(No Model.) 2 Sheets—Sheet 1.

G. A. REINIGER & C. PETRI.

TOBACCO CUTTING MACHINE.

No. 261,763. Patented July 25, 1882.

Fig. I.

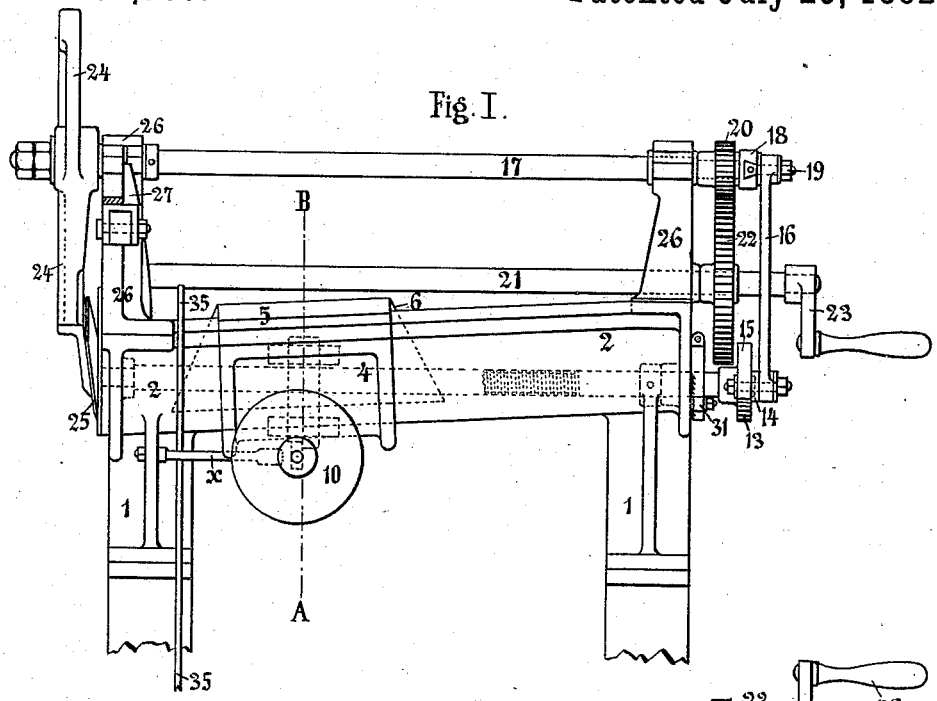


Fig. II.

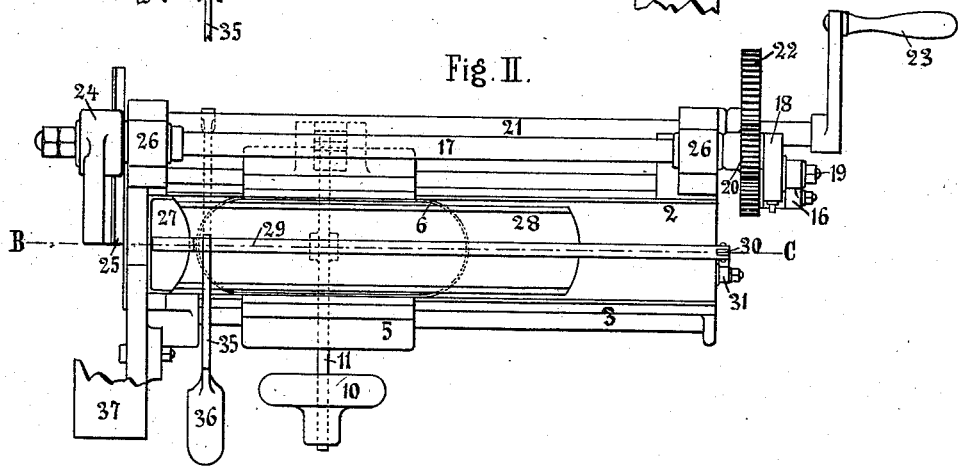
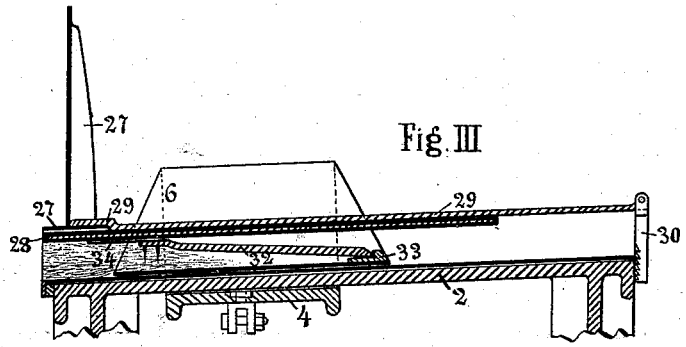


Fig. III.



Witnesses: Eduard Rettich
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Inventors: G. Albert Reiniger
Christian Petri

(No Model.) 2 Sheets—Sheet 2.

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Fig. VI.

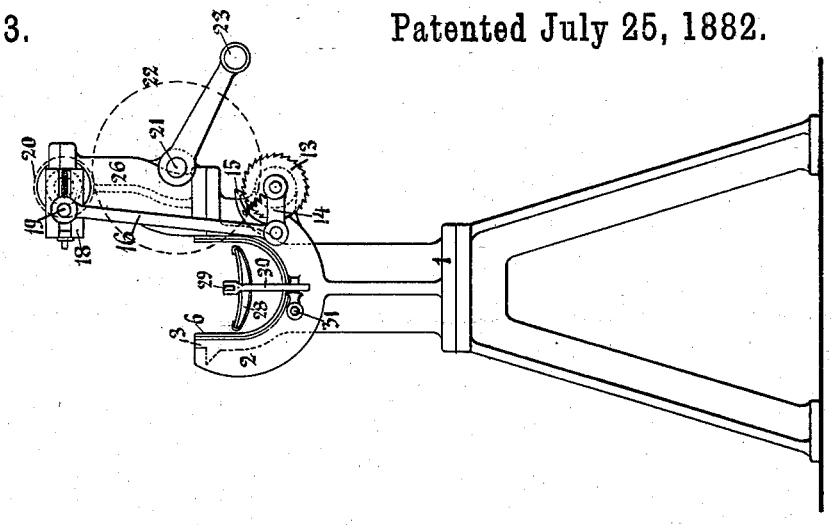


Fig. V.

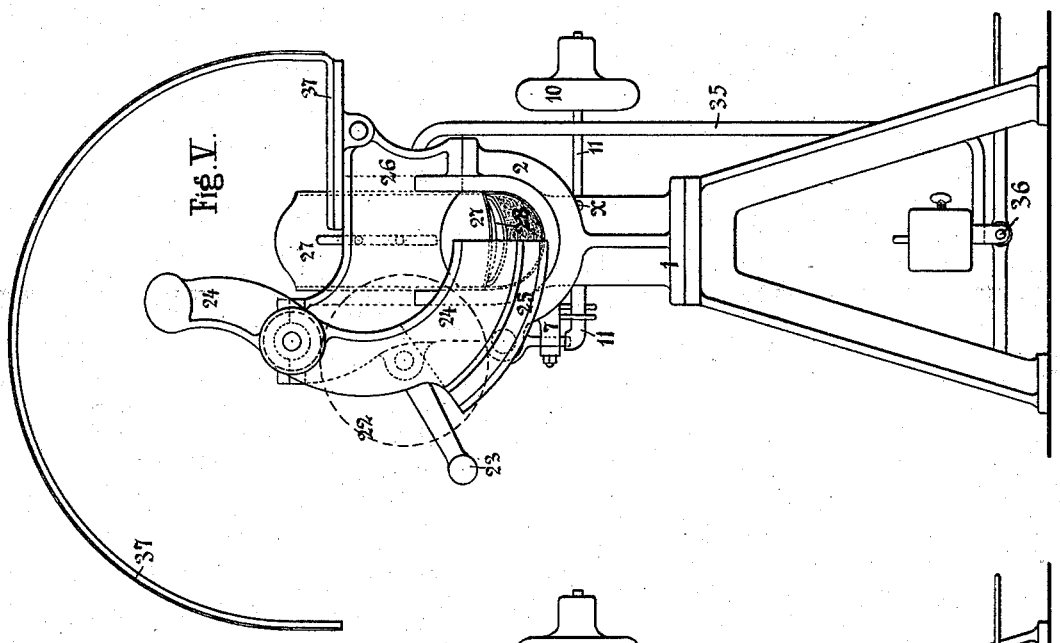
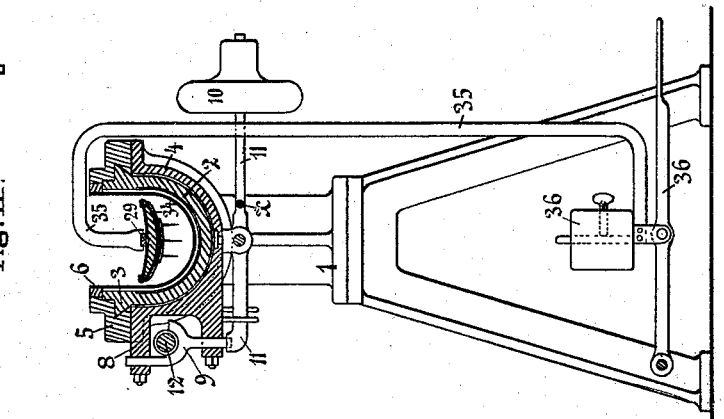


Fig. IV.



Witnesses: Eduard Rettich
Gottlieb Wilfarth

Inventors: G. Albert Reiniger
Christian Petri.

UNITED STATES PATENT OFFICE.

G. ALBERT REINIGER AND CHRISTIAN PETRI, OF STUTTGART, WÜRTEMBERG, GERMANY.

TOBACCO-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 261,763, dated July 25, 1882.

Application filed September 20, 1880. (No model.) Patented in Germany June 29, 1880, No. 11,762, and in England October 15, 1880, No. 4,209.

To all whom it may concern:

Be it known that we, GUST. ALB. REINIGER and CHRISTIAN PETRI, of Stuttgart, Würtemberg, Germany, have invented certain new and useful Improvements in Engines for Cutting Tobacco, of which the following is a specification.

This invention relates to a tobacco-cutting machine secured to me by Letters Patent in Germany, numbered 11,762, and dated June 29, 1880; and it consists in the features of construction and combination, hereinafter fully described and claimed, and illustrated in the annexed drawings, in which—

Figure I is a side view of the machine. Fig. II is a top or plan view; Fig. III, a longitudinal section; Fig. IV, a cross-section on line A B, Fig. I; Fig. V, a front end view, and Fig. VI a rear end view.

Referring to the drawings by the reference-numbers, 2 indicates a stationary iron or other metal trough or box, which is made semicircular in cross-section and mounted upon two frames or standards, 1 1, so as to incline downwardly toward the cutting end of the machine, as shown by dotted lines, Fig. I. This trough is provided with a zinc lining, and it is strengthened by suitable ribs cast on its ends. The sliding carriage, which is arranged to travel along this stationary trough, consists essentially of a frame or body, 4, which is preferably made of cast-iron and adapted to surround the outer side of the stationary trough 2 without touching the same. The carriage-body has formed along each of its two upper side edges a horizontal flange, and to these flanges are bolted the pieces 5, which have in their inner sides the V-shaped grooves, receiving similarly-shaped flanges 3 upon the upper edges of the trough 2. These grooved pieces, which constitute a portion of the carriage, slide upon the flanges of the trough, whereby the carriage will be properly guided in its movement. A further portion of the carriage consists in a strong semi-cylindrical sheet-metal trough, 6, that is secured by suitable connections at its upper edges to the grooved pieces 5, and fitted closely within the trough 2, and is arranged to slide, with the carriage, along the stationary trough.

Upon one side of the carriage-body are cast the two lateral tongues or projections 7 and 8, (see Fig. IV,) which constitute guides for the two vertical arms of a vertically-movable half-nut, 9, and alongside of the stationary trough is arranged the leading screw or spindle 12, supported in suitable bearings at the end of the said trough, the said half-nut being adapted to be raised and brought into engagement with the leading-screw, or to be lowered and disengaged therefrom. The half-nut is raised, so as to engage the leading-screw by means of a lever, 11, one end of which is adapted to bear against the lower vertical arm of the half-nut, while the remaining end of the lever is provided with an adjustable weight, 10. This lever is capable of both horizontal and vertical movements about a center-pin and swivel, (see Figs. III and IV,) which connect the same with the movable carriage.

As long as the lever 11 exerts an upward pressure against the half-nut 9 the latter will be forced into engagement with the leading-screw; but as the carriage travels, carrying the lever along with it, the lever will strike a stop, *x*, on the main frame, (see Figs. I and IV,) whereby the lever will be swung round upon its swivel-connection with the carriage and moved from under the nut, thereby allowing the nut to drop and disengage from the leading-screw. The carriage, being thus entirely freed from connection with the leading-screw, can be freely moved backward or forward on the flanged guides 3 of the stationary trough.

It will also be observed that while the lever is under the half-nut it is held in contact with the same by the weight 10, and that it can at any time be disengaged from the lower arm of said nut by raising its weighted end.

The leading-screw 12 has a ratchet-wheel, 13, rigid on one of its ends, and it is driven by means of a pawl, 15, engaging the ratchet-wheel. This pawl is hung upon the pivot connecting the connecting-rod 16 with the lever 14, which is loosely mounted at one end upon the end of the leading-screw.

The connecting-rod is reciprocated by means of a suitable adjustable crank-throw, 18 and 19, operated by the counter or knife shaft 17.

The counter-shaft 17 is supported on two bearings in the standards 26, that are cast or secured on the main stationary trough, and it is driven by means of the three-to-one gearing 20 and 22, the former, 20, being upon the knife or counter shaft, and the latter, 22, upon a lower hand-crank shaft, 21, which can be conveniently operated by the hand-crank 23.

On the end of the knife-shaft farthest from the driving-gear is secured the cutting-knife arm 24, provided with a movable knife, 25.

Upon the standard 26, that is at the front or cutting end of the machine and nearest to the knife, is fitted a vertical slide, 27, which serves to support the metal cover 28, arranged to lie upon the tobacco, and which, by reason of said support, will not be moved forward with the tobacco as the latter is fed along to the knife.

The cover 28 is composed of curved sheet-iron or other suitable metal, and is arranged within the trough, with its convex side downward and toward the tobacco. To this metal cover is fixed an iron or other metal rod, 29, that has upon its rear end a hinged piece, 30, formed with teeth along a portion of its length. This hinged toothed piece is arranged to engage a lug or projection on the main stationary trough, and it can be set so as to suit the height of the tobacco, the cover just described being pressed down upon the tobacco, as presently described, and supported by means of a lever, 31, connected with one end of the rod 29. Beneath this cover 28 lies the tobacco holder or fork 32, which rests in a recess or hook, 33, fixed to the carriage.

The front part of the tobacco-holder is secured to a leather plate, 34, that is arranged above the said holder, and in the under side of the tobacco-holder is secured a suitable number of spikes or teeth.

An iron or other metal rod, 35, bent into elbow form at its ends, has its upper end resting upon the cover-rod 29, and when depressed serves to press the tobacco together and hold the teeth of the fork in the same. The lower end of this rod 35 is secured beneath the machine to a treadle or foot-lever, 36, carrying a weight, by which treadle the rod and cover can be depressed.

At the front or knife end of the frame is an arc, 37, of sheet-iron, which serves as a protection for the knife.

By the rotation of the lower driving or crank shaft the knife-shaft will be rotated at three times the speed of the lower shaft by reason of the gearing, and hence the knife will be operated with great rapidity, so as to cut the tobacco up fine. At the same time the knife-shaft, through the mechanism already described, operates the ratchet-feed so as to rotate the leading-screw intermittently, and thereby feed forward the carriage and carriage-trough containing the tobacco toward the knife, the tobacco being laid in the carriage-trough when the carriage is at the highest point in its travel on the stationary trough. The tobacco will be laid longitudinally in the carriage-trough and the toothed holder forced into the tobacco and fixed at one end in the notch of the hook 33. The half-nut being pressed up against the leading-screw, so as to engage the same, the carriage will be feed forward toward the knife, carrying the tobacco with it, the tobacco being held more securely down by depressing the rod 35. When, however, the lever 11 strikes the projection *x* it will be swung round and the nut allowed to drop and disengage from the leading-screw, whereby the forward feed of the carriage will be stopped. After this the carriage can be moved back and refilled with tobacco.

The cutting apparatus might be modified by employing a guillotine-knife operated by a crank, and the shape of the trough could also be modified by making it rectangular in cross-section, the carriage being correspondingly modified in shape; also, the half-nut could be secured in place by a trigger instead of by a weighted lever.

What we claim, and desire to secure by Letters Patent, is—

1. The combination, in a tobacco-cutting machine, of the knife, with the carriage provided with a trough for holding the tobacco, and supported upon guides, the screw arranged to move the carriage forward, and also arranged to be driven by the driving-shaft that actuates the cutting devices, and mechanism for automatically releasing the carriage from connection with the feed-screw, whereby after the completion of its forward movement it can be pushed back by hand, substantially as described.

2. In a tobacco-machine, the carriage arranged to convey the tobacco to the cutting-knife, in combination with the vertically-movable half-nut 9, the rotary leading-screw, and mechanism arranged to cause the engagement of the nut with the screw, and also to automatically effect the disengagement of said parts, substantially as described.

3. The trough 6 of the carriage, the cover 28, the cover-rod 29, vertically-movable rod 35, and treadle, combined and arranged substantially as described.

4. The combination, with the carriage and its trough 6, of the tobacco fork or holder 32, the cover 28, cover-rod 29, and vertically-movable rod 35, and treadle, substantially as described.

5. The combination, with the carriage and the stationary trough, of the knife 24, the slide 27, the cover, and the devices for depressing the cover, substantially as described.

6. The combination, in a tobacco-cutting machine, of the carriage for conveying the tobacco to the knife, the rotary leading-screw and connection for imparting a positive forward feed to the carriage, the knife-shaft actuating the

leading-screw by means of a pawl and ratchet and connecting-rod, and the lower cutter-shaft, 21, with the gears 20 and 22, arranged as described, whereby the knife-shaft will rotate at a greater rate of speed than the said leading-screw, substantially as described.

7. The combination, in a tobacco-cutting machine, of the stationary trough with the carriage provided with a receptacle for holding the tobacco, and arranged to traverse the stationary trough, the screw for feeding the carriage forward to the knife, the vertically movable half-nut 9, the swiveled lever 11, and the stop *x*, arranged for operation substantially as described.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two witnesses.

G. ALBERT REINIGER.
CHRISTIAN PETRI.

Witnesses:
R. M. JACKSON,
EDUARD RETTICH.