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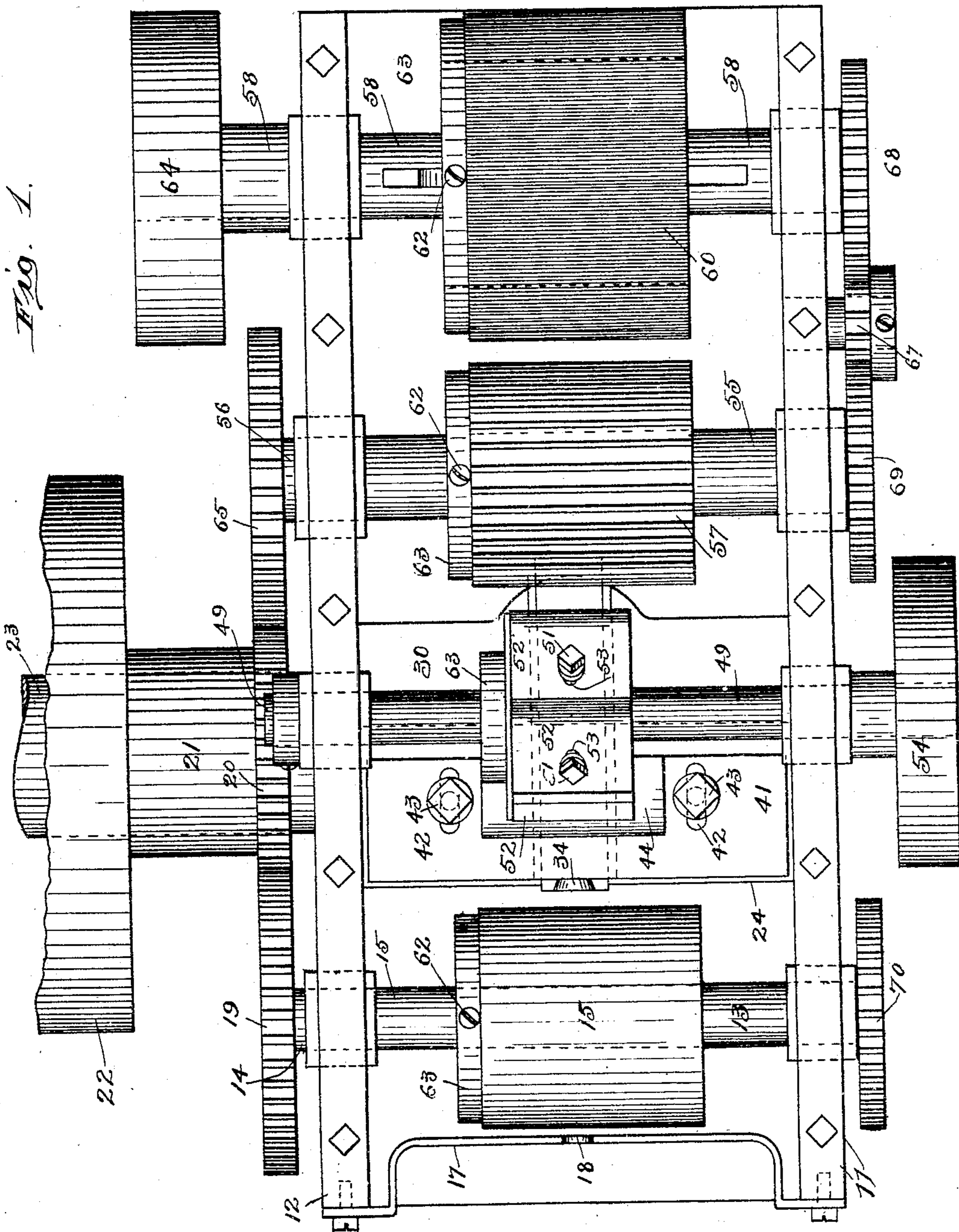
PATENTED DEC. 20, 1904.

F. A. HUEHN.
MACHINE FOR TREATING FEATHERS.

APPLICATION FILED JULY 25, 1904.

NO MODEL.

4 SHEETS—SHEET 1



Witnesses:

Chas. E. Gorton,
A. Gustafson

Inventor:

Frederick A. Huehn,

By: Chas. C. Willman
Atty.

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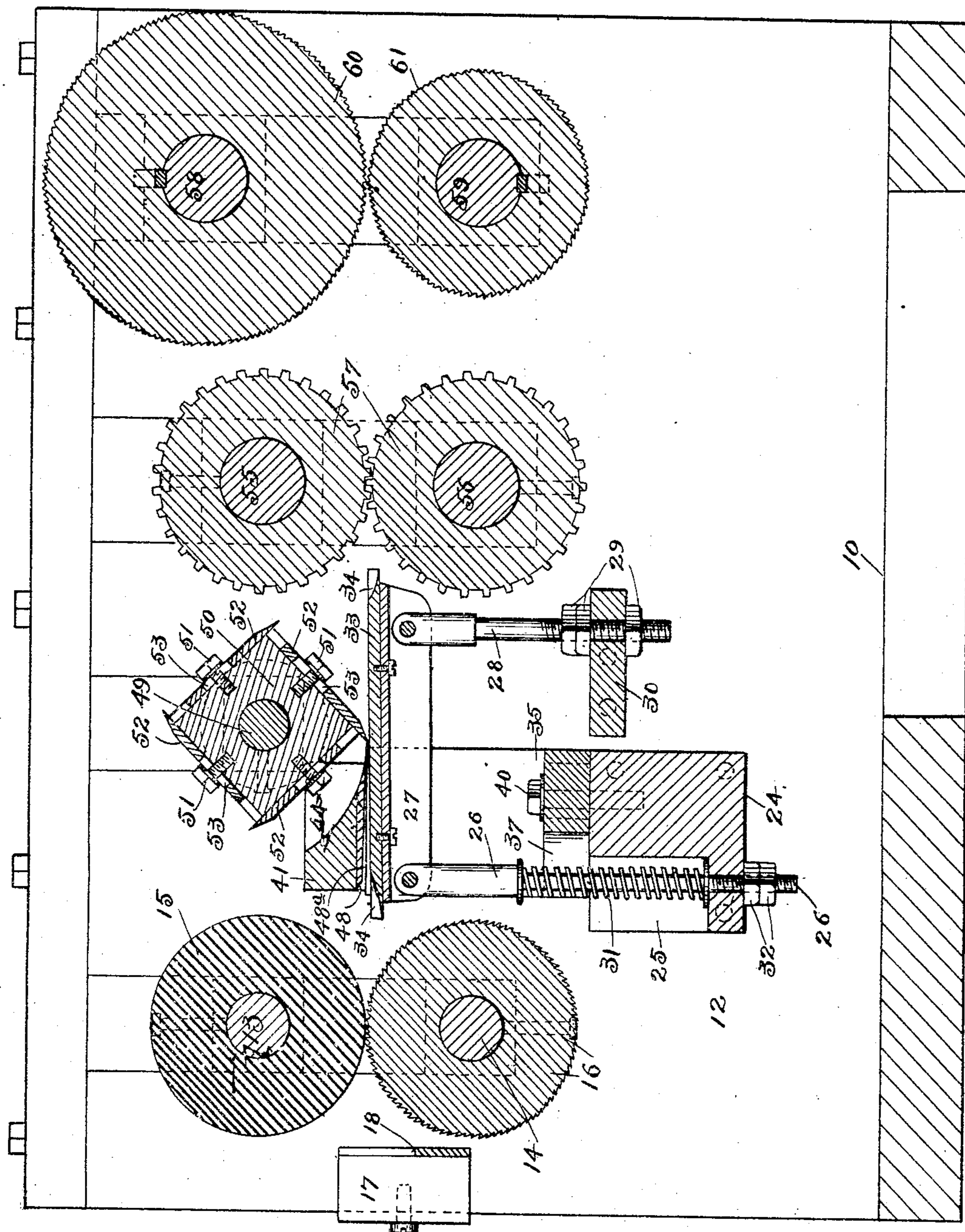
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Chas. E. Gorton
A. Gustafson

2.

Inventor:

Frederick C. Huehn

Chas. C. Pittman
Att'y

By,

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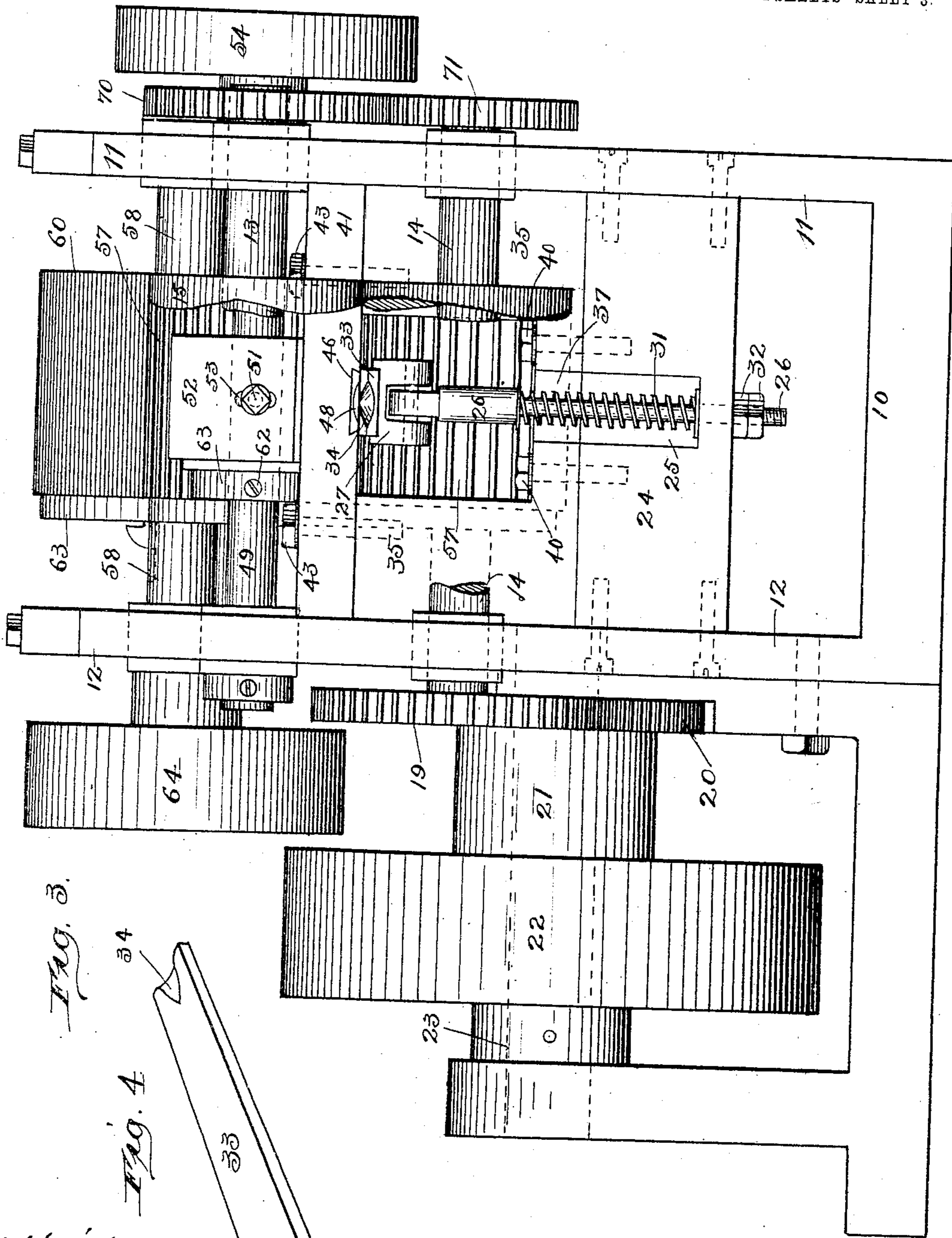


Fig. 3.

Fig. 4.

Witnesses:
Chas. E. Gorton.
A. Gustafson

Inventor:
Frederick A. Huehn.
By Chas. C. Tillman
Att'y.

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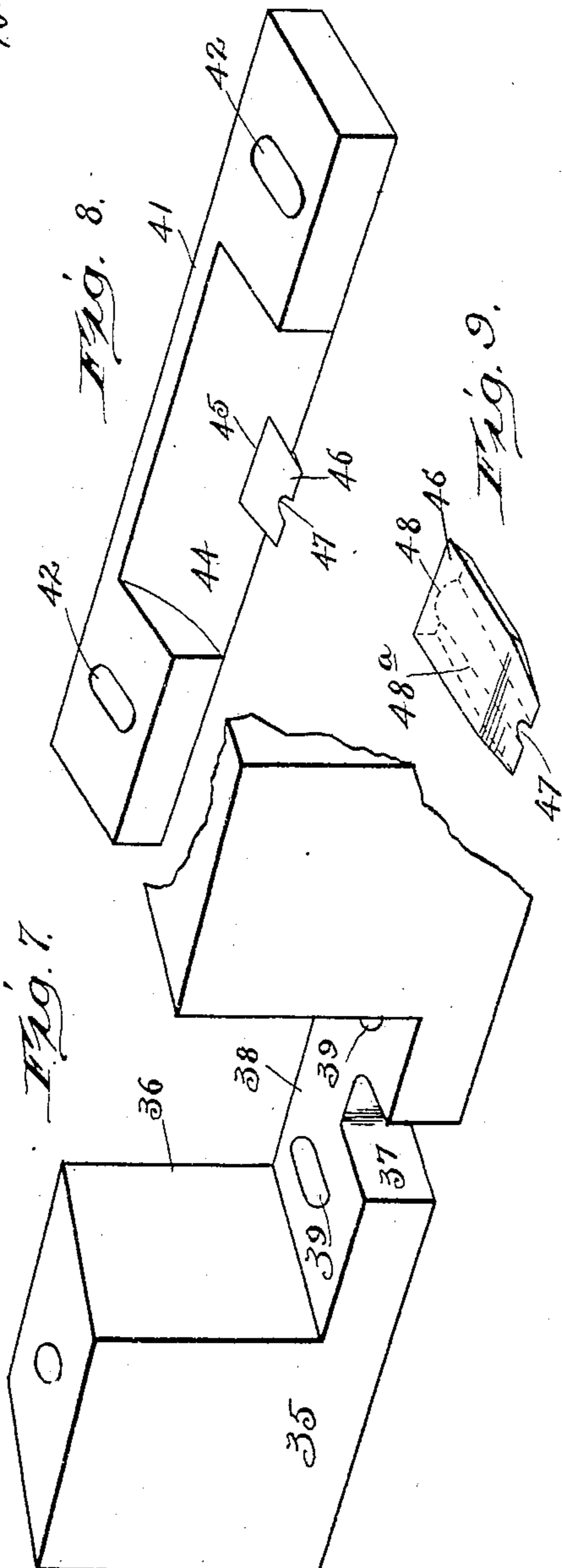
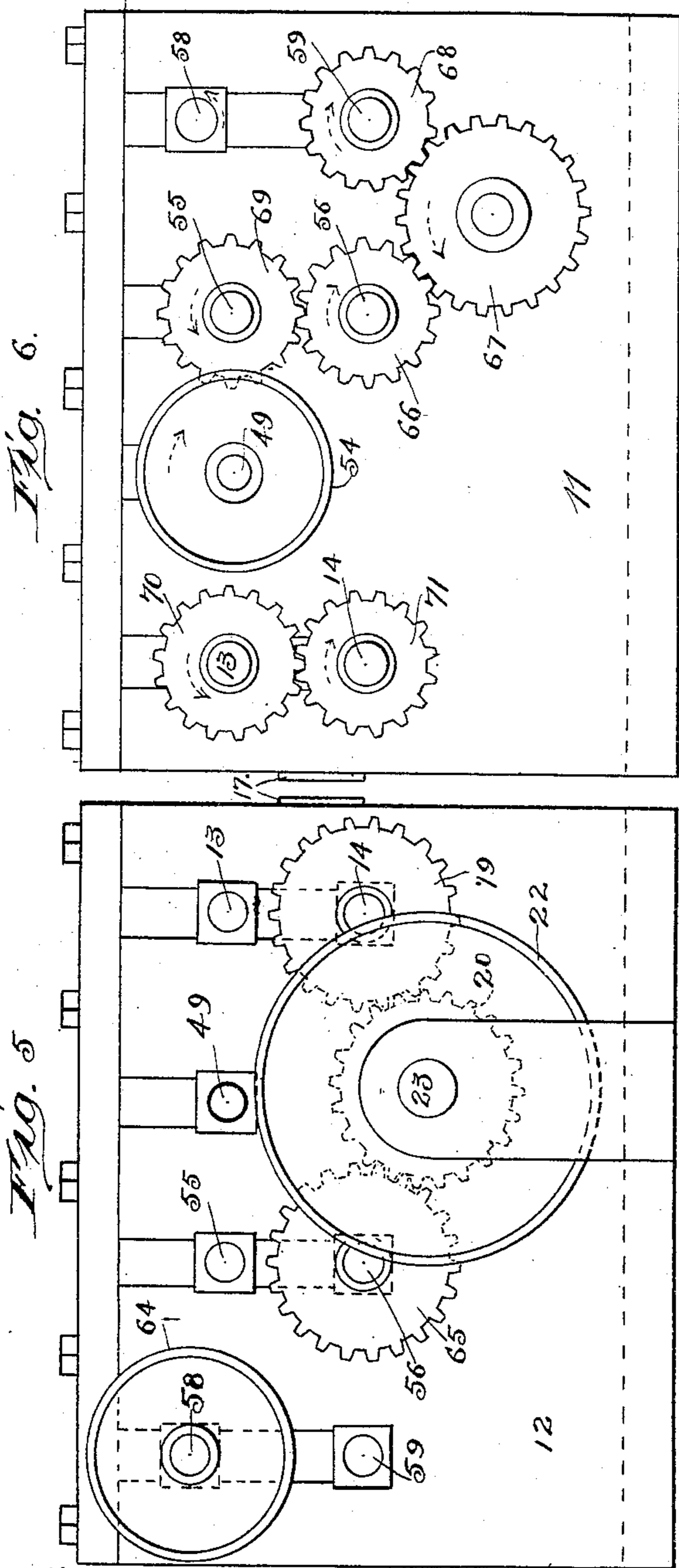
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4 SHEETS—SHEET 4.



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Chas. E. Gorton,
A. Gustafson

Inventor:

Frederick A. Huehn,
BY Chas. E. Tiltman
Atty.

UNITED STATES PATENT OFFICE.

FREDERICK A. HUEHN, OF CHICAGO, ILLINOIS.

MACHINE FOR TREATING FEATHERS.

SPECIFICATION forming part of Letters Patent No. 777,729, dated December 20, 1904.

Application filed July 25, 1904. Serial No. 217,974.

To all whom it may concern:

Be it known that I, FREDERICK A. HUEHN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Treating Feathers, of which the following is a specification.

This invention relates to improvements in a machine to be employed for treating or dressing feathers used in the manufacture of feather-dusters; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

As is well known to those skilled in the manufacture of feather-dusters from the feathers of turkeys or other domestic fowls, it is customary to split or cut away the lower surface of the quills or stems of the feathers, as well as to remove the pith therefrom and to crimp or crease the stems in order to increase their flexibility and make them more durable.

The principal object of the invention is to provide a machine for treating or dressing feathers whereby the processes of cutting away, crimping, or creasing and grinding or removing the pith from the stems may be accomplished in a speedy, economical, and efficient manner and by the same machine.

Another object of the invention is to so construct it that certain parts thereof may be adjusted to accommodate the requirements in the operation of the machine and to render the machine more durable and effective.

A further object is to provide a machine of the above-named character which shall be compact in form, simple and inexpensive in construction and operation, and strong and durable.

Other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a plan view of the machine, showing the parts in their relative positions

ready for operation. Fig. 2 is a central longitudinal sectional view thereof. Fig. 3 is a front end view showing portions of the feed-rollers and their shafts broken away to illustrate other parts of the machine. Fig. 4 is a detached perspective view of the guide-plate for the feathers. Fig. 5 is a view in elevation of one side of the machine, showing the pulleys and gears for operating the feeding, crimping, and one of the grinding-rollers. Fig. 6 is a similar view of the opposite side of the machine. Fig. 7 is a fragmental perspective view of the adjustable block which carries a part of the feather holding and guiding mechanism. Fig. 8 is a detached perspective view of the feather holding and guiding bar, and Fig. 9 is a similar view of the depression-tongue.

Like numerals of reference refer to corresponding parts throughout the different views of the drawings.

The reference-numeral 10 indicates the main or supporting frame, which is provided with two upright portions 11 and 12, located parallel with one another to form the sides of the frame. Transversely journaled on the front upper portion of the sides 11 and 12 and parallel with one another are shafts 13 and 14, on which are mounted the feed-rollers 15 and 16, respectively. The roller 15 is preferably formed of rubber or other resilient material, and the roller 16 has its periphery milled or knurled, so as to better engage the stems of the feathers which pass between said rollers. Transversely secured to the front portion of the frame is a guide-bar 17, which has in its upper edge at about its middle a recess 18 to receive and guide the stems of the feathers. Mounted on one end of the shaft 14 is a gear 19, which meshes with a gear 20, mounted on the hub 21 of a pulley 22, which is loosely mounted on a shaft 23, horizontally journaled near the main frame, as is clearly shown in Figs. 1 and 3 of the drawings. Extending from one side of the main frame to the other, below and somewhat to the rear of the feeding-rollers 15 and 16, is a transverse piece 24, which has in its front portion at about its middle a vertical recess 25 for the reception and operation of

a bolt 26, which is pivotally secured at its upper end to the front portion of a yielding table 27, which is pivotally secured near its rear end to an upright rod 28, which is adjustably secured, by means of nuts 29, on a cross-bar 30, located at the rear of the piece 24 and secured to the sides of the frame. As shown, the upper portion of the bolt or rod 26 is enlarged and has encircling it between its enlarged portion and the bottom of the recess 25 a spiral spring 31, used to actuate said rod and the table 27. The lower portion of the rod 26 is screw-threaded and has fitted thereon nuts 32, used for adjusting the position of the table 27, as well as the movement of said rod. As is shown in Figs. 2 and 3 of the drawings, the table 27 is located with its front end near the meeting surfaces of the rollers 15 and 16 and at about the middle thereof and extends rearwardly and horizontally therefrom. Secured longitudinally on the upper surface of the table 27 is a guide-plate 33 for the feathers, which has each of its ends cut away, as at 34, for the purpose presently to be explained. Located on the upper surface of the transverse piece 24 is an adjustable block 35, which is formed at its middle with a vertical recess 36 to permit of the movement of the front portion of the table 27, and the front middle portion of the block 35 is also formed with a recess 37 to permit of the movement of the rod 26 and the spring 31, which surrounds it.

As shown in Fig. 7 of the drawings, the middle or reduced portion 38 of the block 35 is provided with vertical slots 39, through which are passed bolts 40, which engage suitable openings in the upper part of the transverse piece 24, and thus adjustably secure the block 35 in position. Located on the upper surface of the upward extensions of the block 35 is a guide-bar 41 for the feathers, which bar is provided with elongated openings 42 for the reception of bolts 43, which adjustably secure it to the top of the extensions of the block 35, as is clearly shown in Figs. 1 and 3 of the drawings. The upper rear portion of the bar 41 is cut away, as at 44, to permit of the operation of the rotary cutter. The lower middle portion of the bar 41 is provided with a transverse groove 45, in which is fitted a tongue 46, having on its lower surface a groove 48^a, which has its rear end beveled and provided with a curved recess 47, as is clearly shown in Figs. 8 and 9 of the drawings. The front portion of the tongue 46 is provided with a concaved recess 48, which, with the recess 34 in the front end of the plate 33, receives and guides the quill or front ends of the stems of the feathers.

Transversely and horizontally journaled on the main frame a little above and somewhat to the rear of the bar 41 is a shaft 49, on which is mounted a cutter-head 50, which is rectangular in cross-section and has adjust-

ably secured on each of its sides, by means of screw-bolts 51, a blade or knife 52, which contacts with the beveled front portion of the tongue 46, so as to cut away or split the stems of the feathers as they pass between said tongue and the guide-plate 33. Each of the knives 52 is provided with a slot 53 to receive the bolts 51, which engage suitable openings in the cutter-head.

Mounted on one end of the shaft 49 is a pulley 54, to which power may be applied by means of a belt for driving the same. Transversely and horizontally journaled one above the other at the rear of the table 27 are shafts 55 and 56, on each of which is mounted a corrugated roller 57, which intermesh, as shown in Fig. 2, and are employed for the purpose of creasing or crimping the stems of the feathers, thereby rendering them more flexible and durable. Horizontally and transversely journaled one above the other on the rear portion of the main frame are shafts 58 and 59, on which are mounted milled or knurled rollers 60 and 61, respectively, which are employed for grinding or removing the pith from the stems of the feathers. Both of the feed-rollers, as well as each of the crimping-rollers 57 and grinding-rollers 60 and 61, are adjustable longitudinally on their respective shafts, but are non-rotatably secured thereto, which adjustability may be effected by means of set-screws 62, located in reduced portions 63 on each of said rollers, which screws will engage the shafts and fix the rollers thereon at the desired points.

Mounted on one end of the shaft 58, which carries the grinding-roller 60, which roller is preferably larger than the grinding-roller 61, is a pulley 64, to which power may be applied for driving the roller 60 independently of the roller 61. Mounted on the end of the shaft 56 adjacent to the pulley 22 is a gear 65, which meshes with the gear 20 on the main or driving shaft. On the opposite end of the shaft 56 is mounted a gear 66, which meshes with an idle gear 67, journaled on the side 11 of the main frame, which idle-gear also meshes with a gear 68 on the shaft 59, which carries the roller 61 or lower grinding-roller. The gear 66 also meshes with a gear 69 on the shaft 55, which carries the upper crimping-roller. That end of the shaft 13 adjacent to the pulley 54 has mounted thereon a gear 70, which meshes with a gear 71 on the corresponding end of the shaft 14 or lower feed-roller shaft.

From the foregoing and by reference to the drawings it will be seen and readily understood that by locating the stems of the feathers in the notch or recess 18 of the transverse bar, and presenting their quills to the feed-rollers 15 and 16 so that the lower portion of the stem will be uppermost the feathers will be fed between said feed-rollers, and thereby forced into the opening formed by the con-

caved recesses 34 and 48 in the guide-bar 33 and tongue 46 and between said bar and tongue. As the stems of the feathers protrude under the rear end of the tongue 46 they will be cut away by means of the blades 52 on the rotary cutter-head 50, from which point they will pass between the crimping-rollers 57 and be transversely crimped or creased, after which they will pass between the rollers 60 and 61, which will grind or remove the pith from the stems, thus rendering the feathers in the proper condition for use in the manufacture of dusters. It is apparent that by applying power to the pulley 22 the feed-rollers 15 and 16 and the crimping or creasing rollers 57, as well as the lower grinding-roller 61, will be rotated, and by applying power to the pulley 54 the cutter-head 50, carrying the knives 52, may be rotated in the proper direction and at any suitable speed. The upper grinding-roller 60 may be operated independently of the roller 61 by applying power to the pulley 64, supplied from any suitable source. When it is desired to adjust the block 35 and the bar 41 so as to meet the requirements of tail-feathers or wing-feathers or the feathers of different sizes, it is apparent that the bolts 40 may be loosened, when the block 35 may be moved forwardly or rearwardly, as the case may require, or the bolts 43, which secure the bar 41 in place, may be loosened and said bar properly adjusted.

It is apparent that the position of the table 27 may be regulated by screwing the nuts 32 up or down on the rod 26, which permits the table to swing on its pivot on the upper end of the rod 28, which may also be adjusted by turning the nuts 29 in the proper direction. As the various rollers are adjustable longitudinally on their shafts, it is evident that their positions may be shifted, so that if they become worn at a single point by constant use a new and unworn portion may be presented to act on the stems of the feathers, thus obviating the necessity of substituting new rollers or remilling the old ones.

If it is desired to adjust the bar 41 vertically, this may be done by loosening the bolts 40 and placing thin pieces or washers between the lower surface of the block 35 and the upper surface of the transverse portion of the main frame.

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

1. In a machine for treating feathers, the combination with the main frame, of a rotary cutter journaled thereon; a table pivotally secured near one of its ends and located below said cutter, a spring located under the front portion of the table to press said part upwardly, means to feed the feathers to the table and cutter, and means adjustably secured for holding and guiding the feathers on the

table and to the cutter, substantially as described. 65

2. In a machine for treating feathers, the combination with the main frame, of a pair of feed-rollers horizontally journaled thereon one above the other, a table pivotally secured near its rear end and having its front end projecting near the meeting surfaces of said rollers, a spring located under the front portion of the table to press said portion upwardly, a rotary cutter journaled on the main frame above the table, and means adjustably secured for holding and guiding the feathers on the table and to the cutter, substantially as described. 70 75

3. In a machine for treating feathers, the combination with the main frame, of a pair of feed-rollers horizontally journaled thereon one above the other, a table pivotally secured near its rear end and having its front end projecting near the meeting surfaces of said rollers, a spring to actuate the front part of the table, a rotary cutter journaled on the main frame above the table, means adjustably secured for holding and guiding the feathers on the table and to the cutter, and a pair of crimping-rollers horizontally journaled one above the other at the rear of the table, substantially as described. 80 85 90

4. In a machine for treating feathers, the combination with the main frame, of a pair of feed-rollers horizontally journaled thereon one above the other, a table pivotally secured near its rear end and having its front end projecting near the meeting surfaces of said rollers, a spring to actuate the front portion of the table, a rotary cutter journaled on the main frame above the table, means adjustably secured for holding and guiding the feathers on the table and to the cutter, a pair of crimping-rollers horizontally journaled at the rear of the table one above the other, and a pair of grinding-rollers horizontally journaled one above the other at the rear of the crimping-rollers, substantially as described. 95 100 105

5. In a machine for treating feathers, the combination with the main frame having a transverse portion, of a block adjustably secured on the upper surface of said transverse portion and having its middle part recessed, a guide-bar adjustably secured on the upper surface of the extensions of said block and having in its upper surface a recess, a tongue transversely secured on the lower surface of the guide-bar and having at its front end a concaved recess and at its rear end a curved recess, said recesses united by a groove, a table pivotally supported near its rear end and having on its upper surface a grooved guide-plate and projecting forwardly under the guide-bar and in the recess of said block, a spring to actuate the front portion of the table, a rotary cutter journaled above the table, and a pair of feed-rollers horizontally jour- 110 115 120 125

naled one above the other in front of the table, substantially as described.

6. In a machine for treating feathers, the combination with the main frame having a transverse portion, of a block adjustably secured on the upper surface of said transverse portion and having its middle part recessed, a guide-bar adjustably secured on the upper surface of the extensions of said block and having in its upper surface a recess, a tongue transversely secured on the lower surface of the guide-bar and having at its front end a concaved recess and at its rear end a curved recess, said recesses united by a groove, a table pivotally supported near its rear end and projecting forwardly under the guide-bar and in the recess of said block, a guide-plate secured on the upper surface of the table and having a groove in each of its ends, a rod pivotally secured at its upper end to the front portion of the table and adjustably secured at its lower end on the transverse portion of the main frame, a spring encircling said rod to actuate the front part of the table, a rotary cutter journaled above the table, and a pair of feed-rollers horizontally journaled one above the other in front of the table, substantially as described.

7. In a machine for treating feathers, the combination with the main frame having a transverse portion, of a block adjustably secured on the upper surface of said transverse portion and having its middle part recessed, a guide-bar adjustably secured on the upper surface of the extensions of said block and having in its upper surface a recess, a tongue transversely secured on the lower surface of the guide-bar and having at its front end a concaved recess and at its rear end a curved recess, said recesses united by a groove, a table pivotally supported near its rear end and having on its upper surface a grooved guide-plate and projecting forwardly under the guide-bar and in the recess of said block, a

rod pivotally secured at its upper end to the front portion of the table and adjustably supported at its lower end on the transverse portion of the main frame, a spring encircling said rod to actuate the front portion of the table, a pair of feed-rollers horizontally journaled one above the other in front of the table, and a pair of crimping-rollers horizontally journaled one above the other at the rear of the table, substantially as described.

8. In a machine for treating feathers, the combination with the main frame having a transverse portion, of a block adjustably secured on the upper surface of said transverse portion and having its middle part recessed, a guide-bar adjustably secured on the upper surface of the extensions of said block and having in its upper surface a recess, a tongue transversely secured on the lower surface of the guide-bar and having at its front end a concaved recess and at its rear end a curved recess, said recesses united by a groove, a table pivotally supported near its rear end and having on its upper surface a grooved guide-plate and projecting forwardly under the guide-bar and in the recess of said block, a rod pivotally secured at its upper end to the front portion of the table and adjustably supported at its lower end to the transverse portion of the main frame, a spring encircling said rod to actuate the front portion of the table, a pair of feed-rollers horizontally journaled one above the other in front of the table, a pair of crimping-rollers horizontally journaled one above the other at the rear of the table, and a pair of grinding-rollers horizontally journaled one above the other at the rear of the crimping-rollers, substantially as described.

FREDERICK A. HUEHN.

Witnesses:

CHAS. C. TILLMAN,
A. GUSTAFSON.