

(No Model.)

M. SWEET.

MACHINE FOR RIVETING CURRY COMBS.

No. 409,522.

Patented Aug. 20, 1889.

Fig. 1.

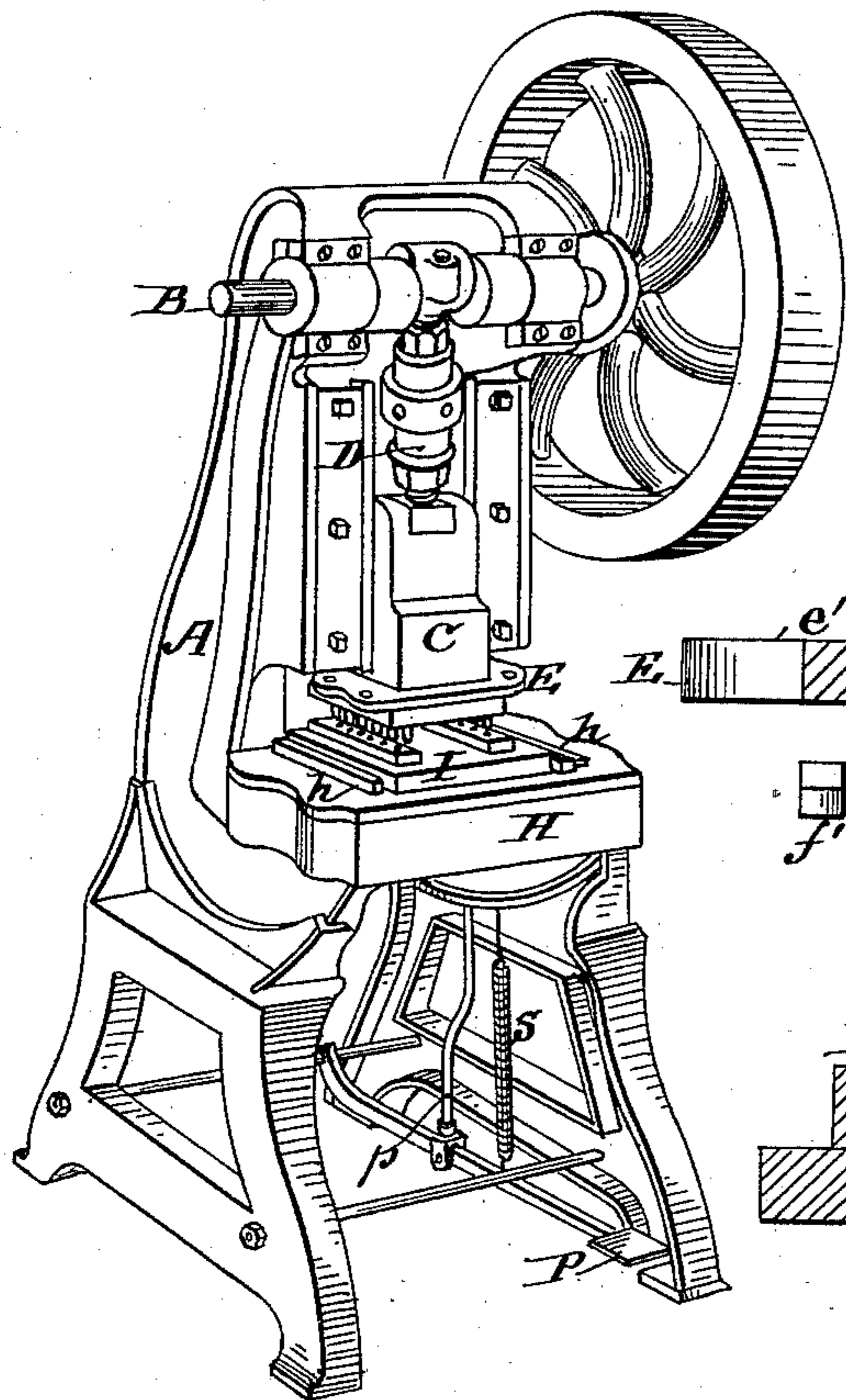


Fig. 2.

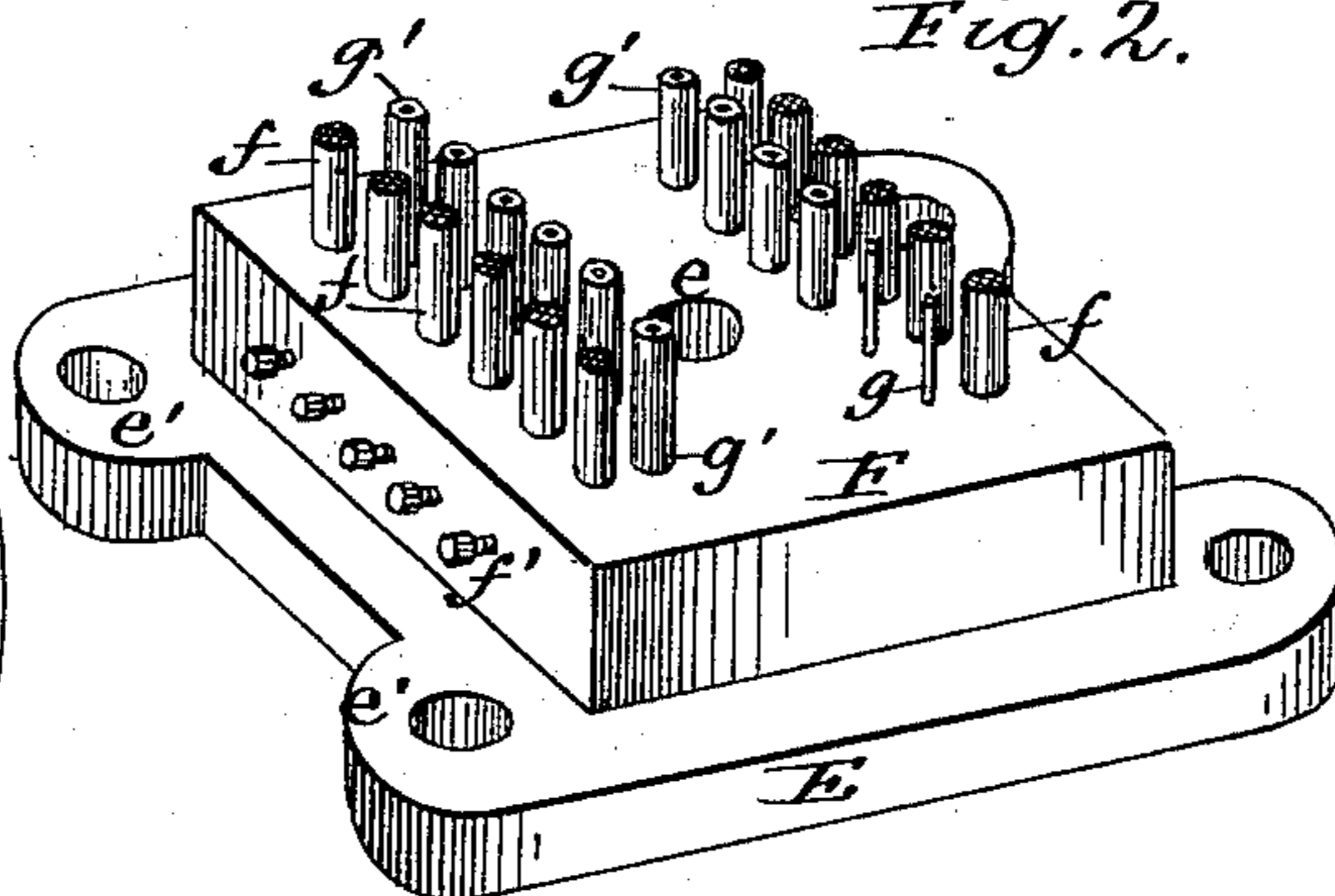


Fig. 3.

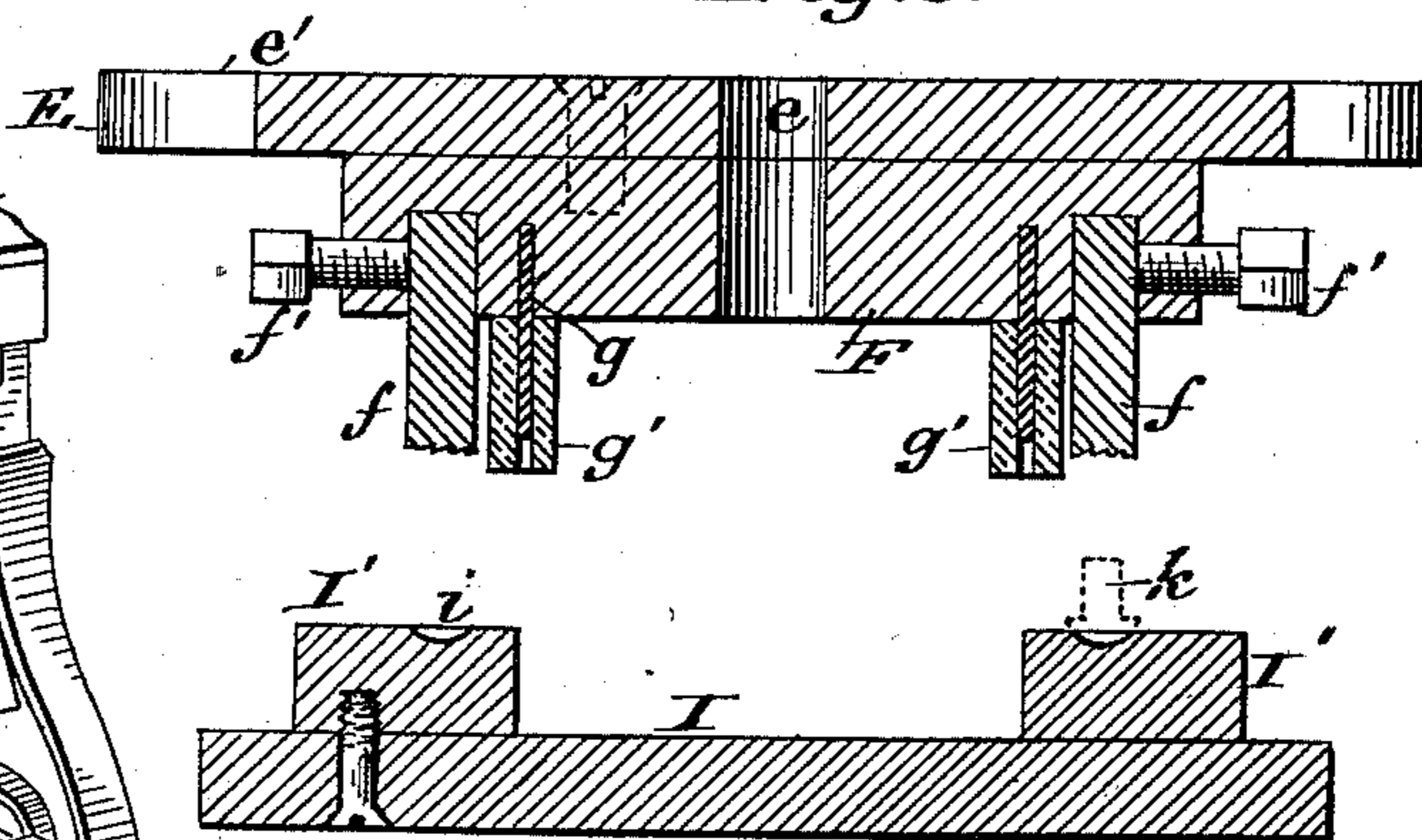


Fig. 4.

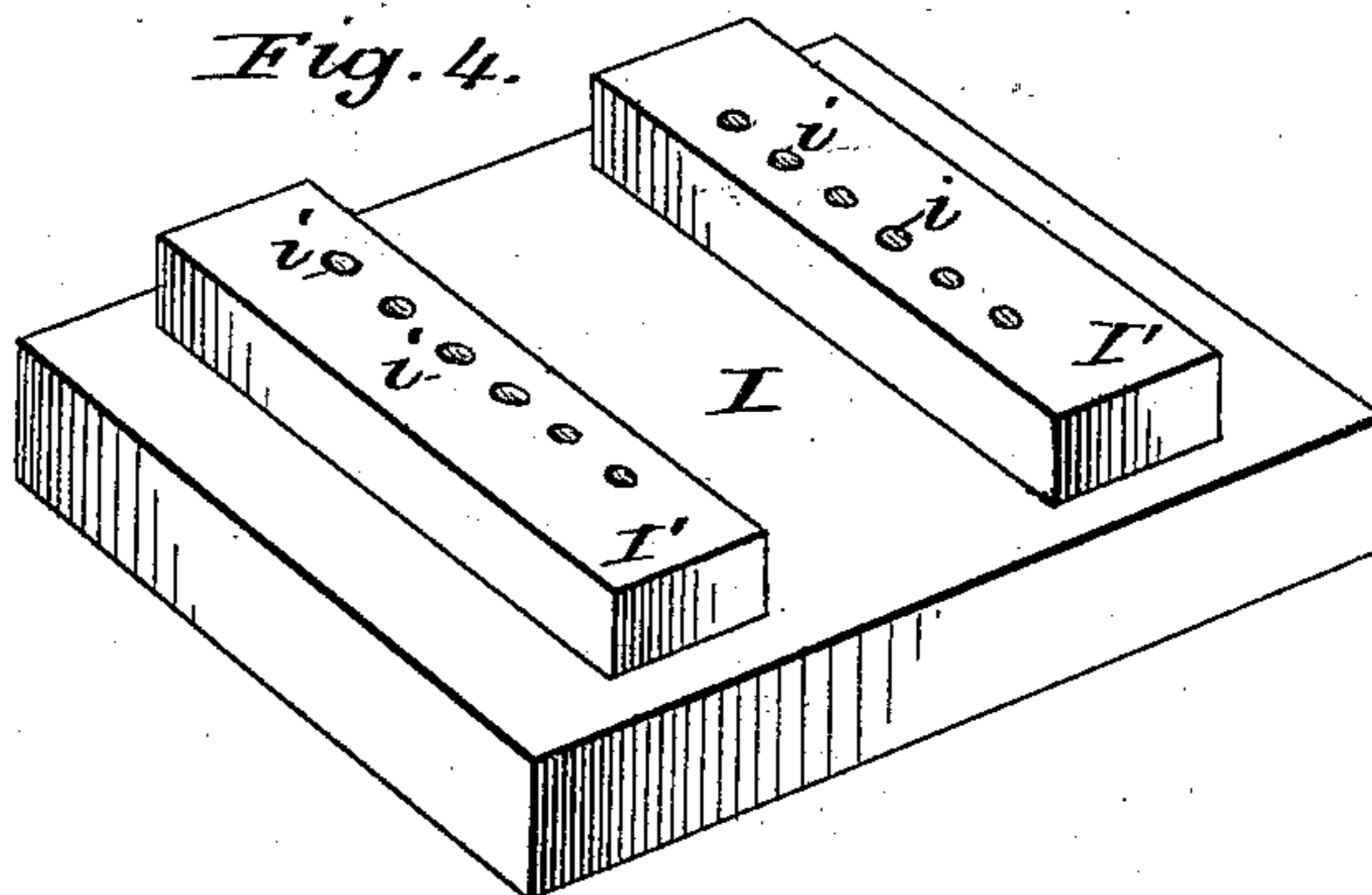


Fig. 5. K

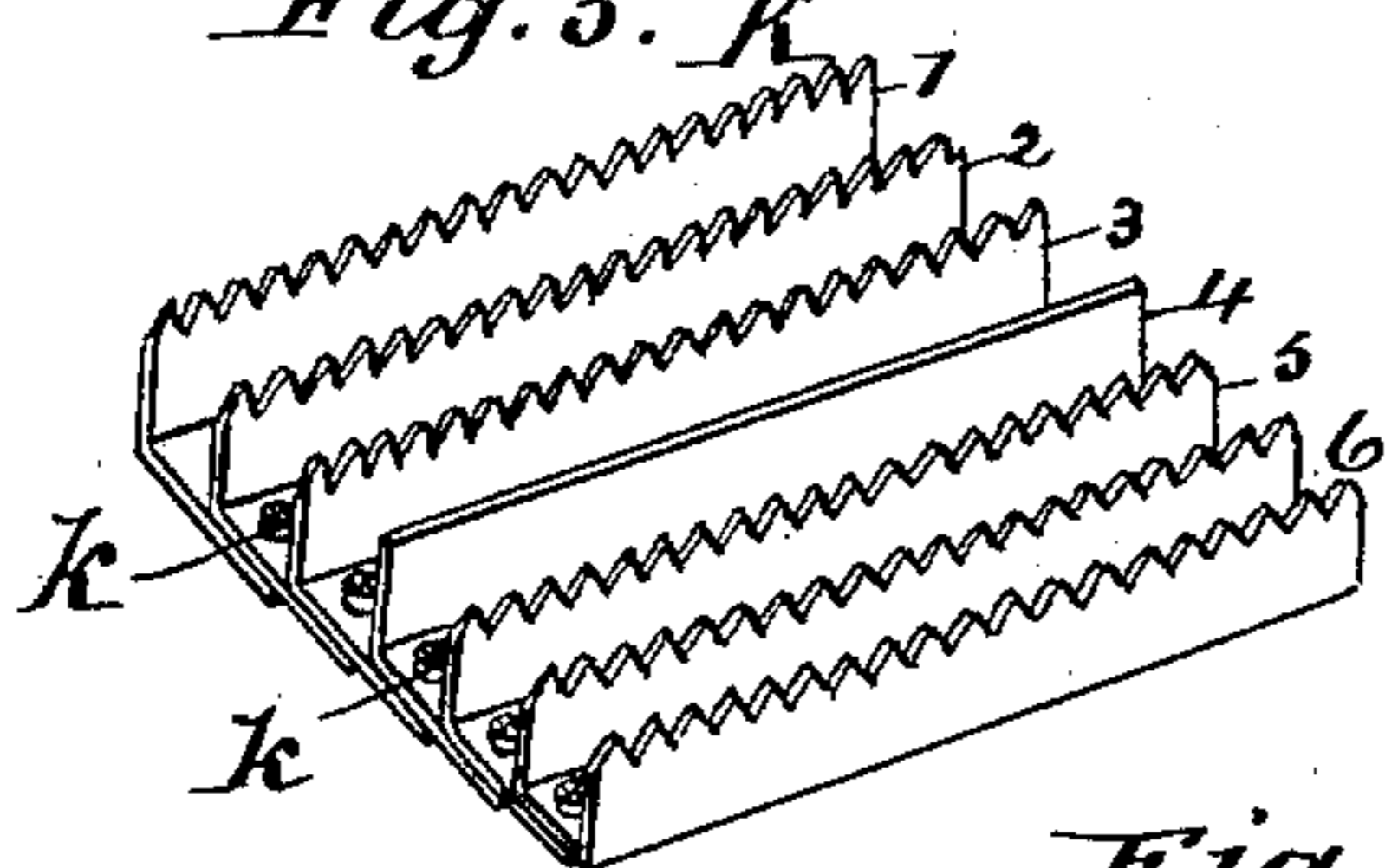
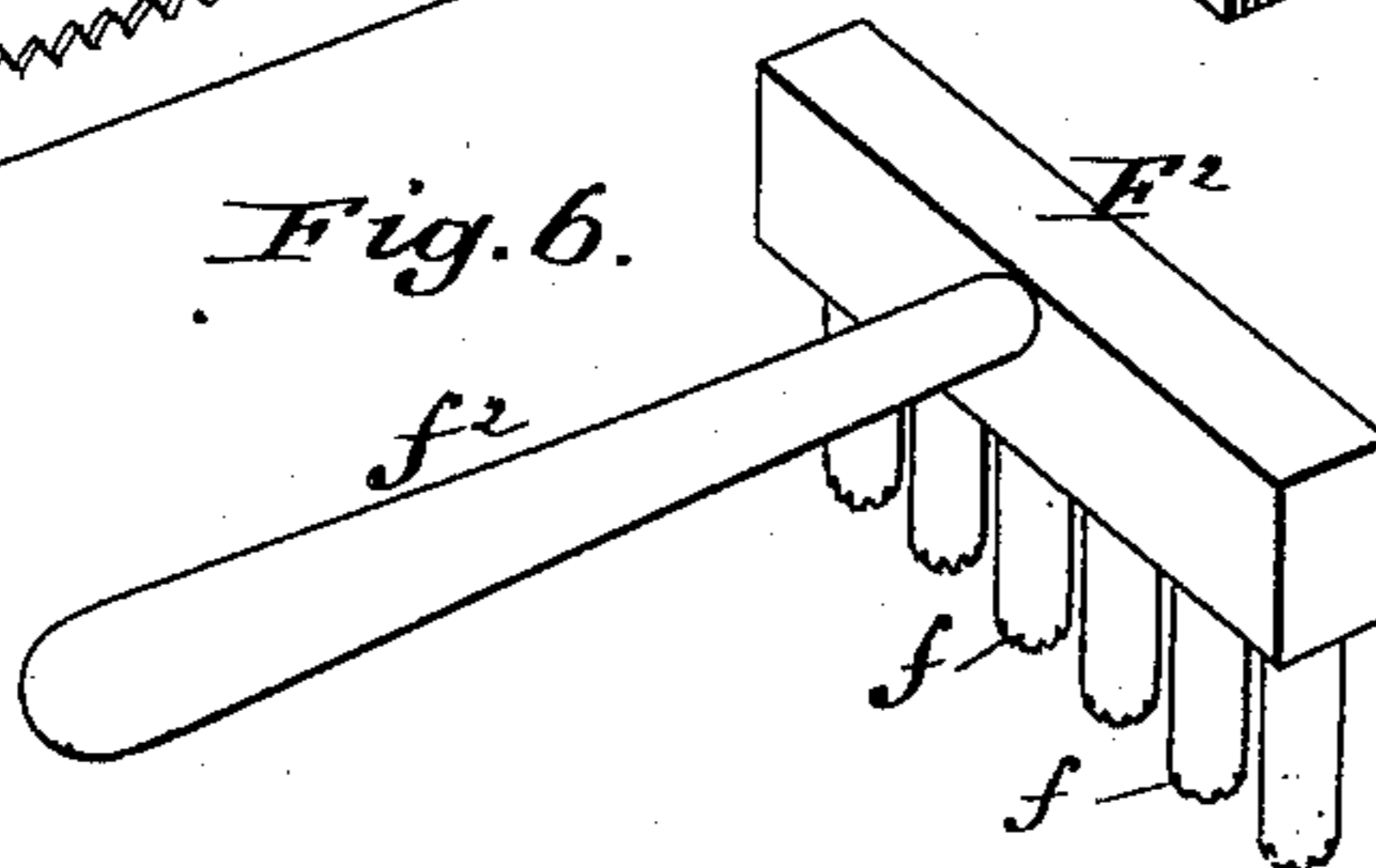


Fig. 6.



Witnesses.
L.C. Hills.
W.B. Masson

Inventor:
Miles Sweet,
by E. E. Masson
atty.

UNITED STATES PATENT OFFICE.

MILES SWEET, OF TROY, NEW YORK.

MACHINE FOR RIVETING CURRY-COMBS.

SPECIFICATION forming part of Letters Patent No. 409,522, dated August 20, 1889.

Application filed September 13, 1883. Serial No. 106,328. (No model.)

To all whom it may concern:

Be it known that I, MILES SWEET, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Machines for Riveting Curry-Combs, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a perspective view of a press carrying my riveting attachment. Fig. 2 is a perspective of the upper half of the riveting attachment detached from the press-gate and turned upside down to show the comb-clamping springs and the rivet-upsetting pins. Fig. 3 is a vertical section through the upper and the lower plates of the riveting attachment. Fig. 4 is a perspective view of the base or lower plate of the same. Fig. 5 is a perspective view of the series of comb-plates united to form the body of a curry-comb. Fig. 6 represents, as a modification of the upper plate of the press, a series of rivet-upsetting pins, secured together to a block provided with a handle.

Heretofore the comb-bars of curry-combs have been united together or to the back by means of rivets inserted through perforations made for the purpose, and having their heads between the comb-bars and their point clinched or upset, one at a time, against the outer surface of the back; and even when this slow process was used the rivets employed were most commonly flat-head rivets, as oval-head rivets are apt to stand out of plumb when resting upon their heads; but in either case the rough hammered or upset end of the rivet was most conspicuous upon the back of the comb.

The objects of my improvements are, first, to unite a series of comb-bars simultaneously together; second, to unite them by means of independent rivets, having their heads on the outside of the back, and, third, to use oval-head rivets for that purpose. I attain these objects by the means illustrated in the accompanying drawings, in which—

A represents the frame of a press of suitable construction; B, the driving-shaft; C, the gate, moved by an eccentric on said shaft and the pitman D. To the lower end of said gate is secured the upper half of the riveting at-

tachment, consisting of a plate E, perforated centrally at *e*, or through its four corner legs *e'*, for the passage of bolts to attach it to the lower end of sliding gate C. To the under side of the plate E is screwed a plate F, carrying two series of rivet-upsetting pins *f*, placed at regular distances apart to enter between the comb-bars K of curry-combs, and press upon the points of rivets *k* and upset or clinch them. The pins *f* enter perforations in the plate F, and are secured thereto by means of set-screws *f'*. This plate F has also a series of small pins *g*, arranged in rows parallel with each row of pins *f*, and projecting from the under surface of said plate; and around each pin *g* is placed a spring *g'*, preferably of india-rubber, to press upon the comb-bars and hold them firmly together, while the rivet-upsetting pins *f* are descending upon the points of the rivets. The springs *g'* project slightly beyond the ends of the pins *f* to permit them to press upon the comb-bars and bring them firmly together before the pins *f* have upset the ends of the rivets and clinched them. To insure the proper action of the pins *f* upon the ends of the rivets and prevent any sliding off to one side, the operating end or lower face of the pins *f* is formed with diamond-shaped or transverse serrations that slightly indent and leave their impression upon the point of each rivet.

To support the comb-bars and the heads of the rivets while being united, there is placed upon the bed-plate H of the press a plate I, forming the lower half of the riveting attachment. From the upper face of this plate project two cleats I', upon which the comb-bars or the heads of the rivets rest while being united. As I prefer oval-head rivets to improve the appearance of the curry-comb, and I find it difficult to make said rivets stand on their heads on a plane surface, I have provided the surface of the cleats I' with a series of cup-shaped depressions *i*, arranged at a distance apart corresponding with the distance between the upsetting-pins *f* of the upper plate F. By the above-described means all the comb-bars of a curry-comb are united together by independent rivets clinched or upset simultaneously. The method used for this purpose is as follows: Supposing it is desired to form the body of a "shingle-

back "curry-comb, as shown in Fig. 5, one edge of each comb-bar is serrated, bent lengthwise, and one or two holes made therein to receive rivets adjoining the ends thereof. The operator (generally a boy) takes the comb-bars 1 and 2 and places them one above the other in the position shown in Fig. 5, and inserts from the under side (as shown in that figure) a rivet through each end perforation of both comb-bars, so that their heads rest in the cup-like depressions *i* of the cleats of the plate I. Then he lays the comb-bars 3 upon the horizontal portion of the comb-bar 2, and inserts a rivet through the perforations made in the horizontal portions of the comb-bars 2 and 3, and repeats the operation for the plates 4, 5, and 6, (or for whatever number of comb-bars used to form a curry-comb,) until all the plates are connected by the rivets in position to be clinched. The plate I, with the comb-plates thereon, is then pushed between the guide-rails *h* of the bed-plate H upon said bed-plate until arrested by a stop projecting from said bed-plate, and each rivet is perpendicularly under the upsetting-pins *f* of the upper plate F, carried by the gate or platen of the press. The attendant then presses his foot upon the treadle P, and the latter, being connected by means of the rod *p* with a clutch upon the driving-shaft B, makes a revolution, and its eccentric brings the pitman and gate to the lower end of its course, and in so doing the springs *g'*, pendent from the plate F, are brought with force upon the horizontal portion of the comb-bars and clamp them solidly together, and immediately after this the serrated ends of the upsetting-pins *f* bear forcibly upon the points of all the rivets simultaneously and clinch them, thus rigidly uniting all the comb-bars together at the same time. The attendant then removes his foot from the treadle, and the latter being retracted by the spring *s* the operation of the press is arrested until a new series of comb-plates are placed in position upon the bed-plates. In lieu of placing only two rivets at a time in the cavities *i* of the lower plate I, all the rivets required may be placed in position therein and each comb-plate placed in succession upon them, as previously stated,

and this may be done without removing the plate I from the bed-plate of the press, if the throw of the press-eccentric is sufficient to give room for the operator's fingers to place the comb-bars in proper position under the upper plate F. In place of securing the upsetting-pins *f* to the plate F, and having the latter carried by the press, a series of these pins may be secured to a small block *F*², and the latter be provided with a handle *f*² for the operator's convenience in placing the block F under the platen of the press, with the pins *f* resting upon the points of the rivets used to unite the comb-bars together.

The above description of a curry-comb called "shingle-back" requires a larger number of rivets than what is called "English comb," in which the comb-bars are in the form of an open-ended trough united to a single plate forming the back, and it is evident that my method and means are also suitable in the manufacture of this simple form of curry-comb.

Having now fully described my invention, what I claim is—

1. In a riveting-machine, the combination of the frame of a press, its bed-plate H, and plate I, provided with means for holding a series of rivets, with the press-platen and plate F, provided with a corresponding series of upsetting-dies, substantially as described.

2. The combination of the frame of a press, its bed-plate, and plate I, provided with means for holding a series of oval-headed rivets, with the press-platen, and a corresponding series of upsetting-dies provided with corrugated faces, substantially as and for the purpose set forth.

3. The combination, with the bed-plate and movable platen of a press, of a series of rivet-upsetting dies *f*, and a series of springs *g'*, pendent from said platen, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

MILES SWEET.

Witnesses:

E. E. MASSON,
L. C. HILLS.