(No Model.) 3 Sheets—Sheet 1.

J. A. BRAUTIGAM.

PRESSER FOOT FOR PEARL BRAID SEWING MACHINES.

No. 347,465. Patented Aug. 17, 1886.

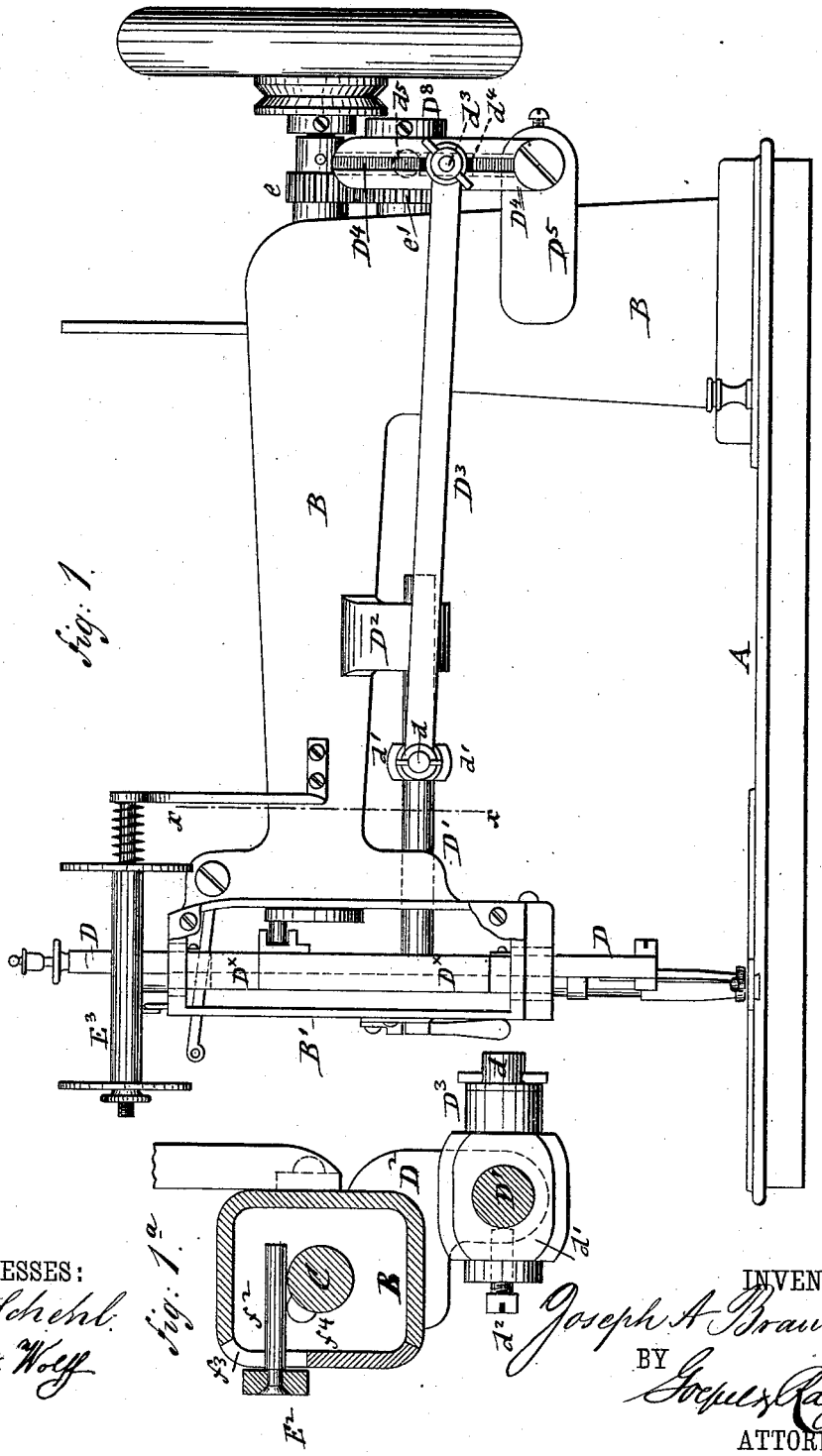

Fig. 1.

Fig. 1a.

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(No Model.) 3 Sheets—Sheet 2.

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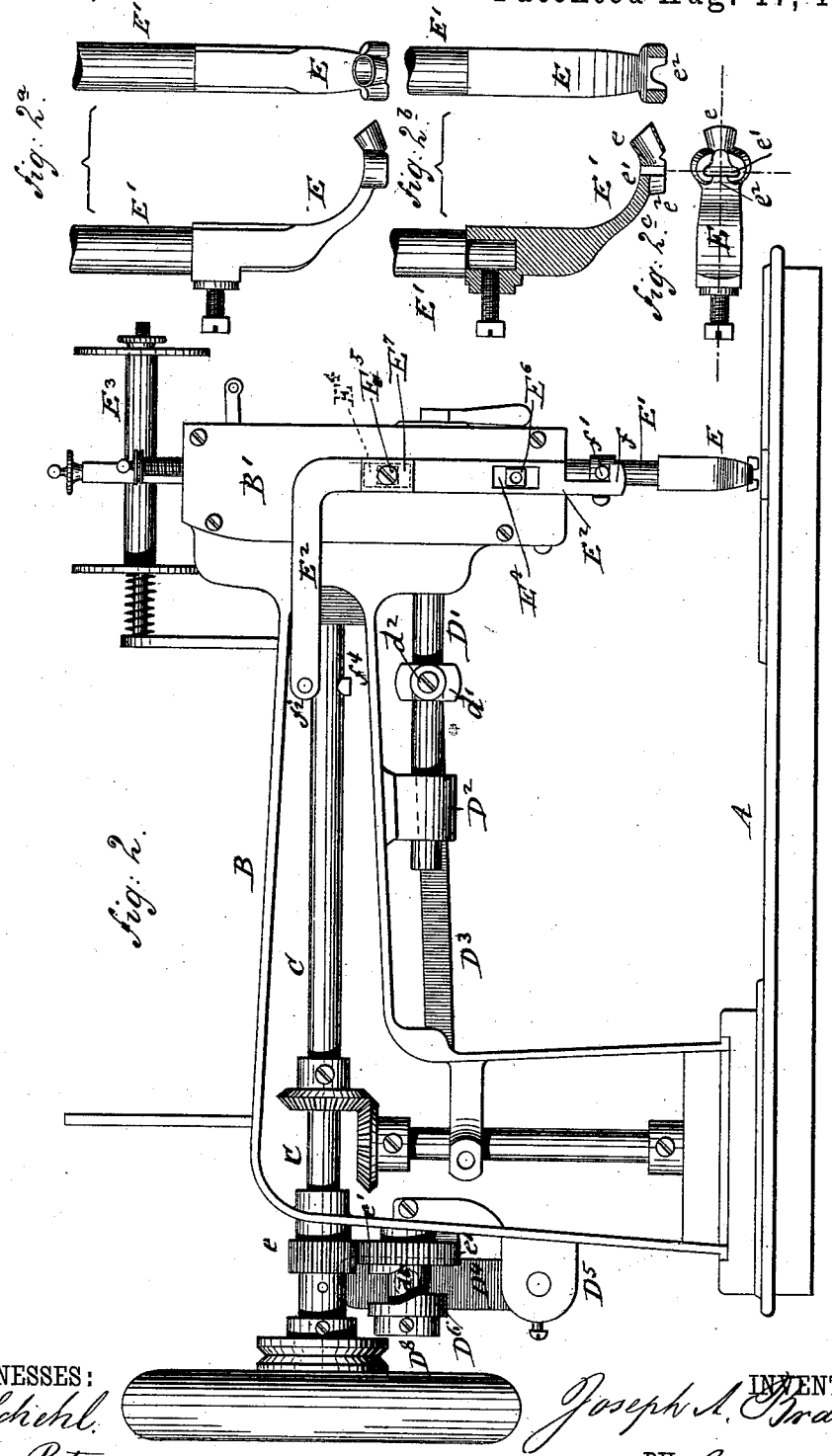

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

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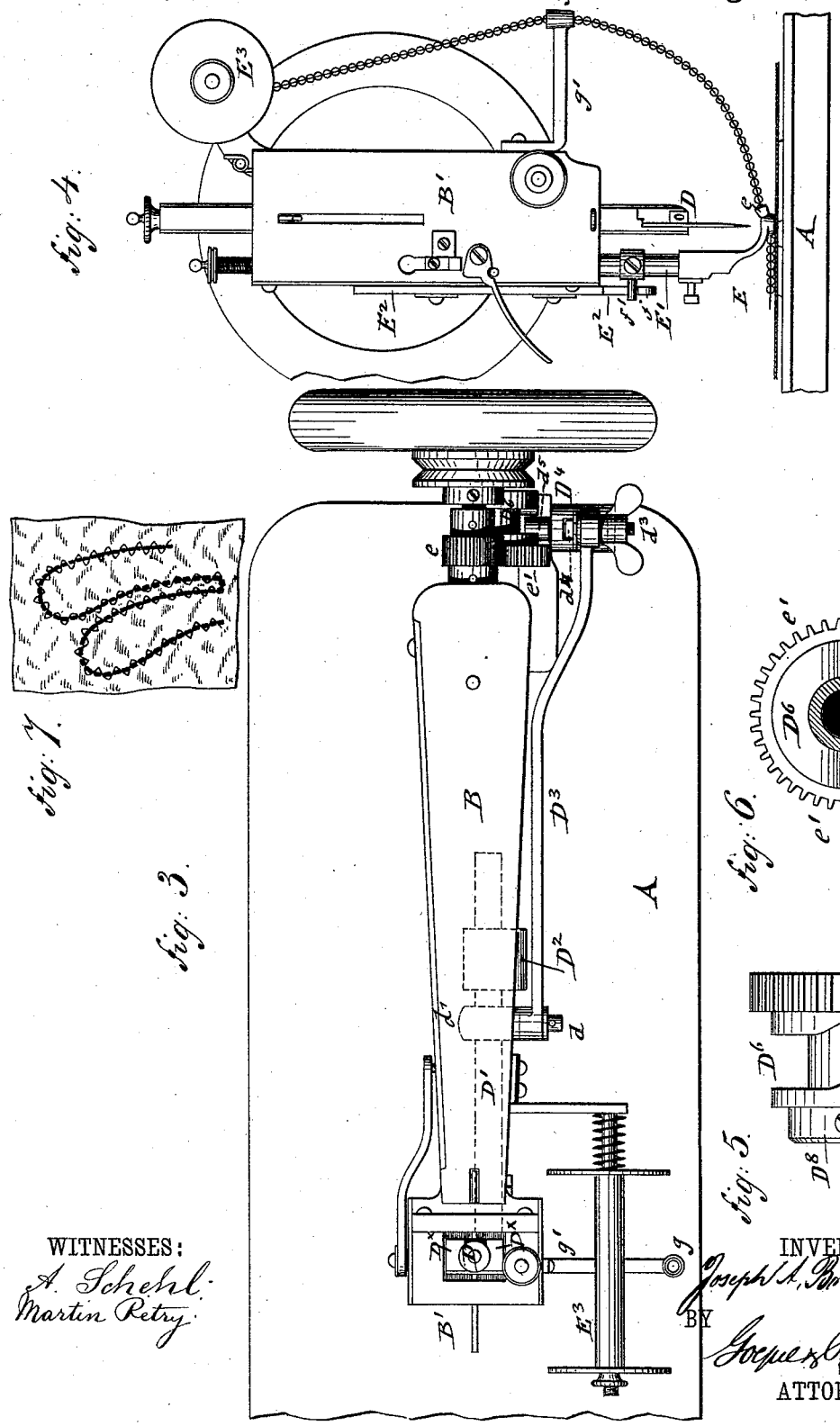

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UNITED STATES PATENT OFFICE.

JOSEPH A. BRAUTIGAM, OF NEW YORK, N. Y.

PRESSER-FOOT FOR PEARL-BRAID SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 347,465, dated August 17, 1886.

Application filed January 23, 1885. Serial No. 153,698. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. BRAUTIGAM, of the city, county, and State of New York, have invented certain new and useful Improvements in Presser-Feet for Pearl-Braid Sewing-Machines, of which the following is a specification.

This invention has reference to an improvement in presser-feet for sewing-machines for braiding with pearls or beads on fabrics of all kinds; and the invention consists in certain details of construction and combination of parts, as will more fully appear hereinafter, and finally be pointed out in the claims.

In the accompanying drawings, Figure 1 represents a front elevation of a sewing-machine for pearl-braiding, showing the face-plate of the bead partly. Fig. 1ª is a vertical transverse section on line *x x*, Fig. 1, drawn on a larger scale. Fig. 2 is a rear elevation of a sewing-machine for pearl-braiding, showing the actuating mechanism of the different parts. Figs. 2ª, 2ᵇ, and 2ᶜ are details of my improved presser-foot used in connection with a pearl-braid sewing-machine. Fig. 3 is a plan; Fig. 4, an end view of a sewing-machine for pearl-braiding. Figs. 5 and 6 are a side view and vertical transverse section of the cam by which horizontally-reciprocating motion is imparted to the needle-bar, and Fig. 7 is a sample of the work made by this machine.

Similar letters of reference indicate corresponding parts.

A in the drawings represents the table, and B the upper supporting-arm, of any suitable sewing-machine for pearl-braiding in connection with which my improved presser-foot may be used.

Through the horizontal part of the arm B extends the main shaft C, which imparts vertically-reciprocating motion to the needle-bar in the usual manner by a crank-disk that engages by its pin a grooved portion of the needle-bar, as shown in Fig. 1. The needle-bar D is guided in a box, $D^{\times}$, which is in turn guided in top and bottom slots of the head B′ of the upper arm, B, said slots permitting the needle-bar and its box to be reciprocated. The horizontal motion of the needle-bar D is imparted by a horizontal guide-rod, D′, which is attached to the box $D^{\times}$, said rod passing through an opening of the head B′ below the arm, and through a fixed bracket, D^2, of the arm B. A connecting-rod, D^3, is applied to a wrist-pin, *d*, of a collar, *d′*, that is attached by a clamp-screw, d^2, rigidly to the horizontal guide-rod D′. The opposite end of the connecting-rod D^3 is applied to a pivot-pin, d^3, of a slide-piece, d^4, that is guided in a grooved arm, D^4, the lower end of which is pivoted to a bracket, D^5, of the vertical part of the arm B. The grooved arm D^4 is provided at its rear side with an anti-friction roller, d^5, that projects into a cam-groove of a cam, D^6, said cam being loosely applied to a short shaft, D^7, that is attached to the arm B, and retained by a collar, D^8, attached to the outer end of the shaft D^7. The cam D^6 is rotated by a gear-wheel transmission, *e e′*, from the main shaft C. By properly adjusting the slide-piece d^4 higher or lower in the grooved oscillating arm D^4 the horizontally-reciprocating motion imparted to the needle-bar may be increased or decreased, according to the size of the pearl-braid to be sewed on the fabrics to be ornamented. The nearer the slide-piece is adjusted to the pivot of the oscillating arm D^4 the smaller will be the reciprocating motion or horizontal stroke of the needle-bar, while the farther the slide-piece is set from the pivot of the oscillating arm D^4 the greater will be the horizontal stroke of the needle-bar. The cam D^6 is rotated once for every two rotations of the main shaft C. The cam D^6 imparts an oscillating motion to the arm D^4, which is transmitted to the needle-bar box by the connecting-rod and guide-rod D′, so that a horizontally-reciprocating motion is imparted to the needle-bar for every full rotation of the main shaft and stitch of the needle. The needle forms thereby zigzag stitches over the braid to be attached to the fabrics.

My improved presser-foot E (which is used in connection with the pearl-braid sewing-machine above described, or with any similar machine of suitable construction) is provided at its lower front end with a funnel-shaped guide, *e*, for the pearl-braid, and with transverse slot *e′* at the bottom of the presser-foot, back of the guide *e*. At the rear part of the presser-foot is arranged a recess, e^2, as shown in Fig. 2ᵇ,

through which the pearl-braid is conducted off. The transverse slot e' is large enough to provide for the laterally-reciprocating motion of the needle. At each revolution of the main shaft C, and simultaneously with the forward feeding of the fabric, the presser-foot is lifted by means of an elbow-shaped arm, E^2, which is guided along the head B' on lugs E^6, projecting laterally from said head and engaging slots E^4 in the vertical member of said arm E^2. Covering-plates E^7 are clamped to the outer faces of the lugs by screws E^5, which pass therethrough and into said lugs, and in Fig. 2 one of the covering-plates is shown removed. The arm E^2 is connected at its lower end by a heel, f, with a pin, f', of the presser-bar E', as shown in Fig. 2. The inner end of the horizontal member of the elbow-shaped arm E^2 is provided with a pin, f^2, which passes through a slot, f^3, at the rear part of the arm B, across the shaft C, so as to be engaged by a cam, f^4, of the same. The action of the cam f^4 on the pin f^2 causes the lifting of the elbow-shaped arm E^2, and thereby the lifting of the presser-foot E, so as to clear the braid and permit the forward feeding of the fabric. The pearl-braid is wound upon a suitable bobbin, E^8, which is supported by a bracket on the arm B, said bobbin being provided with a suitable tension device. From the bobbin the braid passes in downward direction through a sleeve-shaped guide, g, supported by a bracket, g', of the head B', as shown in Figs. 3 and 4, and then through the funnel-shaped guide e of the presser-foot and to the fabric.

The mechanism for feeding the fabric is the same as in other sewing-machines, and is not shown in the drawings. The horizontally-reciprocating motion is imparted to the needle-bar when the same arrives at its highest position, which motion, in connection with the intermittent feed motion of the fabric, forms a zigzag stitch across the pearl-braid, and attaches the latter to the fabric without the needle striking the pearls, as the same are passed through or protected by the funnel-shaped guide of the presser-foot.

By my improved machine pearl-braiding may be quickly and uniformly sewed on the fabrics to be ornamented thereby, so that a larger quantity of pearl-braiding can be accomplished in a given time and at less expense than by hand-work.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A presser-foot for pearl-braid sewing-machines, provided with a funnel-shaped braid-guide having a uniform interior surface, a guide groove or recess in line with said braid-guide, and a needle-slot in rear of said braid-guide, said slot being transversely elongated, substantially as described.

2. The combination of a presser-bar provided with a vertically-adjustable sleeve having a projecting pin, a presser-foot attached to said bar, a vertically-sliding elbow-shaped arm, the vertical member of which engages said pin, its horizontal member being provided at its inner end with a fixed pin extending across the driving-shaft above the same, and a cam on said driving-shaft directly engaging said pin for raising the presser-foot, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOSEPH A. BRAUTIGAM.

Witnesses:

PAUL GOEPEL,

SIDNEY MANN.