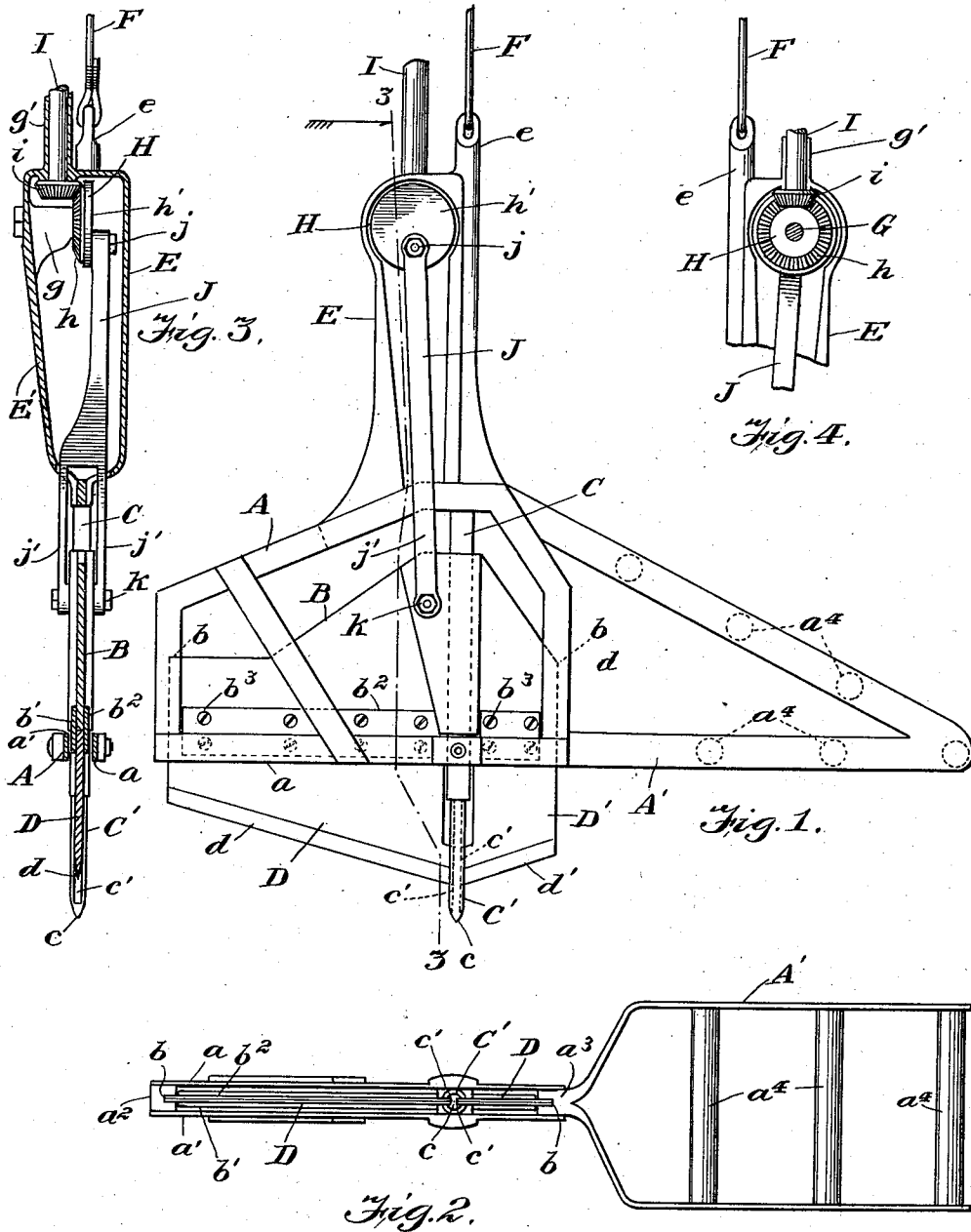


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 DEVICE FOR SPLITTING CARCASSES.
 APPLICATION FILED NOV. 21, 1910.

1,028,468.

Patented June 4, 1912.



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DEVICE FOR SPLITTING CARCASSES.

1,028,468.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed November 21, 1910. Serial No. 593,346.

To all whom it may concern:

Be it known that I, AUGUST KARHAN, a citizen of the United States, residing in the city of New York, borough of Manhattan, county and State of New York, have invented a certain new and useful Device for Splitting Carcasses, of which the following is a specification.

This invention is a device for splitting the carcass of a beef, etc., along the spinal column thereof.

The invention embodies novel means, to be hereinafter described, for retaining a cutting mechanism in proper relation with the spinal column of a carcass, and to direct or guide said cutting mechanism as the work of splitting said column progresses.

In the accompanying drawings, I have illustrated one practical embodiment of the invention, but the construction shown therein is to be understood as illustrative, only, and not as defining the limits of the invention.

Figure 1 is a side elevation of a power operated splitting device constructed in accordance with my invention, a portion of the casing or frame being omitted in order to more clearly illustrate the operating mechanism for the reciprocating cutter. Fig. 2 is an inverted or bottom plan view of the machine shown in Fig. 1. Fig. 3 is a vertical section, taken in the irregular plane indicated by the dotted line 3-3 of Fig. 1. Fig. 4 is a detail view illustrating the opposite side of the driving member from that shown in Fig. 1.

In carrying the invention into practice I employ a supporting frame, indicated in its entirety by A, a cutter head, B, mounted in said frame for reciprocating movement therein, a guide member, C, and power operated means for imparting reciprocating movement to the cutter head, the detailed construction of said parts being hereinafter described.

Frame, A, is shown as consisting of two side frames, a , a' , bar a^2 , positioned intermediate the side frames at one end thereof, and a handle member, A' , which is provided with a bar, a^3 , said last named bar being positioned intermediate the side frames at the opposite end of the main frame from the aforesaid bar, a^2 . The side frames are fastened rigidly in any suitable way to the bars, a^2 , a^3 , thereby producing a small, strong, and compact construction of the

main frame. Handle member, A' , may be of any suitable or preferred form, and it is attached rigidly to the main frame at one end thereof whereby the handle member is adapted to be grasped and manipulated by hand without liability of the operator being injured from the reciprocating motion of the cutter. As shown, the handle member is in the form of a bail, looking at it in plan, Fig. 2, and it is composed of upper and lower portions which are provided with a plurality of cross pieces, a^4 , but it is evident that the form of the handle member may be modified or changed as desired.

The supporting frame is provided with guide ways for the reception of the end portions of cutter head, B, whereby said cutter head is slidable within the frame. As shown, the bars, a^2 , a^3 , are provided with grooves, b , adapted to receive the respective end edges of the cutter head. Said cutter head is provided at its lower edge with plates, b' , b^2 , adapted for engagement with the respective faces of said cutter head, one of said plates, b^2 , being secured removably in position by screws, b^3 , or the like.

D, D' , are blades or knives secured to the cutter head for movement therewith. Said blades are positioned between plates, b' , b^2 , and they are clamped firmly in position by the plates b' , b^2 . Blade D is shown as having a beveled edge, d , which is inclined downwardly and inwardly. The other blade, D' , is somewhat narrower than blade D, and this blade (D') is provided with a beveled cutting edge, d' , the latter being inclined in an opposite direction to the edge, d , of blade, D. As shown in Fig. 1, the edges, d , d' , of the blades converge toward the lower extremity of guide bar, C. The blades are fastened securely to the cutter head, and they are adapted to be removed separately therefrom when it is desired to sharpen said blades, or either of them.

Guide bar, C, is positioned within frame, A, and it extends across said frame intermediate the ends thereof. Said guide bar is secured rigidly to the frame in any suitable way, and it extends through the opening or space provided in the cutter head. The cutter head is slidable with respect to the guide bar and said guide bar is thus adapted to serve as an additional guide for the cutter head. At one end the guide bar is extended beyond the lower part of the frame, said extended part of the guide bar being reduced

in diameter so as to produce a stem, C'. This stem is substantially circular in cross section, and it is uniform in diameter except at its extremity, said lower end of the stem being pointed or tapered, as at *c*. The stem of the guide member coöperates with the knives or blades, D, D', so as to serve as guides therefor, and with this end in view said stem is provided with grooves, *c'*, in opposite sides thereof, as shown by dotted lines in Fig. 1, and by full lines in Fig. 2. The end edges of blades or knives D, D', are fitted slidably in the grooves *c'*, of stem, C', the length of the stem directing the travel of the knives attached to the cutter head.

Secured rigidly to the upper part of frame, A, is a housing or casing composed of members, E, E', as shown in Figs. 1 and 3. The part, E, of the casing is secured rigidly to the frame so as to form a unitary part thereof, but it is preferred to make the part, E', separate from part, E. One part of the casing is provided with an upstanding post, *e*, to which is connected a suspension cable or rope, F, adapted to be attached to overhead means for supporting the splitting device. One form of the overhead supporting means consists of a counterbalance of the character shown in my prior application filed September 26, 1910, Serial Number 583,736, but obviously the means for supporting the splitting device may be modified as desired.

As shown, member E' is provided with a shaft bearing, *g*, and with the bearing sleeve, *g'*. In the shaft bearing is mounted a short shaft, G, see Fig. 4, which is provided with a driving member, H, said driving member comprising a beveled gear, *h*, and a crank disk, *h'*. The gear and crank disk are shown as consisting of separate parts attached rigidly together, but it is obvious that the disk and gear may be made in one piece. The gear meshes with a beveled pinion, *i*, attached to the lower end of a driving shaft, I, and the latter extending lengthwise through bearing sleeve, *g'*, whereby the shaft, I, is adapted to impart rotary motion to the driving member, H. Shaft, I, may be driven by any suitable means, such as an electric motor, a pneumatic motor, or otherwise, as most desired or convenient. The crank disk of the driving member is provided with a wrist or crank pin, *j*, to which is attached the upper part of a link, J. Said link extends downwardly from the driving member, H, to the cutter head, the lower part of the link being slotted or bifurcated to produce members, *j'*, which straddle the cutter head and are connected pivotally thereto by a pin or bolt, *k*.

The operation of the device is as follows: The frame and its contained parts are suspended at its proper height above the floor

by cable, F. Shaft, I, is rotated by suitable power connections, or a motor, and this shaft rotates member, H, for imparting reciprocating motion to pitman, J, cross head, B, and knives or blades, D, D', on said cross head. The cutter head and the knives are guided by the frame and the guide bar, said cutter head and the knives reciprocating freely with respect to the frame and the stem of said guide bar. When the carcass is to be split the tail portion of the spinal column is first split open by a cleaver or other device in the hands of the workmen, and the carcass is then moved into such a position that my new device will be elevated above the suspended carcass. The operator inserts the guide stem, C', into the spinal cord cavity of the carcass and said device is then lowered for the knives or blades to operate upon the vertebrae of the column. The cutter head and the blades are reciprocated quite rapidly so that the knives will act efficiently in severing the spinal column, the entire device being lowered as the work of cutting the column progresses. The operator is not required to adjust the device centrally with respect to the spinal column, for the reason that stem C', of the guide bearing acts to automatically determine the position of said device with reference to the column. The carcass may be easily and quickly split for substantially its entire length by my device in the hands of an unskilled workman, it being necessary only to position the splitting device within the spinal column and to lower said splitting device within said column as it is severed by the operation of the cutting mechanism. The handles on the upper and lower parts of the handle member provide convenient means for the operator to grasp the implement when it is engaged in the act of cutting the upper part as well as the lower part of the carcass.

It will be observed that the device is light and compact in construction, that it comprises a comparatively small number of parts, that the driving mechanism is housed or incased in a manner to preclude it from coming into contact with the carcass, and that the handle is so positioned on the device as to minimize the liability of injury to the operator during the cutting operation. The cutter head and the knives are retained in position against lateral displacement by the guides on the frame and by the guiding bar. The knives or blades act with a draw or shear cut upon the vertebrae of the spinal column thereby increasing the efficiency of the operation.

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

1. In a carcass splitting machine, a frame, a cutter head slidable in the frame, a guide

stem depending from the frame, and a plurality of separate blades attached to the cutter head, said blades having sliding engagement with the exterior surface of that part of said guide stem which depends below the frame.

2. In a carcass splitting machine, a frame, a cutter head slidable in the frame, a guide stem depending from the frame, said guide stem being provided in its external surface with a plurality of grooves, and separate blades fastened to the cutter head, the adjacent end edges of said blades being slidably fitted in said grooves of the guide stem.

3. In a carcass splitting machine, a frame, a cutter head slidable in the frame, a guide stem depending from the frame, and two blades separate from each other and secured to the cutter head, the adjacent end edges of said blades having sliding engagement with that part of the guide stem which depends from the frame, and the cutting edges of said blades being inclined in opposite directions to each other.

4. In a device of the class described, a frame, a guide bar connected therewith, said guide bar being provided with a substantially cylindrical stem which depends from the frame, a cutter head having slidable engagement with the guide bar and with the frame, and a plurality of blades attached to the cutter head, the adjacent end edges of said blades having sliding engagement with that part of the stem which depends from the frame.

5. A carcass splitting machine embodying a frame provided with a cutter head guide way, a cutter head having sliding engagement with the guide way, said frame being provided with a member extending beyond that part of the frame in which the cutter head slides, said member being adapted to be grasped by hand, a guide stem depending from the frame, and a plurality of separate blades attached to the cutter head, the adjacent end edges of said blades having sliding

engagement with that part of the guide stem which depends from the frame.

6. In a device of the class described, a frame, a guide bar attached thereto, a cutter head slidably fitted in the frame and upon the guide bar, said guide bar being positioned intermediate the ends of the cutter head, and a knife attached to the cutter head.

7. In a device of the class described, a frame provided with guiding means, a guide bar attached to the frame intermediate the ends thereof, said guide bar being provided with guiding means, a cutter head slidably fitted in the guiding means of the frame and slidably fitted, also, to the guide bar, and cutters attached to said cutter head and slidably fitted to the guiding means of the guide bar.

8. In a device of the class described, a frame, a cutter head fitted slidably thereto, a guide bar attached to the frame and co-operating with a cutter head, said guide bar being provided with a substantially cylindrical stem having guide means on its respective sides, knives attached to the cutter head and coöperating with the guiding means of said cylindrical stem, and means for imparting reciprocating motion to the cutter head.

9. In a device of the class described, a frame, provided with an upwardly extending housing, means for suspending said frame, a cutter head fitted slidably in the frame, a knife attached to the cutter head, a driving member positioned within the housing of the frame, a link pivoted to the cutter head and to the driving member, and means for rotating the driving member.

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

AUGUST KARHAN.

Witnesses:

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J. F. MOTHERSHEAD.