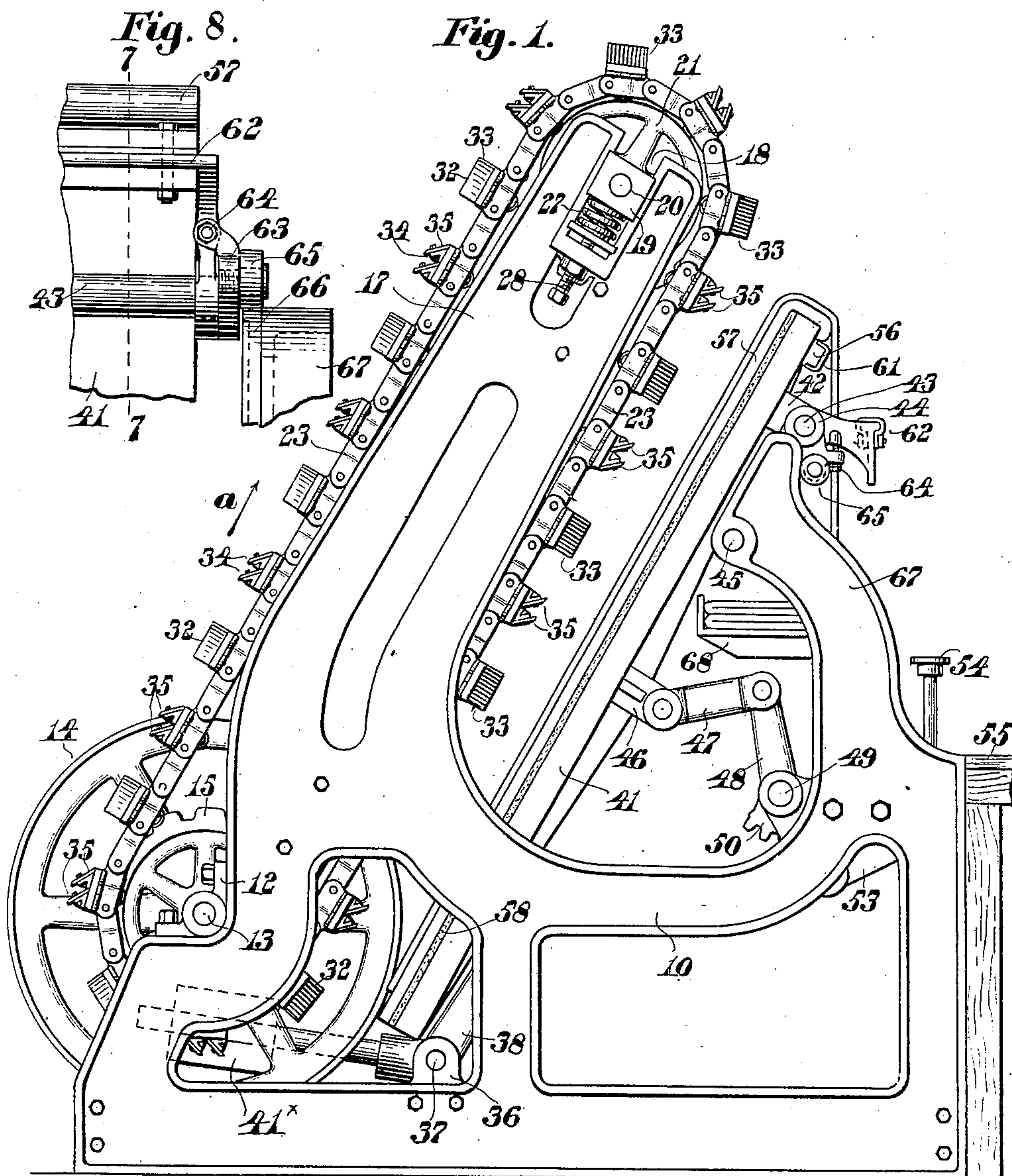


No. 890,750.

PATENTED JUNE 16, 1908.

J. W. AULSON.  
HIDE WORKING MACHINE.  
APPLICATION FILED MAR. 15, 1907.

3 SHEETS—SHEET 1.



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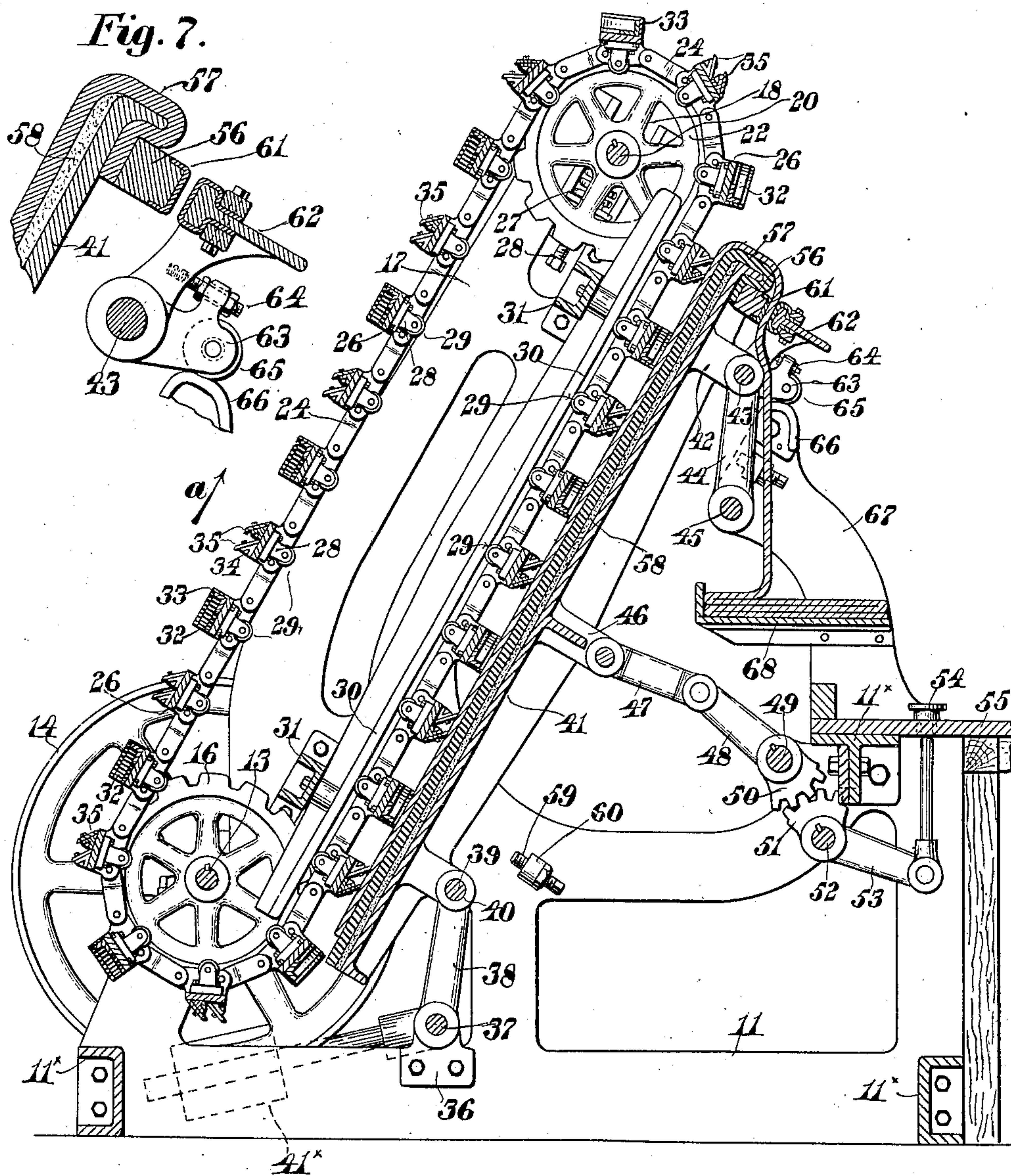
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3 SHEETS—SHEET 2.

*Fig. 2.*



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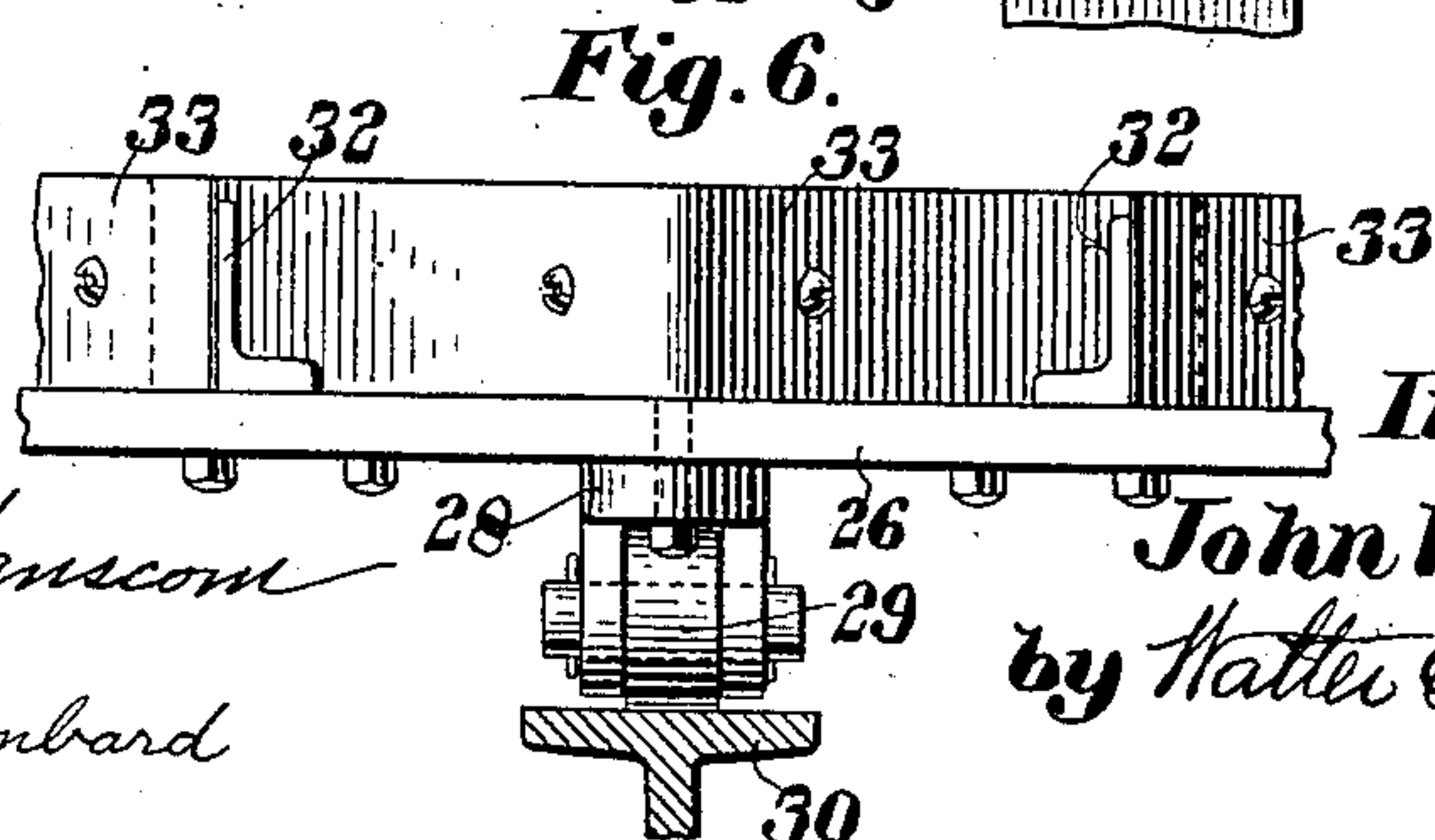
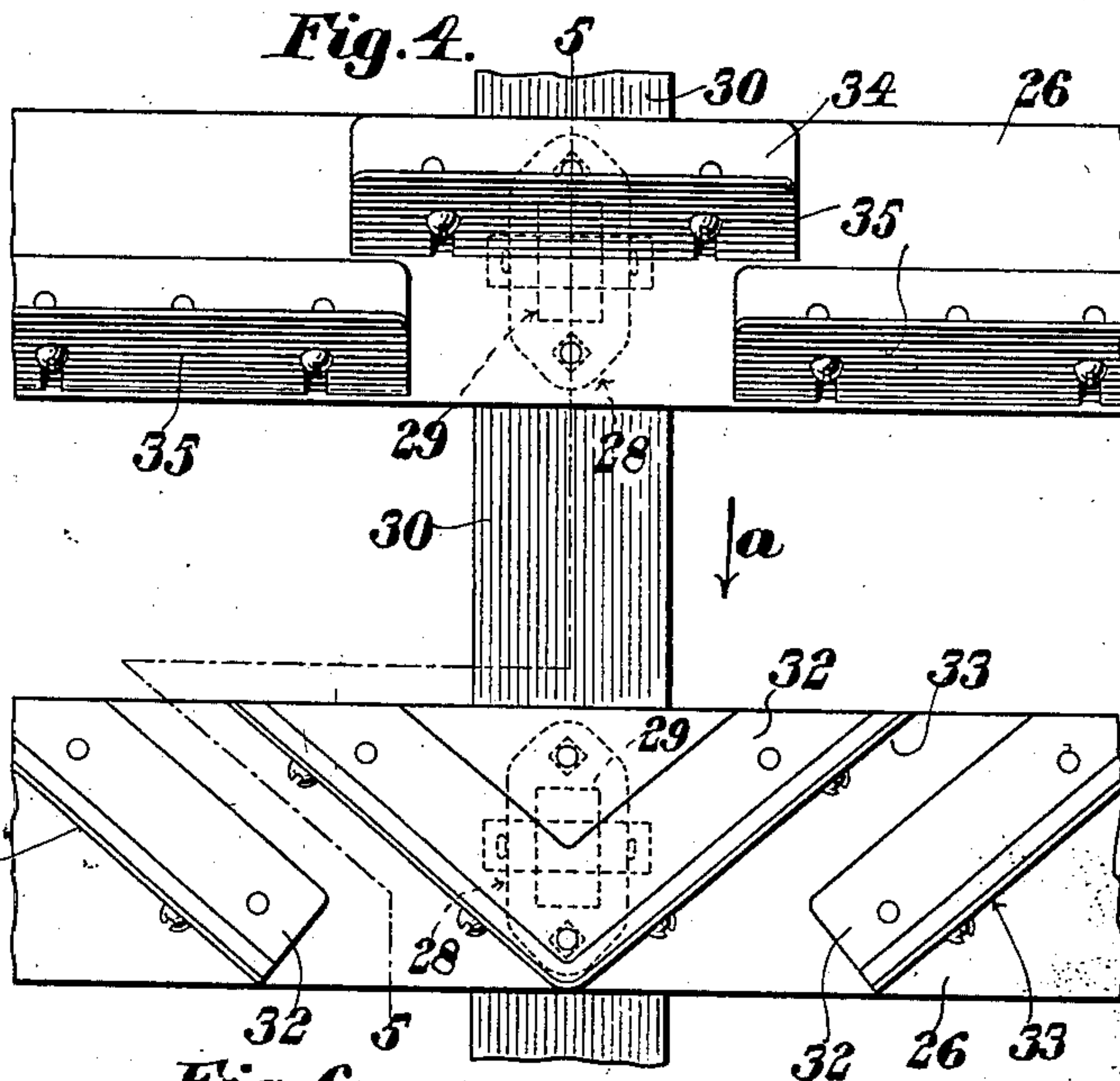
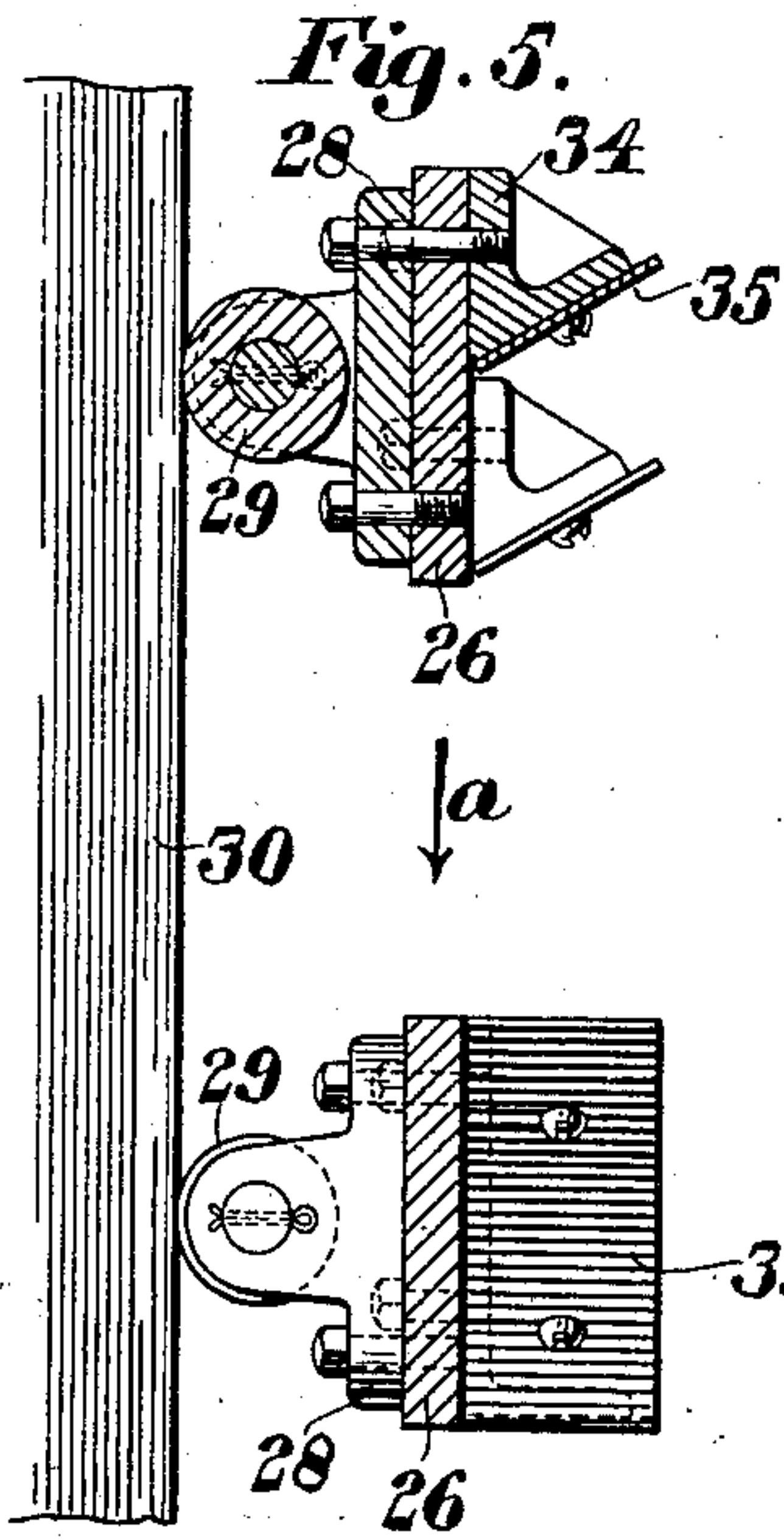
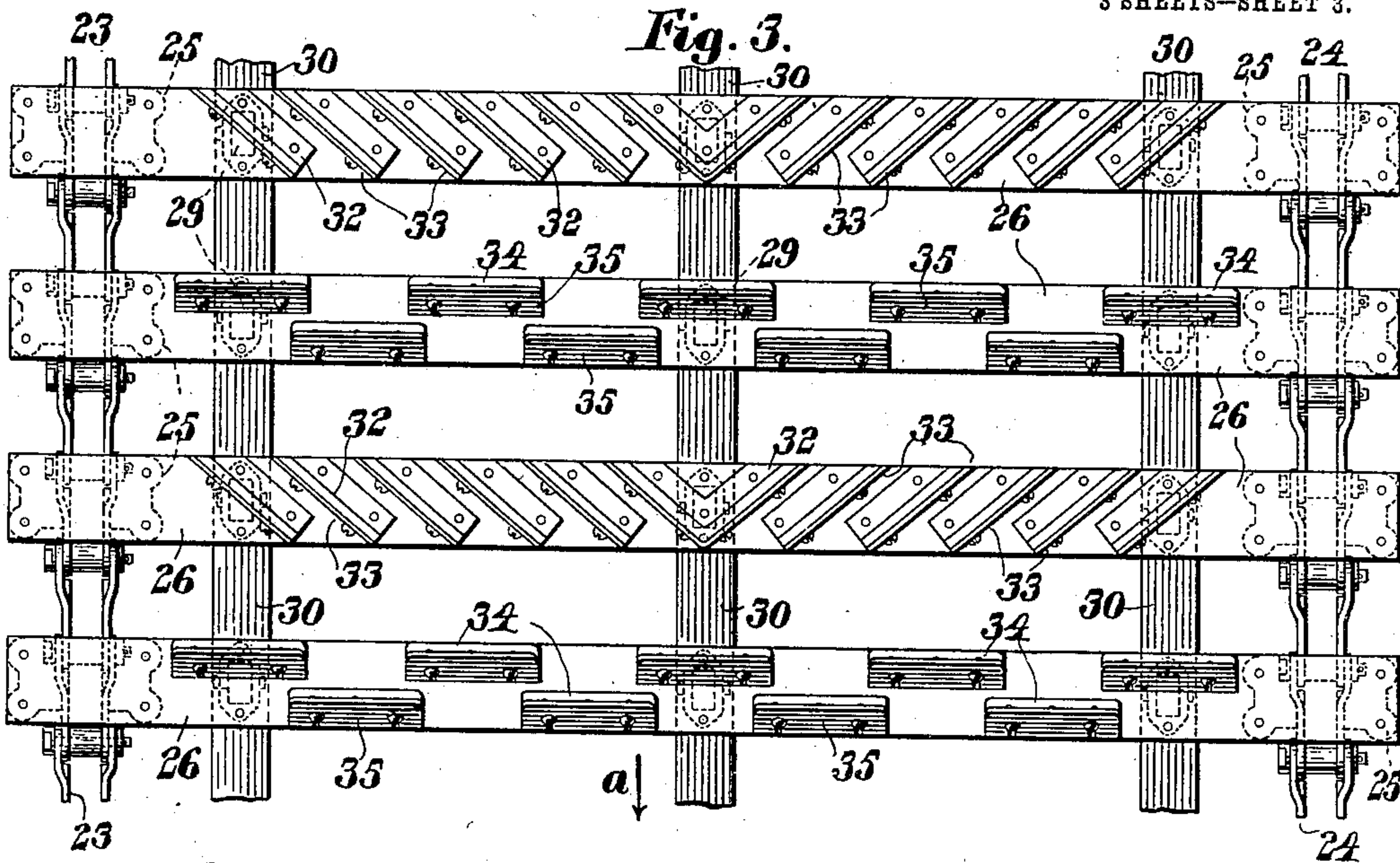


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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

JOHN W. AULSON, OF LYNN, MASSACHUSETTS.

## HIDE-WORKING MACHINE.

No. 890,750.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed March 15, 1907. Serial No. 362,474.

*To all whom it may concern:*

Be it known that I, JOHN W. AULSON, a citizen of the United States of America, and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Hide-Working Machines, of which the following is a specification.

This invention relates to hide-working machines and has for its object the production of a machine of this class in which the knife blades are mounted upon an endless chain or apron and a flat bed is provided as a hide support, means being provided whereby the hide support and the knife blades are moved toward and from each other at the will of the operator.

The invention consists in certain novel features of construction and arrangement of parts which will be readily understood by reference to the description of the drawings and to the claims hereinafter given.

Of the drawings: Figure 1 represents a side elevation of a machine embodying the features of this invention, the hide support being shown in position for the reception of a hide or skin which is shown thereon. Fig. 2 represents a vertical section of the same, the hide support with its hide or skin thereon being shown in position to be operated upon by the knives. Fig. 3 represents a front elevation of a portion of the knife-carrying apron. Fig. 4 represents an enlarged detail of a portion of said knife-carrying apron. Fig. 5 represents a section of the same on line 5—5 on Fig. 4. Fig. 6 represents an inverted plan of a portion of one of the cross bars of said apron with the plurality of knives thereon. Fig. 7 represents a detail in section of the hide or skin clamping mechanism, and Fig. 8 represents a front elevation of the same.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 and 11 represent the two side frames of the machine which are provided at 12 with a bearing for the driving shaft 13 and which are connected together by the tie girths 11\*. This shaft 13 is driven by the pulley 14 and it has mounted thereon and keyed thereto the two sprocket wheels 15 and 16 which are located near the inner walls of the side frames 10 and 11. The frames 10 and 11 each have an upwardly projecting arm 17 inclined toward the front

of the machine and the upper end of each of the arms 17 is provided with an open slot 18 in which is mounted a box 19 having a bearing therein for a shaft 20 extending from one box 19 to the other.

On the shaft 20 is securely mounted to rotate therewith the sprocket wheels 21 and 22 in alinement with the sprocket wheels 15 and 16. On the sprocket wheels 15 and 21 is mounted an endless chain or carrier 23 and similarly mounted upon the sprocket wheels 16 and 22 is mounted a like chain or carrier 24. The alternate links of the chain or carrier members 23 and 24 are provided with the flanges 25 to which are secured the cross pieces or bars 26 extending from one chain 23 to the opposite chain 24. The chains 23—24 are operated by the driving sprocket wheels 15 and 16 in any well-known manner, the direction of movement of said chains being as indicated by the arrows "a" in the various figures of the drawings. In each of the slots 18 is mounted a spring 27 the tension of which is adjusted by means of the threaded member 28. This spring 27 forces the bearing 20 toward the open end of the slot 18 and causes the chains or carrier members 23 and 24 to be held taut at all times.

To the rear of each of the cross bars 26 is secured a forked member 28 having mounted therein a roller 29 which bears against one of the bars 30 which are secured to the ties 31 interposed between the side frames 10 and 11. These bars 30 form a suitable back support for the knife-carrying apron when the knives carried thereby are operating upon the hide. To the front of every alternate cross member or bar 26 of the endless apron are secured a plurality of supports 32, to the front face of each of which is secured a knife 33. These knife blades 33 extend outwardly at right angles to the front face of the bar 26 and are secured to the bar so that the blades on one-half of each of the cross members 26 are practically at right angles to those on the other half. Each of the cross members 26 lying alternately between the bars carrying the before-mentioned knife blades has secured to the front face thereof the supports 34 extending longitudinally of the cross members 26 in two lines, the supports of one line being opposite the space between the blades of the other line. The face of the supports 34 to which the blade 35 is secured extends at an acute angle to the front face of the cross member



26. The blades 33 and 35 are provided with means whereby they may be adjusted relative to the front face of the cross members 26 and secured in said adjusted position. As the apron is moved in the direction of the arrows "a" on the various figures of the drawings by means of the driving shaft 13 these blades 33 will act upon the hide or skin with which they are cooperating to spread out the hide and make it perfectly flat so that the longitudinal knives 35 may better operate upon the hide or skin to remove the hair and flesh therefrom. A bracket 36 is secured to each of the side frames 10 and 11 and has mounted therein a shaft 37 extending from one to the other. Upon this shaft 37 at either end thereof is mounted a link 38 in the free ends of which is a shaft 39 extending from one link to the other through bearings 40 in a boss extending to the rear at the lower end of the main bed 41 of the hide support. Near the upper end of this bed 41 a boss 42 extends to the rear and is provided with a bearing for the shaft 43 mounted in the free ends of the links 44, the opposite ends of which are movable about a shaft 45 mounted in bearings in the side frames 10 and 11. It is obvious from an inspection of the drawings that the bed 41 may be moved bodily on the links 38 and 44 toward and from the operating knife blades and as these links are of the same length, the face of the plate 41 is always in parallelism with the knife-carrying apron.

Any desired means of operating the bed may be utilized but the form shown in the drawings includes a boss 46 extending to the rear of the bed 41 to which is pivoted one member 47 of a toggle mechanism, the opposite member 48 of which is pivoted at 49 and is provided on the opposite side of said pivot 49 with a gear segment 50 meshing with a similar gear segment 51 pivoted at 52 and provided with an arm 53 which is operated by means of the foot pad 54 in any well-known manner. It is obvious that a pressure by the foot of the operator upon the pad 54 will cause the toggle mechanism to act to force the bed 41 into operative position as indicated in Fig. 2 and that when pressure is released from the pad 54 the weight of the bed 41 will cause the toggle mechanism 47—48 to be broken and the bed 41 to return to its normal position. The return of the bed 41 to its normal position is regulated by the counterweight 41\* which nearly balances the weight of said bed 41 and prevents it from returning to its normal position too suddenly. The operator stands on a suitable platform 55 while operating the machine. The upper end of the bed is provided with a clamping bar 56 by which a rubber bolster 57 may be securely gripped to maintain it in position and prevent its accidental release, this bolster being of sufficient thickness to

yield under the action of the knife blades when passing over inequalities in the thickness of the hide. The bolster 57 is gripped only at one end and lies upon a felt pad 58 secured to the operating face of the bed 41. The movement of the bed 41 in a direction from the knife blades is limited by the adjustable threaded members 59 mounted in bosses 60 extending inwardly from the side frames. The clamp bar 56 is faced with leather 61 on its front side and cooperates with the leather-faced member 62 loosely mounted upon the shaft 43.

Another member 63 is loosely mounted upon said shaft 43 at one side of the member 62 and is connected therewith by means of the adjustable threaded member 64 by which the members 62 and 63 may be adjusted relative to each other and move about the pivot 43 in their adjusted relation to each other. This movement about the pivot 43 is obtained by a truck 65 pivoted to the members 63 and cooperating with a fixed cam 66 secured to or formed upon the upper end of the upwardly-extending arm forming a part of the side frames 10 and 11. To the arms 67 is secured a shelf 68 which is adapted to support that portion of the hide or skin which is not being operated upon.

It is obvious that when the hide support is in the position shown in Fig. 1 the operator may take a hide or skin and throw it over the bolster 57 so that it will lie comparatively flat thereon, the greater part of the hide or skin being in contact with the bolster while the remainder will hang down in the position shown in Figs. 1 and 2 and will rest upon the shelf 68. As soon as the operator presses his foot upon the foot pad 54 the work support will be moved into position to cause the hide to be operated upon by the knives 33 and 35, the knives being in continuous operation during the working hours.

As the work support is moved toward the knife blades the roller 65 will move over the gear 66 to cause the members 62 and 63 to be moved about the shaft 43 so that the hide or skin inserted between the members 61—62 will be gripped thereby and firmly held in position so that there will be no slip thereof during the operation of the knives thereon. This makes a very convenient form of hide-working machine, particularly adapted for dehairing and especially fine hairing although it may also be used for fleshing or as a putting-out machine. Better results can be obtained on a machine of this class as the hide is held perfectly flat upon the bolster which will yield under the pressure of the knives to allow for inequalities in the hides and one set of knives are continually operating thereon to spread out the hide or skin while the other set of longitudinal knives are following up the first-mentioned knives to remove the hairs or flesh from the hides. The machine



is so constructed that the flesh and waste material removed from the hide is carried by means of the knives therefrom and is readily deposited in a well beneath the frame without interfering with any of the mechanism for operating the machine as is usually the case. Not only may better results be obtained in the working of the hide or skin upon a machine of this class but a machine for effecting these desirable results may be produced of greatly simplified construction.

It is believed the operation and advantages of this machine will be thoroughly understood without further description.

Having thus described my invention, I claim:

1. The combination with a hide support; of an endless carrier provided with a plurality of blades adapted to act upon the hide on said support; means for moving said hide support into and from its operative position; and a device adapted to clamp a hide upon said support and hold it in fixed position during the operation thereon of said knives.

2. The combination with a hide support; of an endless carrier provided with a plurality of blades adapted to act upon the hide on said support; means for moving said hide support into and from its operative position; a clamping device for retaining the hides in fixed position upon said support during the action of the blades thereon; and means for automatically operating said clamping device during the movement of said hide support into its operative position.

3. The combination with a hide support pivoted to a fixed part of the frame; of an endless carrier provided with a plurality of blades adapted to act upon the hide on said support; and toggle mechanism independent of the pivots for said support and intermediate thereof for swinging said support about its pivot into a position to cooperate with said bladed apron carrier.

4. The combination with a hide support pivoted to a fixed part of the frame; of an endless carrier provided with a plurality of blades adapted to act upon the hide on said support; toggle mechanism independent of the pivots for said support and intermediate thereof for moving said support about its pivot into a position to cooperate with said bladed carrier; and treadle mechanism for operating said toggle mechanism.

5. The combination with a hide support pivoted to a fixed part of the frame; of an endless carrier provided with a plurality of blades adapted to act upon the hide on said support; mechanism for moving said support about its pivot into a position to cooperate with said bladed carrier; and a yielding bolster rigidly secured at one end to the upper end of said pivoted hide support and extending over its working face with its lower end disconnected therefrom.

6. The combination with a pivoted hide support; of an endless carrier provided with a plurality of blades adapted to act upon the hide on said support; levers pivoted to the upper end of said hide support; a clamp bar secured thereto; a fixed cam; and a member interposed between said cam and clamp bar levers for effecting a clamping by means of said bar during the forward movement of said hide support.

7. The combination with a pivoted hide support; of an endless carrier provided with a plurality of blades adapted to act upon the hide on said support; levers pivoted to the upper end of said hide support; a clamp bar secured thereto; a fixed cam; a member interposed between said cam and clamp bar levers for effecting a clamping by means of said bar during the forward movement of said hide support; and means for adjusting the position of said member relative to said clamp bar levers.

8. The combination with a hide-supporting member; a revoluble shaft; a driving wheel thereon; a second wheel freely revoluble in a suitable bearing; parallel separated endless chains mounted upon said wheels and driven by said revoluble shaft; bars connecting said chains; a plurality of hide-working blades on each of said bars; and means for moving said hide-supporting member about its pivot into operative position and retaining it in fixed position relative to said knives.

9. The combination with a hide-supporting member; a revoluble shaft; a driving wheel thereon; a second wheel freely revoluble in a suitable bearing; endless chains mounted upon said wheels and driven by said revoluble shaft; bars connecting said chains; a plurality of hide-working blades on each of said bars extending transversely of the machine at different angles; and means for moving said hide-supporting member about its pivot into operative position and retaining it in fixed position relative to said knives.

10. The combination with a hide-supporting member; a revoluble shaft; a pair of driving sprocket wheels thereon near the lower end of said hide supporting member; another pair of wheels freely revoluble in suitable bearings near the upper end of said hide supporting member; endless chains mounted upon said wheels and driven by said revoluble shaft; bars connecting said chains; a plurality of hide-working blades on each of said bars; rollers mounted upon said bars; and fixed rails as guides for said rollers.

11. The combination with a pivoted hide support; of means for moving said hide support about its pivots; an endless carrier provided with a plurality of blades adapted to act upon the hide on said support; a hide clamping mechanism secured to the upper end of said hide support; and fixed means



for operating said clamping mechanism during the forward movement of said hide support.

12. The combination with a hide support  
5 pivoted to a fixed part of the frame; of a pair  
of parallel separated endless chains; bars  
separated from each other interposed be-  
tween said chains each provided with blades  
adapted to act upon the hide on said support,  
10 the blades of each alternate bar extending at  
a different angle to those on the bar next  
preceding it; mechanism for driving said  
chain; and means for bringing said support  
and blades into operative relation to each  
15 other.

13. The combination with a pivoted hide  
support; of an endless carrier provided with a  
plurality of blades adapted to act upon the  
hide on said support; mechanism for moving  
20 said support about its pivot into a position

to cooperate with said bladed carrier; and a  
counterbalance for said support.

14. The combination with a hide support;  
of a pair of levers pivoted to each end thereof  
and also to a fixed part of the frame; a toggle 25  
mechanism between said hide support and a  
fixed part of the frame; means for operating  
said toggle mechanism to move said hide  
support about its pivots; a pair of endless  
chains; bars interposed between said chains; 30  
and a plurality of blades upon each bar  
adapted to act upon the hides when said  
hide support has been moved into operative  
position.

Signed by me at Boston, Mass., this 9th 35  
day of March, 1907.

JOHN W. AULSON.

Witnesses:

WALTER E. LOMBARD,  
EDNA C. CLEVELAND.