2 Sheets Sheet 1.

M. R. Griswold,

Turning Irregular Forms.

No. 47,814. Patented May 23, 1865.

Fig: 1.

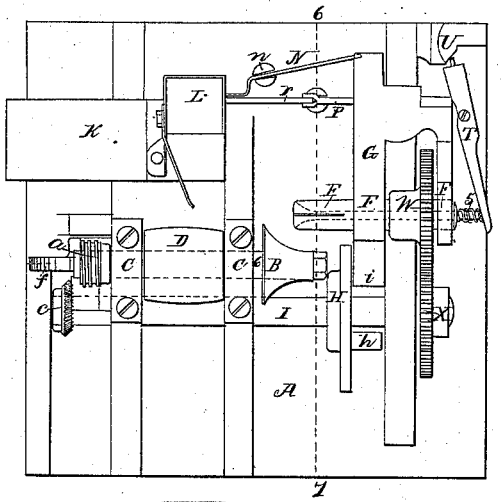


Fig: 2.

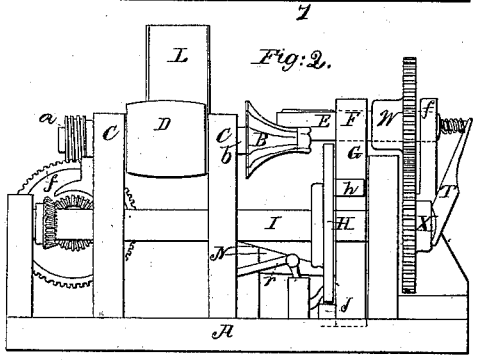
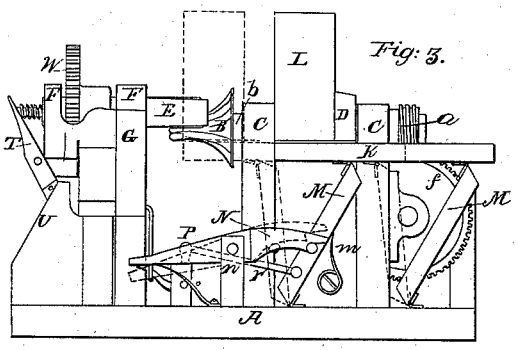


Fig: 3.



Witnesses:
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By his Atty
John E. Eady.

2 Sheets, Sheet 2.

M. R. Grismold,

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Fig: 4.

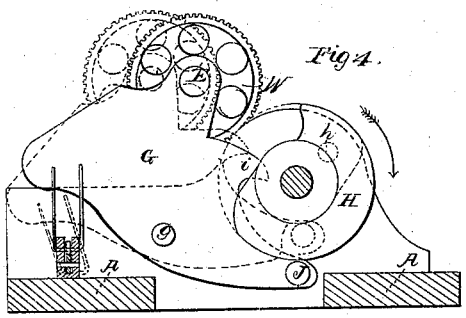


Fig: 5.

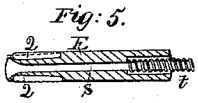


Fig: 6.

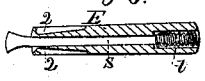


Fig: 7.

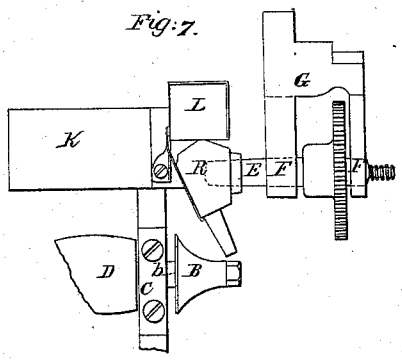


Fig: 8

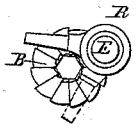
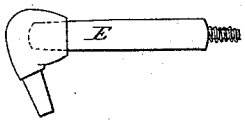


Fig: 9.



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UNITED STATES PATENT OFFICE.

MARTIN R. GRISWOLD, OF WATERTOWN, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR MAKING TOBACCO-PIPES.

Specification forming part of Letters Patent No. **47,814**, dated May 23, 1865.

To all whom it may concern:

Be it known that I, M. R. GRISWOLD, of Watertown, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Machines for Making Tobacco-Pipes; and I do hereby declare the following to be a full, clear, and exact description of the same, when taken in connection with the accompanying drawings and the letters of reference marked thereon and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view; Fig. 2, a front side view; Fig. 3, a rear side view; Fig. 4, a sectional view, cutting through on a line 6 7; and Figs. 5, 6, 7, 8 and 9, detached parts to illustrate the operation of the machine.

Similar letters and characters indicate corresponding parts in the several figures.

My invention relates to an improvement in machines for making tobacco-pipes from wood, and consists in a mechanism for turning or forming the outside of the bowl of the pipe.

To enable others skilled in the art to make and use my improved machine, I will proceed to describe its construction and operation as illustrated in the accompanying drawings.

A is a bed-plate; B, the cutter fixed to an arbor, *b*, supported and revolving in bearings C. D is a pulley fixed to the said arbor *b*, and to which power is applied to drive the cutter B.

E is a spindle, upon which the bowl to be formed is placed. The said spindle is supported in bearings, F F on a carriage, G, which swings to and from the cutter B on a pivot, *g*. (See Fig. 4.) The said carriage G is moved to and from the cutter by the cam H, (see Fig. 4,) the said cam being caused to revolve in the direction of the arrow shown, through the connection of its shaft I with the cutter-arbor *b*, by means of worm-gear *a*, wheel *f*, and bevels *c*. The carriage G is shown in black, Fig. 4, as forward, the cam H bearing upon a stud, J, to hold the carriage in that position, where it will remain until the cam H shall have revolved to the position denoted in red, when the action of the cam upon the stud J will have ceased, and a pin or stud, *h*, on the opposite side of the cam (shown in dotted circle, Fig. 4) will come under a projection, *i*, of the carriage, and, rising, throw the carriage back to the position in red, carrying with it the spindle E. When the carriage is forward, as in black, the spindle E is made to revolve, by means of the gear-wheel W, on the said spindle, meshing into the wheel X on the cam-shaft I, and when back, as in red, the gears are not in connection, so that the spindle is at rest.

K is a table supporting a carrier, L, in which the blanks to be formed are placed one above the other. (See the position of one in Fig. 7.) The stem of the pipe and the inside of the bowl are formed before being placed in the carrier. The operation of the said carrier to place a blank upon the spindle is as follows: The table K is hinged by two legs or supports, M, to the bed-plats. A spring, *m*, bears against one of the legs to force the table forward to the position denoted in red, Fig. 3. A latch, N, hung at *n*, acted upon by the spring *o*, holds the table K back as in block, but when carriage G is forced back, as before described and shown in Fig. 4, it strikes the said latch N, forces it to release the table, which springs forward to the position in red, (Figs. 3 and 7,) carrying the blank with it, and setting the bottom one onto the spindle E, as seen in Fig. 7. Then when the carriage G is drawn forward toward the cutter B, as in black, Fig. 4, a bell-crank lever, P, connected by a rod, *r*, to the table-leg M, and acted upon by the rising carriage, will force the table back to the position in black, Fig. 3, leaving a blank, R, on the spindle as in Fig. 7, where it will be caught and held by the latch, as before described. The carriage carries the spindle E with the blank R up to the cutter, as in Fig. 8, in black, and the cutter and spindle revolving, as before described, carry the blank around to the position in red, Fig. 8. The cutter B, being the form required to dress the bowl, forms the outside of the bowl, as shown in Fig. 9. When this is done, the carriage is thrown back again, as before, and the turned pipe thrown from the spindle, as follows:

In Figs. 5 and 6 the spindle E is shown in longitudinal section. Through the said spindle I place a rod, *s*, its inner end forming an inverted cone for the purpose of forcing out two or more dogs, 2 2, to hold the blank from turning on the spindle. When the rod is in, as in Fig. 5, the dogs are out, presenting a sharp edge to hold upon the wood of the pipe when forced on over them. After the bowl is finished,

as before described, and during the operation of the carriage falling back, a lever, T, upon the said carriage, (see Fig. 1,) one end bearing against the rod *s*, the other end strikes upon and rides down upon an inclined plane, U, forcing the rod *s* forward, as in Fig. 6, to throw the pipe from the spindle. This done, the lever T slips from the inclined plane, when the rod, by the action of the spring *t*, will fly back to the position in Fig. 5, to receive a second blank, and so on receiving, dressing, and discharging so long as the carrier L is supplied with blanks.

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

1. The combination of the spindle E, constructed and operating substantially as described, with the cutter B, as and for the purpose specified.

2. The carrier L, constructed and operating substantially as described, with the spindle E, combined as and for the purpose specified.

MARTIN R. GRISWOLD.

Witnesses:

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RUFUS SANFORD.