(No Model.) 3 Sheets—Sheet 1.

J. E. & H. R. STUART.

SLICER.

No. 589,514. Patented Sept. 7, 1897.

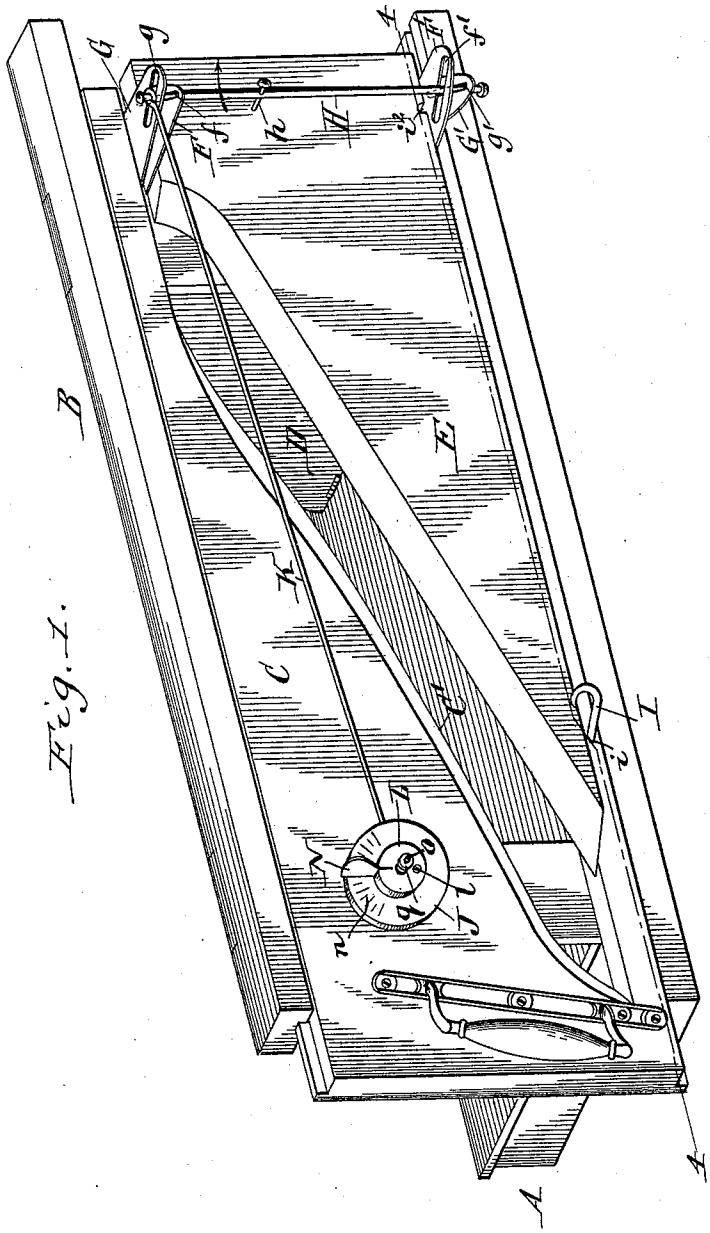


Fig. 1.

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Fig. 6.

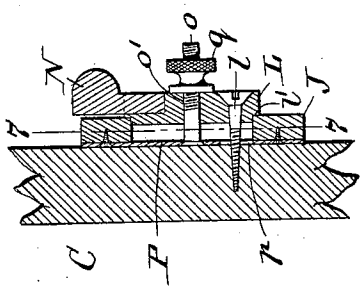


Fig. 7.

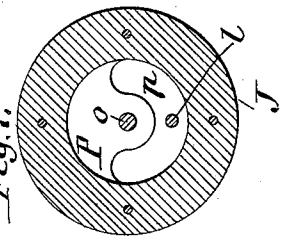


Fig. 3.

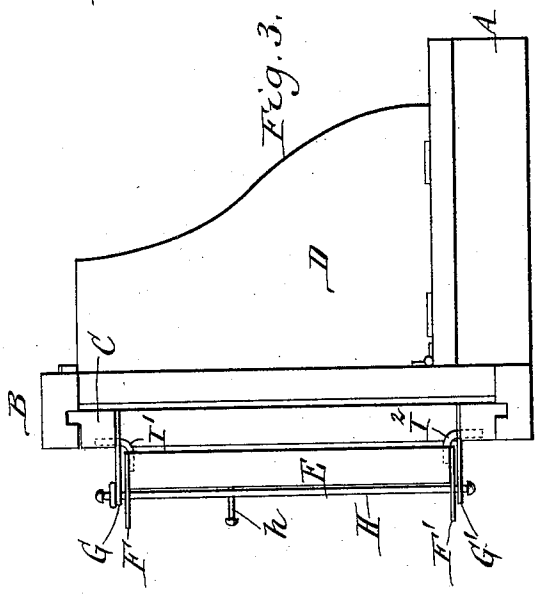


Fig. 4.

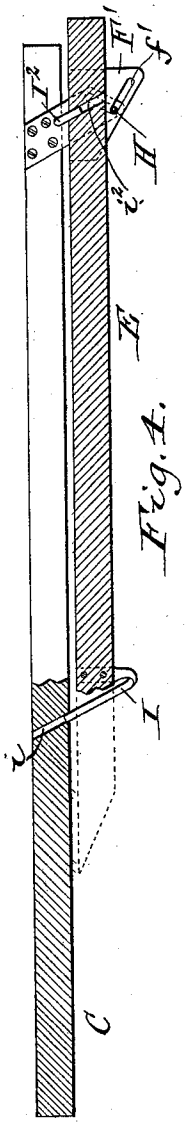


Fig. 5.

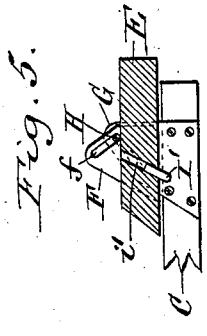
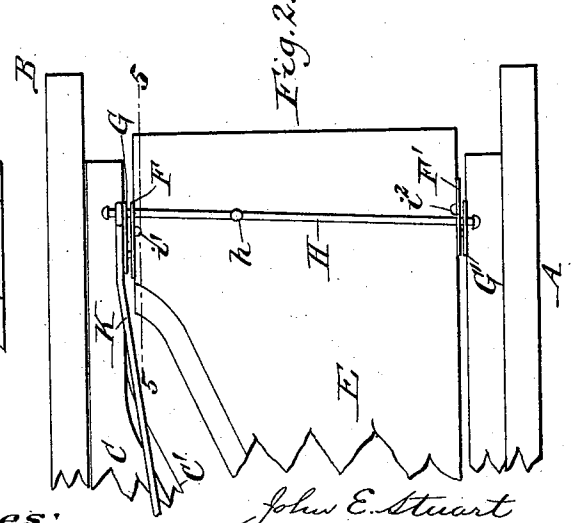


Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

J. E. & H. R. STUART.

SLICER.

No. 589,514. Patented Sept. 7, 1897.

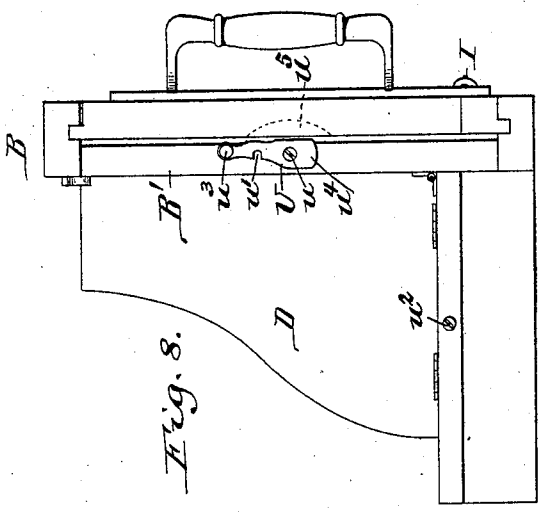


Fig. 8.

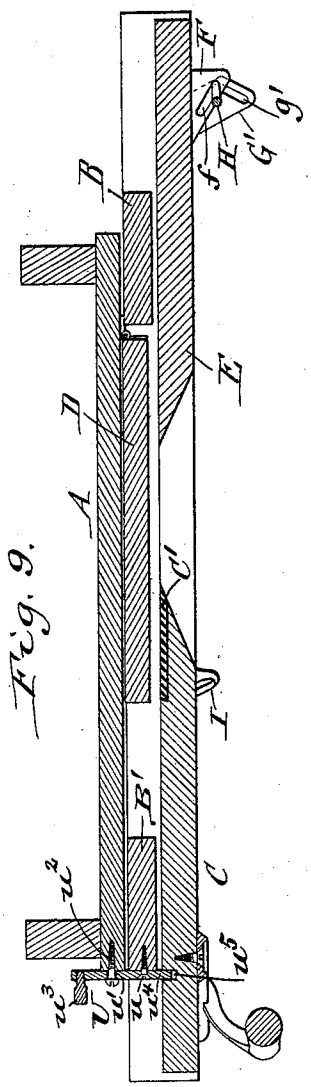


Fig. 9.

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UNITED STATES PATENT OFFICE.

JOHN E. STUART AND HARVE R. STUART, OF NEWARK, NEW YORK.

SLICER.

SPECIFICATION forming part of Letters Patent No. 589,514, dated September 7, 1897.

Application filed February 15, 1897. Serial No. 623,475. (No model.)

To all whom it may concern:

Be it known that we, JOHN E. STUART and HARVE R. STUART, citizens of the United States, residing at Newark, in the county of Wayne and State of New York, have invented new and useful Improvements in Slicers, of which the following is a specification.

This invention relates to the class of bread and vegetable slicers which comprise an upright guide-frame mounted on a base-board or table, a reciprocating slide guided in the upright frame and carrying the knife or cutter, and an adjustable gage-board for regulating the thickness of the slices to be cut, and more particularly to slicers of this kind in which the guide-frame and the head-block or gage are arranged to fold against the table when the device is not in use.

One of the objects of our invention is to improve the construction of the guide devices of the adjustable gage-board, so as to effect a uniform adjustment thereof and firmly and reliably hold the same in position.

The invention has the further object to provide an efficient adjusting device for shifting the gage-board and locking it in position and also to provide the slicer with a simple lock or catch which serves the double function of retaining the guide-frame in its folded position and locking the slide against movement in the guide-frame when not in use.

In the accompanying drawings, consisting of three sheets, Figure 1 is a perspective view of our improved slicer. Fig. 2 is a fragmentary side elevation thereof. Fig. 3 is an elevation of the front end of the slicer. Fig. 4 is a horizontal section in line 4 4, Fig. 1. Fig. 5 is a similar section in line 5 5, Fig. 2, looking upward. Fig. 6 is a fragmentary transverse vertical section, on an enlarged scale, of the adjusting device of the gage-board. Fig. 7 is a vertical longitudinal section in line 7 7, Fig. 6. Fig. 8 is an elevation of the rear end of the slicer. Fig. 9 is a horizontal section thereof, showing the parts folded.

Like letters of reference refer to like parts in the several figures.

A is the table of the slicer, upon which the article to be sliced is placed.

B is the upright frame, in which the reciprocating slide C is guided, and which is preferably hinged at its lower edge to the front edge of the table, as shown in Fig. 8, so that it can be folded down upon the table.

D is the upright transverse head-board, which forms a stop or side gage for the article to be sliced and also serves as a brace for holding the upright frame B in its normal position. In the construction shown in the drawings this head-block is hinged at its lower edge to the table A, so that it can be folded down upon said board lengthwise of the latter.

The slide is provided at its upper and lower edges with the usual tenons which engage in the longitudinal ways of the guide-frame B, and with the customary triangular opening, to the upper edge of which the oblique knife-blade or cutter C′ is secured.

E is the adjustable gage-board, carried by the slide and arranged to move laterally in the opening thereof, the gage-board being approximately triangular in form and somewhat smaller than the opening of the slide to afford the necessary clearance for the sliced material. The gage-board is provided at its upper and lower edges, near its front end, with fixed outwardly-projecting guide plates or brackets F F′, having oblique slots or guides *f f′*, respectively, and the slide is provided on its adjacent portions with similar fixed guide plates or brackets G G′, arranged parallel with the guide-brackets F F′ of the gage-board and having oblique slots or guides *g g′*, respectively. The slots of the slide-brackets G G′ trend in the opposite direction from the slots of the gage-board brackets F F′, so as to intersect the same, as shown in Fig. 1. The oblique slots of the upper slide-bracket G and the lower gage-board bracket F′ are parallel and trend forwardly and outwardly, and the slots of the upper gage-board bracket F and the lower slide-bracket G′ are also parallel with each other, but trend rearwardly and outwardly, as shown in Fig. 1. In other words, the slots of the upper pair of guide-brackets G F trend in the reverse direction from the slots of the lower pair of guide-brackets F′ G′.

H is an upright shifting lever which is mounted between its ends upon a horizontal pivot-pin *h*, projecting from the outer side of the gage-board and which engages with its upper arm in the intersecting slots of the upper pair of guide-brackets F G and with its lower arm in the intersecting slots of the lower pair of guide-brackets F′ G′. This lever not only rocks on its pivot, but is also

capable of sliding thereon toward and from the gage-board, the pivot being made of sufficient length to permit the requisite sliding movement of the lever. By this arrangement of the guides and the shifting lever when the upper arm of the lever is moved forwardly, as indicated by the arrow in Fig. 1, the lever is caused to slide outwardly on its pivot by the oblique slot of the upper slide-bracket G, and during this forward and outward movement said arm bears against the front wall of the intersecting slot of the upper gage-board bracket F, compelling the gage-board to move in the same direction. Upon swinging the upper arm of the lever backwardly the lever is caused to slide inwardly on its pivot by the upper slide-bracket G, and during this backward and inward movement said lever-arm bears against the rear wall of the intersecting slot of the upper gage-board bracket, thereby shifting the gage-board backwardly and inwardly. The lower arm of the shifting lever moves in the opposite direction from its upper arm, and by the reverse arrangement of the slots of the lower pair of guide-brackets F' G', hereinbefore described, said arm is caused to shift the lower portion of the gage-board laterally or inwardly and outwardly in the same measure as the upper lever-arm and guide-brackets shift the upper portion of the board, thereby adjusting the latter uniformly throughout its height.

Owing to the crossed arrangement of the slots of each pair of guide-brackets the arms of the lever are firmly locked at the intersection of the slots in any position to which the gage-board may be adjusted, rendering the board reliable in action and insuring the cutting of the material into slices of uniform thickness.

As the lever-pivot *h* advances and retreats with the gage-board in adjusting the latter the effective stroke of the lever-arms is somewhat reduced, the stroke of the lower arm being affected to a greater extent than that of the upper arm, because it moves in an opposite direction from the pivot. In order to equalize this differential movement of the arms and effect a uniform lateral adjustment of the gage-board, the lever is fulcrumed above its center, say at a point about one-third of its length from its upper end, as shown in Fig. 1.

In addition to the guide-brackets F F' G G' auxiliary oblique guides I I' I^2 are employed. The guide I is arranged near the lower rear end of the gage-board and consists, preferably, of a horizontal rod secured to the lower edge of the gage-board and arranged below the latter and sliding in an oblique opening *i*, formed in the adjacent portion of the slide C, as shown in Figs. 1 and 4. The other auxiliary guides I' I^2 are arranged at the upper and lower edges of the gage-board, near the front end thereof, and each of the same preferably consists of a pin driven vertically into the edge of the slide and having its projecting portion bent outwardly and obliquely parallel with the auxiliary rear guide I. These front guides engage in oblique grooves or recesses i' i^2, formed in the opposing edges of the gage-board, as shown in Figs. 4 and 5. These auxiliary guides steady the gage-board and determine the angle of its oblique movement.

Any suitable means may be employed for actuating the shifting lever H and retaining the same in position after adjusting the gage-board. We prefer, however, to use the adjusting and clamping device shown in the drawings. As shown in Figs. 1, 6, and 7, this device consists of a laterally-movable ring or dial J, arranged on the face of the slide C, near its rear end, and a rod K, connecting the projecting upper end of the shifting lever with the front edge of said ring. This ring is shifted and supported by means of an eccentric L, which is pivoted upon a horizontal screw or pin *l*, projecting from the face of the slide, and which is loosely fitted in the opening *m* of the ring J, so that upon swinging the eccentric upon its pivot in either direction the ring or dial is shifted laterally or lengthwise of the slide. The rear edge of the eccentric is reduced or recessed, as shown in Fig. 6, so as to partially enter the opening of the ring and form an annular shoulder *l'*, which bears against the face of the ring.

N is a knob or thumb-piece which is secured to the eccentric for manipulating it, and which is preferably arranged radially and combined with a graduated segmental scale *n*, arranged on the face of the ring or dial, the knob thus serving the additional function of a pointer. This scale is graduated relatively to the throw of the shifting lever H, so that the gage-board may be readily set for cutting slices of a predetermined thickness by simply bringing the pointer in line with the corresponding graduation of the scale.

o is the clamping bolt or screw, which passes through an axial opening *o'*, formed in the eccentric L, and through a similar opening formed centrally in a plate or disk P, secured to the rear side of the dial J, in which disk the head of the bolt is confined against outward movement. The back plate P is provided with a slot *p* for the passage of the eccentric-pivot *l*, as shown in Fig. 6, which slot is curved concentric with the axis of the dial, as shown in Fig. 7.

q is a clamping or thumb nut applied to the projecting outer portion of the screw *o* and bearing against the eccentric L, whereby the eccentric is clamped against the dial, and the latter and the shifting-lever connected therewith are locked in position.

When it is desired to adjust the gage-board, the thumb-nut *q* is loosened and the dial J is then shifted by turning the eccentric L in

the proper direction by means of its thumb-piece, and after effecting the adjustment the thumb-nut is again tightened.

The connecting-rod K is preferably rigidly secured to the dial J, the elasticity of the rod permitting it to spring sufficiently to follow the outward or lateral movement of the shifting lever H.

U is a hook or latch whereby the upright frame B is retained in position when folded against the table. As shown in Figs. 8 and 9, this latch consists of a vertically-swinging bar pivoted at u to the rear standard B′ of the upright guide-frame B and provided on the front side of its pivot with a notch u', which interlocks with a pin u^2, projecting horizontally from the rear edge of the table A, and with a projection u^3 for manipulating it. The latch is provided on the rear side of its pivot with an extension u^4, which enters a transverse slot or recess u^5, formed in the rear side of the slide, when the latch is interlocked with the pin of the table, as shown in Fig. 9, the recess of the slide being arranged to register with the extension of the latch when the ends of the slide are flush with the ends of the upright guide-frame. When the latch is swung up for releasing the upright frame, the extension of the latch is at the same time withdrawn from the recess of the slide, releasing the latter. By the use of this duplex latch the upright guide-frame is retained in its folded position and the slide is held against displacement by a single locking device.

We claim as our invention—

1. The combination with the knife-slide and its guide-frame, of a laterally-adjustable gage-board, upper and lower pairs of oblique guides arranged on said board and the knife-slide, respectively, the guides of each pair trending in opposite directions, and a shifting lever pivoted to the gage-board and having its arms engaged with said upper and lower pairs of guides, substantially as set forth.

2. The combination with the knife-slide and its guide-frame, of a laterally-adjustable gage-board, upper and lower pairs of oblique guides arranged on said board and the knife-slide, respectively, the guides of each pair trending in opposite directions, and a shifting lever fulcrumed between its ends on a pivot carried by the gage board and capable of sliding lengthwise of said pivot and having its arms engaged with said upper and lower pairs of guides, substantially as set forth.

3. The combination with the knife-slide and its guide-frame, of a laterally-adjustable gage-board, upper and lower pairs of oblique main guides arranged on said board and the knife-slide, respectively, the guides of each pair trending in opposite directions, a shifting lever pivoted between its ends to the gage-board and having its arms engaged with said main upper and lower pairs of guides, and oblique auxiliary guides which are arranged on the knife-slide and the gage-board and which determine the direction of movement of the gage-board, substantially as set forth.

4. The combination with the knife-slide and its guide-frame, of a laterally-adjustable gage-board, a pair of upper guide-brackets arranged on the knife-slide and gage-board, respectively, and having intersecting oblique slots, a pair of lower guide-brackets arranged on the knife-slide and gage-board, respectively, and having intersecting oblique slots which trend in the reverse direction from the slots of the upper pair of guide-brackets, and a shifting lever pivoted between its ends to the gage-board and having its arms arranged in the slots of said upper and lower guide-brackets, substantially as set forth.

5. The combination with the knife-slide, its guide-frame and the gage-board, of a laterally-movable ring or dial mounted on the knife-slide and provided with a scale; an eccentric pivoted to the knife-slide and engaging with said dial and having a pointer which traverses the scale of the dial, and a connection between said dial and the gage-board, substantially as set forth.

6. The combination with the knife-slide, its guide-frame and the gage-board, of a laterally-movable ring mounted on the knife-slide, an eccentric pivoted to the knife-slide, fitted in the opening of said ring and having means for turning it, a clamping device for holding the eccentric against turning, and a connection between the ring and the gage-board, substantially as set forth.

7. The combination with the knife-slide, its guide-frame and the gage-board, of a laterally-movable ring mounted on the knife-slide, an eccentric pivoted to the knife-slide, fitted in the opening of the ring and having means for turning it, a bolt passing through the eccentric, and a clamping-nut applied to the projecting end of said bolt, substantially as set forth.

8. The combination with the table of the slicer, the knife-slide and the folding guide-frame for said slide hinged to the table, of a duplex latch carried by said guide-frame and arranged to interlock with both the table and the knife-slide in the folded position of the guide-frame, substantially as set forth.

9. The combination with the table of the slicer having a projection at its end, of a folding upright guide-frame hinged to the table, a knife-slide guided in said frame and having a locking-recess, and a duplex latch pivoted transversely to the guide-frame and having a notch adapted to interlock with the projection of the table and an extension adapted to enter the recess of the knife-slide, substantially as set forth.

Witness our hands this 4th day of February, 1897.

JOHN E. STUART.
HARVE R. STUART.

Witnesses:
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M. H. RICHMOND.