5 Sheets—Sheet 1.

G. W. GLAZIER & O. E. WAIT.

Machine for Making Bobbins.

No. 209,614. Patented Nov. 5, 1878.

Fig. 1.

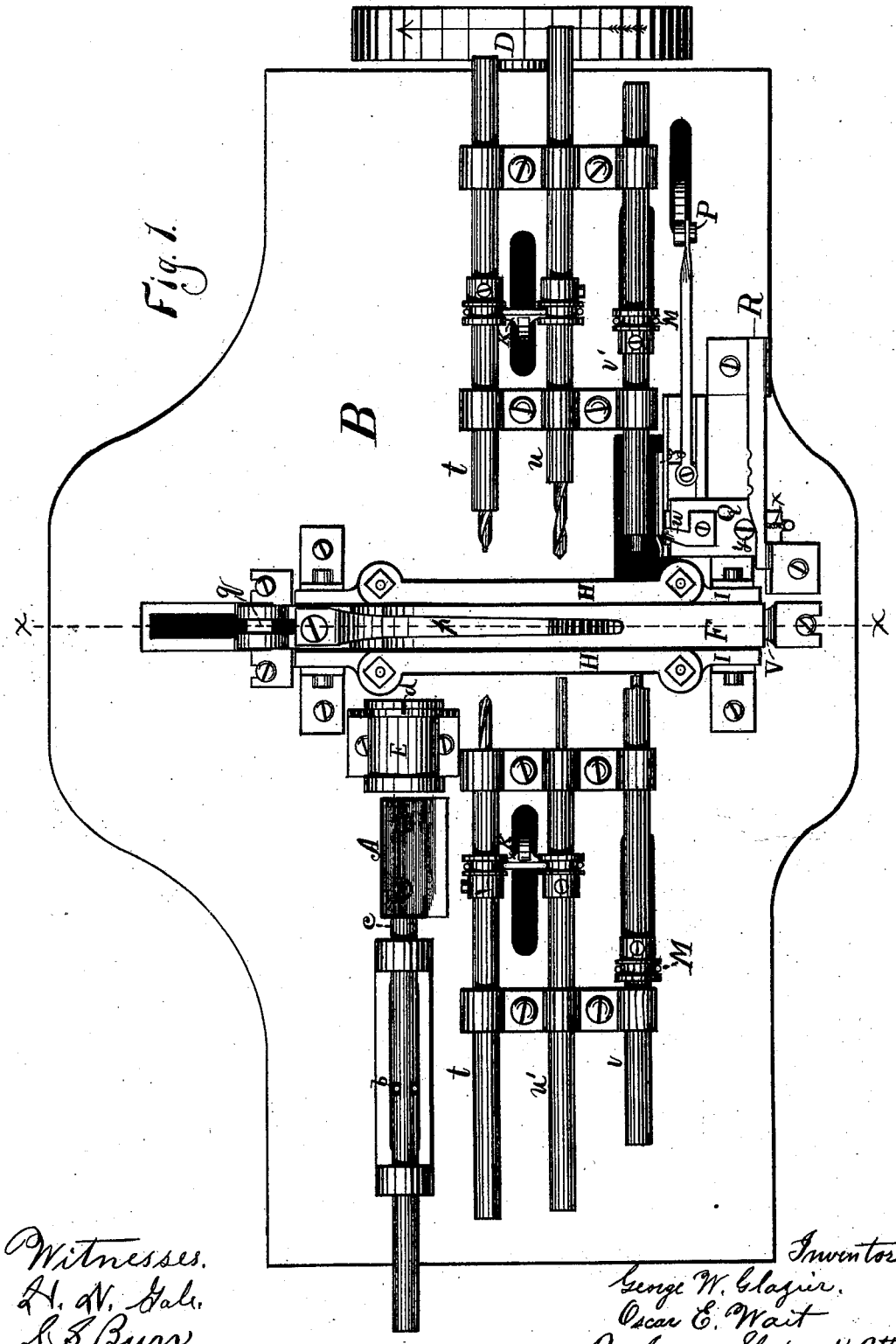

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Fig. 2.

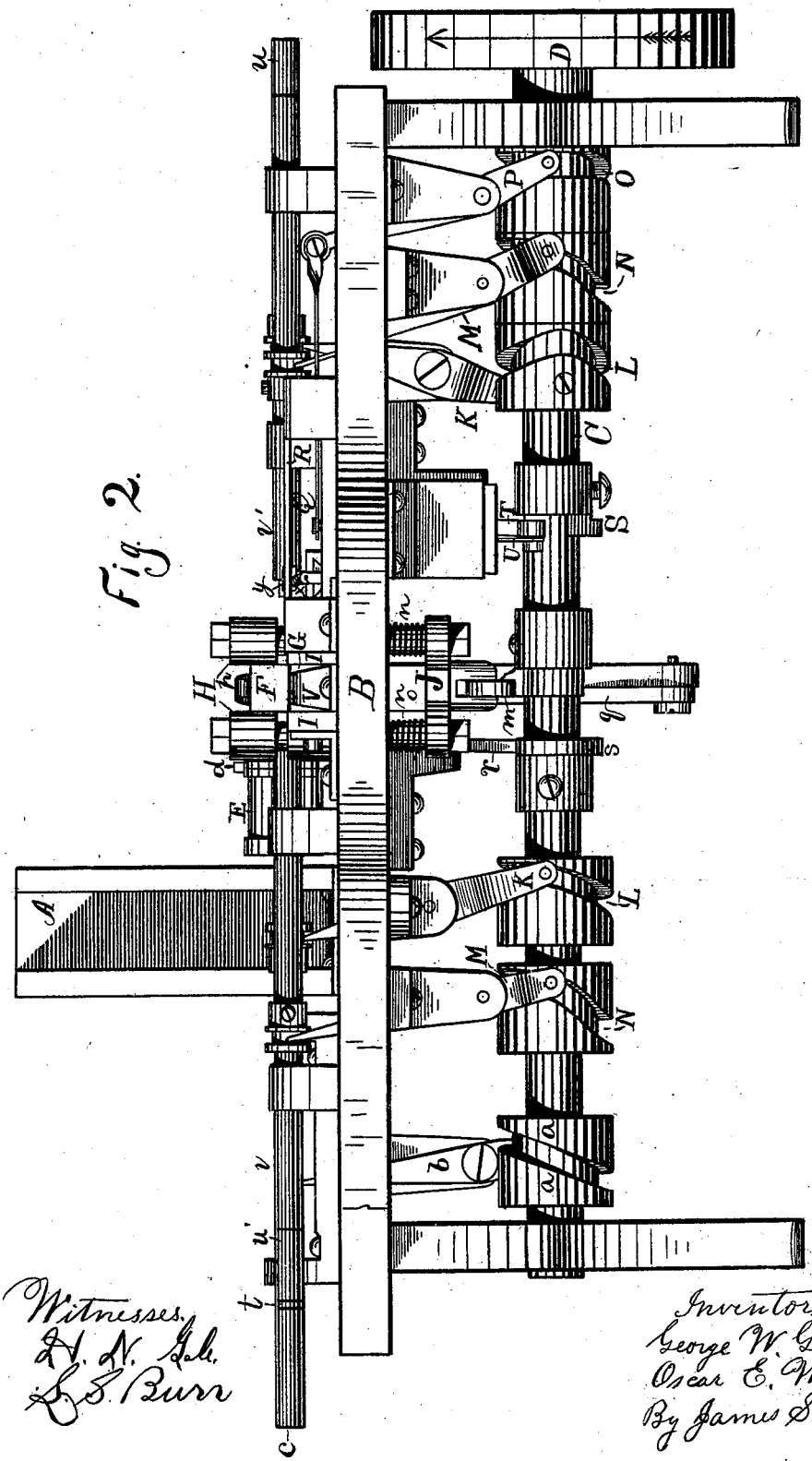

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Fig. 3.

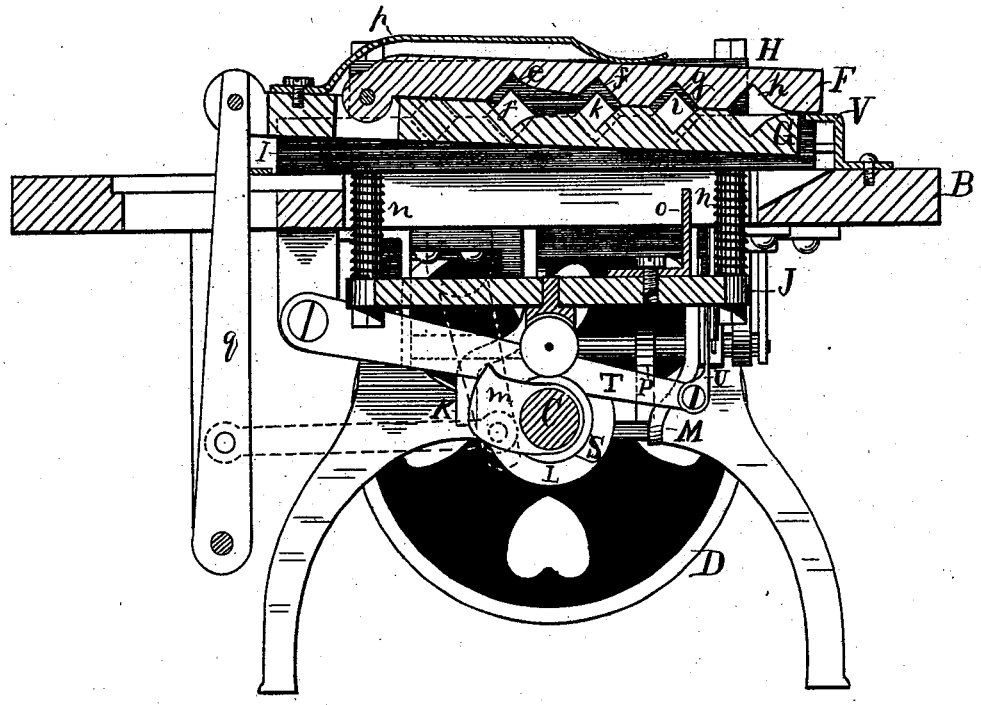

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Fig. 4

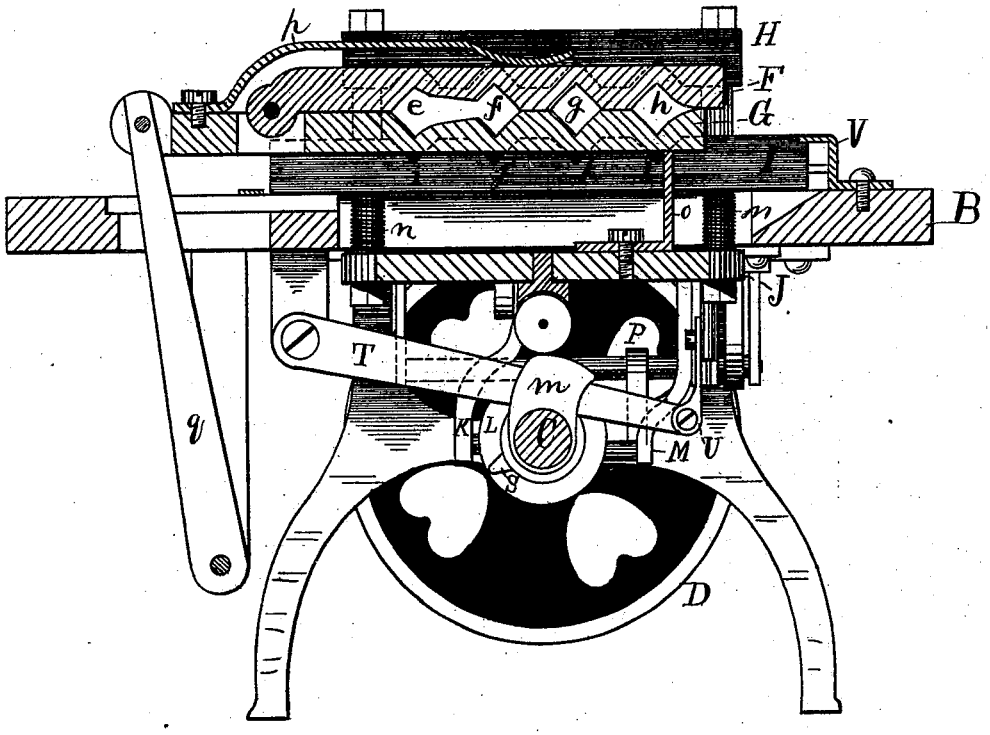

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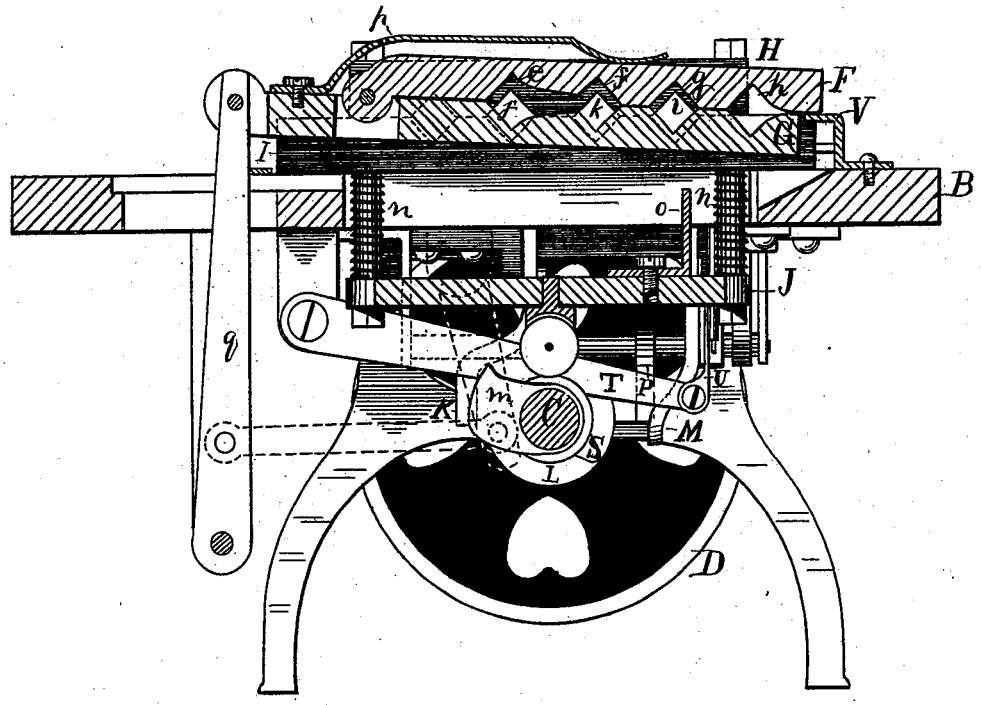
Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE W. GLAZIER, OF SALEM, AND OSCAR E. WAIT, OF LYNN, MASS.

IMPROVEMENT IN MACHINES FOR MAKING BOBBINS.

Specification forming part of Letters Patent No. **209,614**, dated November 5, 1878; application filed November 27, 1876.

To all whom it may concern:

Be it known that we, GEORGE W. GLAZIER, of Salem, and OSCAR E. WAIT, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Making Bobbins, of which the following is a specification:

Our invention consists in the peculiar construction of the conveyer, the clamping-bars, and various other parts of the machine, and also in various combinations of parts, all as hereinafter described.

In the accompanying drawing, Figure 1 is a plan view of a machine for making bobbins which embodies our invention. Fig. 2 is a front view of the same. Fig. 3 is a transverse section of the same on line *x x* of Fig. 1. Fig. 4 is a like view of the same with the parts in a different position. Fig. 5 is an enlarged top view of a detached part thereof. Fig. 6 is a front view of the smoothing-chisel detached, and Fig. 7 an end view of the bearings at one end of the hollow auger.

Blocks of square form in transverse section, and of the proper length for a bobbin, are stacked one upon the other in the hopper A, Figs. 1 and 2, which hopper is mounted upon the table B. Underneath said table is the cam-shaft C, motion being imparted thereto through the driving-pulley D. A double-faced or grooved cam, *a*, engages with the lower end of lever *b*, and imparts a vibrating motion to its upper end, which is indicated, and engages with the plunger *c*, Fig. 1, thereby imparting to it a reciprocating motion.

The plunger *c* works through a hole at the left-hand side of the hopper A, and should have a reciprocating motion fully equal to the width of the hopper, and should draw back so far as to clear the inside walls of the hopper, as shown in Fig. 1. Upon the forward movement of the plunger *c* it strikes the end of the lowermost block within the hopper, and forces it into and nearly through the hollow auger E, said auger being of ordinary construction, and motion is communicated to it from any suitable power by means of a belt. (Not shown.)

As the plunger *c* recedes from the hopper another block falls down, and at its next forward movement said block is carried forward into the hollow auger, driving the first block through, thereby completing the rounding of the block. The orifice in the side of the hopper A, facing the hollow auger E, is of a size corresponding to that of the blocks, so as to prevent their rotation within the auger while passing out of the hopper. Just before the rear end of the block leaves the hopper the front end, which is then rounded, strikes a stationary spur or knife-point, *d*, in the bearings of the hollow auger, (most clearly shown in Fig. 7,) which slightly enters the wood and prevents it from rotating with the auger in its farther progress through the same.

The hopper is replenished from time to time fast enough to keep up a continuous supply to the plunger *c*, thereby causing each block to be immediately followed up by another throughout all the various operations of the machine. This being understood, we will confine our description mainly to the first block, and follow it in its course through the machine.

The parts so far described, with the exception of the stationary knife-point, are substantially the same as in our Patent No. 172,622, dated January 25, 1876.

Transversely with the machine, and near the middle of its length, between the revolving spindles, hereinafter described, is a reciprocating conveyer, consisting of two jaws, F G, bearing holding-notches *e f g h*, (see Figs. 3 and 4,) and upon each side of said conveyer F G clamping-bars H I, bearing holding-notches *i j k l*, are placed, the upper one, H, of which in each pair is movable, and they are connected to cross-bar J, and are lifted by cam *m* on shaft C, and drawn down by their weight and the springs *n*, Figs. 3 and 4. The cross-bar J also carries a standard, *o*, which raises the front end of the conveyer F G into the position shown in Fig. 4. The jaws of the conveyer F G are hinged at one end, and are forced together by the spring *p*. They are also connected to the lever *q*, which, by means of a cross-lever, (indicated by broken lines in Fig. 3,) is connected to the lever *r*, Fig. 2, the latter bearing against the cam *s*, Fig. 2, and kept in contact therewith by a spring, (not shown,) whereby said cam imparts a reciprocating motion to the conveyer F G.

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the ends of the blanks, &c., without altering or affecting the operation of the conveyer or clamping-bars.

In case other tools are employed and other articles made in the machine besides bobbins, such as pill-boxes, spools, handles, &c., the various cams would also require modification, to conform to the change of tools and object to be produced.

The stationary cam R may also be changed so as to impart various desired forms to the article or articles turned by the chisel *w*. We have also described one pair of conveyer-jaws and two pairs of clamping-bars; but there might be only one pair of clamping-bars, if desired, and two pairs of conveyers, in which case the clamping-bars would be in the middle and the conveyers placed by their sides. It is also immaterial whether the lower or upper one of the clamping-bars is made the movable one; and they and the conveyer may be provided with a greater or less number of notches, to present the work to a greater or less number of tools, as may be desired.

We are aware of the patents to J. C. Rider, February 4, 1873, No. 135,443, and to G. E. Lyman, January 12, 1875, No. 158,644, for spool-machines, and we hereby disclaim all the devices and mechanism therein described or shown.

We claim as our invention—

1. The conveyer F G, consisting of a pair of hinged jaws having a series of notches upon their meeting-faces, held together with a yielding pressure, and provided with suitable mechanism for imparting to them a reciprocating motion, substantially as described, and for the purpose specified.

2. The clamping-bars H I, provided with a series of holding-notches upon their inside faces, one of which bars is rigidly secured to the bed or table of the machine, and the other has a vertical reciprocating motion, substantially as described, and for the purpose specified.

3. The combination of the conveyer F G and clamping-bars H I, substantially as described, and for the purpose specified.

4. The combination of the clamping-bars H I, conveyer F G, and the stop V, which engages with the upper member thereof, substantially as described, and for the purpose specified.

5. The combination of the conveyer F G, clamping-bars H I, and revolving spindles set in line with the holding-notches of the clamping-bars, substantially as described, and for the purpose set forth.

6. The combination of the conveyer F G, clamping-bars H I, revolving spindles set in line with the holding-notches in said bar, and the hollow auger E, substantially as described, and for the purpose set forth.

7. The combination of the conveyer F G, clamping-bars H I, tool-bearing spindles *t t* and *u u'*, lathe-center-bearing spindles *v v'*, and carriage Q, bearing chisel *w*, said carriage and spindles *v v'* provided with means for actuating one by the other, substantially as described.

8. The combination of the cam *m*, bar J, and clamping-bars H I, substantially as described, and for the purpose set forth.

9. The combination of the cam *m*, bar J, clamping-bars H I, conveyer F G, levers *q r*, connected together, and cam *s*, substantially as described, and for the purpose set forth.

10. The combination of the cam *m*, bar J, standard *o*, reciprocating conveyer F G, and the stop V, substantially as described, and for the purpose set forth.

11. The combination of the conveyer F G, clamping-bars H I, and their actuating mechanism with the cam *a*, lever *b*, plunger *c*, hopper A, hollow auger E, spindles *t t* and *u u'*, levers K K, and cams L L, substantially as described.

12. The combination of the cams N N, levers M M, and spindles *v v'*, bearing lathe-centers, with the carriage Q, bearing chisel *w* and projection *y*, lever P, and cams O and R, substantially as described, and for the purpose set forth.

13. The combination of the spindles *v v'*, carriage Q, lever P, and cam O with the vertically-sliding smoothing-chisel Z and its actuating-cam S, substantially as described, and for the purpose set forth.

14. The knife-point *d*, affixed in a stationary position to the framing of the machine and in the path of the rounded blocks, substantially as described, and for the purpose specified.

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