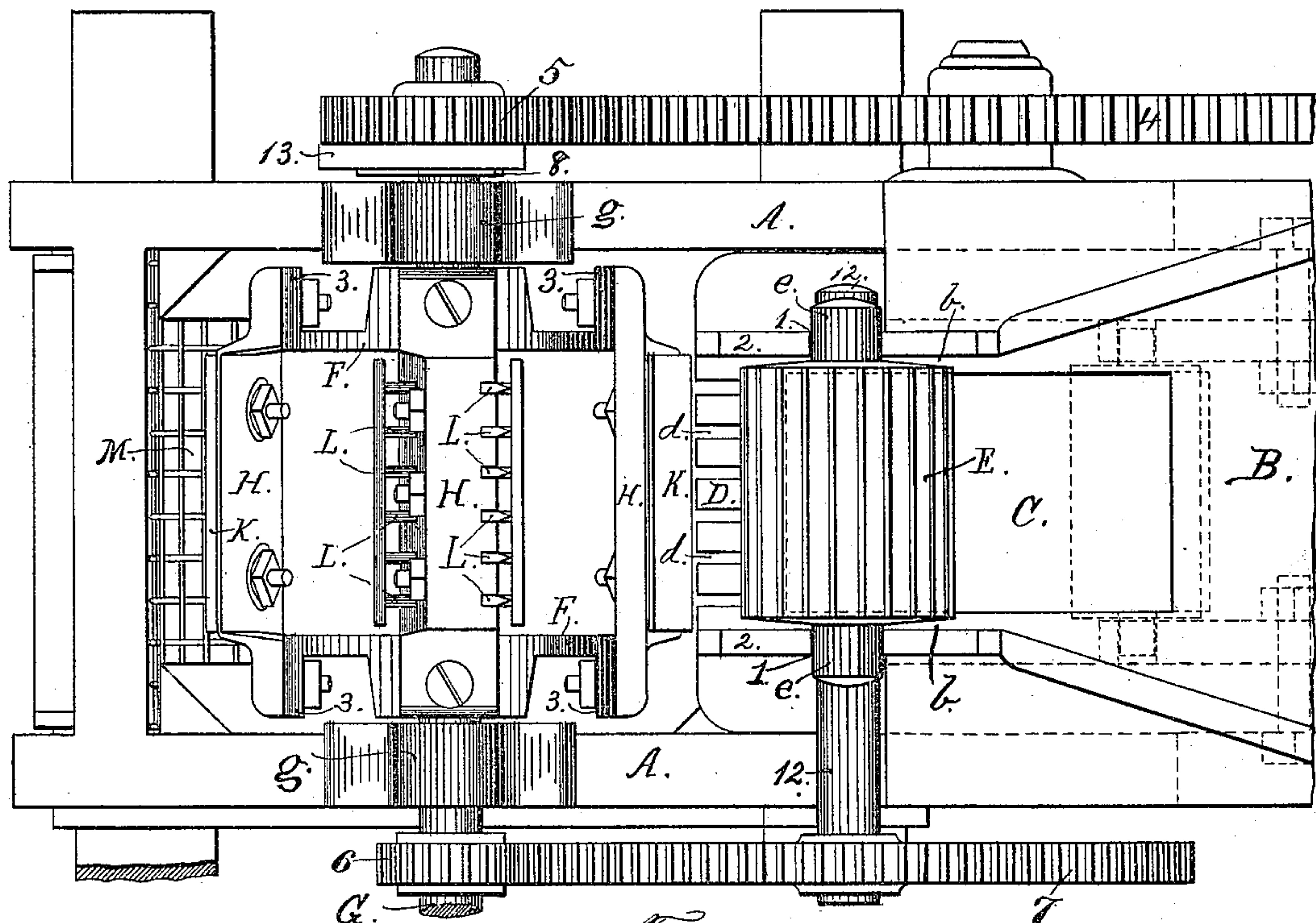


(No Model.)

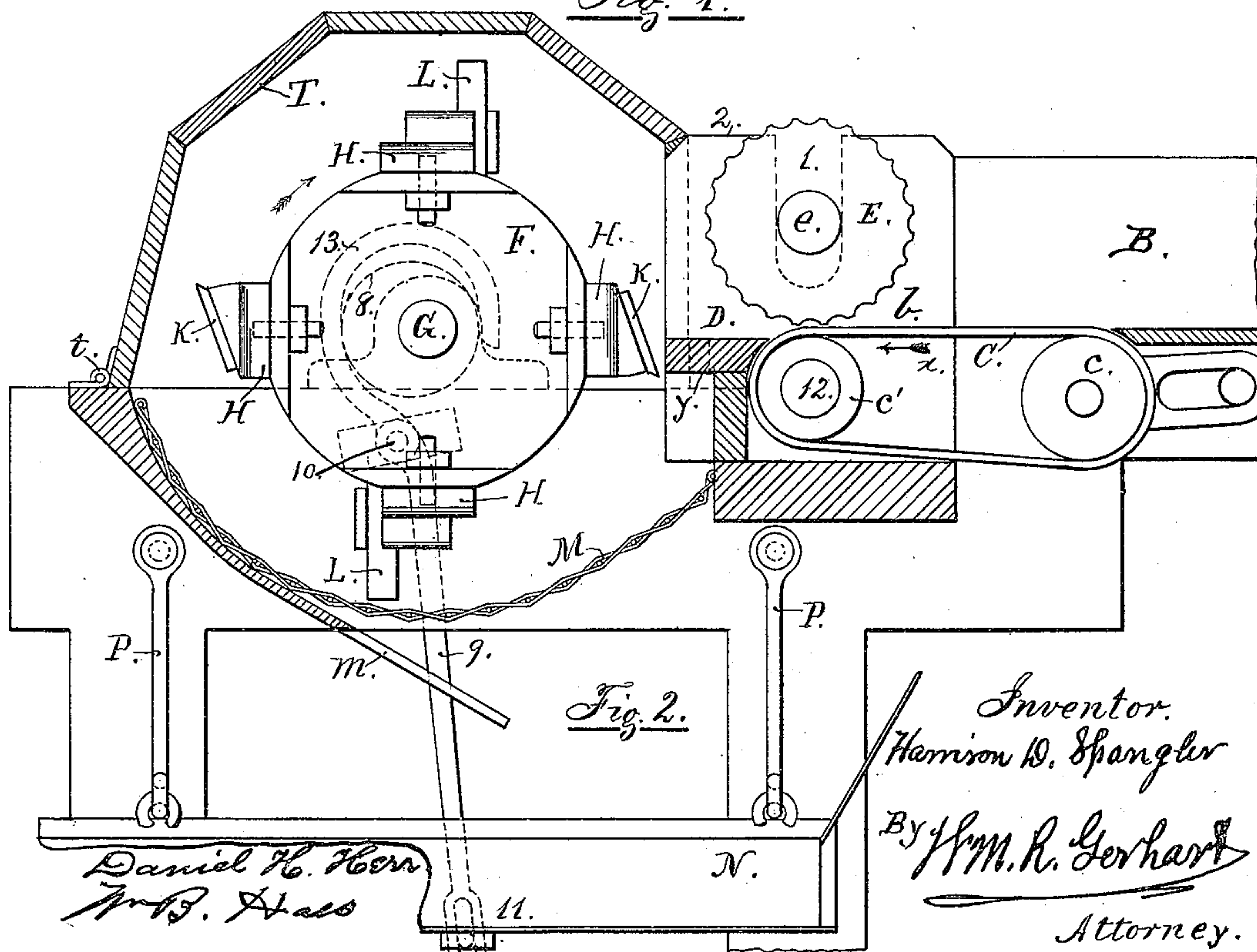
H. D. SPANGLER.  
TOBACCO SCRAP CUTTING MACHINE.

No. 438,198.

Patented Oct. 14, 1890.



*Fig. 1.*



*Fig. 2.*

Daniel H. Horn  
W. B. Aas

Inventor.  
Harrison D. Spangler  
By *J. M. R. Gerhart*  
Attorney.



# UNITED STATES PATENT OFFICE.

HARRISON D. SPANGLER, OF EPHRATA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JACOB B. KELLER, OF SAME PLACE.

## TOBACCO-SCRAP-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 438,198, dated October 14, 1890.

Application filed February 21, 1889. Serial No. 300,746. (No model.)

*To all whom it may concern:*

Be it known that I, HARRISON D. SPANGLER, a citizen of the United States, residing at Ephrata, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Tobacco-Scrap-Cutting Machines, of which the following is a specification.

My invention relates to improvements in machines for cutting tobacco scraps into small particles; and it consists in the peculiar construction, arrangement, and combination of parts, as hereinafter described, and then specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a top view of the machine, the cover of the cutting device being removed; and Fig. 2, a side view of the same, the whole of the sides of the cylinder and feed-boxes toward the bottom of the sheet and the gearing located without the box on that side being removed, so as to show a full end view of the feeding and cutting mechanism and the shafts on which they are mounted.

Similar letters and figures indicate like parts throughout the several views.

In the drawings, A represents the sides of the box containing the feed and cutting mechanism.

B is the hopper, which narrows in width from the feed to the delivery end, as shown in Fig. 1.

C is an endless belt which passes around rollers *c c'*. The roller *c* is located beneath the hopper, and the roller *c'* under the forward end of the passage-way or channel *b*, through which the scrap-tobacco is carried to be delivered to the cutters. Above the rollers the upper surface of the belt C is flush with the bottom of the hopper and thence extends forward to the slotted platform or table D, where the tobacco is cut. The back part of this table, where the tobacco is first received, is a plain surface; but the front has a series of slots *d* cut into it backward from the forward edge to the dotted line *y*, Fig. 2.

A transversely-corrugated roller E rests upon the belt C above the belt-roller *c'*, the spindles *e* of which loosely rest in the vertical slots 1 in the sides 2 of the channel *b*.

This roller E is revolved by its own pressure upon the belt C and serves to compress the tobacco as it is fed forward to the table D, so that the knives may cut it more readily. The roller is of such weight as to sufficiently compress the tobacco as it passes beneath it without the use of springs or additional weights therewith, its rotation by the friction between its periphery and the belt C or the tobacco on the belt causing its motion at all times to conform with the movement of the belt. Mounted in the manner described it is found to act more effectively as a compressor than when it has a positive motion of its own imparted to it by special gearing.

In front of the table D there is a skeleton cylinder which carries the knives for cutting the tobacco and has its axis parallel with the plane of the upper surface of the table. It is formed of end disks F, mounted on a shaft G, journaled at *g g* in the sides of the box A. These disks are provided with outwardly-projecting lugs 3, to which cross-ribs H are secured. To these ribs the knives are fastened, each alternate rib having a single blade K extending lengthwise thereof, so that the edge is parallel with the shaft on which the cylinder is mounted. These blades project sufficiently to just pass the edge of the table D, cutting across the mouths of the slots *d*. To each of the other alternate ribs is secured a series of knives L, projecting outward as nearly as may be at right angles to the axis of the shaft G. The blades of each series are equal in number to the number of slots *d* in the table D and engage and pass through those slots as the cylinder carrying them revolves, cutting the tobacco in a direction at right angles to the cut made by the blades K. Thus as the cylinder which carries the knives revolves the tobacco is alternately cut transversely and longitudinally of the direction in which it is fed forward.

The knife-carrying cylinder constructed as herein described is light in weight, cheap in construction, and permits the blades to be easily and readily connected therewith or detached therefrom.

By this arrangement of the knives the tobacco is more uniformly cut than in other ma-



chines where the knives cut in but one direction. In those machines much of the tobacco is cut into strips and has to be recut in order to render it suitable for working. The efficiency of my system of arranging the knives is also much increased by the use of the roller E, as the compression of the tobacco as it is is fed forward onto the table puts it into better condition for being cut than it otherwise would be, for by rendering it more compact and flattening out the leaves the blades cut it better and are less liable to drag it from the table in strips. Beneath the knife-carrying cylinder there is located a concave separating-screen M, the meshes of which allow the tobacco cut sufficiently small to pass through. That which is too large to pass through the screen is caught up by the transverse blades K and carried around and again deposited on the table D. Those larger portions of the tobacco which lie close to the screen and prevent the smaller particles from passing through are thrown up by the outwardly-projecting knives L, and then caught by the transverse blades K and carried to the table D. As the tobacco drops through the screen M it is received on the chute *m* and delivered onto the rear end of the shaking sieve N. The front end of this sieve is of coarser mesh than the rear, so that tobacco of different degrees of fineness may pass through, as is common. The sieve is suspended below the screen by hangers P.

Motion is imparted to the operating parts by the large gear-wheel 4 on the side of the box. This gear-wheel meshes with a gear 5 on one end of the main shaft G. A pinion 6 on the opposite end of shaft G meshes with the gear-wheel 7, keyed to the spindle 12 of the forward feed-belt roller *c'*. A recipro-

cating movement is imparted to the sieve by a lever 9, connected therewith at 11 and having its fulcrum at 10, the upper end forming a strap 13, which embraces a cam 8 on the end of the shaft G to which the power is applied.

The part of the box in which the cutter-carrying wheel is journaled is covered by a concave top or lid T, hinged at *t*, as shown in Fig. 2.

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

1. In a tobacco-scrap cutter, the combination, with the table D, of a cylinder journaled in front of the delivery end of said table, a concave screen located below the cylinder, and blades secured to the cylinder transversely thereof, adapted to catch up the tobacco which is too large to pass through the screen and carry it to and deposit it on said table, substantially as specified.

2. In a tobacco-scrap cutter, the combination, with the table D, having a series of vertical slots cut in the delivery end thereof, of a cylinder journaled in front of said delivery end of the table, a concave screen located below the cylinder, blades, as L, radiating from the cylinder, constructed to pass through said vertical slots in the table D and adapted to stir up the cut portions of tobacco in the screen, and blades extending transversely of the cylinder and constructed to catch up the tobacco which is too large to pass through said screen and carry it to and deposit it on the table D, substantially as specified.

HARRISON D. SPANGLER.

Witnesses:

W. K. SELTZER,  
MARY SELTZER.