pressure against the top of the steam-chest, so as to obtain a great and superior finish on the cloth during the mangling or ironing operation. The size and weight of such rollers may vary according to the pressure desired, or they may be dispensed with altogether—as, for instance, the endless apron may be of sufficient weight so as to produce the same effect.

In practice the bars *d<sup>3</sup> d<sup>3</sup>* are covered or padded on their outside with cloth, felting, &c., so as to serve as a cushion to relieve the pressure on the goods in a manner similar to ordinary ironing-tables, so as to produce in this machine work similar to or superior to ordinary handwork. In Fig. 5 we have shown such padding or cushion as consisting of a series of flexible strips *d<sup>5</sup> d<sup>5</sup>*, attached in a suitable manner to each individual bar *d<sup>3</sup>* and lapping over one or more of the succeeding bars, as shown. In a like manner to the shaft *g* (which is arranged below the steam-chest D<sup>4</sup>) are secured sprocket-wheels G', from which a rotary motion is conveyed to similar



sprocket-wheels  $G''$ , secured to a shaft  $g'$ , preferably journaled in vertically-movable bearings in the end frames A A, by means of sprocket-chains  $G^3 G^3$ , to which the endless apron, composed of the metal bars  $g^3 g^3$ , (shown in dotted lines in Fig. 4,) is connected, like the bars  $d^3$  on the chains  $D^3$ , hereinabove described. In connection with said endless apron we use a series of vertically-movable gravity-rollers  $g^4 g^4$ , like the ones hereinabove described, and below said apron is arranged a flat steam-chest  $G^4$ , like the steam-chest  $D^4$  on the uppermost mangle or ironing device.

Below the steam-chest or flat steam-heated ironing-table  $G^4$  are arranged the rotary sprocket-wheels  $E' E''$ , secured to the respective shafts  $e e'$  and provided with sprocket-chains  $E^3$  and apron-bars  $e^3$ , with hollow flat steam-chest  $E^4$ , like corresponding parts hereinabove described. To the front of the steam-chest  $D^4$  is secured a guide-plate  $D^5$  for properly guiding the articles to be mangled or ironed between the endless apron  $d^3$  and the flat steam-chest  $D^4$ , as shown in Fig. 4. At the rear end of said steam-chest  $D^4$  is secured a downwardly-projecting guide-plate  $D^6$  for guiding the cloths onto the endless apron  $g^3$ . To the rear end of the steam-chest  $G^4$  is secured a guide-plate  $G^5$  for guiding the cloths between the apron  $g^3$  and steam-chest  $G^4$ . To the front end of said steam-chest  $G^4$  is secured a guide-plate  $G^6$  for guiding the cloths onto the apron  $e^3$ .

$E^5$  is a guide-plate secured to the front of the steam-chest  $E^4$  for guiding the cloths between the apron  $e^3$  and steam-chest  $E^4$ , and  $E^6$  is a guide-plate secured to the rear end of the steam-chest  $E^4$  for guiding the mangled or ironed cloths out of the machine.

During the operation of the machine the

cloths are taken in a damp condition directly from the extractor or wringer, and by being passed between the successive traveling aprons and their steam-heated flat chests such cloths are caused to be automatically dried, mangled, or ironed on both sides, as described. It will be noticed that as the cloths pass from one apron and steam-chest to another in the series they are reversed—that is, the position of such cloths is reversed—causing them to be dried, ironed, or mangled on both sides.

What we wish to secure by Letters Patent and claim is—

1. In a mangle or ironing-machine, the combination with a series of flat steam-tables arranged horizontally one above the other, of sprocket-wheels arranged at the opposite ends of the tables, endless metallic aprons carried by said sprocket-wheels in contact with the upper sides of the tables, and reversely-curved rigid guide-plates fixed to the opposite ends of the tables and operating to guide the cloths from beneath one apron and deliver them under another, substantially as described.

2. An apron for mangles or ironing-machines, comprising endless chains, metallic bars arranged transversely and secured to said chains, and flexible strips attached to the outer sides of said bars and overlapping each other and said bars at their free ends, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

ARTHUR L. WING.  
ANDREW NORTON.

Witnesses:

ALBAN ANDRÉN,  
KARL A. ANDRÉN.