

C. Bourgard.

Wig Mach.

Patented Jan 25. 1853

N^o 9554.

Fig. 1

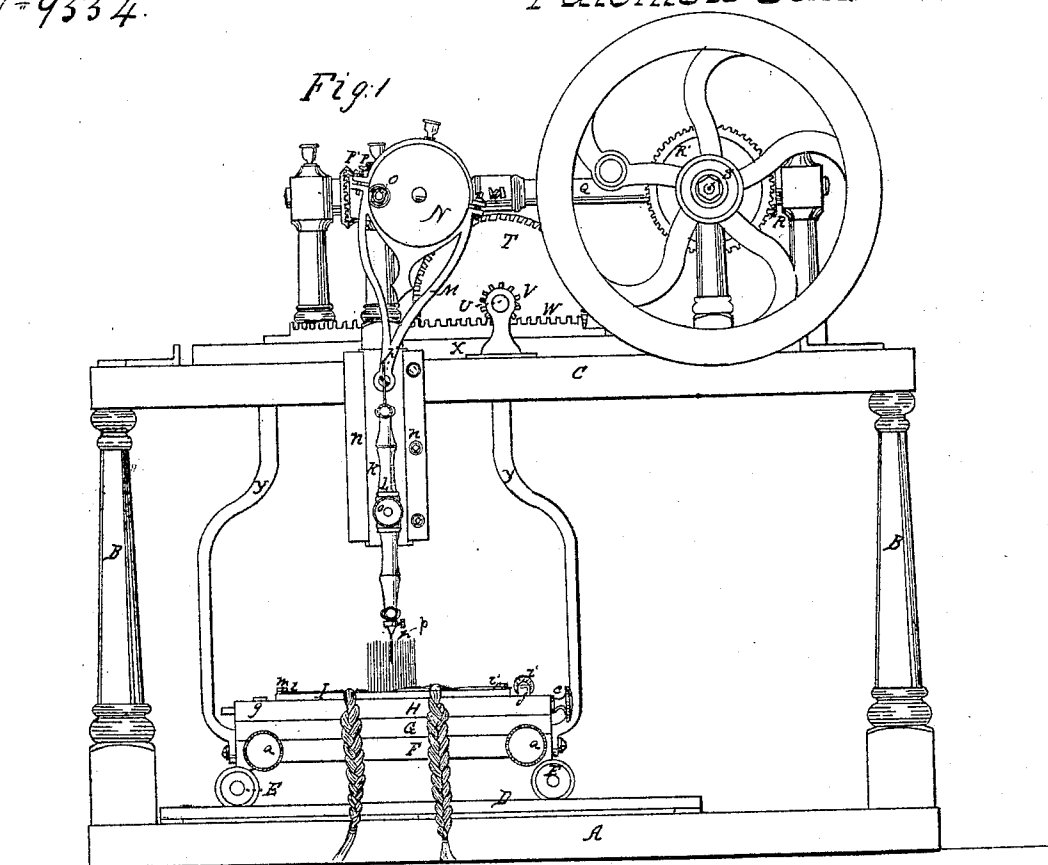


Fig. 2

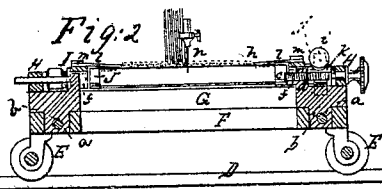


Fig. 3

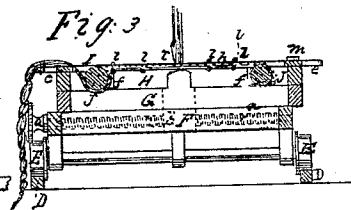


Fig. 4

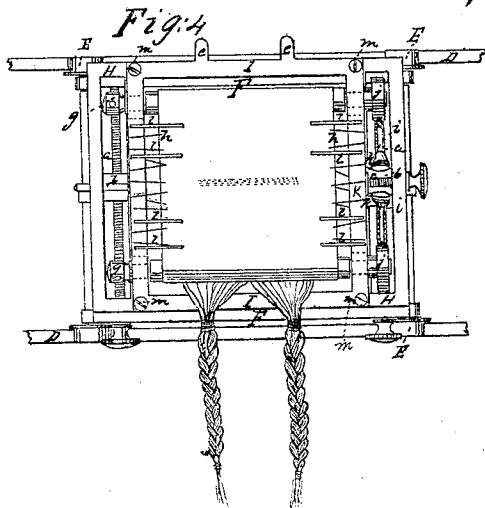


Fig. 5



UNITED STATES PATENT OFFICE.

CHARLES BOURGARD, OF NEW YORK, N. Y.

MANUFACTURING WIGS.

Specification of Letters Patent No. 9,554, dated January 25, 1853.

To all whom it may concern:

Be it known that I, CHARLES BOURGARD, of the city, county, and State of New York, have invented a new and useful machine to be used in the manufacture of wigs, toupees, fronts, and similar coverings for the head, for the purpose of inserting the hair in the silk or other foundation which is intended to represent the natural scalp in places where the hair is parted; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a front elevation of the machine complete. Fig. 2, is a section of the work carriage in a vertical plane parallel with Fig. 1. Fig. 3, is a vertical section of the same taken at right angles to Fig. 2. Fig. 4, is a plan or top view of the same. Fig. 5, shows the needle on an exaggerated scale.

Similar letters of reference indicate corresponding parts in each of the several figures.

The machine which constitutes this invention consists of a work frame and its carriage, one or more needles and the mechanism through which the said work table, carriage, needle or needles, receive such motions in relation to each other as are necessary for the proper performance of the operation. The carriage is mounted on wheels which run on a suitable railway and the work frame is placed upon a double slide frame, which rests on the carriage and is adjustable longitudinally and transversely. The work frame is provided with means of securing the silk or other material into which the hair is to be inserted and of confining a suitable quantity of hair which is laid on the face of the said material. The needle is barbed and receives a reciprocating motion in a line perpendicular to the face of the silk or material and passes through it from its back side catching one or more hairs as may be required and drawing the root ends through the back of the silk or material. The carriage receives an intermittent rectilinear motion which takes place between every two passages of the needle through the silk or material, so as to bring the silk or material to a proper position for

the drawing through of the succeeding hair. By this motion the hair is inserted in rows. The relative position of the hairs of each row to those of the next rows is regulated by the double slide of the frame.

To enable those skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, is the bed plate or base; B, B, columns and C, an entablature, which serve as a framing to carry the working parts of the machine.

D, is the railway upon which the wheels E, of the carriage F, run, the said railway being secured to the bed plate. The carriage F, is simply a four sided frame of metal or other material.

G, H, are the two frames which constitute the double slide frame, G resting on the carriage and H upon G, both frames being of about the same size and form as the carriage. G, is adjustable on the carriage transversely to the railway by two screws *a, a*, one on each side, which work in nuts *b, b*, which are secured to or form part of it, and which have journals at either end fitting and working in bearings in the frame, the longitudinal motion of the said screws in the carriage being prevented by any suitable means. H, is adjustable on G, in the direction of the railway by a screw *c*, which fits in a nut *d*, secured to or forming part of G, the said screw having a journal turning freely in a bearing in H, but being prevented from moving longitudinally in it.

I, is the work frame, which is also a square metal frame with ears *e, e*, at its front and back and with two bearings *f, f*, under each side for the journals of two rollers J, J, upon which the sheet of material *h*, to form the foundation for the hair is wound, the said material being secured to their peripheries by pins or other means. The rollers J, J, have holes G, at one end to receive the point of a lever for turning them to tighten or strain the material *h*, the strain or tightness being preserved by small levers *i, i*, which screw into set collars *j, j*, fitted on the opposite ends of the rollers and press upon and bite the ends of the rollers, the set collars being movable on the rollers when the bite of the screws is released and being adjustable so as to be

tightened in any position by the screws, which are always brought, when the material is strained, to rest upon two small projections *k, k*, on the sides of the frame and thus prevent the rollers turning back to allow the material to slacken. The foundation material *h*, is shown in Fig. 4, tinted of a pale pink color in order to distinguish it and in Figs. 2 and 3, where it is seen in section, it is represented by a bright red line. In addition to being strained by the rollers *J, J*, its sides are laced to the sides of the frame. The hair is secured for the length of two or three inches at the ends near its roots to the front of the foundation—which is the under side when it is strained—by wires *l, l*, which are passed through the cloth near each edge and lie across it with their ends resting on the sides of the frame. The work frame is secured to the top frame *H*, of the double sliding frame by screws *m*. *K*, is a dovetailed shaped slide fitted in vertical dovetailed guides or attached to the entablature *C*. *L*, is a rod pivoted at about the middle of its length to the slide *K*, but capable of being secured in a fixed position by means of a nut *o*, fitting to a screw on the end of the pivot. The ends of the rod *L*, are bored to receive two needles *p, p*, which are barbed or hooked, as shown at 6, in Fig. 5. One of these needles is of such size that its hook can only contain one hair, and the other is large enough to contain two or more. The needles are both placed in the rod with the hooks transverse to the direction of the hair on the work frame, and are secured in place by set screws.

The slide, *K*, is connected by a forked rod *M*, to an eccentric *N*, on a shaft *O*, which receives rotary motion through a pair of bevel gear wheels *P, P'*, from a shaft *Q*, which derives its motion through another pair of bevel gear wheels *R, R'*, from the main or driving shaft *S*, which has rotary motion communicated to it by a crank or by any suitable means. The shaft *Q*, also gives an intermittent motion to the work frame and its carriage by means of two segments of a screw thread *q*, which gear into a worm wheel *T*, on a shaft *U*, which carries a toothed pinion *V*, gearing into a toothed rack *W*, on a slide working in guides on the entablature, the carriage *F*, being connected to the said slides by two rods *Y, Y*.

The operation of the machine is conducted in the following manner: The work frame is taken from the carriage in order to strain the silk or other foundation, and after that is strained a large quantity of hair is spread at the front or under side of it, and secured by the wires *l, l*, that portion of the hair not secured by the wires being plaited together to avoid entanglement and conducted over the top of the work frame and tied to the

ears *e, e*. The work frame is then secured to the top slide frame *H*. The needle rod *L*, is then turned to bring the finest needle to a downward position and as nearly as possible in line with the motion of the slide *K*. The carriage *F*, is then brought to a suitable position on the railway and the double slide frame *G, H*, adjusted by the screws *a, a*, and *c*, to bring the foundation to a suitable position in relation to the needle, and the machine is then set in motion. The reciprocating motion communicated to the needle by the eccentric *N*, drives it through the foundation *h*, into the hair at the front or under side, and on its return it catches a hair in its hook or barb *G*, and draws it through to the back or upper side of the foundation, first in the form of a loop *r*, as shown in Fig. 3, which loop as the needle continues rising is drawn out straight. After every passage of the needle through the foundation the movement of the carriage takes place and moves the foundation a suitable distance for the next hair, which is drawn through as before. In this manner the operation proceeds drawing through the hair in a row parallel with the movement of the carriage. When the row is of the required length of the parting, the movement of the machine is stopped and the screws *a, a*, turned to move the foundation a suitable distance for the next row. The screw *c* is then turned to give the upper slide *H*, such a movement as will cause the hair of the row about to be formed to be inserted opposite the spaces between those on the next row, as then the hair can be inserted thicker or closer together. The machine is next started in the opposite direction and the carriage moves back at intervals between the passages of the needle. In this way another row of hair is inserted in like manner to the first. After a few rows of single hairs have been inserted with the fine needle, the coarser needle is turned downward and any suitable number of rows the operator may think proper inserted in the same manner on either side of those formed by the fine needle. The reason of the difference between the needles is that the finer, which draws through one hair only at a time, makes a parting like that in the natural head, but the larger one, which takes more hair, inserts the hair where a greater body is required and where the roots are not seen and consequently such regularity is not necessary, and works quicker, as the distance between the rows may be increased. When a sufficient number of rows have been inserted, the machine is stopped, the work removed and the hair secured and otherwise treated in the same manner as when performed without the use of this machine.

By the use of this machine I estimate from actual trial that one operative having ordinary faculty may perform the same amount

of work as ten skilled hand workmen, who can only acquire proficiency by long practice, besides doing it in a neater manner.

Having thus fully described my invention,
5 I will now proceed to state that I do not confine myself to the precise means of giving motion to or adjusting the several parts essential to the operation of the machine, as I know that it is possible to move and adjust
10 them in other ways to produce the same effect; and I will also state that I do not claim the employment of the hooked or bearded needle irrespective of the manner of its employment; but
15 I claim, for the purpose of making the partings or those parts of wigs and all arti-

cles of a similar nature where the artificial scalp or skin is visible and the surrounding parts,

The employment of two or more adjustable slide frames, for carrying the silk or other material into which the hair is to be inserted, and the hair to be inserted therein, in combination substantially as described with a reciprocating hooked or barbed needle, either the said frames or needle having
20 such a movement as is necessary to insert the
25 hairs at a proper distance apart.

CHARLES BOURGARD.

Witnesses:

S. H. WALES,
THOS. MAHON.