

(No Model.)

2 Sheets—Sheet 1.

T. W. FRANKLIN.

## STEAK PERFORATOR.

No. 376,080.

Patented Jan. 10, 1888.

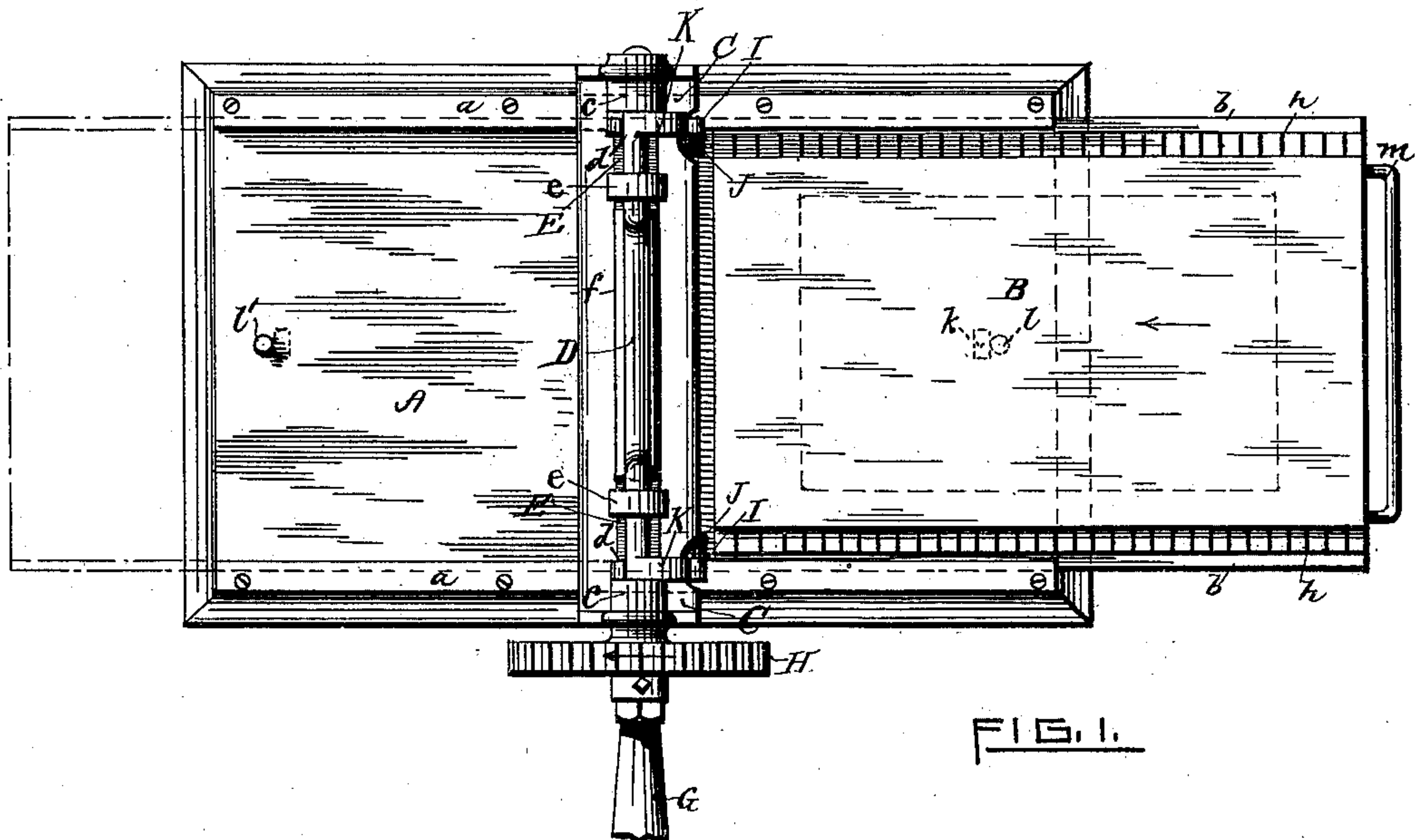
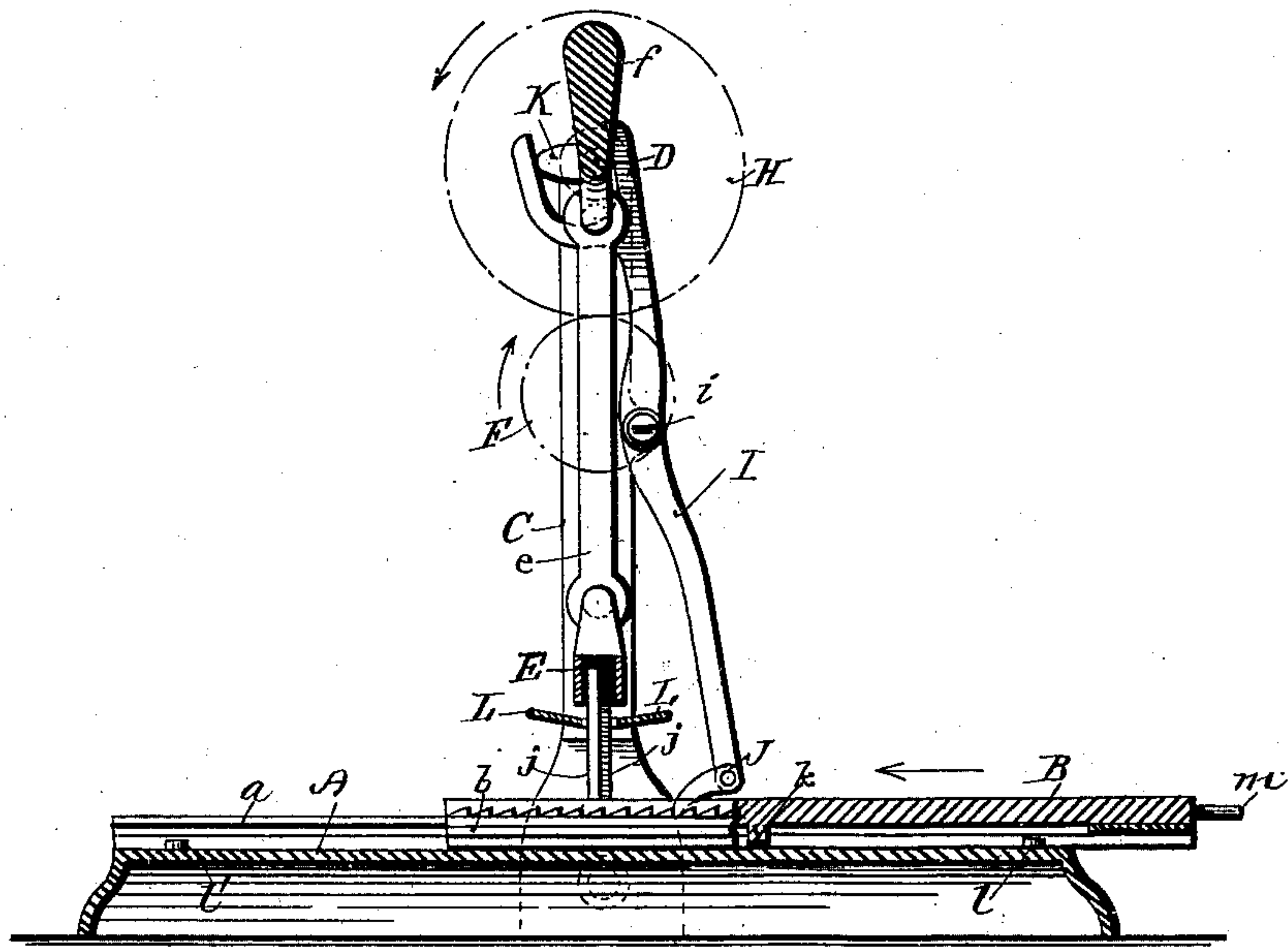


FIG. 1.



WITNESSES,

INVENTOR,

Mark A. Heath

Chas. F. Schuch

FIG. 2.

Thomas W. Franklin

per A. Scholfield  
attorney

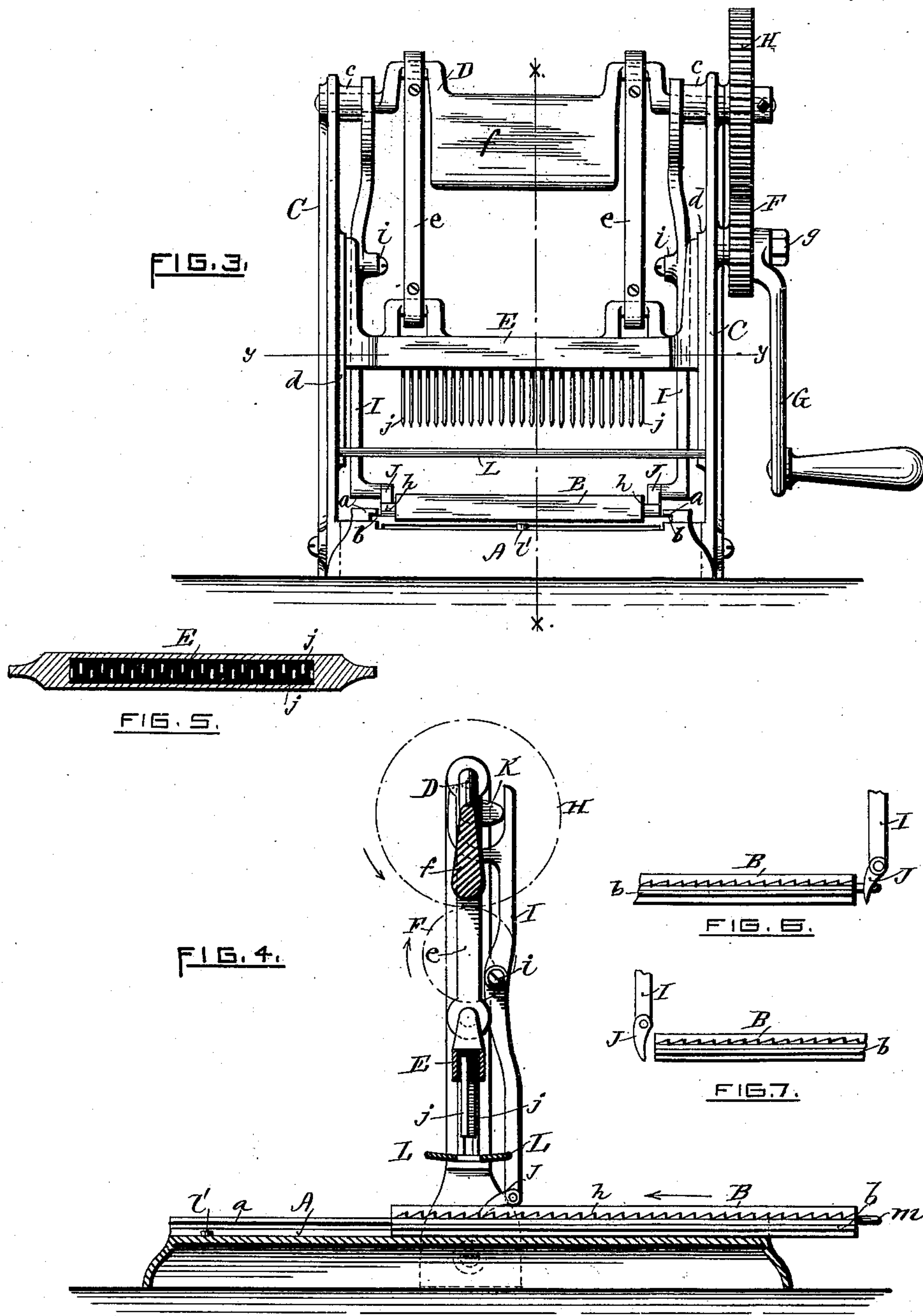
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*Mark A. Heath*  
*Chas. F. Schmelz*

INVENTOR.

*Thomas W. Franklin*  
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*attorney*



# UNITED STATES PATENT OFFICE

THOMAS W. FRANKLIN, OF PROVIDENCE, RHODE ISLAND.

## STEAK-PERFORATOR.

SPECIFICATION forming part of Letters Patent No. 376,080, dated January 10, 1888.

Application filed March 31, 1887. Serial No. 233,223. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS W. FRANKLIN, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Steak-Perforators, of which the following is a specification.

It is well known that what is called "round beefsteak" has a superior flavor to the higher-priced and more tender sirloin-steak, and various devices have been employed to separate and crush the fibers of such round steak in order to render the same easier of mastication when cooked. The toughening of beef when subjected to the process of cooking is due to the contraction of the nerve fibers which penetrate the beef in the line of the muscles, and the ordinary process of crushing the steak does not materially affect the said fibers, thus leaving the steak subject to the nerve-contraction, as before; and in order to be able to overcome this difficulty I have invented a machine for perforating the steak by means of two or more parallel series of perforating-cutters, which are preferably interlocked with each other, the said interlocked series of cutters being made to reciprocate vertically over a horizontally-moving table, upon which the steak to be operated upon is placed and fed intermittingly under the reciprocating cutters, by means of which the nerve fibers of the beef will be severed into short lengths, and still leave the steak in a coherent slice, as before, so that while being cooked the contraction of the nerve fibers will not operate, as before, to so toughen the beef as to materially resist mastication; and my invention consists in the improved construction and arrangement of the several parts of the machine, as hereinafter fully set forth.

Figure 1 is a plan view of my improved steak-perforating machine, the sliding table being shown in its forward position for receiving the slice of steak, the rearward position being shown by broken lines. Fig. 2 is a longitudinal vertical section showing the sliding table as fed under the perforating-cutters, the said cutters being shown at their lowest position in contact with the upper surface of the sliding table, a portion of the edge of the table being shown in elevation. Fig. 3 is a rear end elevation showing the perforating-cutters at

their highest point of elevation. Fig. 4 is a central vertical section taken in the line *xx* of Fig. 3, the sliding carriage being shown in edge elevation. Fig. 5 represents a section of the cutter-head taken in the line *yy* of Fig. 3, showing the interlocking arrangement of the duplicate series of cutters. Fig. 6 is a detail view showing the pendent position of the ratchet-pawl when the table is at its extreme rearward position. Fig. 7 is a detail view showing the same when the table is at its extreme forward position.

In the accompanying drawings, A is the bed of the machine, provided at its upper side with the ways *a a*, adapted to receive the projecting guides *b b* of the sliding table B. To the opposite sides of the bed A are secured the upright standards C C, provided at their upper ends with the hubs *c*, which serve to form the bearings for the crank-shaft D, and upon the inner side of the standards C are formed the ways *d*, which serve to guide the reciprocating cutter-head E in its vertical reciprocation over the table B. The cutter-head E is operatively connected to the crank-shaft D by means of the connecting-rods *e e*, and the shaft D is provided with a balance-weight, *f*. To the pinion-gear F, which turns loosely upon a stud, *g*, secured to the side of one of the standards C, is attached the hand-crank G, the pinion F being arranged to engage with the gear H, secured to the crank-shaft D, and thus by turning the crank G reciprocating motion will be imparted to the cutter-head E. The table B is provided at its opposite edges with the ratchet-teeth *h*, and to the inner side of the standards C C, at the point *i*, are pivoted the levers I I, the said levers being provided at their lower ends with the pivoted ratchet-pawls J, which are adapted to engage with the ratchet-teeth *h* of the table, the levers I being forked at their upper ends to embrace wiper-cams K, secured to the crank-shaft D, and by means of the said cams K the levers I and pivoted pawls J will be made to vibrate, and thus cause an intermittent sliding movement of the table B, through the action of the ratchet-pawls J upon the teeth *h*, in timely relation to the up-and-down movement of the cutters.

The steak-perforating cutters *j* are made in chisel form, and preferably arranged in two



parallel rows or series, which interlock with each other laterally, as shown in Fig. 5, and in order to secure the cutters to the reciprocating head E to the best advantage I chamber out the head E, as shown in the section, Fig. 2, and after setting the perforating-cutters in their parallel interlocking rows in proper position, with their ends within the said chamber, pour molten lead around their said ends to fill the chamber, thus firmly securing the cutters to the reciprocating head E in a cheap and convenient manner.

Extending from one of the standards C to the other, at each side of the rows of cutters, are placed the clearer-bars L, which serve to prevent the steak, when perforated by the cutters, from rising with the same from the table. At the under side of the table B is formed the downward projection k, as shown in section in Fig. 2 and by broken lines in Fig. 1, and upon the bed A, under the table B, are placed the two stop-pins l l', which serve to properly limit the movement of the table B in both directions, the pins l l' being so arranged relatively to the ends of the table B and the ratchet-pawls J that when the table is moved backward to the stop-pin l' the ratchet-pawls J will be freed from the ratchet-teeth of the table and drop to a pendent position from their pivots, as shown in Fig. 6, and will also be in the same pendent position when the table B has been brought to its extreme forward position, as shown in Fig. 7, and when the table has been pushed slightly forward from the position shown in Fig. 7 the ratchet-pawls will be raised from the pendent

position to the position shown in Figs. 2 and 4, and will then, upon the revolution of the crank-shaft, by means of the hand-crank, serve to feed the table intermittingly under the cutters, thus bringing the piece of steak successively under the action of the said cutters, by means of which the steak will be so perforated as to sever the nerve fibers, which by shrinking when under the process of cooking serve to toughen the steak. When the table, with the steak resting thereon, has been fed backward to the position shown in Fig. 6, the ratchet-pawls will be caused to drop to the pendent position, as therein shown. Then the table is to be brought forward to the position shown in Fig. 1 by pulling upon the wire handle m, thus bringing the ratchet-pawls to a pendent position at the rear end of the table, so that after removing the perforated steak and the placing of another piece of steak upon the table a slight backward movement will suffice to bring the table again under the cutters, with the ratchet-pawls in operative engagement with the ratchet-teeth of the table.

I claim as my invention—

In combination, the crank-shaft, the perforating-cutters connected with the crank-shaft, the wiper-cams, the levers and ratchet-pawls, the table provided with the ratchet-teeth, and the bed provided with the stops, substantially as and for the purpose specified.

THOMAS W. FRANKLIN.

Witnesses:

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