(No Model.)

C. H. PALMER.

SEWING MACHINE.

No. 271,908. Patented Feb. 6, 1883.

Fig. 1.

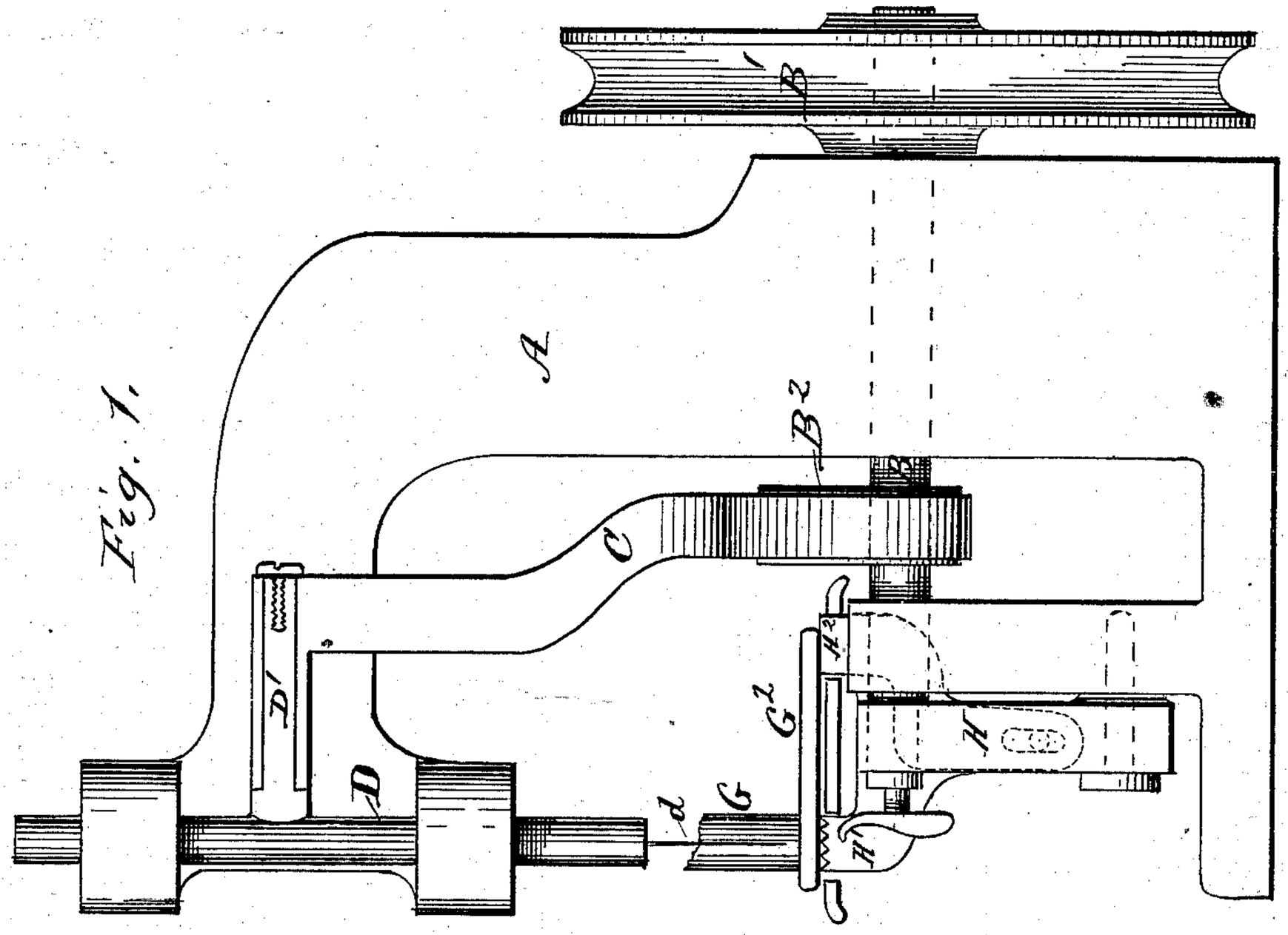
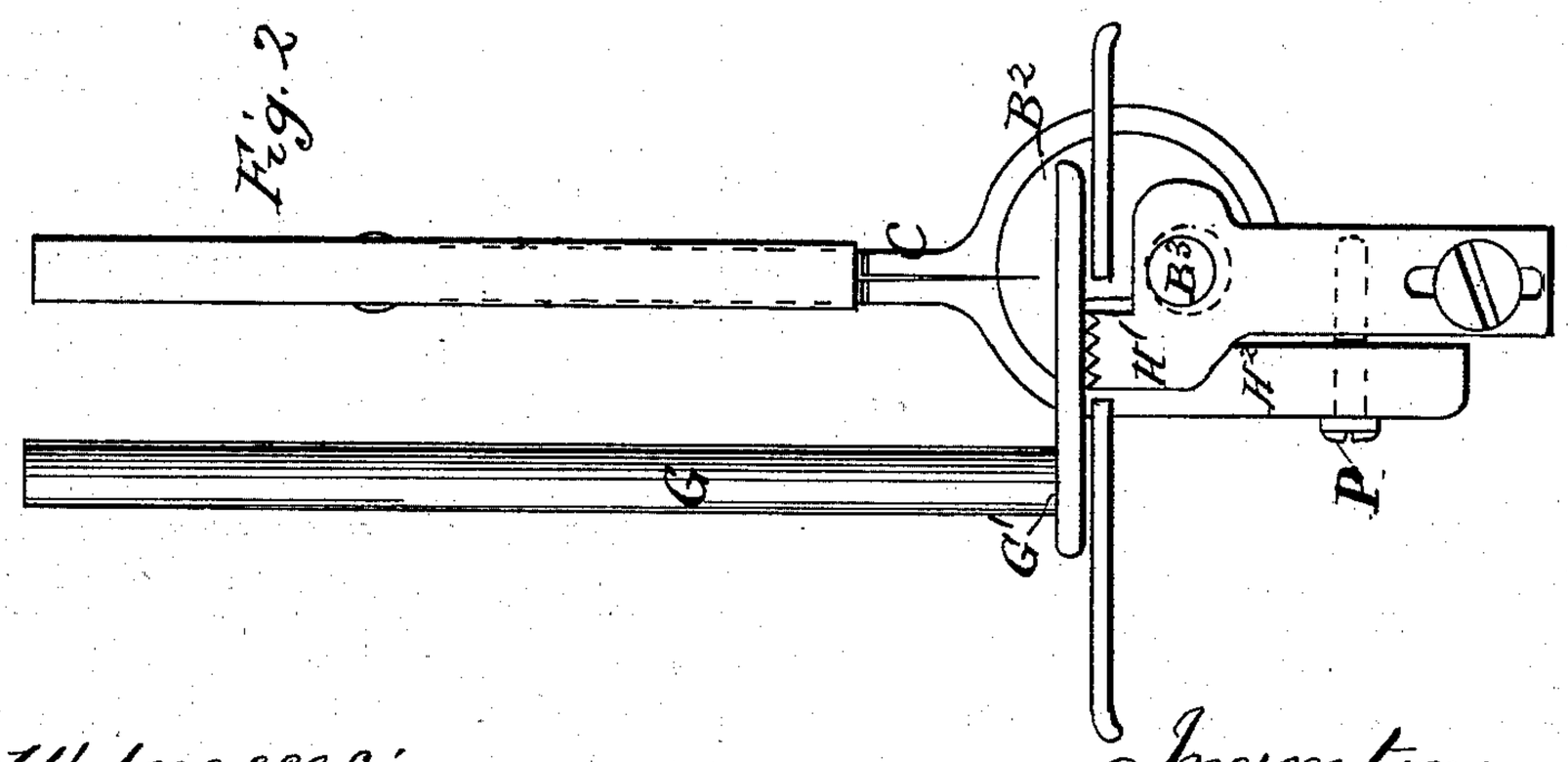


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES H. PALMER, OF NEW YORK, N. Y., ASSIGNOR TO JUDSON M. BEMIS, OF BOSTON, MASS., AND STEPHEN A. BEMIS, OF ST. LOUIS, MO.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 271,908, dated February 6, 1883.

Application filed August 12, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. PALMER, a citizen of the United States, residing in the city and county of New York, in the State of New York, have invented certain new and useful Improvements Relating to Sewing-Machines, of which the following is a specification.

My experiments have been made with machines for sewing straw braid. The improved machine may be used for various analogous classes of work where there is but a little breadth of the material extending into the machine beyond the line of the seam. I will describe it as sewing straw braid. I connect the driving-bar or connecting-rod from the eccentric or crank on the driving-shaft below directly to a point sufficiently high on the needle-bar. The direct connection in this manner avoids the difficulties due to the complication and springing of the ordinary arrangements. It avoids also all the lost motion, which is unavoidable, as the machines wear with the ordinary multiplication of connections. The feeder may be of the ordinary character, except for a ledge or bearing-surface farther back in the machine, so as to come beyond the edge of the braid. The presser-foot is provided with an arm reaching correspondingly back. When there is braid in the machine and the feeder acts thereon, compressing the same between itself and the presser-foot, the action proceeds in all respects in the ordinary manner; but when through any contingency the machine works empty the teeth of the feeding device are not allowed to come in contact with the presser-foot. The back surface referred to on the feeder at each lift of the feeder comes in contact with the back arm on the presser-foot and lifts it. Part of the mechanism herein represented I have made the subject-matter of a separate application for Letters Patent, which application was filed January 11, 1882, serial No. 49,903.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a side elevation, partly in section, showing all the novel parts, with so much of the ordinary parts as is necessary to indicate their relations thereto. Fig. 2 is a front view of the novel parts alone.

Similar letters of reference indicate like parts in both the figures.

A is a rigid frame-work, of cast-iron or other suitable material.

B is the main shaft, mounted in suitable bearings and driven by a belt running on a pulley, B′.

An eccentric, B^2, fixed on the shaft near its front end, gives motion to the connecting-rod C, which leads upward therefrom and connects by a pin, D′, directly to the needle-bar D, which works in bearings above and below, as shown, and carries a needle, *d*, with such other devices for thread-gathering, &c., as may be required to produce the stitch with proper tension. The long pin D′ is provided with a flange, *d*′, making a broad and firm bearing on the adjacent surface of the needle-bar when screwed down, and is received in a long sleeve-bearing, C′, on the top of the connecting-rod C. This length of bearing insures against any twisting around of the needle-bar, and the flange gives a rigid support.

G is the presser-bar, urged downward by a spring (not shown) in any ordinary or suitable manner.

G′ is the presser-foot, of any ordinary or suitable configuration, extending around or in the vicinity of the path of the needle in the ordinary manner.

G^2 is an arm or backward extension from the presser-foot, which performs an important function.

H is the feeder. It is what is known as the "four-motion" feed, actuated by the aid of the feed-eccentric B^3, and gaged in any ordinary or suitable manner. The toothed portion, which rises through a suitable orifice in the work-plate, and is effective in acting on the work, is marked H′. An arm or extension reaching upward at a point farther in the rear is marked H^2. The upper edge of this extension H^2 is smooth. It is smoothly finished. Its height is carefully adjusted so that it will come in contact with the part G^2 of the presser-foot and hold it just clear of the teeth H′ when the machine is empty, but will not touch the part

G^2, and will be of no effect when there is any braid in the machine, because the teeth H′ will lift the presser-foot through the medium of the braid.

The back extension H^2 of the feeder may be made in one with the front portion, H′, and with the main body H; but I prefer to make it in a separate piece secured adjustably to the part H by the screw P, standing in a vertical slot in the part H^2, as shown. I thus provide for adjustment of the height of the two parts H′ H^2 relatively to each other. This may become desirable to allow for the difference of wear of the teeth H′ and the back-extension H^2.

My improved machine involves little spring and little liability of derangement. The parts may be very light. The inertia is little and the vibrations light.

The looper which is on the end of the shaft is the kind ordinarily used in this position on what are known as the "Willcox & Gibbs" machines, and performs the same functions.

Most of the ordinary attachments and appliances used in other sewing machines may be used with this invention.

I claim as my invention.

1. In a sewing-machine, the main shaft B, having eccentrics B^2 B^3, lying below the work-plate, the connecting-rod C, pin D′, and needle-bar D, feeder H, toothed portion H′, and smooth back extension H^2, and the presser-bar G, having the presser-foot G′ and back extension G^2, all combined and arranged for joint operation as and for the purposes herein specified.

2. The rigid arm connected directly to the needle-bar at one end and embracing the eccentric at the other end, said eccentric fixed on the driving-shaft, in combination with said driving-shaft, having a looper on the end thereof, substantially as set forth.

In testimony whereof I have hereunto set my hand, at New York city, this 11th day of August, 1880, in the presence of two subscribing witnesses.

CHARLES H. PALMER.

Witnesses:
W. COLBORNE BROOKES,
H. A. JOHNSTONE.