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C. F. JONES.

MEAT CUTTER AND MEAT CUTTING MECHANISM.

No. 570,222. Patented Oct. 27, 1896.

Fig. 1.

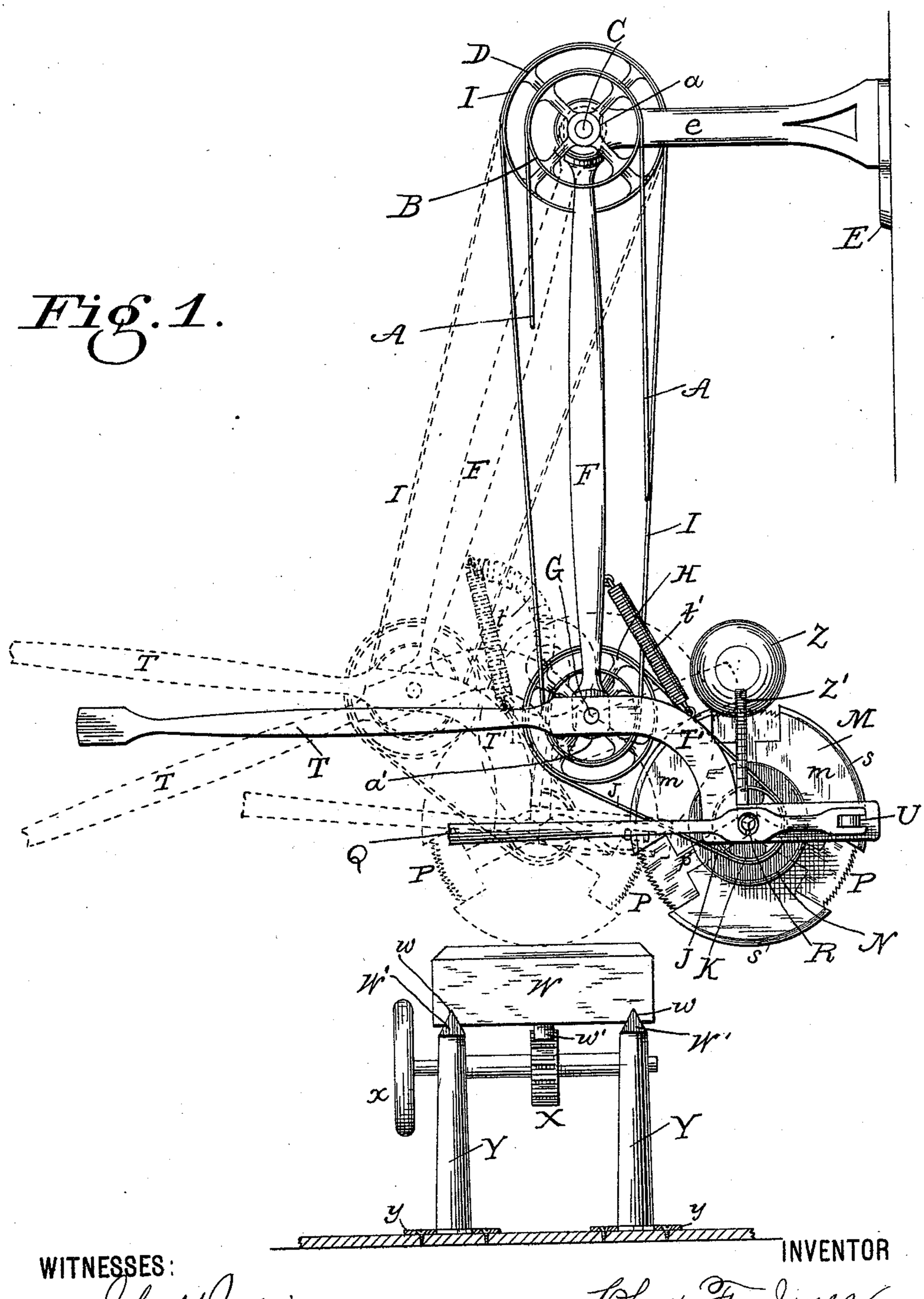

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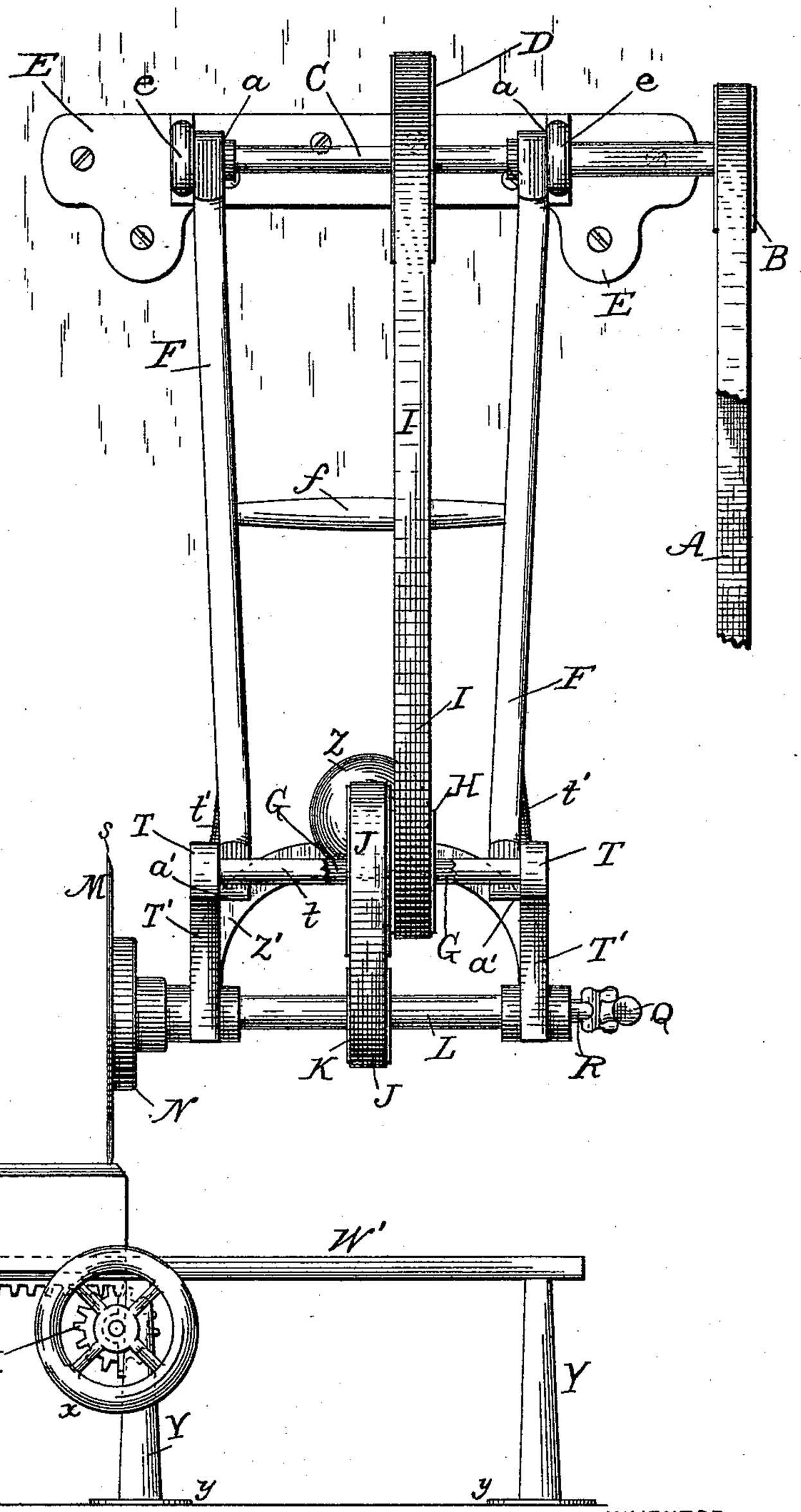
Fig. 2.



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MEAT CUTTER AND MEAT CUTTING MECHANISM.

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Fig. 3.

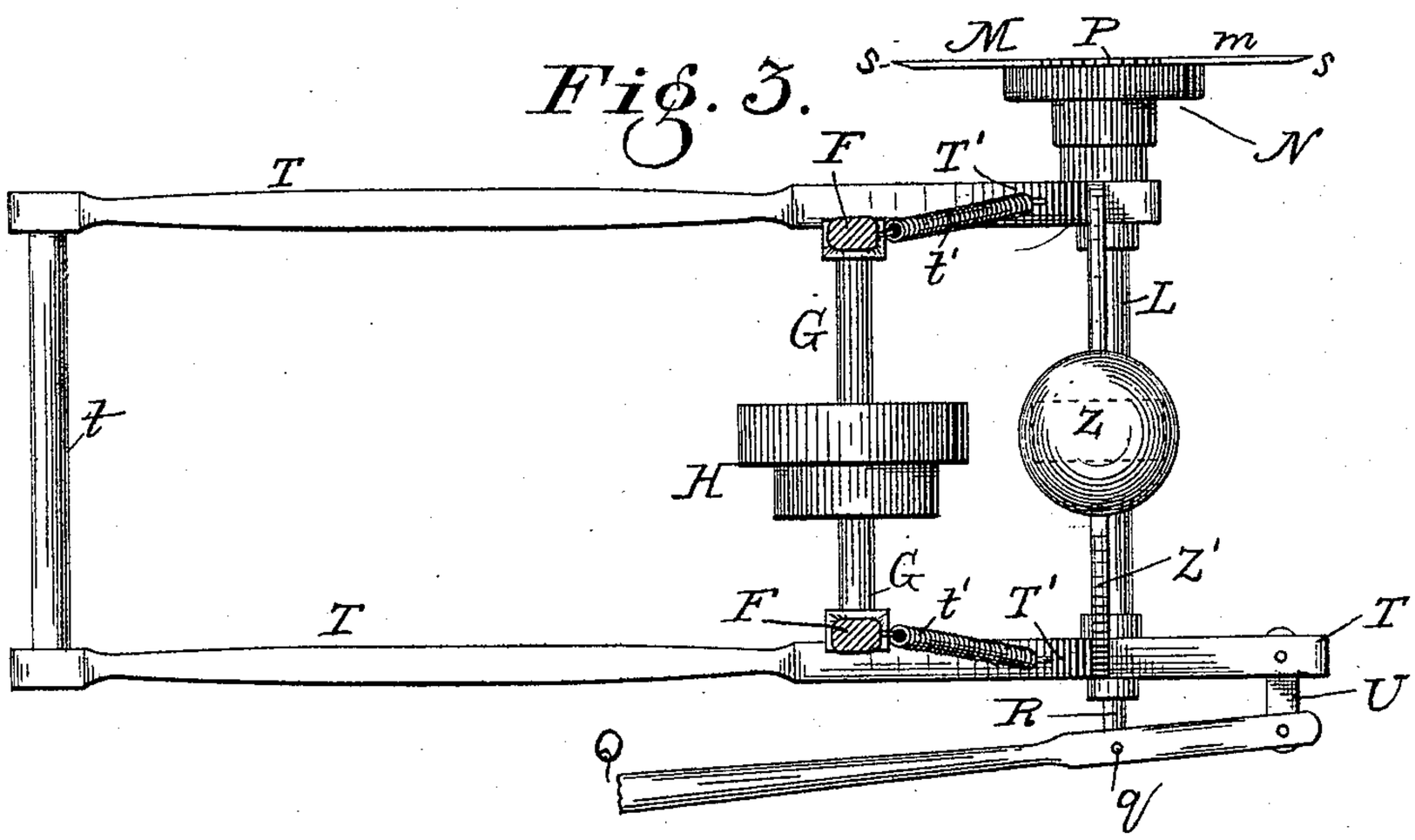

Fig. 4.

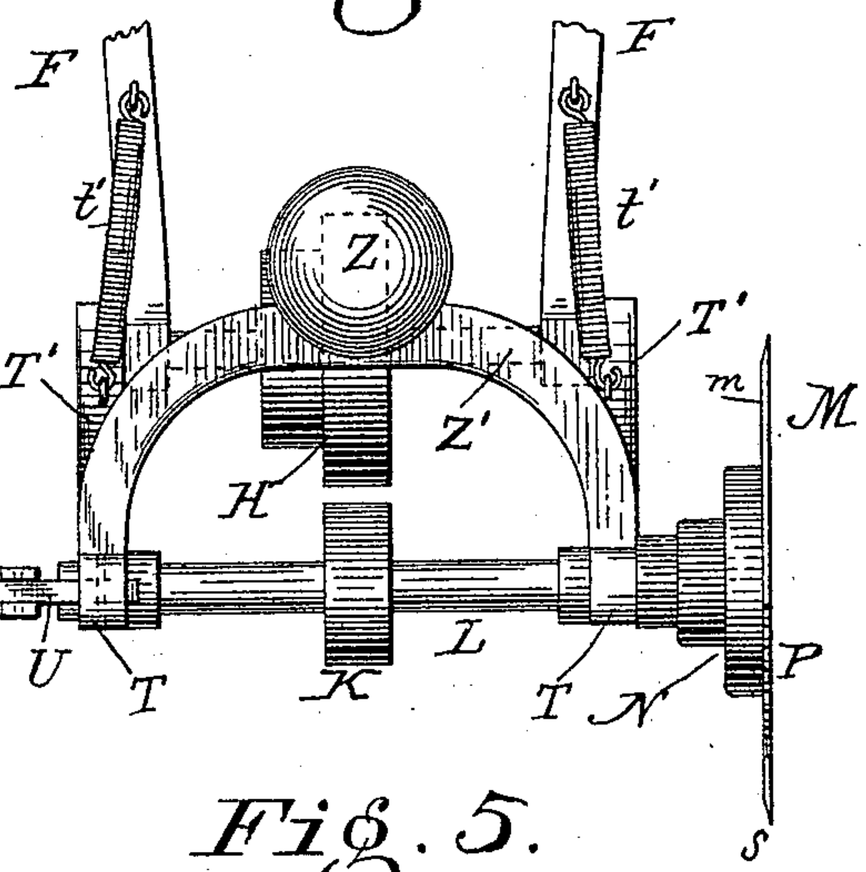

Fig. 5.

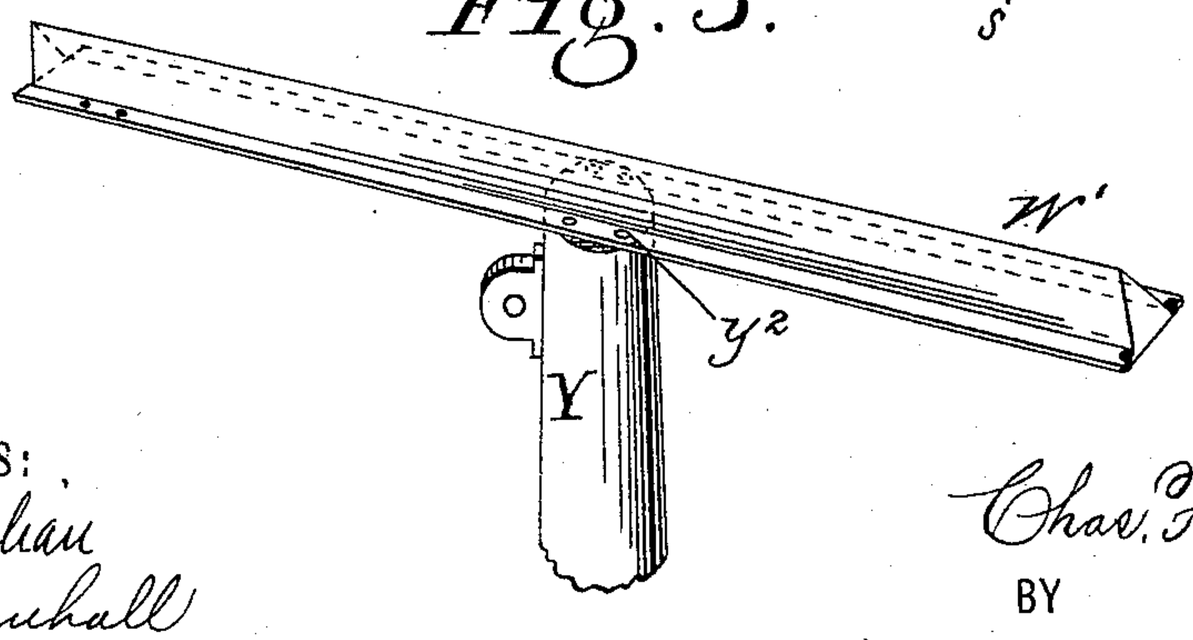

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Fig. 6.

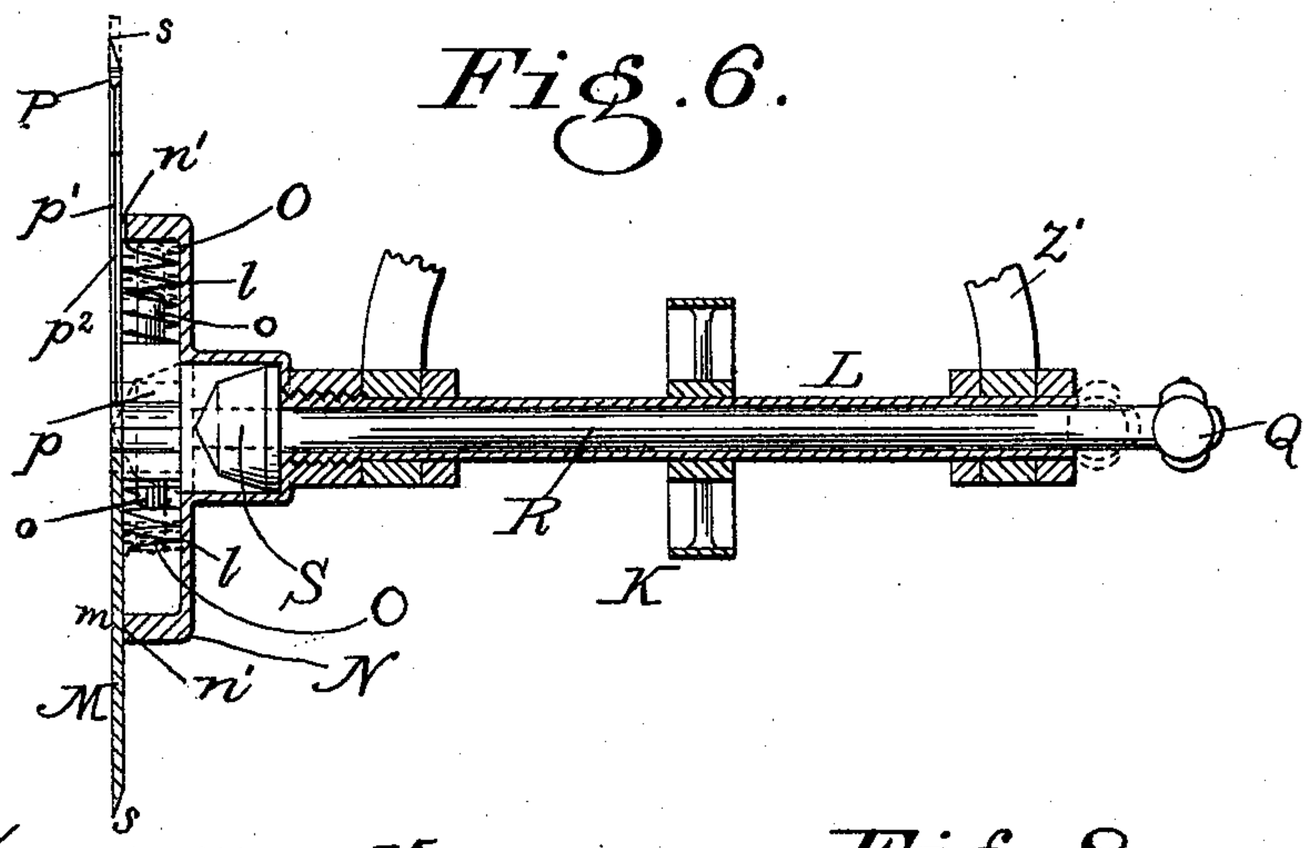


Fig. 7.

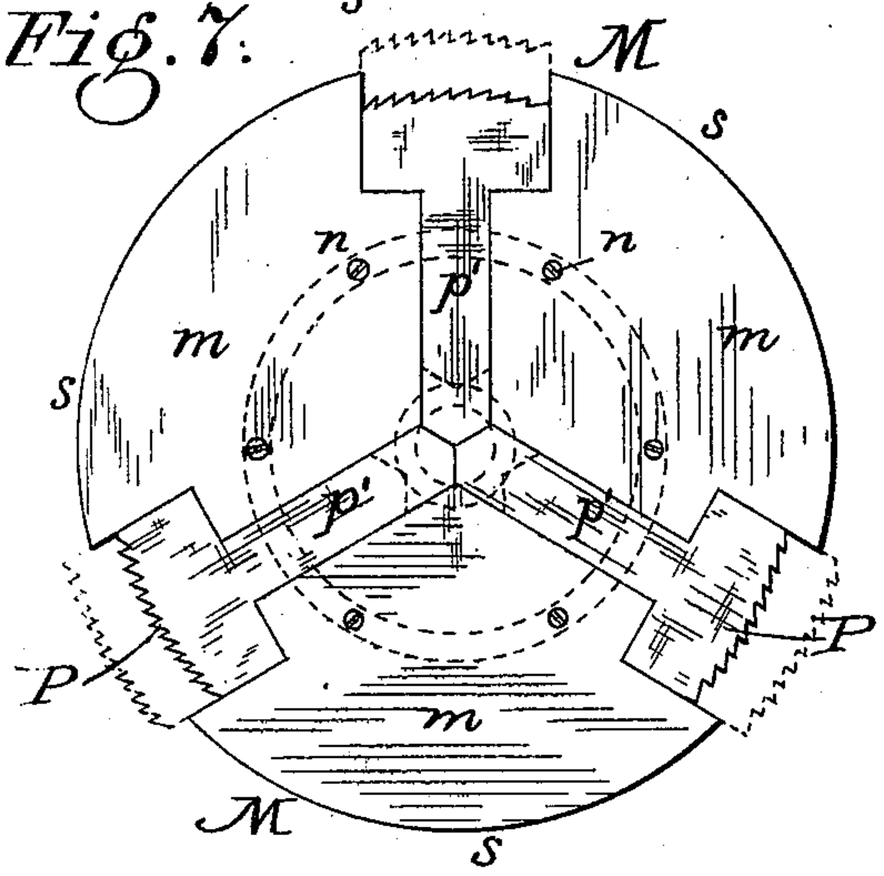


Fig. 8.

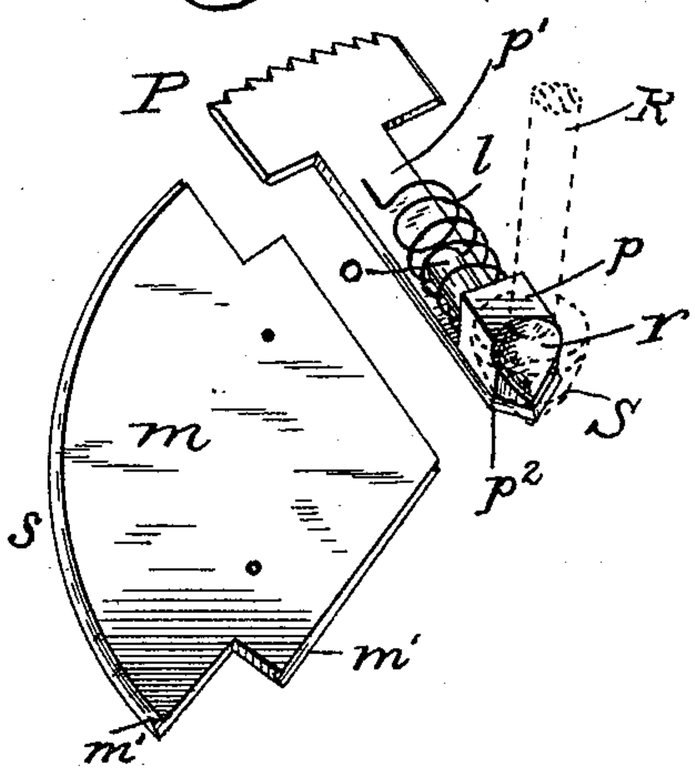
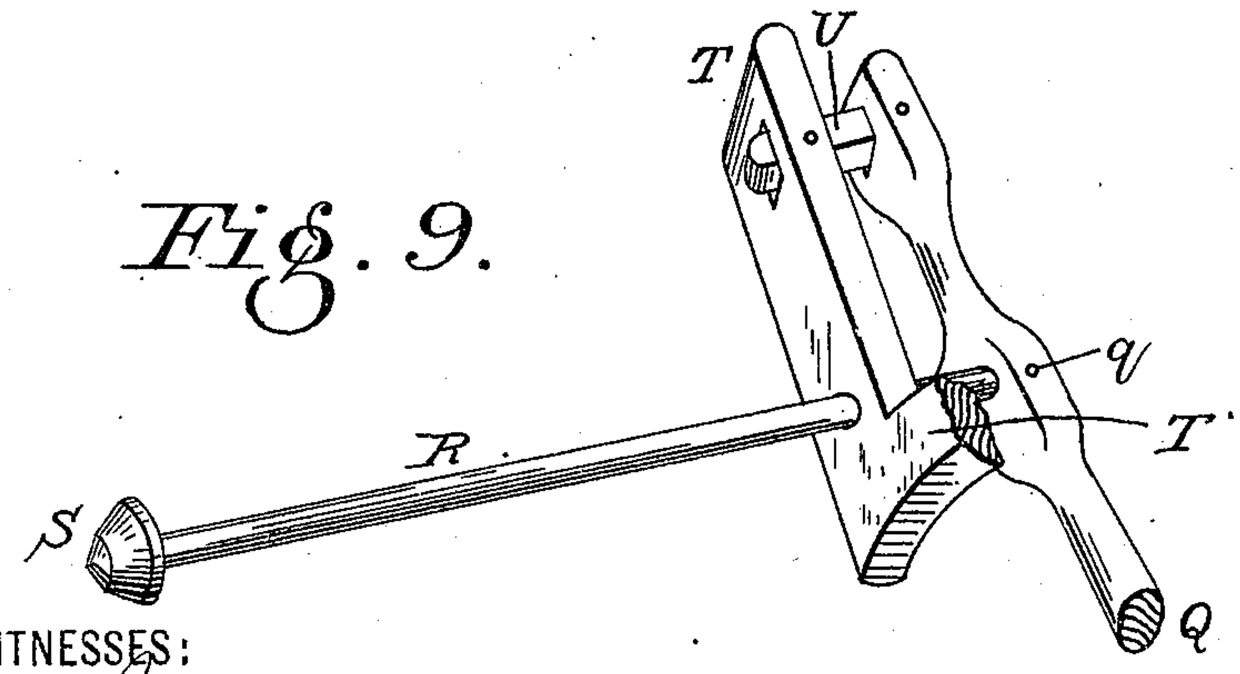


Fig. 9.



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UNITED STATES PATENT OFFICE.

CHARLES FRANKLIN JONES, OF TROY, OHIO.

MEAT-CUTTER AND MEAT-CUTTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 570,222, dated October 27, 1896.

Application filed December 16, 1895. Serial No. 572,303. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FRANKLIN JONES, a citizen of the United States, residing at Troy, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Meat-Cutters and Meat-Cutting Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to meat-cutters and meat-cutting machines; and it consists in the peculiar construction and novel combination of parts, as hereinafter fully described, and pointed out in the claims.

The objects of my invention are to obviate the laborious and tedious process of cutting meat, especially steaks, by hand, to permit of the cutting of a steak of a more regular shape and uniform thickness, to save in the number of hands now necessarily employed, also to save in the cost of knives, saws, and meat-blocks, and in combining a saw and knife together in one device.

My meat-cutting machine is especially adapted to be used in butcher-shops, slaughter-houses, and, in fact, all places where meat is handled in quantity.

In the accompanying drawings, illustrating my invention, and in which similar letters of reference indicate like parts in the several views, Figure 1 is a side view of my meat-cutting machine with meat-block in position and showing in dotted lines its various movements when in operation. Fig. 2 is a front elevation of same. Fig. 3 is a plan view, partly in section, so as to show lower portion thereof with belting and meat-block removed; and Fig. 4 is an end view thereof. Fig. 5 is an enlarged perspective view of a modification of section of rail and standard which support meat-block. Fig. 6 is an enlarged sectional view of circular cutter-head, showing a saw and knife, disk, hollow mandrel, and plunger for operating same. Fig. 7 is an enlarged plan view of circular cutter-head, showing in solid and dotted lines the location and different positions of the saws. Fig. 8 is an enlarged perspective view of under side of saw and knife. Fig. 9 is an enlarged perspective view of the plunger and handle for operating the same.

A is a belt which is connected to an electric motor or other means of transmitting power, and at its other end passes over the pulley B, which revolves a shaft C. Said shaft carries and revolves the pulley D, and is supported and held in position by the arms or other suitable bearings *e e* of the supporting-bracket E, which latter is screwed or otherwise fastened to the wall or partition of the shop, store, or building. Said arms or bearings *e e* project far enough and at right angles to the bracket E to allow of a free oscillating or swinging movement of the entire machine which they support.

F F are two swinging supporting arms or hangers provided intermediately of their length with a strengthening and securing brace *f*. Said arms or hangers F F are loosely journaled or supported at their upper ends to said shaft C in small bearings at *a a*, and at their lower ends loosely journaled to a shaft G at *a' a'*, said shaft G being supported and held in position by the side pieces or arms T T, the latter connected at their forward or front ends by a cross-bar or handle *t*, by which the machine is guided.

The shaft G has attached at or about its center a double or cone pulley H, around the smaller wheel of which passes the belt I, which connects said cone-pulley H with the upper pulley D, and through which means power is transmitted to the lower and main portion of the machine. The larger wheel of cone-pulley H carries a belt J, which passes over a small pulley K, rigidly secured to the hollow mandrel L and adapted to revolve the same.

The hollow mandrel L carries at one end the circular cutter M, said circular cutter being provided, as shown in Figs. 6, 7, and 8, with a number of segmental knives *m*, rigidly secured to the flange *n'* of the disk N by small countersunk screws *n*.

Within the space or chamber O of said cutter (attached, as above described, to said flange *n'*) are coiled springs *l*, which surround the stems *o* and rest against the shoulders of the lugs *p* carried by or forming a part of

the arms or shanks p' of the segmental saws P, so that said saws P are forced out beyond the periphery of cutting edges s (see Figs. 6 and 7) of each of the knives m of the cutter M, by reason of the operator pressing inward the hand-lever Q, which is connected through the medium of a link U to an extended portion of one of the arms T, said hand-lever Q being pivotally attached to the plunger-stem R at q. When the plunger is moved forward, its head S is caused to enter the concaved recess r of each of said lugs p, thus throwing or forcing out the arms p' by reason of their angularly-beveled or V-shaped edges p^2 sliding forward through corresponding V or angular shaped grooves m' of the knives m, and as the power communicated through pulleys and belting revolves the hollow mandrel the cutter-head attached thereto and carrying the saws is rapidly revolved, and the bone is quickly and smoothly sawed or cut, and by the operator now pressing the hand-lever Q in the opposite direction the plunger-stem R, together with plunger-head S, recedes from the concaved recess r of each of the lugs p, and tension being withdrawn from each of their springs l by their action the saws P, by means of their angularly-beveled edges p^2, slide along the corresponding angular grooves m' of knives m until they meet together in their proper positions in center of cutter M, (see Fig. 7,) and when in this their normal position are removed far enough in and back of the periphery of the cutting edges s, which are thus allowed to continue the operation of cutting the steak or piece of meat.

When it is desired to cut or slice a steak or piece of meat, the same is placed upon the meat-block W, which is formed with V-shaped grooves w in its under side, so as to move along the V-shaped rails W', the latter being supported by the standards Y, provided with the annular base y, screwed to the floor, and by means of the teeth of rack w', located in center of under side of meat-block, engaging with the teeth of pinion X. When the hand-wheel x on end of shaft on which said pinion X is attached is turned until the meat-block with meat is brought in proper position in front of cutter M, according to the thickness of steak or piece of meat to be cut, the operator then catches hold of the cross-bar or handle t, and power being applied to the machine the circular cutter M is brought in contact with the meat at any point desired, as shown in dotted lines, Fig. 1, either by being brought straight forward or raised above or clear over the meat by means of the pivotal points a a and a' a' and the springs t' t', and the operation of sawing and cutting, as has been described above, will be obvious to all.

To properly balance the machine when hanging and offset any resistance when the knives or saws come suddenly in contact with a bone, I provide a weight Z of proper heft, connected to an arched piece Z', said arched piece Z' being attached to the curved portion T' T' of side arms T T.

I do not limit myself to any precise style or form of construction of any of the several parts of my meat-cutting machine, and although a movable meat-block, on which the meat may be run up to the cutter-head whenever it is necessary to cut another steak or piece of meat, is an essential feature and part of my invention any form of movable block may be used, but the form I have here shown I deem preferable; or the rails W', on which the block moves, may be integral with the standards Y, as shown in Figs. 1 and 2, or separate thereform and simply screwed or riveted at y^2 thereto, as shown in Fig. 5.

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

1. In a meat-cutting machine, the combination of a movable meat-block, a cutter-head comprising segmental knives and segmental saws, said segmental saws being radially adjustable, means whereby said saws may be withdrawn within the circle of the edges of said knives, or projected beyond said circle, and means for operating said meat-block and cutter-head, substantially as shown and described.

2. The combination of a circular cutter, comprising segmental knives having grooved edges, segmental saws having edges fitting in said grooves and radially adjustable, and means substantially as described, whereby said saws may be withdrawn within the circle of the edges of said knives, or at will projected beyond said circle so as to alternate as desired between the functions of cutting and sawing.

3. The combination of a hollow mandrel, a circular cutter comprising a flanged disk, knives rigidly secured to the flange of the disk, said knives having V-shaped grooves in their adjacent edges; segmental saws having V-shaped edges fitting in said grooves and radially movable therein, said saws having shanks, recessed lugs and stems; springs mounted on said stems and bearing against the inner surface of said flange; and the plunger sliding within the hollow mandrel and engaging the recesses of said lugs, substantially as set forth.

4. A machine for cutting and sawing meat, &c., comprising a hollow mandrel, a circular cutter comprising a flanged disk, knives rigidly secured to the disk and having V-shaped grooves in their adjacent edges, segmental saws having V-shaped edges fitting in said grooves and radially movable therein, said saws having shanks, lugs and stems; springs mounted on said stems and bearing against the inner surface of the flange on said disk; the plunger sliding within the hollow mandrel and engaging the recesses of the said lugs; meat-block provided with grooves and resting on rack-rails, support for said rails and block; and suitable mechanism for oper-

ating the meat-block and cutting and sawing devices, substantially as described.

5. In a meat-cutting apparatus, a combined cutting and sawing device, comprising a circular cutter having segmental knives and segmental saws, said saws being radially adjustable, and means whereby the saws are withdrawn within the circle of the edges of said knives or projected beyond said circle independently of the knives, substantially as described.

6. In a meat-cutting apparatus, a combined saw and cutter, and means whereby the saws are projected beyond the outer periphery of the cutters or withdrawn within the outer periphery of said cutters, while the said cutters remain fixed, substantially as described.

7. In a meat-cutting apparatus, a combined saw and cutter, made up of segmental portions, the saw edges being adapted to be projected beyond the periphery of the cutter-segments, and to recede within the circumference of said cutters, all substantially as shown and described.

8. In a meat-cutting apparatus, a combined saw and cutter, composed of several segmental portions each, the saw-segments each having a shank portion, a spring secured to each shank portion, and means for projecting the saw-segments beyond the periphery of the cutters or cutting-segments, substantially as shown and described.

9. A meat-cutting apparatus, comprising a swinging frame, a revolving shaft carried thereby, a sleeve carrying a head at one end thereof and having secured thereto cutters and saw-segments; means for driving said shaft and sleeve, and a plunger for forcing the said saw-segments beyond the periphery of the cutter-segments; in combination with a movable meat-block, substantially as shown and described.

10. A meat-cutting apparatus, comprising a swinging frame, a revolving shaft carried thereby, a sleeve also supported by said frame provided with a head to which are secured segmental cutters, and saw-segments, means for driving said shaft and sleeve, a plunger for forcing the saw-segments beyond the periphery of the cutting-segments, a handle for operating the plunger, and a weight for balancing said swinging frame; in combination with a movable meat-block, substantially as and for the purposes shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES FRANKLIN JONES.

Witnesses:

JAMES KNIGHT,

EDWIN J. EBY.