

S. SCHOLFIELD.

Cigar-Machines.

No. 140,846.

Patented July 15, 1873.

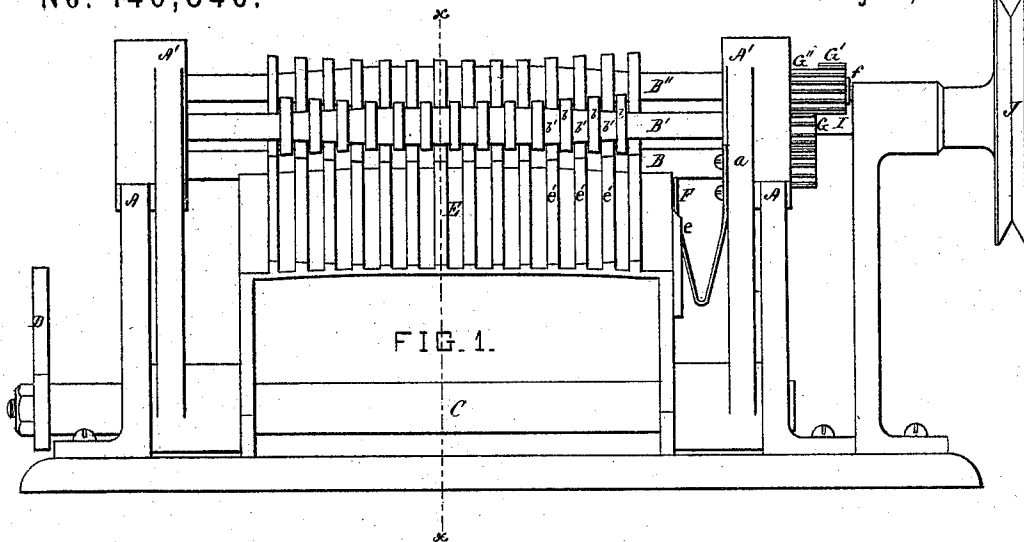


FIG. 4.

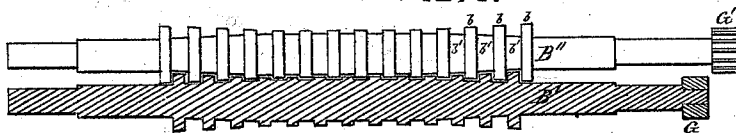


FIG. 3.

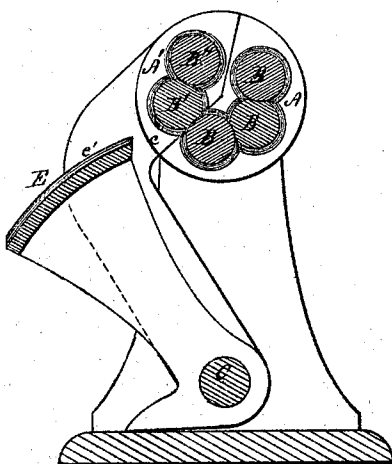
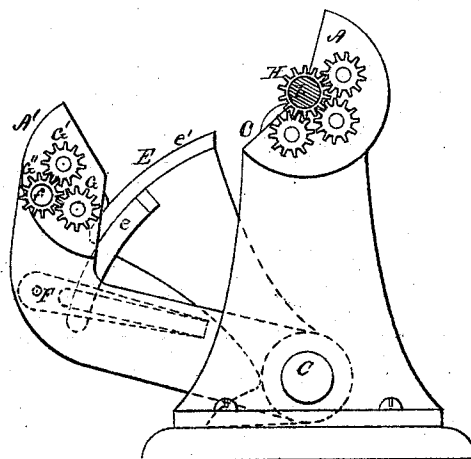


FIG. 2.



WITNESSES.

George H. Rogers
Alfred R. Abbott

Socrates Scholfield

S. SCHOLFIELD.
Cigar-Machines.

2 Sheets--Sheet 2.

No. 140,846.

Patented July 15, 1873.

FIG. 5.

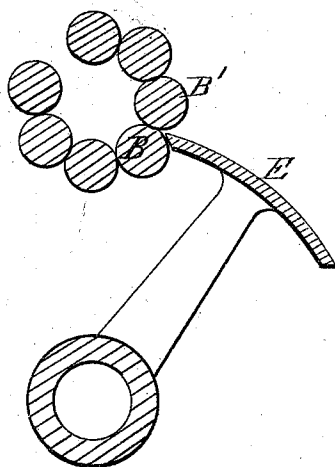
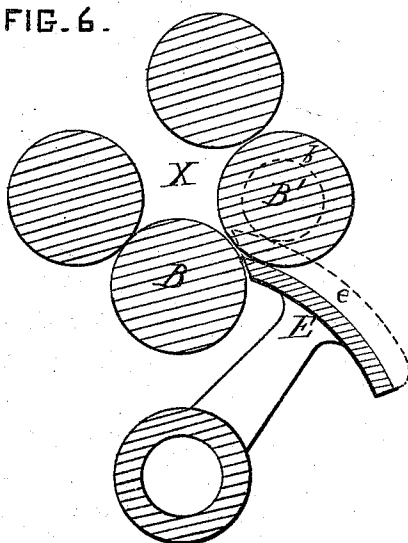


FIG. 6.



WITNESSES.

Charles E. Baker
William E. Mead

Socrates Scholfield

UNITED STATES PATENT OFFICE.

SOCRATES SCHOLFIELD, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN CIGAR-MACHINES.

Specification forming part of Letters Patent No. **140,846**, dated July 15, 1873; application filed January 2, 1873.

To all whom it may concern:

Be it known that I, SOCRATES SCHOLFIELD, of Providence, in the State of Rhode Island, have invented an Improvement in Cigar-Machines, of which the following is a specification:

The nature of my invention consists in a tobacco-receiving apron arranged in combination with the opening rolls of the cluster, so as to receive a like movement when they are being first brought forward in the act of closing the machine, but which becomes disengaged and moves back to its normal or receiving position, when the rolls of the cluster become completely closed upon the tobacco. It also consists in a ribbed or barred receiving-apron, over the intermatching surface of which a circumferentially-grooved opening and closing roll is made to move in collecting a deposit of loose tobacco. The object of this improvement is to prevent the tobacco from being caught between one of the movable and stationary rolls of the cluster in such a manner as to prevent the proper closing of the machine.

Figure 1 represents a rear view of a binding-machine embodying my improvement. Fig. 2 is an end elevation of the machine, shown with the rolls thrown open in order to receive a fresh filler upon the receiving-apron. Fig. 3 is a transverse sectional view taken in the line *xx* of Fig. 1. Fig. 4 is a longitudinal view of the two opening and closing rolls, one of which is shown in section. Figs. 5 and 6 are sectional views illustrating the advantages of my improvement in its application to a machine having four rolls.

In the drawing, *A A* are two stationary heads carrying the rolls *B B B*, and *A' A'* are two movable or opening heads carrying the rolls *B' B''*. The heads *A' A'* are rigidly attached to the shaft *C*, which may be rocked back and forth to open and close the machine by means of the arm *D*, to be operated by hand or treadle, or by any other suitable means. The apron *E*, arranged to receive the filler as it drops into the machine, is hinged upon the shaft *C*, and has its normal or receiving position, as shown in Figs. 2 and 3, and is connected with the opening and closing heads *A' A'*, so as to operate to cover the space *c* in timely relation to the closing movement, which may

be effected by various devices, of which I have preferred the employment of a pressure-spring, *F*, attached to the arm *a*, and acting against a cam, *e*, upon the end of the apron *E*, said cam and spring being so arranged that as the rolls become completely closed the point of the spring *F* will pass beyond the end of the cam *e*, as shown in Fig. 1, releasing the apron and allowing it to drop back to its normal or receiving position. Now, when a binder has been rolled upon the inclosed filler and the rolls *B' B''* are being thrown back to open the machine, the finished bunch will be discharged through the space *c* between the apron *E* and the stationary rolls of the cluster; and as the movement of the opening rolls continues the spring *F* will slide back upon the cam *e*, the apron *E* in the meantime being held to occupy the space left between the opening and stationary rolls, with the exception of the space *c*, through which the finished bunch was discharged. A fresh filler being now deposited upon the apron, and a closing movement imparted to the rolls, the friction of the spring *F* upon the cam *e* will cause the apron *E* to partake of the closing movement of the rolls until the space *c* is closed by the said apron, which has then reached its extreme forward limit, and the continued closing movement of the heads *A' A'*, which carry the rolls *B' B''*, will cause the spring *F* to slide along to the end of the cam *e*, and by passing beyond it release the apron, and thus allow it to drop back to its receiving position, as before, the filler in the meantime having been received between the stationary and closing rolls of the machine, to be there rotated in order to receive the proper binder.

In machines where the opening heads *A' A'* have a straight line of action, being attached to a slide instead of moving in the arc of a circle, as shown in the drawing, the apron *E* will partake of a similar direct sliding movement, and may be operated with reference to the closing movement of the rolls, in a manner similar to the case illustrated.

In such cases a spring may be readily employed to draw back the apron to its receiving position. The surface of the apron *E* may be made with ribs or bars *e' e' e'* to enter the corresponding spaces *b b b* turned out of the

roll B', in order that the tobacco deposited upon the apron may be brought into the space inclosed by the cluster of rolls with greater facility and certainty. This improvement is of the highest value when a cluster of four rolls is used, and becomes of less and less importance as the number of rolls is increased; and in carrying out my invention I necessarily groove but one roll of the cluster, and that the movable roll immediately above the apron, the others being kept smooth and solid, as in ordinary machines.

The proper relative position for a receiving-apron and its adjoining stationary roll is shown in Fig. 5, where the surface of the apron is arranged as nearly as possible in line with the curved surface of the roll B', but in the case of a cluster of four rolls, as shown in Fig. 6, where the rolls are all arranged to nearly touch each other, except upon the side where the binder is to be run in upon the filler, the apron will strike the roll B at a point so low down that the tobacco will not rise over the roll B into the space X, but will be caught between the rolls B and B', and the machine cannot then be closed.

The difficulty and uncertainty attending the proper transfer of the loose tobacco from the surface of the apron to the chamber X is overcome in my improvement by cutting in the roll B' the circumferential grooves *b b b*, and arranging the surface of the apron E in bars or ribs *e' e'* to enter the grooves of the roll. The tobacco is thus elevated above the opposing surface of the roll B, and may therefore be made to pass into the chamber X without difficulty, the grooves of the roll B' causing it to act like a rake when moving over the surface of the apron to force the tobacco into the rolling-chamber.

The driving-gear *a'* upon the roll B'' is placed beyond the plane of the others of the cluster, which are driven by means of the central gear H upon the shaft I, to which is also attached the pulley J. The gear G, being thus placed beyond the plane of the gear H, which serves to operate the other gears of the cluster, is to be driven by means of a long intermediate gear, G'', placed upon a stud, *f*.

I am aware that rolls grooved circumferentially have been used heretofore; therefore, I make no claim to an intermatching cluster of such rolls. I am also aware that stationary bars have been placed between the separate washers or disks used to form such a roll, in order to keep the washers steady and in their proper places; therefore, I make no claim to stationary bars used for a like purpose; but

I claim as my invention—

1. The combination of the circumferentially-grooved roll B' with the ribs or bars *e' e' e'* of the movable apron E arranged to cover and uncover the space *c* when receiving the loose filler and discharging the bunch, substantially as described.
2. The apron E receiving a forward movement conjointly with the primary closing movement of the rolls, and also receiving an independent backward movement toward its normal or receiving position upon the complete closing of the rolls, substantially as described.
3. A frictional connection between the head A', or any of its attachments, and the apron E, operating to transmit a forward movement to the apron during the closing movement of the rolls, substantially as described.

SOCRATES SCHOLFIELD.

Witnesses:

GEORGE H. ROGERS,
ALBA R. ABBOTT.