

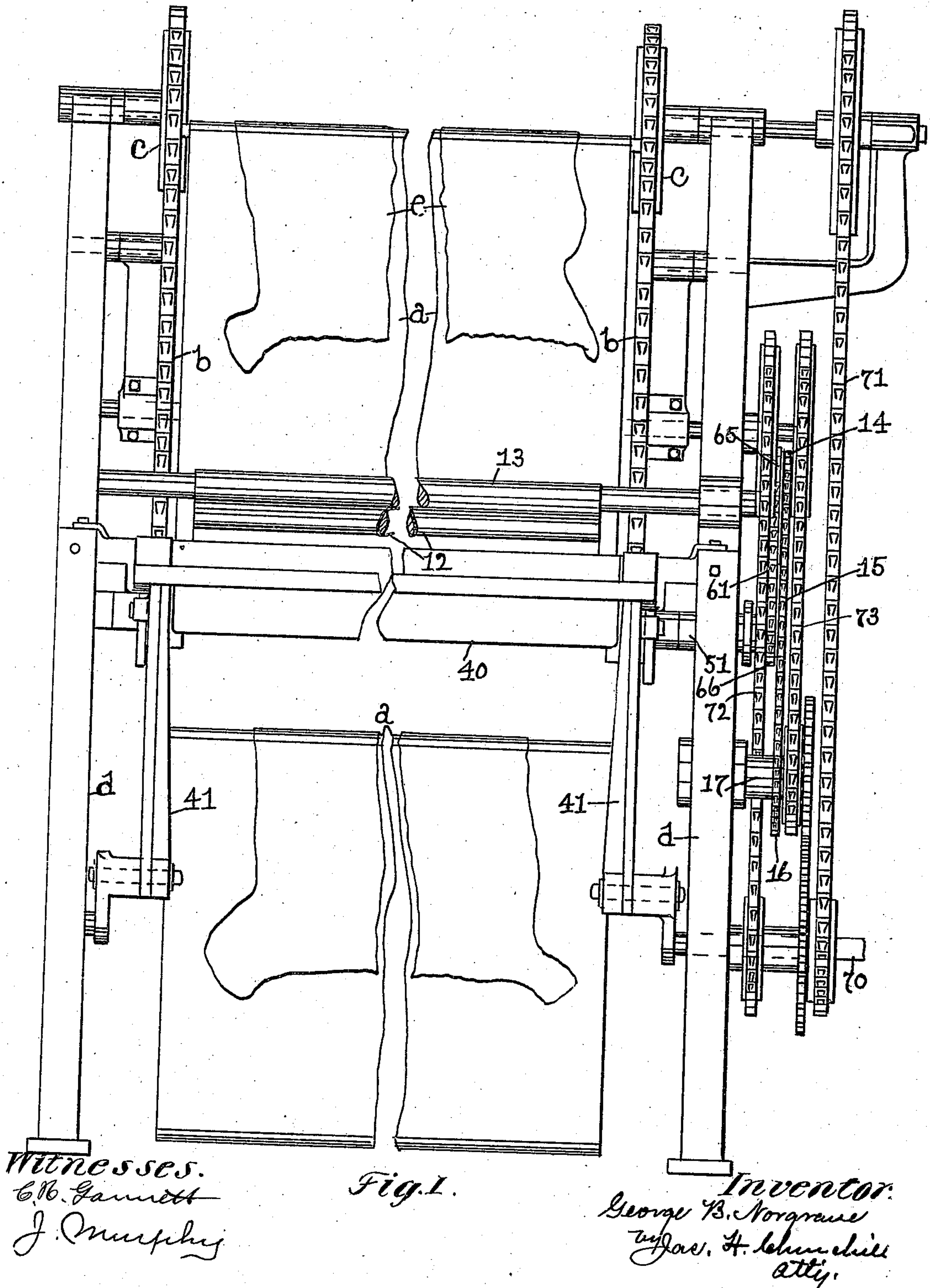
No. 847,684.

PATENTED MAR. 19, 1907.

G. B. NORGRAVE.  
MACHINE FOR TREATING HIDES AND SKINS.

APPLICATION FILED MAR. 27, 1906.

3 SHEETS—SHEET 1.



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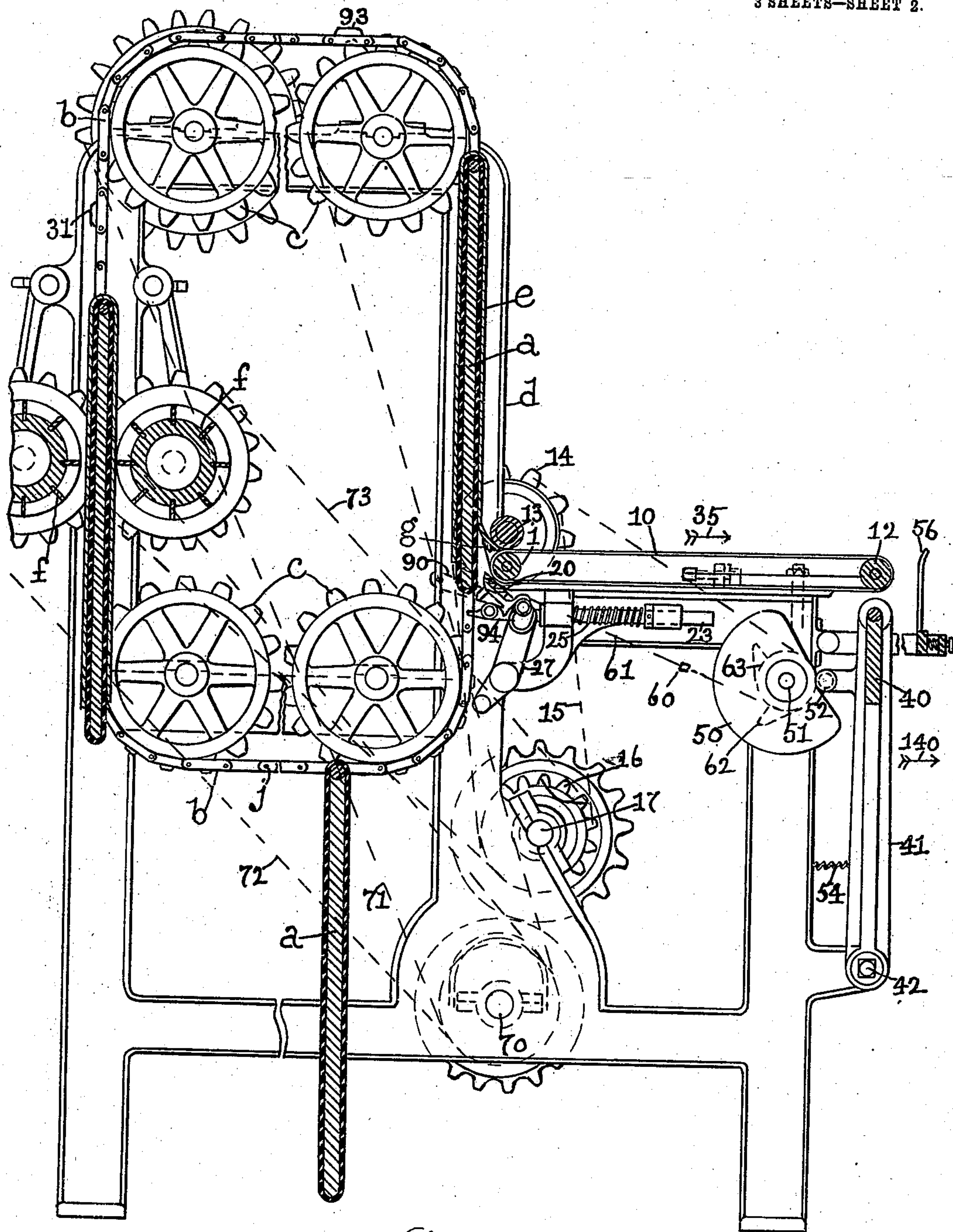


Fig. 2.

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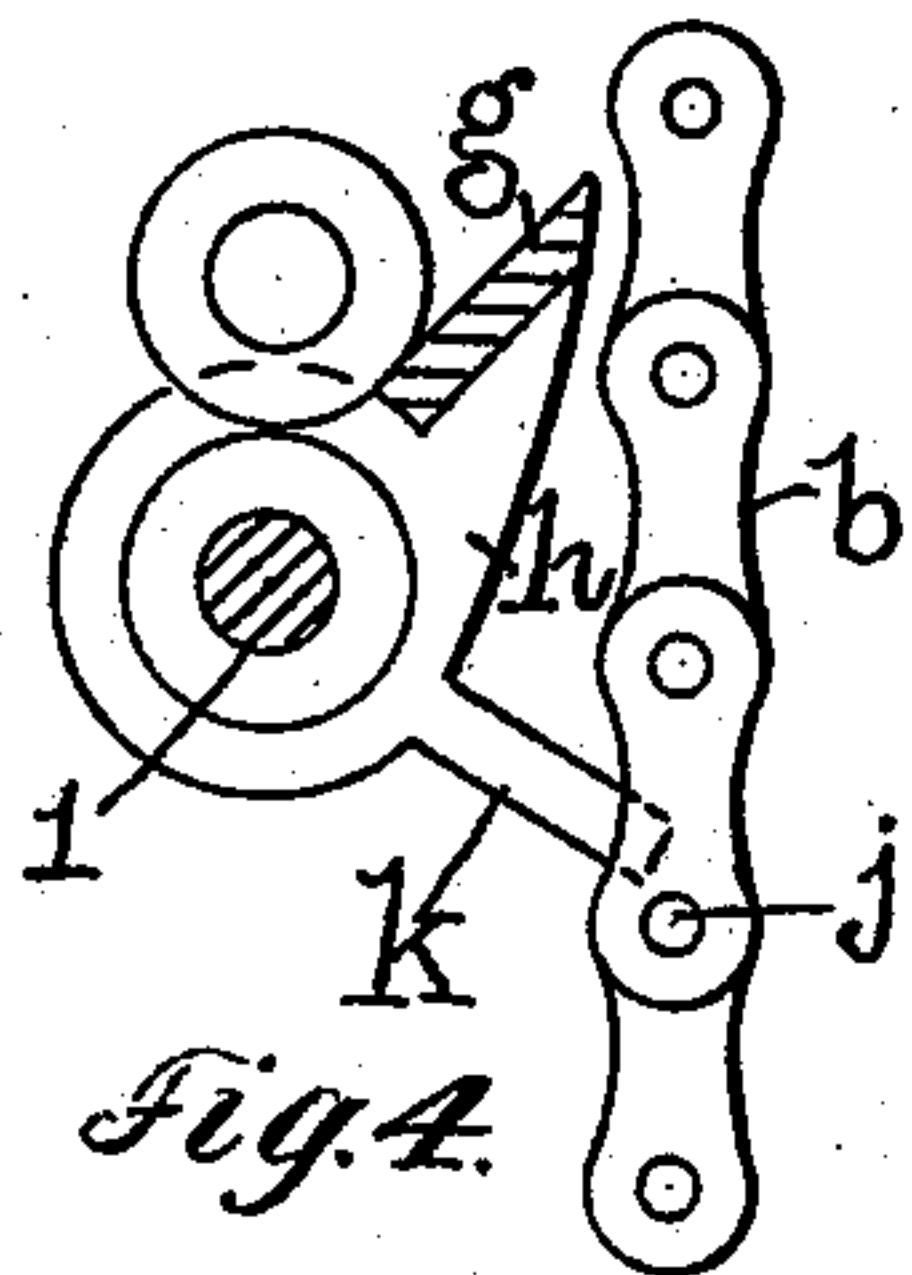


Fig. 4.

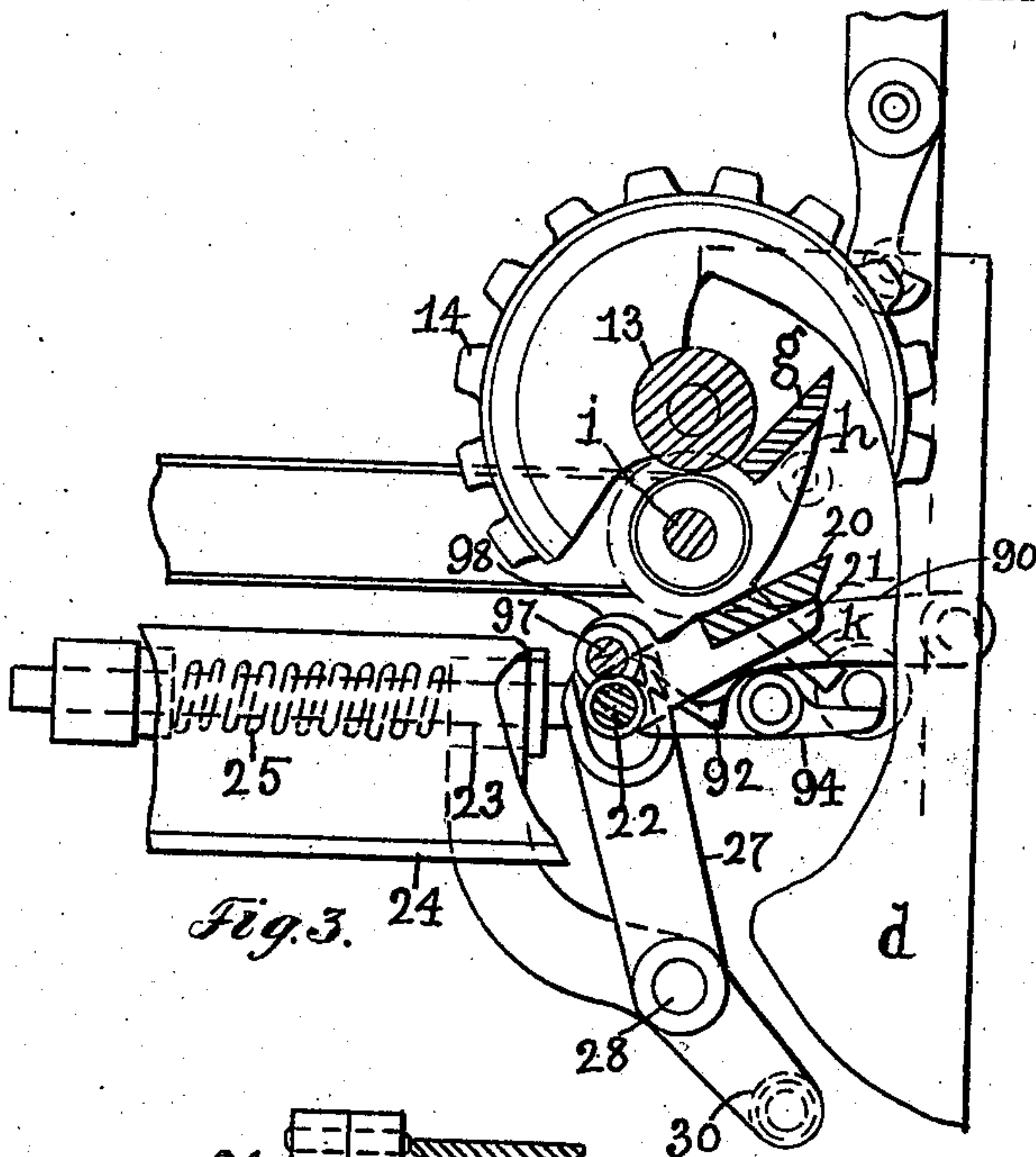


Fig. 3.

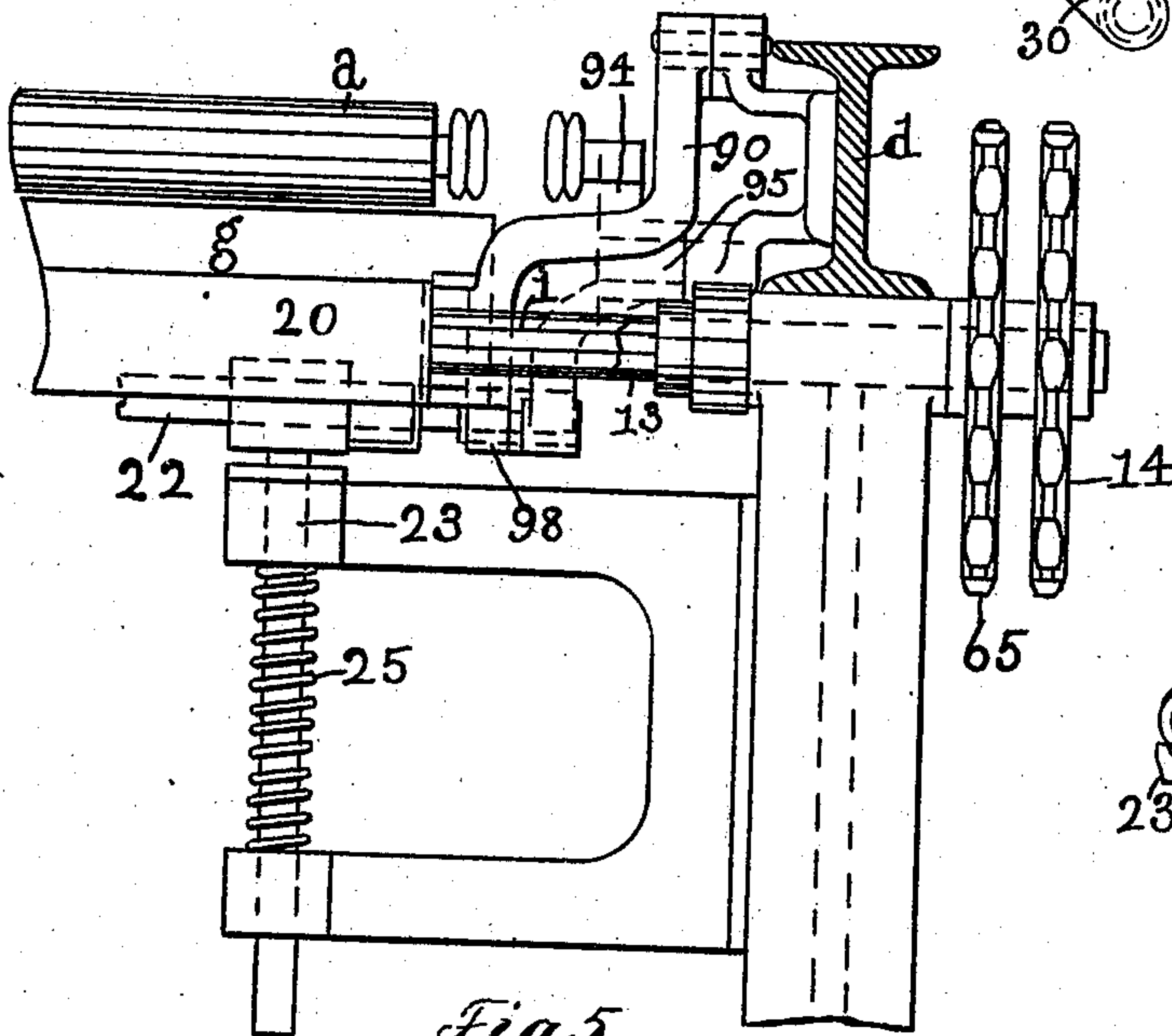


Fig. 5.

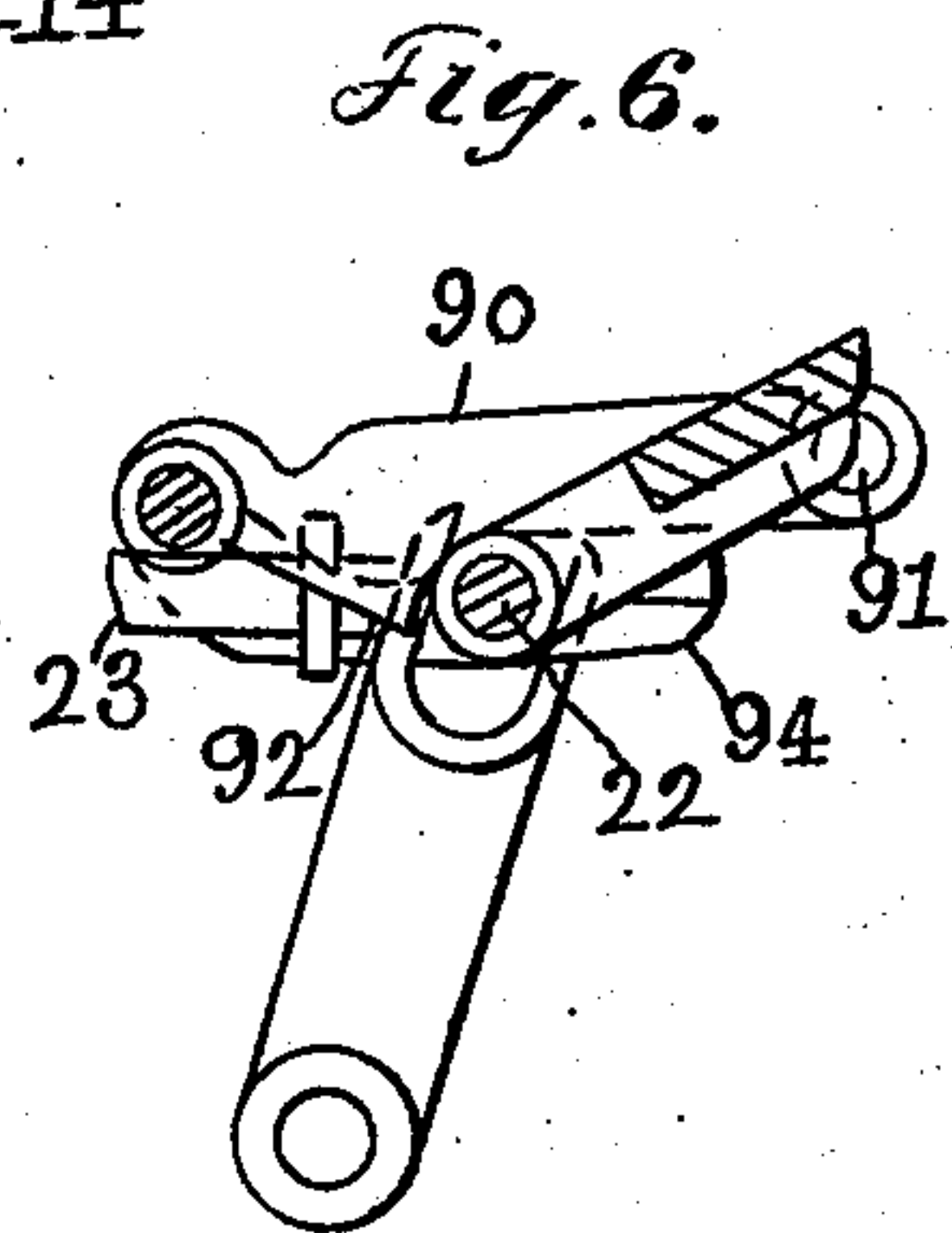


Fig. 6.

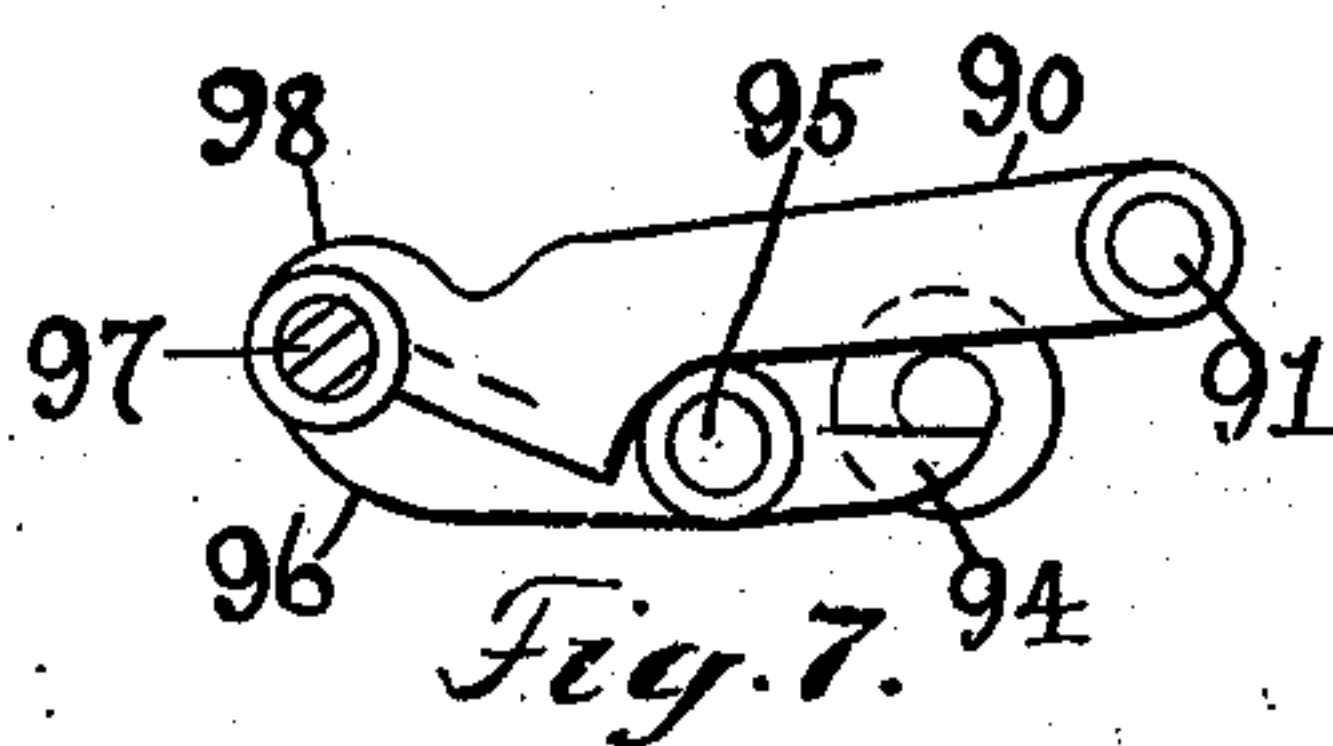


Fig. 7.

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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR TREATING HIDES AND SKINS.

No. 847,684.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed March 27, 1906. Serial No. 308,246.

*To all whom it may concern:*

Be it known that I, GEORGE B. NORGRAVE, a citizen of the United States, and a resident of Peabody, in the county of Essex and State of Massachusetts, have invented an Improvement in Machines for Treating Hides and Skins, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a machine for treating hides, skins, and leather, and is herein shown as embodied in a machine of the class referred to employing a plurality of tables or work-supports and known as a "serial table-machine."

The present invention has for its object to provide a machine of the class referred to with means, as will be described, for removing the treated hides or skins from the work supports or tables and assembling them so as to facilitate handling by the operator. These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 represents in elevation a machine embodying this invention; Fig. 2, a vertical section of the machine shown in Fig. 1; Figs. 3, 4, 5, 6, and 7, enlarged details to be referred to.

The invention is herein shown as embodied in a serial table-machine in which a plurality of work supports or tables *a* (shown as three in number) are pivotally secured to endless chains or carriers *b*, passed about sprocket-wheels *c*, supported by each side frame *d* of the machine.

The present invention relates more particularly to mechanism for removing the hides or skins *e* from the tables *a* after they have been treated or acted upon by the operating-tools or working cylinders *f*, which latter may be of any suitable or desired construction and are shown as bladed cylinders or rolls.

In the operation of putting out, the hides or skins are in a wet condition when placed on the tables *a*, and after they have been worked out by the operating tools or rolls *f* they are liable to adhere somewhat firmly to the table. In order to facilitate the removal of the hide or skin from the tables, and especially those which stick thereto, a device is

provided to engage the lower edge or end of the hide or skin on one side of the table and separate or start it away from the table, thereby destroying the vacuum or suction between the hide or skin and one side of the table. The device referred to may be designated a "separator" or "starter," and in the present instance I have shown one form of device suitable for this purpose, which consists of a bar or plate *g*, (see Fig. 3,) extended across the machine between the side frames *d* and secured at its opposite ends to levers or arms *h*, which are mounted to turn on a roller *i*, supported by the framework of the machine. The levers *h* are adapted to be rocked on the roller *i* as a center, so as to impart a chattering or prying motion to the bar or plate *g*, for a purpose as will be described, and the rocking motion may be imparted to the levers *h* by the cross-pins *j* of the link chains or endless carriers *b* engaging arms *k* on the levers *h*, the said arms extending into the path of movement of the cross-pins *j* of the endless carriers. (See Fig. 4.) The starter or separator is located with relation to the path of movement of the table or work-support, so as to engage the lower end of the outer side of the hide or skin after the latter has been treated by the working rolls or tools *f*, and in the present instance the said separator or starter is located at the back side of the machine below the upper end thereof, so as to engage the lower edge of the hide or skin on the downward movement of the table.

Provision is also made to carry the hide or skin away from the table substantially as fast as it is separated therefrom, and this result may be accomplished, as herein shown, by means of an endless carrier in the form of a band or apron 10, which is passed about the roller *i* and about a second roller 12, suitably supported by the framework of the machine. The endless band or apron 10 may be driven in any suitable manner and, as herein shown said band has cooperating with it a delivery-roll 13, located above the band in line with the roller *i* and provided with a sprocket-wheel 14, which is driven by a link chain 15 from a sprocket-wheel 16 on a shaft 17, supported by the framework of the machine.

The separator *g* starts or loosens the side of the hide or skin from one side of the table,



and provision is also made for starting or loosening the other side of the hide or skin from the opposite side of the table, and for this purpose I have shown one form of mechanism which consists of a bar or plate 20 (see Fig. 3) extended transversely of the table and secured to cranks or arms 21 on a rod 22, which is supported by rods 23, arranged to slide in suitable supports, shown as brackets 24 attached to the framework of the machine, the rods 23 being encircled by springs 25 and having their front ends connected to the rod 22. The spring 25 acts to normally keep the push bar or plate 20 in its inactive or inoperative position out of the path of movement of the tables and the endless carrier.

The push-bar 20 is moved forward by levers 27, pivoted at 28 to the framework and having their upper ends forked to straddle the rod 22 and having their lower ends provided with rollers 30, which are engaged by suitable cams or projections 31 on the endless carrier. The cams 31 are suitably shaped and appropriately located with relation to the tables, so as to engage the levers 27 at or about the time the upper end or top of the table has been brought substantially opposite to or in a horizontal line with the push-bar 20 and thereby cause said levers to have their upper ends moved toward the path of movement of the table.

It is preferred to have the cams move the bar 20 across and beyond the path of movement of the tables, so that the hide or skin will be loosened or started away from the opposite side of the table sufficiently to permit it to be removed therefrom by the delivery-rolls and carried away by the endless band or apron. The cams 31 may be made of sufficient length to remain in engagement with the levers 27 until the hide or skin has been disengaged from the opposite side of the table; but to avoid making the cams of sufficient length to accomplish this purpose it is preferred to provide means for locking the levers 27 in their forward or operative position, so that the cams 31 may be made short and only long enough to move the levers 27 into their operative position, and when in this position said cams may pass out of engagement with the levers 27, which are retained in their operative position by latches 90, (see Figs. 3 and 6,) pivoted at 91 to the side frames *d*, and each having a hook 92, which is designed to engage the bar 22 when the latter is in its forward or operative position. (Shown in Fig. 6.) The push-bar 20 is thus held in its operative position until the hook 92 of the latch is disengaged from the bar 22. This may be effected by a suitable cam or projection 93 on the endless carrier engaging a lever 94, pivoted at 95 to a stationary part of the frame and having its arm 96 provided with a lug or projection 97, upon which a finger 98 of the latch rests. By reference to Figs. 3 and 6, it

will be seen that when the release cam or projection 93 strikes the lever 94 on the downward movement of the endless carrier the said lever is turned on its pivot and its arm 96 is elevated, which carries with it the finger 98, thereby turning upward the latch 90 and disengaging the latch 90 from the rod 95, which is then returned to its normal or inoperative position by the spring 25. The hide or skin thus loosened from the table *a* is carried away by the endless band or apron, which is moved in the direction indicated by the arrow 35 in Fig. 2, and the front end of the hide or skin passes off from the endless band and descends on one side of a vertically-arranged support or assembling device, which may be made as herein shown, and consists of a cross-bar 40, secured at its ends to upright levers 41, which are pivoted at their lower end, as at 42. The levers 41 normally occupy a substantially vertical position with the bar 40 substantially in line with the roller 12 and are adapted to be automatically turned backward or outward in the direction indicated by the arrow 140 in Fig. 2 until the cross-bar 40 has been brought to a position beyond the roller 12, as will leave sufficient space between said roller and said bar, to permit a portion of the hide or skin to pass down on the other side of the cross-bar 40.

The rocking or tilting movement of the cross-bar 40 just described may be effected, as herein shown, by cam-disks, 50 fast on a rotatable shaft 51 and acting on projections or arms 52 on the levers 41. The cams 50 are suitably shaped to permit springs 54 to hold the levers 41 in a substantially vertical position while substantially one-half of the hide or skin is passing down on the outer side of the cross-bar 40 and then to move said levers backward, so as to permit the remaining portion of the hide or skin as it leaves the endless carrier or apron 10 to pass down on the other side of the cross-bar 40. In this manner one or any number of hides or skins within limits may be assembled or hung on the movable support in convenient position for removal by the operator.

The endless carrier or apron 10 may have cooperating with it a device shown as an upright board or plate 56 suitably secured to the framework of the machine and which serves to deflect the free end of the hide or skin passing off of the delivery carrier or apron 10 down on one side of the supporting cross-bar 40. The assembling device referred to is designed to be intermittently operated, which may be accomplished, as herein shown, by one or more projections or devices 60 on a link chain 61 engaging one or more teeth or projections 62 on a disk 63, which is fast on the shaft 51, carrying the cam 50, the link chain 61 passing over a sprocket-wheel 65 on the shaft 13 and about a sprocket-wheel 66 on the cam-shaft 51.



The endless carrier *b* for the tables may be driven from a main shaft 70 by a link chain 71, and the bladed cylinders *f* may be driven from the shafts 70 and 17 by link chains 72 73.

The operation of the machine herein shown may be briefly described as follows: The hide or skin to be put out or otherwise treated is placed over one of the tables *a* at the front of the machine, which is at the left-hand viewing Fig. 2, and is put out by the bladed cylinders *f* as the table, with the hide thereon, is passed between said cylinders. After the hide or skin has been worked out by the cylinders *f* it is carried to the back of the machine, and on the downward movement of the table the hide is removed from the table, as above described, and delivered by the endless apron or carrier onto the assembling apparatus, from which a single hide or skin may be removed by the operator, or a number of hides or skins may be allowed to accumulate before removal.

I claim—

1. In a machine of the class described, in combination, a work support or table over which a hide or skin is placed, an endless carrier for said table, operating-tools to treat the hide or skin on said table, a separator co-operating with said table to loosen the hide or skin from one side of the same, a device to loosen the hide or skin from the opposite side of said table, an assembling device, and means to carry the hide or skin from the table to said assembling device, substantially as described.

2. In a machine of the class described, in combination, a work support or table over which a hide or skin is placed, an endless carrier for said table, operating-tools to treat the hide or skin while on said table, an oscillating separator co-operating with said table and movable about a center having a fixed relation to the path of movement of the table to loosen the hide or skin from the side of the table adjacent to said separator, and means to automatically rock said separator a plurality of times while a work-support is moving past said device, substantially as described.

3. In a machine of the class described, in combination, a work support or table over which a hide or skin is placed, an endless carrier for said table, operating-tools to treat the hide or skin while on said table, a separator co-operating with said table to loosen the hide or skin from one side of the same, and a device movable across the path of movement of said table to loosen the hide or skin from the opposite side of said table, substantially as described.

4. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to

treat the hide or skin on said table, a vibrating separator co-operating with the table to loosen the hide or skin therefrom, and means to operate said separator and impart to it a plurality of vibrations while a work-support is moving past said separator, substantially as described.

5. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, means to separate one side of the hide or skin from the table, and means to engage the hide or skin and separate it from the other side of said table after said hide has been separated from the first-mentioned side of the table, substantially as described.

6. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, means to separate one side of the hide or skin from the table, means co-operating with said separator to engage the hide or skin as it is loosened from the table and carry it away from said table, substantially as described.

7. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide or skin while on said table, means to carry the hide or skin away from the table, and an assembling device movable with relation to said means to enable the hide or skin to be placed substantially one-half on each side of said device, substantially as described.

8. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, a delivery device to carry the hide or skin away from the table, an upright assembling device to receive the hide or skin from said delivery device, and means to move said assembling device, for the purpose specified.

9. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide or skin while on said table, means to move the lower end of the hide or skin away from the table, and delivery-rolls co-operating with said means to receive the end of the hide therefrom, substantially as described.

10. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, a device extended transversely of said table to engage the hide or skin, and pivoted supports for



said device actuated by the endless carrier to impart to said pivoted supports and said device a plurality of oscillations while a work-support is moving past said device, substantially as described.

11. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, a delivery device to carry the hide or skin away from the table, an upright assembling device to receive the hide or skin from said delivery device, a movable cam to actuate said assembling device, and means to intermittently move said cam, substantially as described.

12. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide or skin on said table, an intermittently-movable upright assembling device, and means to carry the hide or skin from said table to said assembling device, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE B. NORGRAVE.

Witnesses:

JAS. H. CHURCHILL,

J. MURPHY.