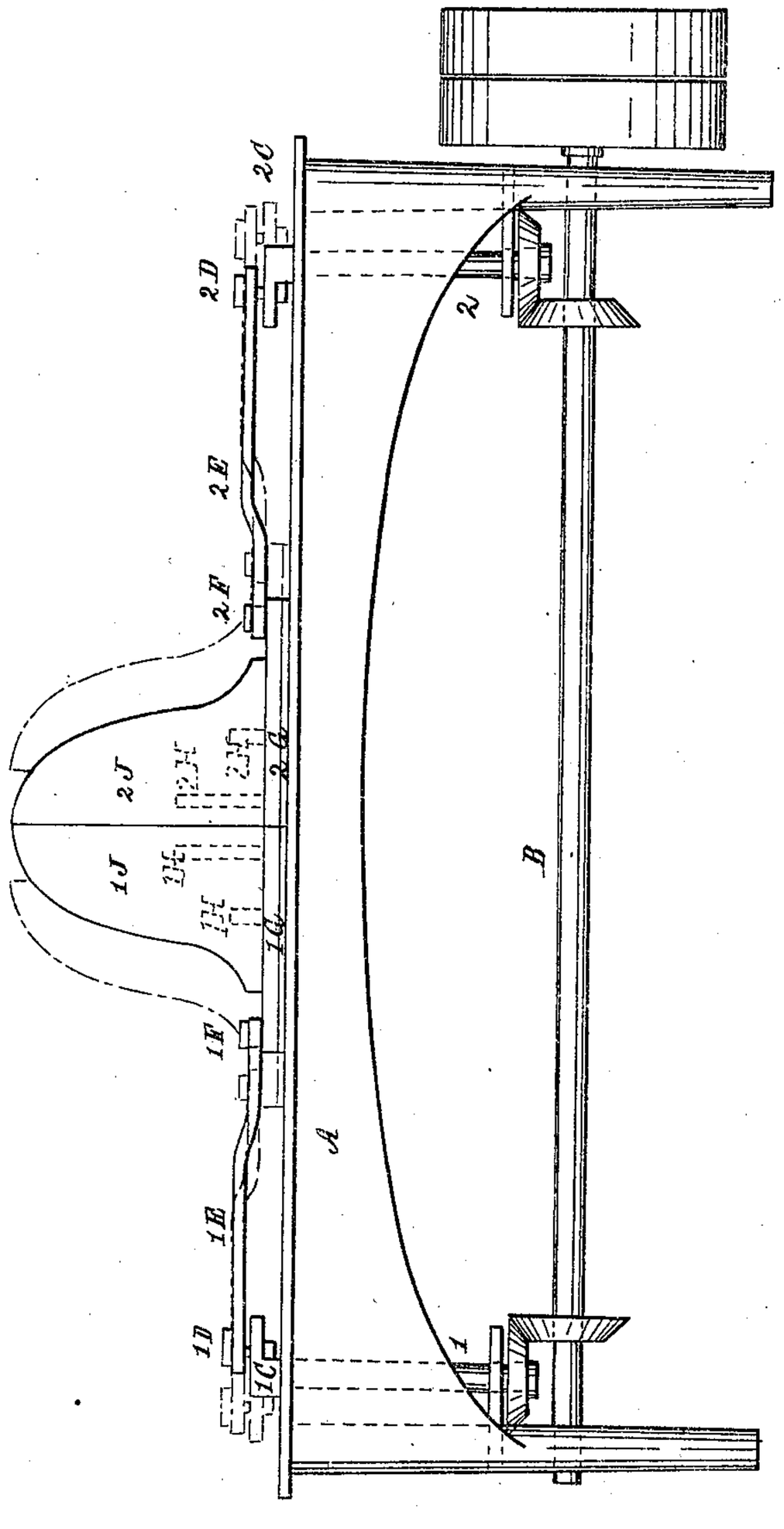
Sheet 1.
2 Sheets.

J. W. Blackham.

Blocking & Stretching Hats.

No. 41036 Patented Dec. 22, 1863.

Fig. 1.



Witnesses.

Thomas L. Stetson

P. W. Burnham

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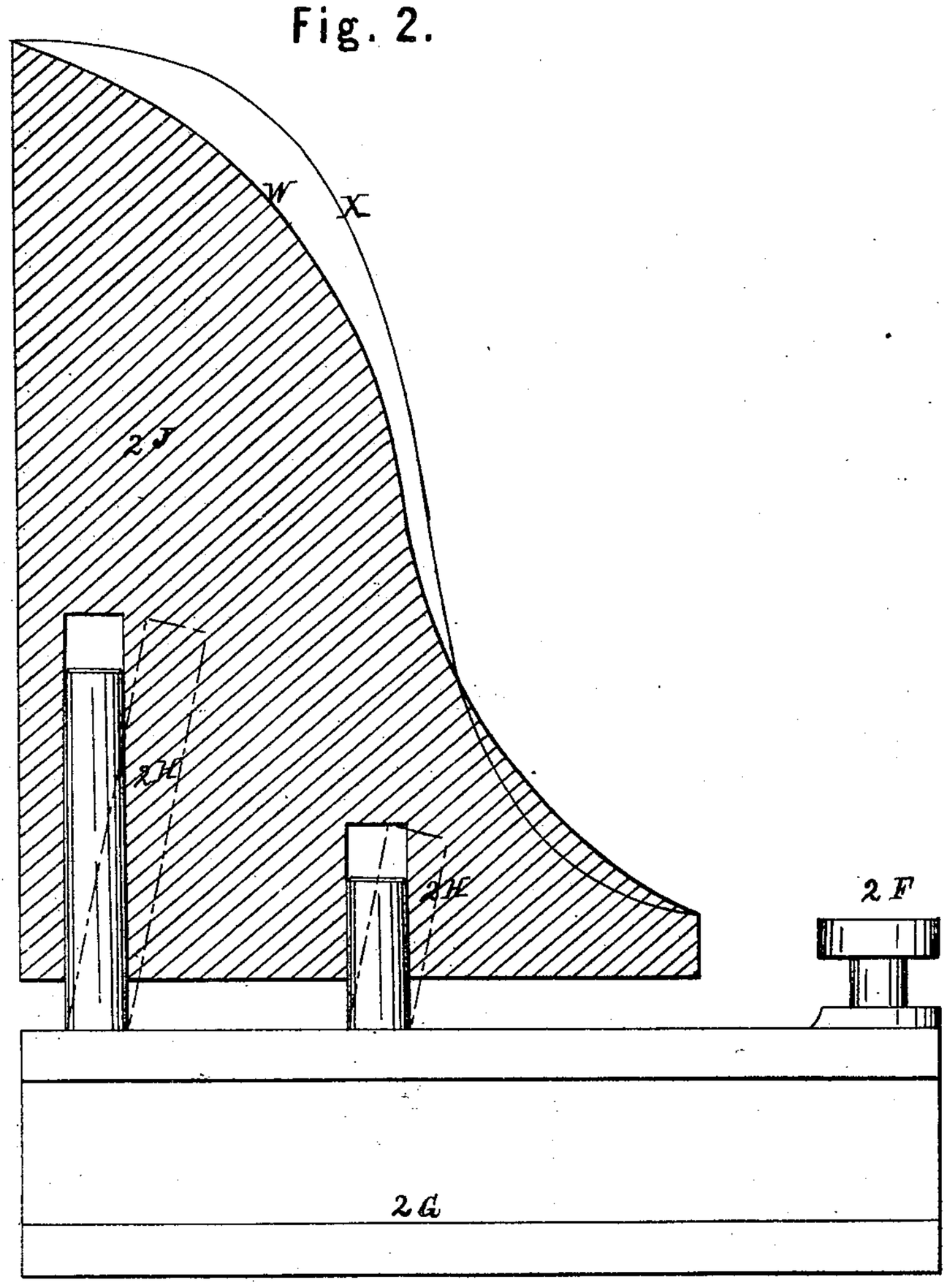
Sheet 2.
2 Sheets.

J. W. Blackham.

Blocking & Stretching Hats.

No. 41036 Patented Dec. 22, 1863.

Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOB W. BLACKHAM, OF BROOKLYN, NEW YORK, ASSIGNOR TO JAMES H. PRENTICE, OF SAME PLACE.

IMPROVEMENT IN APPARATUS FOR STRETCHING HATS.

Specification forming part of Letters Patent No. **41,036**, dated December 22, 1863.

To all whom it may concern:

Be it known that I, JOB W. BLACKHAM, of Brooklyn, in the county of Kings, in the State of New York, have invented certain new and useful Improvements in Machinery for Stretching Hats; and I do hereby declare that the following is a full and exact description of the same, which has been prepared with a view of obtaining Letters Patent therefor.

The accompanying drawings form a part of this specification.

Figure 1 is a side view of a machine embodying my improvements, the dark lines and tints representing the position of the parts when the stretcher is closed, and the red outlines representing the position of the same parts when extended. Fig. 2 is a section representing some of the details on a larger scale.

Similar letters or references indicate like parts in both figures.

The fulling of hat-bodies leaves the top of the crown full of wrinkles and contractions, which it is desirable to remove by gentle and repeated extensions or stretchings. This has usually been effected by the hands of the operator applying the tension in various directions alternately. The object of my invention is to aid the workman in effecting this operation. Its effect is to stretch the hats more evenly and rapidly and with less labor to the attendant.

I provide by my invention means for readily adapting a machine to stretching different styles and sizes of hats.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation by the aid of the drawings and of the letters of reference marked thereon.

A is a fixed frame-work or bed, and B a shaft mounted in bearings therein and adapted to be turned by a belt not represented. 1 and 2 are upright shafts mounted in bearings near the opposite ends of A and receiving motion from the shaft B through the medium of the gear-wheels, as represented. On the upper ends of these shafts 1 and 2 are cranks 1 C and 2 C. The crank-pins 1 D and 2 D are adapted to be secured in radial slots in these cranks in a manner well known to mechanics, so as to increase and diminish the "throw" of the cranks at pleasure.

1 E and 2 E are shackle bars or connecting-rods, extending from the crank-pins 1 D and 2 D to corresponding pins 1 F and 2 F, which latter are fixed on flat slides 1 G and 2 G. These slides are adapted to run on ways (not represented) in the frame A, and the rotation of the shaft B results in traversing the slides 1 G and 2 G so that they approach together, nearly or quite in contact, and then recede to a distance corresponding with the throw of the cranks 1 D and 2 D.

On the upper surface of the slides 1 G and 2 G are fixed two or more pins, 1 H and 2 H, represented in dotted lines in Fig. 1 and strong lines in Fig. 2. Forms of wood or other suitable material adapted to properly conform to the shape of the hat to be stretched are bored with corresponding holes and applied to these pins in the manner represented by 1 J and 2 J. It will be readily understood that the hat to be stretched is applied by the hands of the attendant or otherwise upon the forms while in their closed position and turned more or less thereon after each extension or stretch has been effected.

Any convenient means not represented may be employed, if desired, to key the forms firmly upon the slides; but I have not found such necessary in practice, and the absence of any such provision simplifies the machine and makes it easier to remove the forms and substitute others of different size and shape, it being understood that a number of forms, 1 J and 2 J, may be provided and kept on hand, all bored to correspond with the position of the pins in the slides so that either may be applied at pleasure according to the form and size of the hats to be stretched. The two differently-curved lines W and X in Fig. 2 indicate variations in the form, which may be multiplied and adapted to different forms of hats to any extent desired.

To avoid the forms becoming loosened in their hold on the slides 1 G 2 G without the necessity for keying, I have sometimes placed the pins 1 H 2 H in inclined instead of strictly upright positions, as indicated in red outlines in the drawings, making the holes in the forms 1 J 2 J, of course, correspond-

ingly inclined. I believe this to be the preferable position for these parts.

Spiral or other suitable springs (not represented) may be introduced tending to draw together the slides 1 G and 2 G, and the holes in the shackle-bars 1 E and 2 E may be made long so as to slip on the pins. Such a construction will prevent any injury resulting from the accidental introduction of any substance between the forms 1 J and 2 J, or between the slides 1 G and 2 G, because in such case the parts will yield and subject the material to only so much compression as is due to the tension of the springs; but in all cases the stretching motion is positive, and, by reason of the strictly parallel motion of the parts, the entire hat will be gently stretched by each opening motion, providing that the forms are adapted to the style and size of hat.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. A hat-stretching machine in which the surfaces 1 J and 2 J are alternately extended and contracted to adjustable extents substantially in the manner and for the purpose herein set forth.

2. In connection with the above, giving a uniform and parallel motion to the entire surfaces of 1 J and 2 J, so that the quantity of stretch in the base and top may be always uniform, substantially as set forth.

3. In combination with the foregoing substituting forms in hat-stretching machines, each separately adapted to uniformly stretch a given style or character of hat, substantially in the manner and for the purpose herein set forth.

JOB W. BLACKHAM.

Witnesses:
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S. W. BURNHAM.