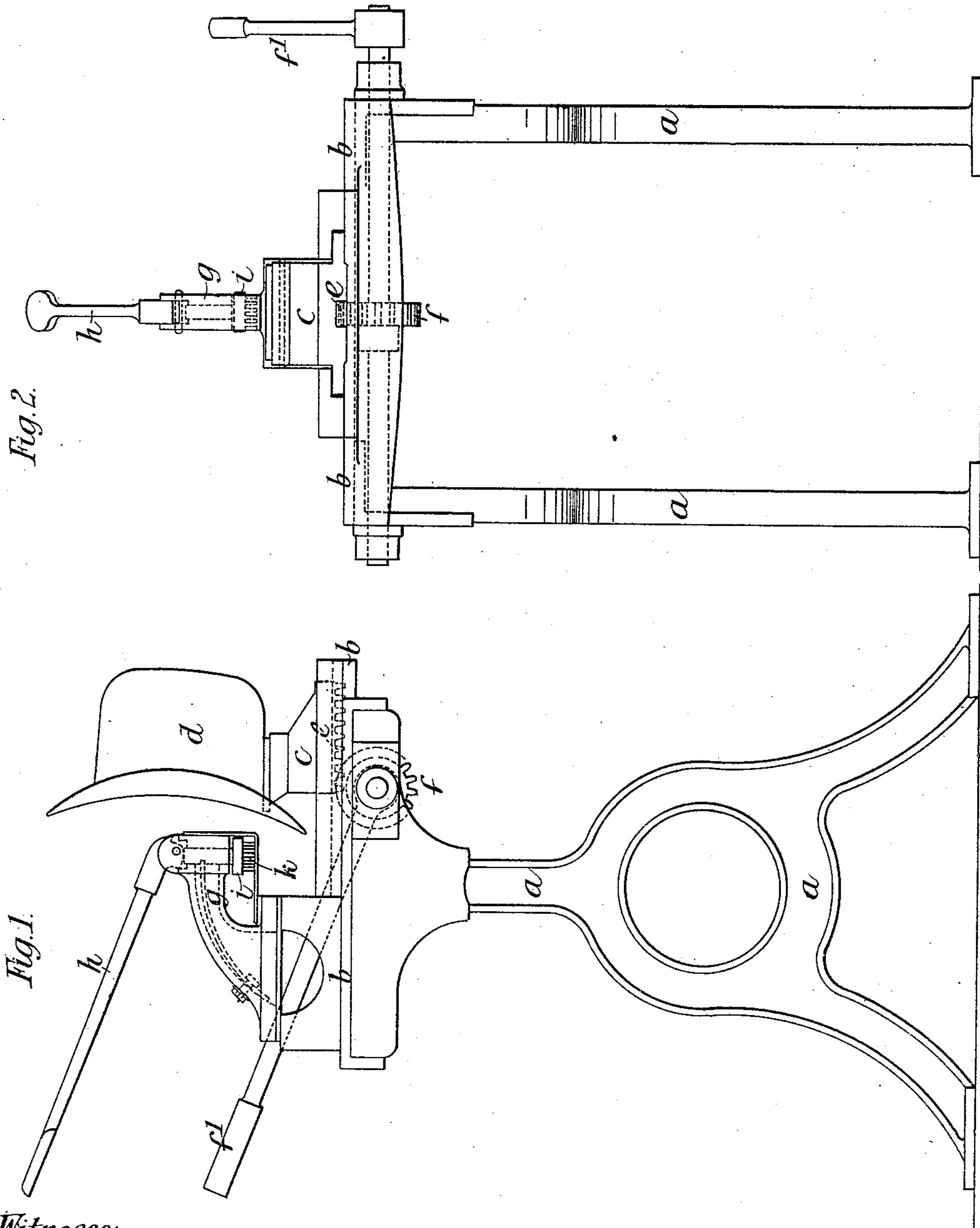


(No Model.)

J. EATON.  
MACHINE FOR PUNCHING HOLES IN HATS.

No. 464,117.

Patented Dec. 1, 1891.



Witnesses.  
John Lullin  
Wm. V. Bates

Inventor.  
John Eaton  
By J. H. Meesler for  
his atty's

# UNITED STATES PATENT OFFICE.

JOHN EATON, OF STOCKPORT, ENGLAND.

## MACHINE FOR PUNCHING HOLES IN HATS.

SPECIFICATION forming part of Letters Patent No. 464,117, dated December 1, 1891.

Application filed July 18, 1891. Serial No. 399,936. (No model.) Patented in England November 15, 1890, No. 18,406.

*To all whom it may concern:*

Be it known that I, JOHN EATON, a subject of the Queen of Great Britain, residing at Stockport, England, have invented new and  
5 useful Improvements in Apparatus for Punching Ventilating-Holes in Silk, Felt, and other Hats and Head-Coverings, (patented in Great Britain November 15, 1890, No. 18,406,) of which the following is a specification.

10 This invention relates to an improved apparatus for making ventilating-holes in silk, felt, and other hats and head-coverings after the leather or sweat band has been sewed in position.

15 I punch a series of small holes both through the felt or other body of the hat and through the leather or sweat band, and preferably at one operation, whereby I obtain a perfectly free ventilation. These holes I prefer to  
20 make in groups, and I punch them either at the front only or all around, or otherwise, as may be preferred, the said holes being situated as low down on the brow as possible, so that they may be covered by the silk or other  
25 band which is put on afterward and which is sufficiently porous for ventilating purposes, and for hot climates, where extra ventilation is required I punch additional holes through the leather and hat above the band,  
30 and in cases where a grease-proof material is employed between the leather and the body of the hat I punch the holes through the grease-proof material also. The apparatus which I employ for this purpose will be  
35 readily understood on reference to the annexed sheet of drawings, in which—

Figures 1 and 2 represent side and front elevations of the improved punching-machine, which is constructed as follows:

40 Upon a suitable frame *a* I support a table *b*, carrying a horizontal slide *c*, formed so as to carry the hat or other head-covering *d*, Fig. 1, and provided with a rack *e*, which is in gear with a toothed pinion *f*, actuated by a  
45 lever *f'*, so that the slide *c* and the hat *d* with it can be readily moved to and fro endwise. In a convenient position on the table *b*, opposite the end of the slide *c*, I fix a bracket or arm *g*, carrying a lever *h*. The inner end  
50 of the lever *h* acts on a punch *i*, which is provided underneath with a group of blunt

needles or fine punches *k*, and the front end of the slide *c* is pierced with a corresponding group of holes. The slide *c* being in its backward position and the punches *k* raised, 55 the hat *d* is placed on the slide in the proper position, as shown at Fig. 1. The slide *c* is then brought forward by means of the pinion-lever *f'* until the holes are just below the punches *k*, which will then be inside the 60 hat *d*. The punch-lever *h* is now actuated, bringing the group of needles or punches *k* down simultaneously and thus punching a corresponding group of holes through both the hat *d* and the leather or sweat band at 65 the same time. The same effect might be partly obtained by punching the hat and the leather or sweat band separately in exactly the same positions; but I find it greatly preferable to punch through both at the one op- 70 eration, as it is more accurate and saves time.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is— 75

1. A machine for punching holes in hat-bodies, comprising a frame having a series of punches mounted thereon and moving in right lines and means for operating the same, in combination with a horizontally-sliding 80 hat-supporting carriage mounted on the same frame, the punches moving at right angles to the line of movement of the carriage, substantially as set forth.

2. In combination with a suitable frame, a 85 carriage having a rack-slide thereon on which the outside of the hat-crown rests, pinion *f*, engaging such rack and connected to a hand-lever, and a set of vertically-moving punches, the combination serving to move the slide 90 and hat horizontally to bring the inner face of the sweat-lining beneath the punches, and a hand-lever *h*, serving to force the punches first through such lining and then through the hat, all substantially as set forth.

JOHN EATON.

Witnesses:

JOHN E. BOUSFIELD,  
Of the firm of G. F. Redfern & Co., 4 South  
Street, Finsbury, London, Patent Agents.  
E. CHURCHER.