(No Model.)

2 Sheets—Sheet 1.

G. LE CLAIR.

TOBACCO CUTTING MACHINE.

No. 348,402. Patented Aug. 31, 1886.

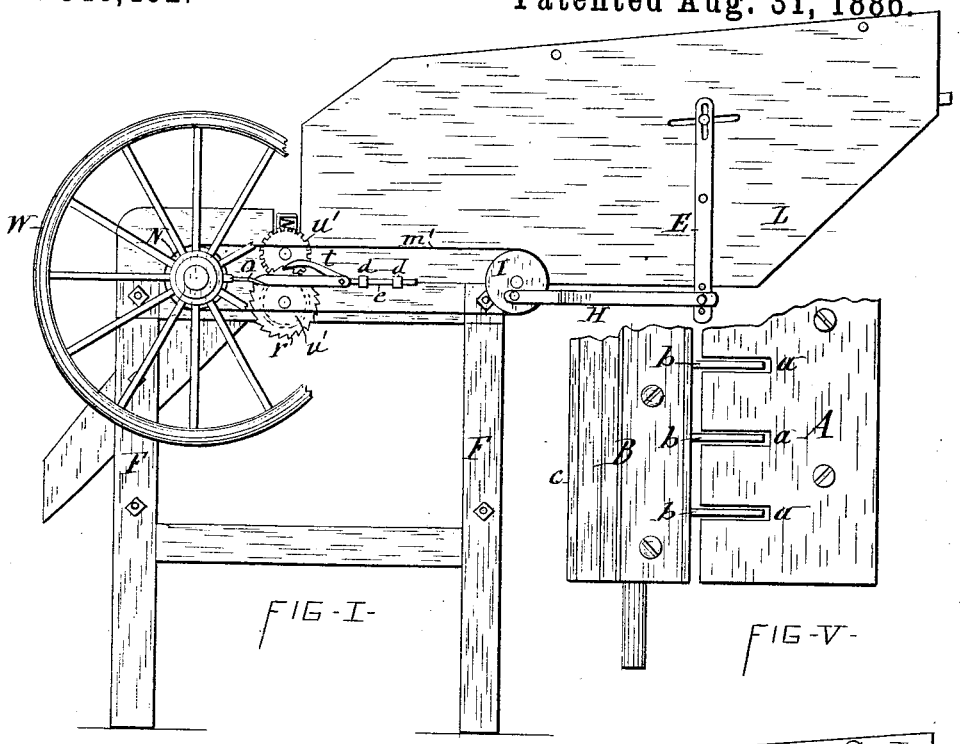

FIG-I-

FIG-V-

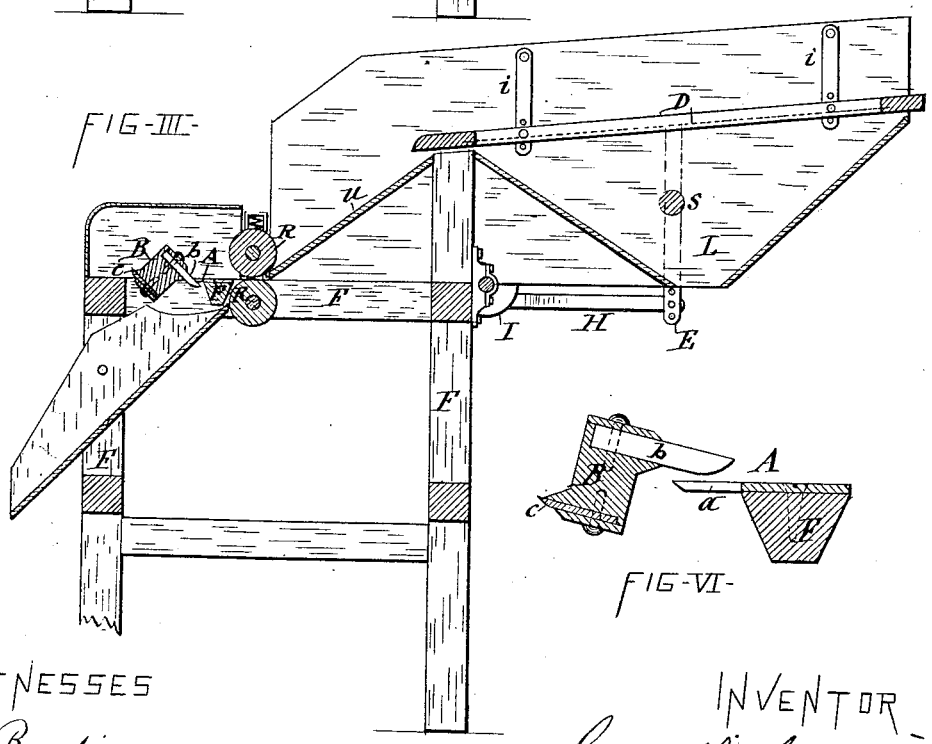

FIG-III-

FIG-VI-

WITNESSES

C. Bendixon

E. C. Cannon

INVENTOR

George Le Clair

per Munn & Lacey Attys

(No Model.) 2 Sheets—Sheet 2.

G. LE CLAIR.

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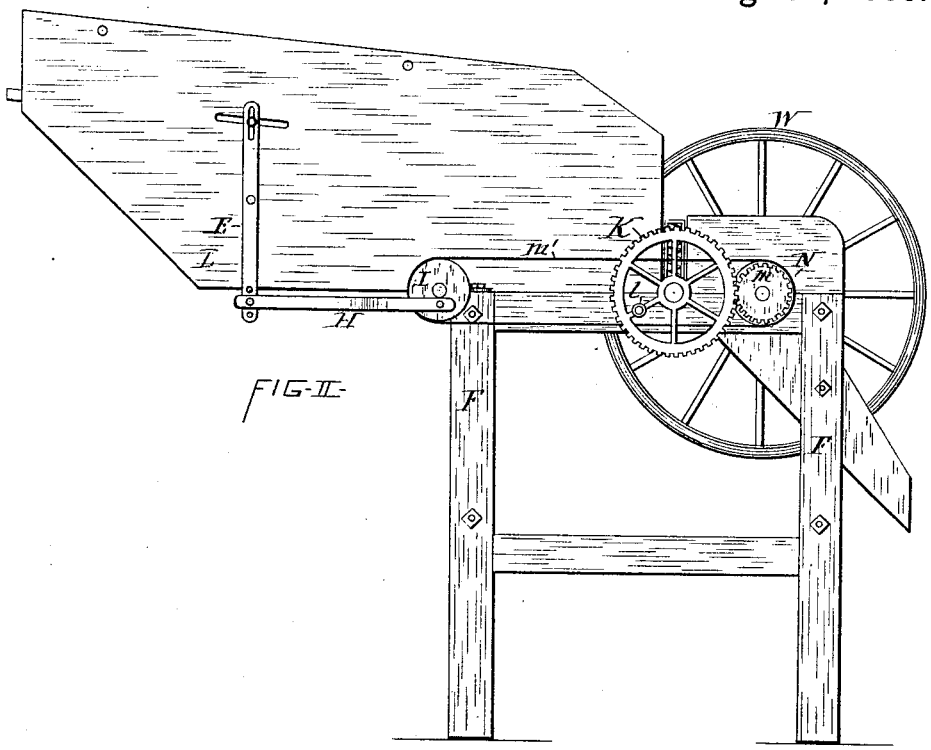

FIG-II-

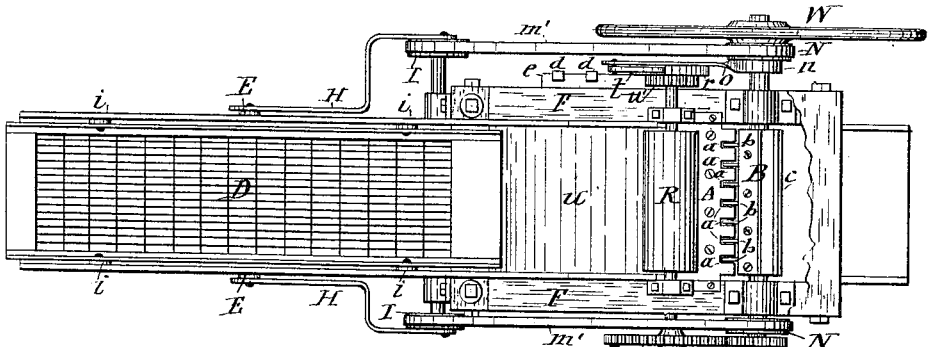

FIG-IV-

WITNESSES

E. Bendixon

E. C. Cannon

INVENTOR

George Le Clair

per Dodd, Lacey & Hay

his Attys

UNITED STATES PATENT OFFICE.

GEORGE LE CLAIR, OF MEXICO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO CHARLES MOULTER AND MICHAEL D. GRIFFIN, BOTH OF SYRACUSE, NEW YORK.

TOBACCO-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 343,402, dated August 31, 1886.

Application filed December 19, 1885. Serial No. 186,158. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LE CLAIR, of Mexico, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Tobacco-Cutting Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of tobacco-cutting machines which cut leaf-tobacco into scraps designed for fillings of cigars.

The invention is designed for a specific improvement on the machine for which I have obtained Letters Patent of the United States, No. 327,885, dated October 6, 1885.

The invention consists in novel devices for feeding the tobacco-leaves to the cutters and simultaneously screening said leaves so as to separate therefrom foreign hard substances, which are liable to injure the cutters, all as hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figures I and II are elevations of opposite sides of the machine, with portions broken away to better illustrate essential parts thereof. Fig. III is a longitudinal section of the machine. Fig. IV is a top plan view. Fig. V is an enlarged detached plan view of the cutting devices; and Fig. VI is a transverse section of the same.

Similar letters of reference indicate corresponding parts.

F designates the frame of the machine, which is in an upright position, and may be formed either of wood or metal, and of any suitable shape to support in their requisite operative positions the mechanisms hereinafter described. Across the top of said frame, at one end thereof, is rigidly secured a plate, A, which is provided with narrow slits *a a*, extending at right angles from the free edge of said plate back toward the feed-bed of the machine. Said slits are uniformly distributed over the length of the plate and proper distances apart, and of proper lengths to make the intervening solid portions of the plate equal to the size of the scraps of tobacco to be cut, the plate projecting from the frame F a corresponding distance.

B denotes a rotary cutter-head, arranged in front of the free edge of the plate A, and axially parallel with the same, and journaled at opposite ends in suitable bearings in the sides of the frame F. To this cutter-head I firmly secure a series of knives or cutters, *b b*, arranged edgewise, or with their plane at right angles to the plane of the plate A, and the same distances apart as the slits *a a* of said plates, so as to coincide with said slits. Said cutters project from the cutter-head a distance equal to the length of the scrap of tobacco to be cut, and in passing through the slits *a a* slit longitudinally the tobacco-leaves fed to the described cutting devices, as hereinafter explained.

Diametrically opposite the cutters *b b* is a straight cutting-blade, *c*, secured lengthwise on the cutter-head and in position to pass across the free edge of the plate A in proximity thereto. The cutters *b* and *c* being alternately forced through the tobacco-leaves lying upon the plate A, causes said leaves to be first slitted longitudinally equidistantly apart and then cut transversely through the slitted portion, and by feeding the tobacco to the described cutting devices at regular intervals said tobacco is cut into scraps of uniform size.

The feeding mechanism of the machine consists of two rollers, R R, arranged one above the other immediately back of and parallel with the plate A, and rotating with their adjacent sides toward said plate. The lower of said rollers having its upper face flush with or slightly above the top of the plate A and the tobacco-leaves entering between the two rollers, are thereby forced forward to the free edge of the aforesaid plate, where said leaves are subjected to the action of the cutters *b* and *c*, as hereinbefore described.

The cutter-head B and rollers R R receive their requisite motions by the following instrumentalities, viz: On a gudgeon secured to one side of the frame F is journaled a gear-wheel, K, which is provided with a handle, *l*, by which to turn it. This wheel meshes in a pinion, *m*, rigidly attached to the shaft or trunnion of the cutter-head B, which thus receives rotary motion. To the shaft or trunnion at the opposite end of the cutter-head B is attached a balance-

wheel, W, to overcome the intermittent checks of the motion due to the intermittent action of the cutters. At the inner side of the balance-wheel is an eccentric, *n*, attached to the shaft or trunnion of the cutter-head, and with said eccentric is connected the eccentric-rod *o*, the extremity of which is connected to a slide, *e*, which moves in guides *d*, secured to the side of the frame F, as shown in Fig. 1 of the drawings. At the same side of the frame are two pinions, *u'*, attached to the shafts of the two rollers R R, which pinions mesh in each other, and thereby cause the two rollers to rotate correspondingly. On the shaft of one of said rollers (preferably the lower) is also secured a ratchet-wheel, *r*, with which engages a pawl, *t*, connected to the slide *e*. During the rotation of the shaft of the cutter-head B the eccentric *n*, with its rod *o*, imparts a reciprocating motion to the slide *e*, and the latter, by means of the pawl *t*, transmits an intermittent rotary motion to the ratchet-wheel *r*, and a corresponding motion to the lower roller R, which moves the superincumbent tobacco-leaves toward the cutters and cutting-plate A. The upper roller R is yieldingly supported by springs bearing on the upper half of the journal-boxes of said roller, and serves to press the tobacco against the lower roller with sufficient force to permit the latter to obtain the requisite hold on the tobacco-leaves. Back of the feed-rollers R R is a feed-bed, *u*, which is inclined toward said rollers, so as to facilitate the passage of the tobacco to the same, and back of said inclined feed-bed I employ a shaking-screen or separator, D, preferably of the form of a coarse wire sieve having meshes of about one and three-fourths by three-eighths inch for the escape of nails and other hard substances which are sometimes found in tobacco and which would injure the cutters if brought in their path during their operation. This screen I incline toward the elevated end of the feed-bed *u* and suspend it on the ends of hangers or straps *i i*, pivoted on the side plates which project from the frame F above the screen D. The inclination of the said screen I make adjustable by providing one or both hangers *i i* with a series of holes arranged at different heights, the screen being connected with the hangers by pins or bolts passing through the holes thereof and removably connected with the screen, and the adjustment of the aforesaid inclination being effected by shifting the pins or bolts from one set of holes to another.

Across the frame F, underneath the screen D, is arranged a rock-shaft, *s*, and to this shaft is attached an arm, E, the upper end of which is connected with the screen. To the lower end of the arm E is connected a pitman, H, the opposite end of which is connected with a crank-wheel, I, journaled on the frame F, and this wheel receives rotary motion by a driving-belt, *m'*, connecting said wheel with a pulley, N, attached to the trunnion or shaft of the cutter-head B. The screen D thus receives a longitudinal reciprocating motion, with which is combined a vertical vibratory motion of the screen produced by oscillation of the hangers *i i*, which carry the screen. The aforesaid combined reciprocating and vibratory motion, together with the inclination of the screen, causes the same to gradually thrust the superincumbent tobacco-leaves toward the cutters, and thus constitutes an automatic feeding device.

L denotes a chute arranged under the screen D to convey the screenings to a suitable place of deposit.

I am well aware that shaking-screens are very common mechanical appliances, and, like the majority of inventions which consist merely in the combination of old and well-known mechanical elements, the screen herein described is only new in its combination with certain co-operating elements producing a new and improved result; hence it is obvious that I do not claim the within described screen, *per se;* but

What I do claim, specifically, is—

A tobacco-cutting machine comprising an upright frame, a rotary cutter-head pivoted on one end of said frame, a cutting-plate fixed stationary on the frame back of the rotary cutter-head, feeding-rollers pivoted on the frame back of the stationary cutting-plate, a feed-bed back of and inclined toward the feeding-rollers, a shaking screen back of the inclined feed-bed and inclined to the elevated end of said feed-bed, and mechanism for transmitting motion to the cutter-head, feeding-rollers, and screen, substantially as described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 19th day of November, 1885.

GEORGE LE CLAIR. [L. S.]

Witnesses:
C. H. DUELL,
C. BENDIXON.