(No Model.) 2 Sheets—Sheet 1.

W. H. EMERY.

Machines for Slitting Cigarettes.

No. 231,780. **Patented Aug. 31, 1880.**

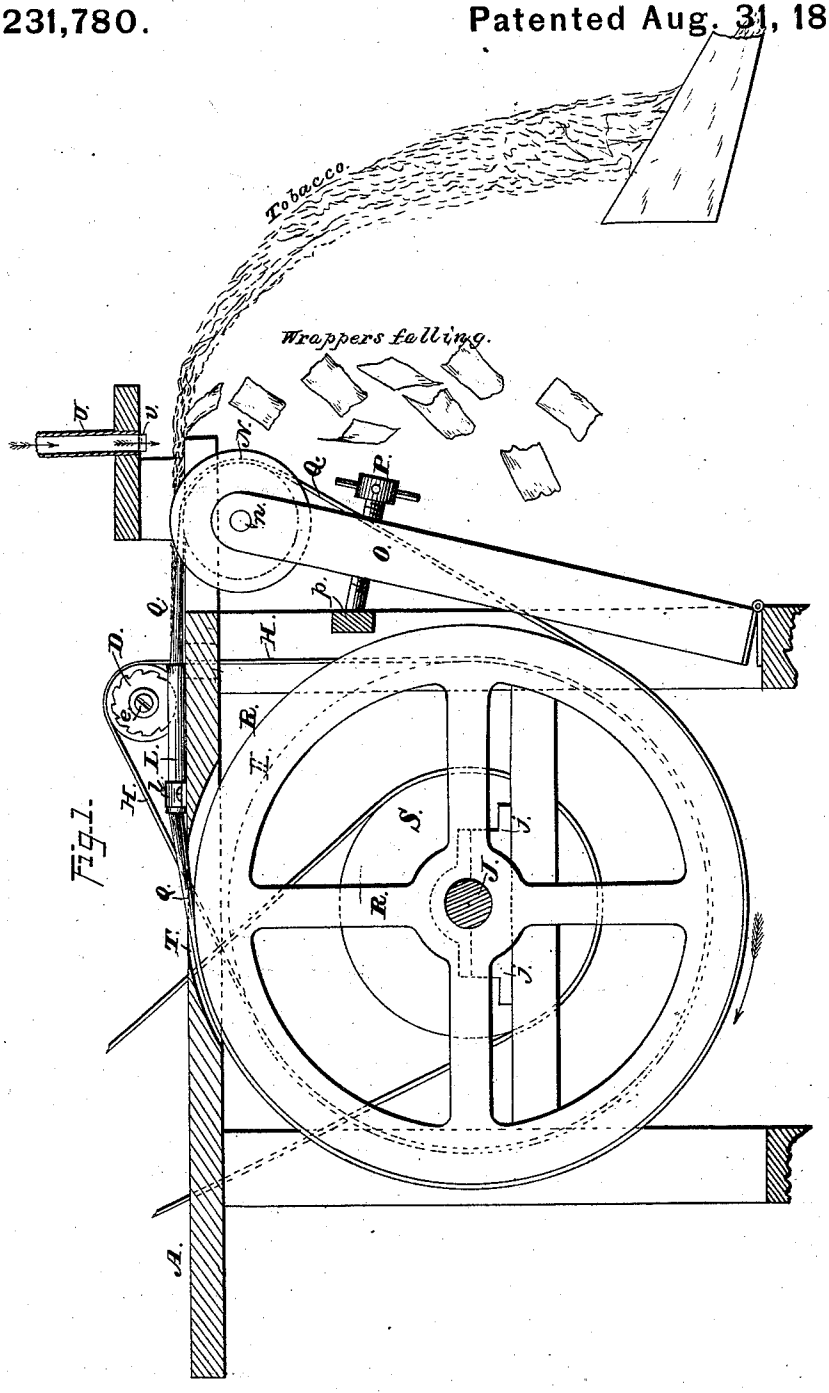


Fig. 1.

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Fig. 2.

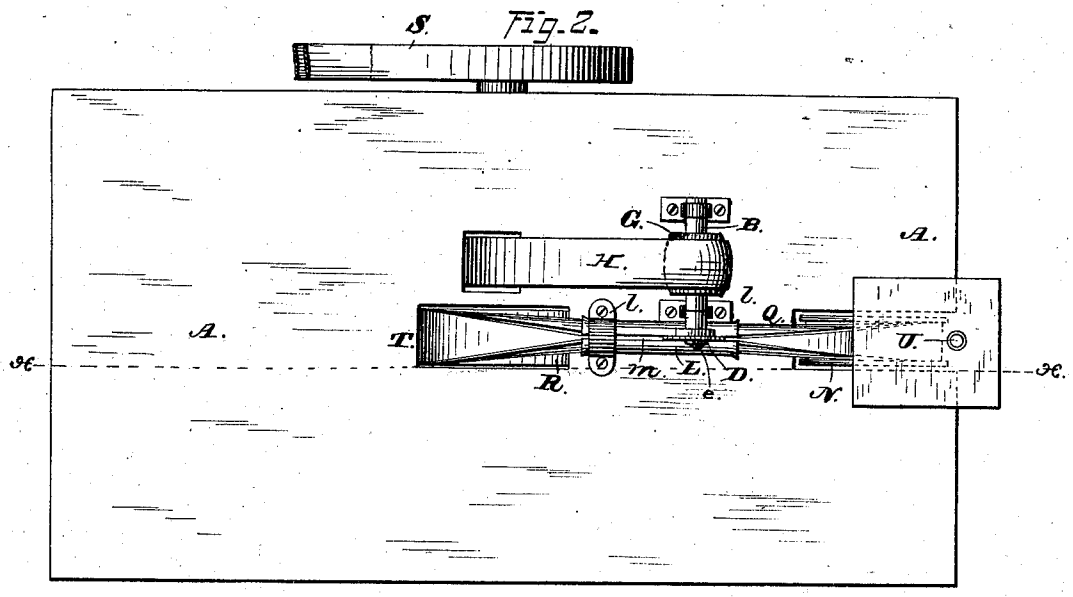
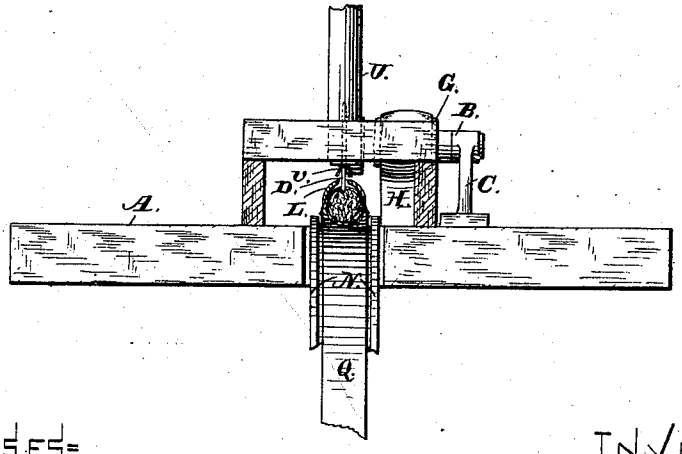


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM H. EMERY, OF BROOKLYN, NEW YORK, ASSIGNOR TO CHARLES G. EMERY, OF SAME PLACE.

MACHINE FOR SLITTING CIGARETTES.

SPECIFICATION forming part of Letters Patent No. 231,780, dated August 31, 1880.

Application filed July 13, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. EMERY, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Machines for Dividing the Wrappers of Imperfect Cigarettes, of which the following is a specification.

This invention relates to a machine for slitting the wrappers of imperfect cigarettes which have been spoiled in the process of manufacture or otherwise.

In establishments where cigarettes are extensively made, either by hand or machinery, they are inspected in lots before being packed, and many are condemned as unfit for the market, owing to imperfections of the wrappers, faulty shape, over and under size. The wrappers of these imperfect cigarettes must be removed, in order that the tobacco may be used again, and they have heretofore been removed by hand, generally by girls, who tear the wrappers with their fingers or slit them with shears. This hand-work is very tedious and slow, and entirely inadequate to meet the requirements of establishments manufacturing on the large and increasing scale of the present time.

To obviate the necessity of this hand-work is the object of my invention; and to this end it consists in the combination, with a rotary cutting-disk, of a tubular guide, through a slit in the wall of which the edge of the said disk extends, a belt passing through said guide and having a width to cause it to assume an approximately tubular shape therein, and suitably-arranged belt pulleys or wheels for driving said belt, whereby when said disk is caused to rotate and cigarettes fed lengthwise upon the belt they will be carried through said guide from one end, have their wrappers slitted in their passage, and the tobacco and slitted wrappers discharged from the opposite end of the guide.

In the accompanying drawings, Figure 1 is a vertical section of my improved cigarette-slitting machine, taken on line *x x* of Fig. 2. Fig. 2 is a plan view, and Fig. 3 a front view, of the machine.

The letter A designates a table, upon which is mounted a shaft, B, journaled in bearings in standards C C. At one end the shaft B carries a cutting-disk, D, concentrically secured by screw *e*. Said disk may have its edge either toothed, as shown in Fig. 1, or plain and sharp. About its middle the shaft carries a belt-pulley, G, around which passes a belt, H, which also passes around a much larger belt-wheel, I, carried by the shaft J, journaled in bearings *j*, suitably supported below the top of the table, which is provided with openings for the passage of the belt.

Upon the top of the table, with one end directly under the cutting-disk, a tubular guide, L, is secured by means of suitable fastenings *l*. This guide flares somewhat at its left-hand end, as seen in the drawings, and longitudinally through its top is cut a slit, *m*, through which extends the edge of the cutting-disk D. At one end of the table a guide-pulley, N, is mounted on a journal-pin, *n*, projecting from a standard, O, hinged at its lower end to a suitable cross-bar. Through this standard a screw, P, is fitted in a correspondingly-threaded hole, its tip bearing against a cross-bar, *p*.

The periphery of the pulley extends through an opening in the top of the table, and is about on a level with the upper surface of said top.

Around the pulley N passes a belt, Q, which also passes around a belt-wheel, R, carried by the shaft J, said wheel having its periphery extending through an opening in the table-top. The belt Q passes through the tubular guide L, conforming to the shape of the same, and is of such width that its edges approach each other and are about even with the edges of the slit *m*, and on opposite sides of the cutting-disk, the space within the folded portion of the belt having a diameter slightly smaller than that of an ordinary cigarette. The proper degree of tension is given to the belt Q by turning the screw P.

The shaft J may be provided with a belt-pulley, S, and upon motion being communicated to said shaft in the direction indicated by the arrow, Fig. 1, the shaft B is rotated by belt H, and thus the cutting-disk given a rotary motion. The belt Q is caused to travel through the guide L, and as it leaves the wheel R is gradually folded to a tubular form.

When cigarettes which are to have their

wrappers slitted are fed lengthwise upon the belt Q from the point indicated by T on the top of the table, they are carried rapidly through the guide L, and in their passage their wrappers are slitted by the cutting-disk, their tobacco being carried on and projected some distance beyond the table upon the floor, or into a suitable receptacle placed to receive it, while the wrappers, being formed of light paper, require much less momentum and fall almost directly, though slowly, downward from the belt, and many are thus automatically separated from the tobacco, the remainder being separated by hand. In order, however, to cause the complete automatic separation of the tobacco and wrappers, I arrange an air-pipe, U, to direct a light blast downward across the path of the mass discharged from the belt Q, the light papers being thus blown away from the tobacco. The pipe U may lead from any convenient blower suitably located. Across the bottom opening of the pipe U, I preferably arrange an inverted-V-shaped deflector, *v*, which divides the blast and directs in such manner as to strike the margins of the wrappers and cause them to thoroughly open without the blast materially interfering with the tobacco.

What I claim is—

1. In a cigarette-wrapper-slitting machine, the combination, with a rotary cutting-disk, of a tubular guide, through a slit in the wall of which the edge of the said disk extends, a belt passing through said guide and having a width to cause it to assume an approximately tubular shape therein, and suitably-arranged belt pulleys or wheels for driving said belt, substantially as described, whereby when said disk is caused to rotate and cigarettes fed lengthwise upon the belt they will be carried through said guide from one end, have their wrappers slitted in their passage, and the tobacco and slitted wrappers discharged from the opposite end of the guide.

2. The combination, with the rotary cutting-disk D and tubular slitted guide L, of the belt Q, passing through said guide, and suitable pulleys or wheels for driving said belt, substantially as described.

3. The combination, with the rotary cutting-disk D, guides L, belt Q, and belt-wheel R, of the adjustable pulley N, substantially as described.

4. The combination, with the traveling belt Q, guide L, and rotary cutting-disk D, of the air-blast pipe U, substantially as and for the purpose set forth.

5. The combination, with the traveling belt Q, guide L, and cutting-disk D, of the air-blast pipe U and deflector *v*, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM H. EMERY.

Witnesses:

JOHN D. LITTLE,

N. H. DENNIS.