

(No Model.)

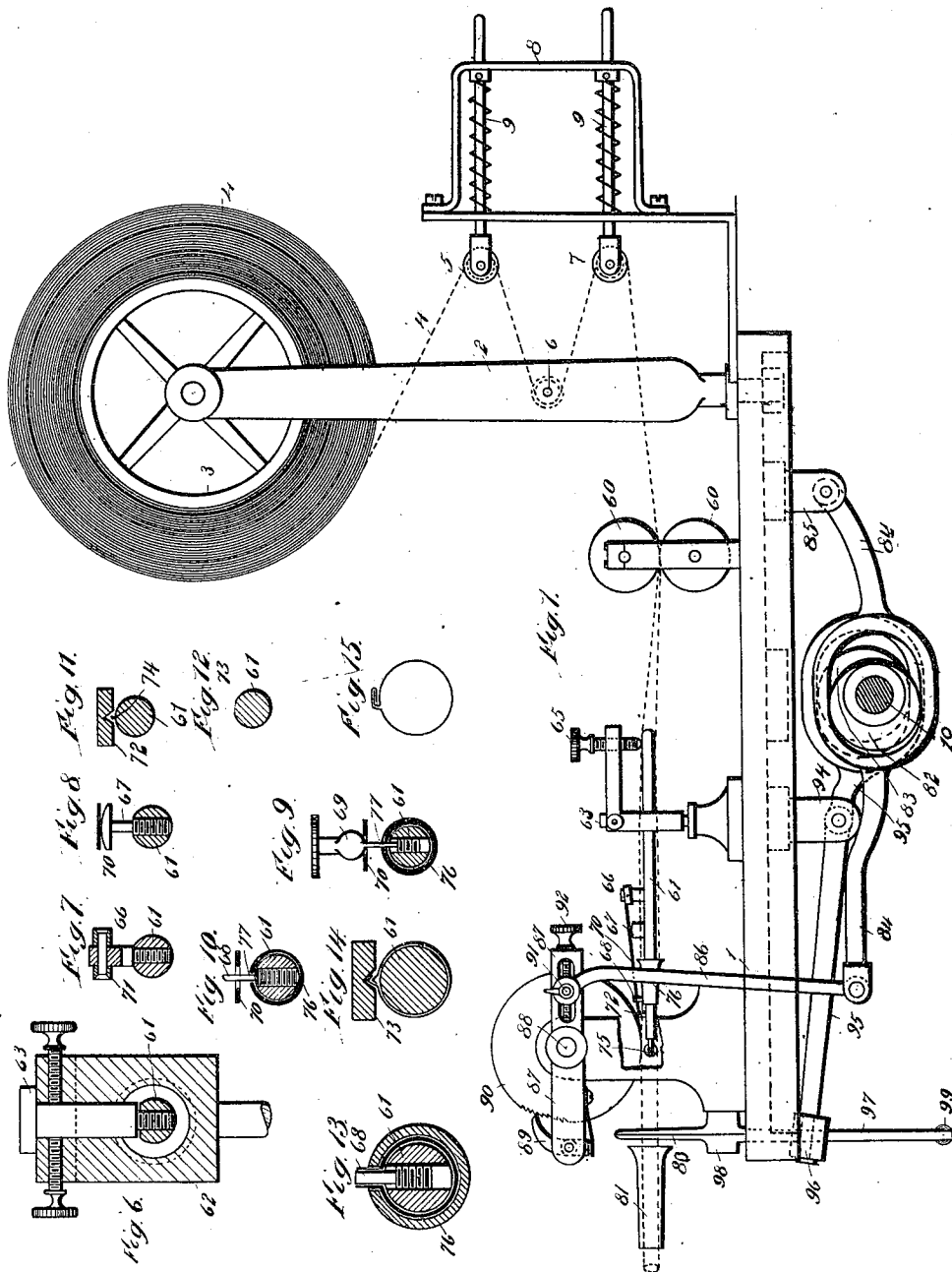
3 Sheets—Sheet 1

P. SCHAEFFER.

MACHINE FOR MAKING CIGARETTE CASINGS.

No. 582,695.

Patented May 18, 1897.



WITNESSES.

6. Sedgewick
C. E. Holsie.

INVENTOR:

F. Schaeffer

BY

Munn & Co

ATTORNEYS

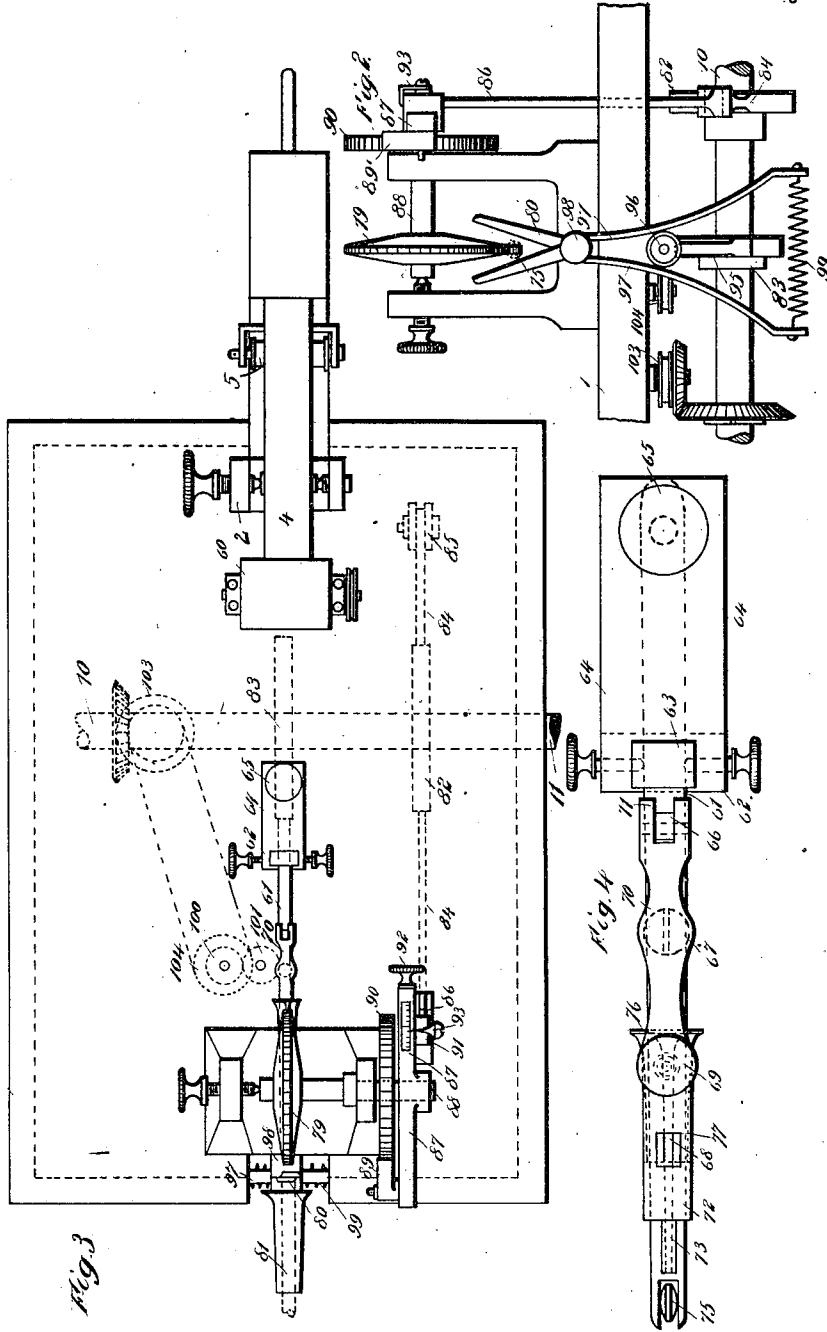
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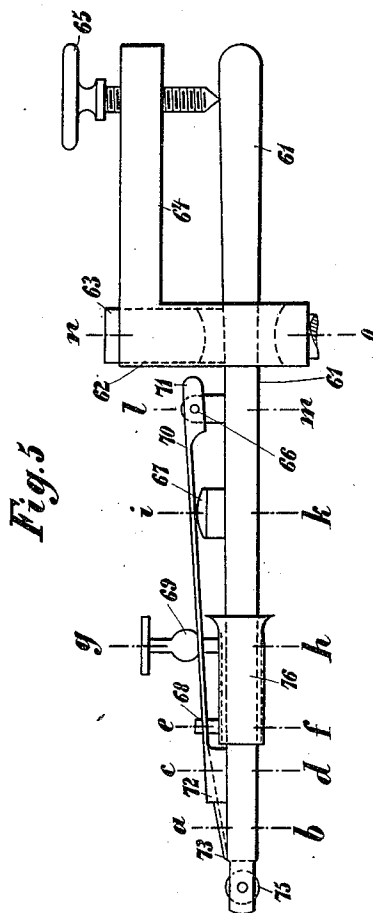
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Witnesses

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UNITED STATES PATENT OFFICE.

PAUL SCHAEFFER, OF BERLIN, GERMANY.

MACHINE FOR MAKING CIGARETTE-CASINGS.

SPECIFICATION forming part of Letters Patent No. 582,695, dated May 18, 1897.

Application filed June 22, 1893. Serial No. 478,529. (No model.) Patented in Germany July 10, 1889, No. 50,044, and June 26, 1890, No. 55,820; in England June 12, 1891, No. 10,004; in Austria-Hungary May 13, 1892, No. 5,897 and No. 14,707; in Spain November 11, 1892, No. 13,926; in Italy November 21, 1892, No. 32,950, LXIV, 443, and in Turkey December 12, 1892, No. 330.

To all whom it may concern:

Be it known that I, PAUL SCHAEFFER, of the city of Berlin, Germany, have invented certain new and useful Improvements in Machines for Making Cigarette-Casings, of which the following is a specification, reference being had therein to the accompanying drawings, and for which I have obtained Letters Patent in the following countries, to wit:
o Germany, June 26, 1890, No. 55,820, and July 10, 1889, No. 50,044; England, June 12, 1891, No. 10,004; Austria-Hungary, May 13, 1892, No. 5,897 and No. 14,707; Italy, November 21, 1892, No. 32,950, LXIV, No. 443; Spain, November 11, 1892, No. 13,926, and Turkey, December 12, 1892, No. 330.

The object of the invention hereinafter described is the manufacture of cigarette-casings from an endless roll of paper, which is accomplished by folding the edges of the paper into each other on the side, unglued or glued, as may be desired. After this folding operation the casings are cut off to the desired length. The machine serving for this purpose and hereinafter described is represented in the annexed drawings, in which—

Figure 1 is a side elevation of the machine with parts shown in section. Fig. 2 is an end elevation of the machine. Fig. 3 is a plan of the machine. Figs. 4 and 5 are an enlarged detail plan view and side elevation, respectively, of the spindle upon which the cigarette-casings are rolled and folded and the parts connected therewith. Fig. 6 is a transverse vertical section of the same on line *n o* of Fig. 5. Figs. 7, 8, 9, 10, 11, and 12 are similar sections taken on the lines *l m*, *i k*, *g h*, *e f*, *c d*, and *a b*, respectively, of Fig. 5. Figs. 13 and 14 are still more enlarged transverse sections on lines *e f* and *c d*, respectively, of Fig. 5, showing the shape of the paper while it is rolled and folded. Fig. 15 represents a finished casing.

Similar figures of reference designate corresponding parts in all the views.

The machine is arranged upon a table 1. The bracket 2 carries the drum 3, upon which the cigarette-paper is rolled. In order to be properly conducted, the strip of paper 4, which

comes from the drum 3, is led over several 50 rollers, which are so arranged that one of them, 6, rests in the bracket 2, while the others, 5 and 7, are carried by the frame 8 and held by the springs 9. Thus the rollers 5 and 7 exercise a slight and always uniform tension 55 upon the paper, so that the latter always possesses the desired tension without the possibility of its tearing in case the speed should suddenly be altered.

The continuous strip of paper 4, coming 60 from the roller 7, passes between opposing rollers or carrying-cylinders 60. The carrying-cylinders 60 lead the strip of paper to the spindle 61. The latter rests in the frame 62 in such a manner, Figs. 4, 5, and 6, that it is 65 held by the bolt 63, hanging in the frame, and can be exactly adjusted by means of the thumb-screw 65 in the horn 64. Farther on the spindle 61 carries the pins 66, 67, and 68 and the thumb-screws 69. To pin 66 the 70 folder 70 is attached, with a forked end 71. The folder rests on pin 67 and is pressed down by the thumb-screw 69. In continuation of the thin elastic portion of the folder 70 there is a thicker portion 72 and the blade 73, which 75 two parts are provided with a groove 74, Fig. 11, which is required for forming the outside fold of the casing.

The spindle 61 is forked at its left-hand end and here carries a small wheel 75, while a split 80 ferrule 76, with a clearance space, is pushed so far onto the spindle that the pin 68 enters the slit 77 and prevents the ferrule from turning, while the thick part 72 of the folder 70, against which the ferrule lays itself, prevents 85 the latter from sliding off the spindle.

The ferrule 76, Figs. 9, 10, and 13, catches up the edges of the paper which is sliding along the spindle, and the part 72 and blade 73 fold them into each other, so that the seam 90 made and lying on the outside can be pressed together. This latter operation is effected by the small and large wheels 75 and 79, which also at the same time cause the paper to advance. The completed casings are then cut 95 off by means of the shears 80 and ejected through the funnel 81. This apparatus for folding, advancing, and cutting off the cas-

ings is set in motion by the shaft 10, which is secured underneath the table 1, and can be turned by means of a pulley or hand-wheel (not shown) preferably secured to the end of the shaft at 11. Cams 82 and 83 are keyed to the same.

The cam 82 sets in motion the rod 84, which surrounds it and is fulcrumed at 85, so that its motion is transferred to the lever 87 by means of the connecting-rod 86. The lever must not, however, turn the shaft 88 continuously, but must allow it short rests, during which the casing last completed is cut off. For this purpose the lever 87 is loose on the shaft 88 and operates it by means of the pawl 89 and the ratchet-wheel 90, which is keyed to the shaft 88 and provided with teeth of a fine pitch. The opposite side of the lever 87 has a slot in which the pin 91 of the rod 86 may be adjusted by means of a micrometrical screw 92 to any desired distance from the center of the shaft 88. The closer the pin comes to the center of the shaft the larger the lift of the pawl 89 becomes and the longer, therefore, the cigarette-casing, which is moved onward by means of the wheel 79, which latter is keyed onto the shaft 88. An indicator 93, connected with the pin 91, shows the exact length of the cigarette-casing, which is produced at a given distance of the pin 91 from the center 88.

The above motion is produced during the first half-turn of the belt or hand-wheel at 11, and during the second half the shears 80 enter into action and cut off the casing. For this purpose the shaft 10 carries the cam 83, already mentioned, which causes the lever 95, fulcrumed at 94 and embracing it with its forked free end, to oscillate. The other end of the lever 95 is provided with a roller 96, and this, upon being raised, forces the curved legs 97 of the shears 80, pivoted at 98, apart and releases them again upon being lowered. The shears are closed by means of the spring 99.

The mode of working of this machine is as follows: The paper, provided with gilt lettering, is conducted through the carrying-cylinders 60 and arrives at the frame 62, which lays it round the spindle 61. In this convex shape it goes along the spindle until it is

clasped together by the split ferrule 76, Fig. 13. After this the edges of the paper are conducted into the groove 74 of the part 72 and blade 73, Fig. 14, and bent over in same, and as the blade 73 is inclined toward the spindle 61 and the groove gets shallower the outside fold continues to bend over more and more, getting into the shape represented in Fig. 15. Now the casing thus produced gets in between the wheels 75 and 79, which compress the outside seam firmly and carry the casing in between the shears 80. As soon as the casing has been pushed forward to the desired length the motion of the cam 82 is stayed and the cam 83 allows the shears to be closed by means of the spring 99, so that the casing is cut off. In case the casings are also to be gummed a gumming apparatus, such as is indicated in Fig. 3, is attached. Between the horizontal disks 100 and 101 gum is brought by means of a funnel (not shown) placed at 102. The disks are turned from the shaft 10 by means of cord-pulleys 103 and 104, (see Figs. 2 and 3,) and thereby the disk 101 communicates the gum adhering to its circumference to the paper cigarette-casing, which it grazes.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In machines for making cigarette-casings the combination of a spindle 61 provided with three pins 66, 67, 68, a thumb-screw 69 and a small wheel 75 at its left-hand forked end, with a split ferrule 76 with a clearance space pushed onto the spindle 61 and an adjustable folder 70 provided with a grooved thicker portion 72 and a grooved blade 73; as and for the purpose set forth.

2. In machines for making cigarette-casings the combination of a drum 3 carried by a bracket 2 with several rollers 5, 7 and 6, one of which 6 resting in the bracket 2, the others 5 and 7 being carried by a frame 8 and held by springs 9 as and for the purpose set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

PAUL SCHIAEFFER.

Witnesses:

PAUL FISCHER,
JOHN SALVURTH.