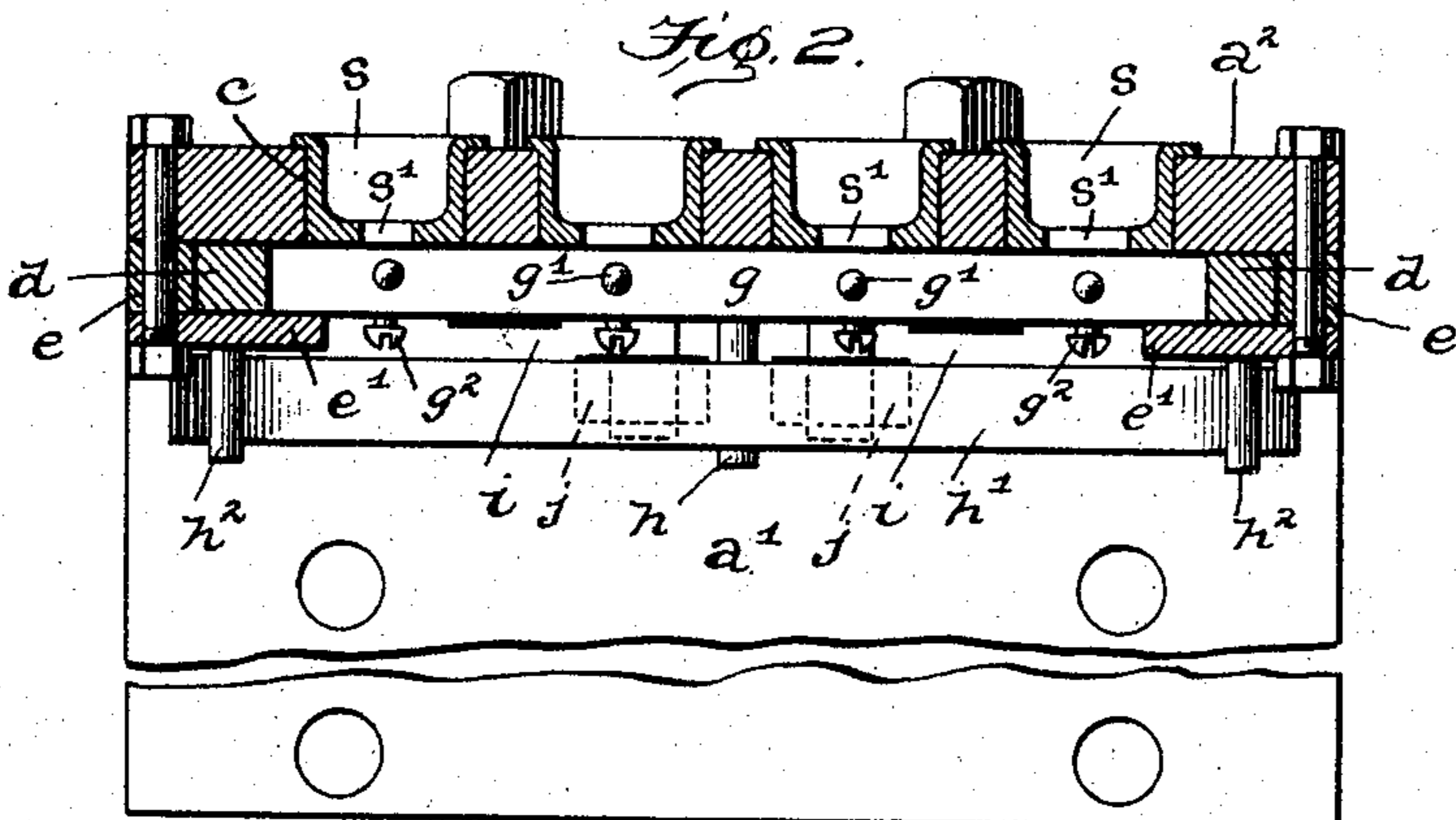
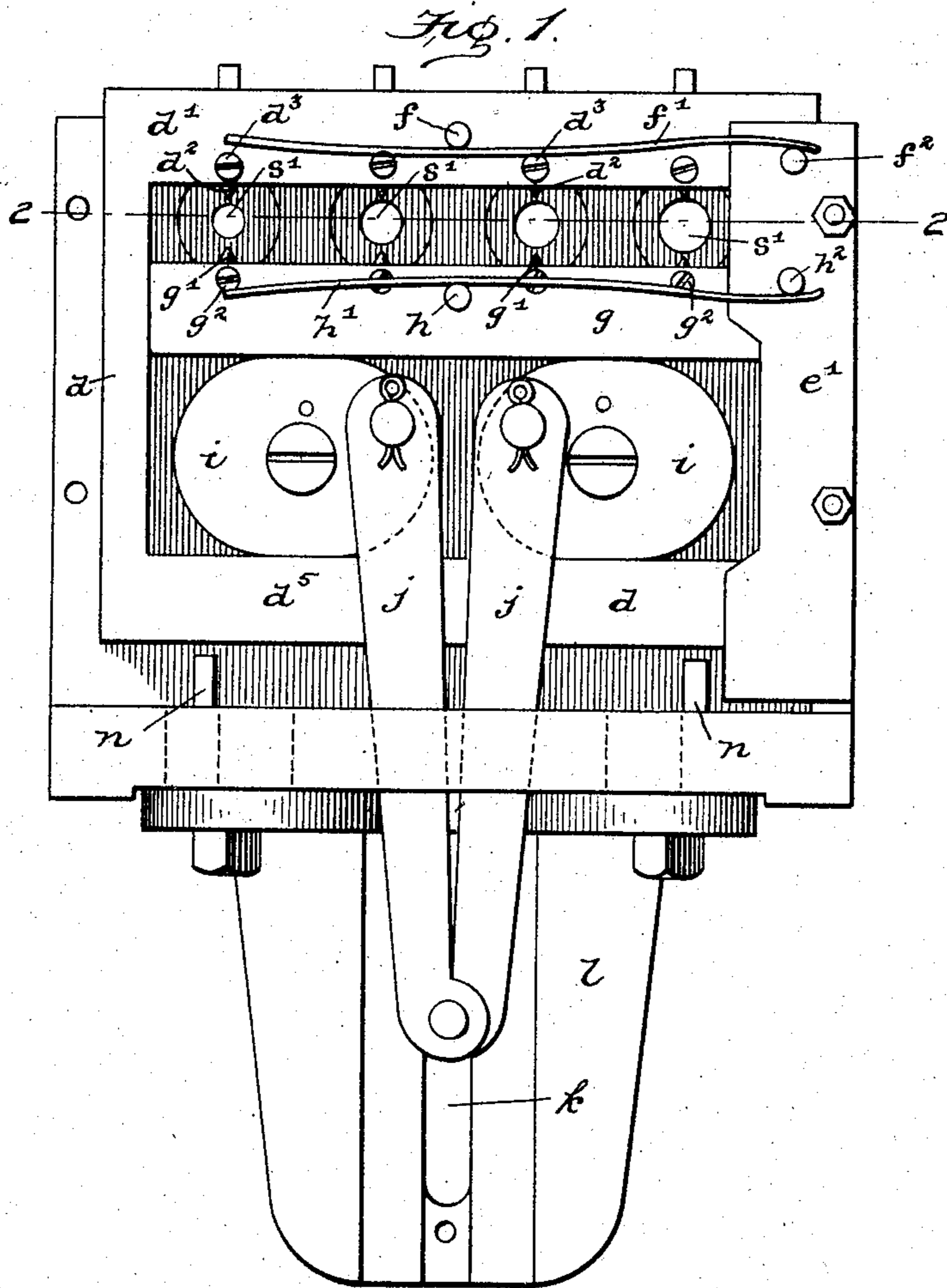


No. 780,561.

PATENTED JAN. 24, 1905.

M. G. GANS.
PUNCHING MACHINE.
APPLICATION FILED APR. 20, 1904.

2 SHEETS—SHEET 1.



Inventor

Witnesses

Edwin L. Bradford
F. Ferdinand Vogt

By

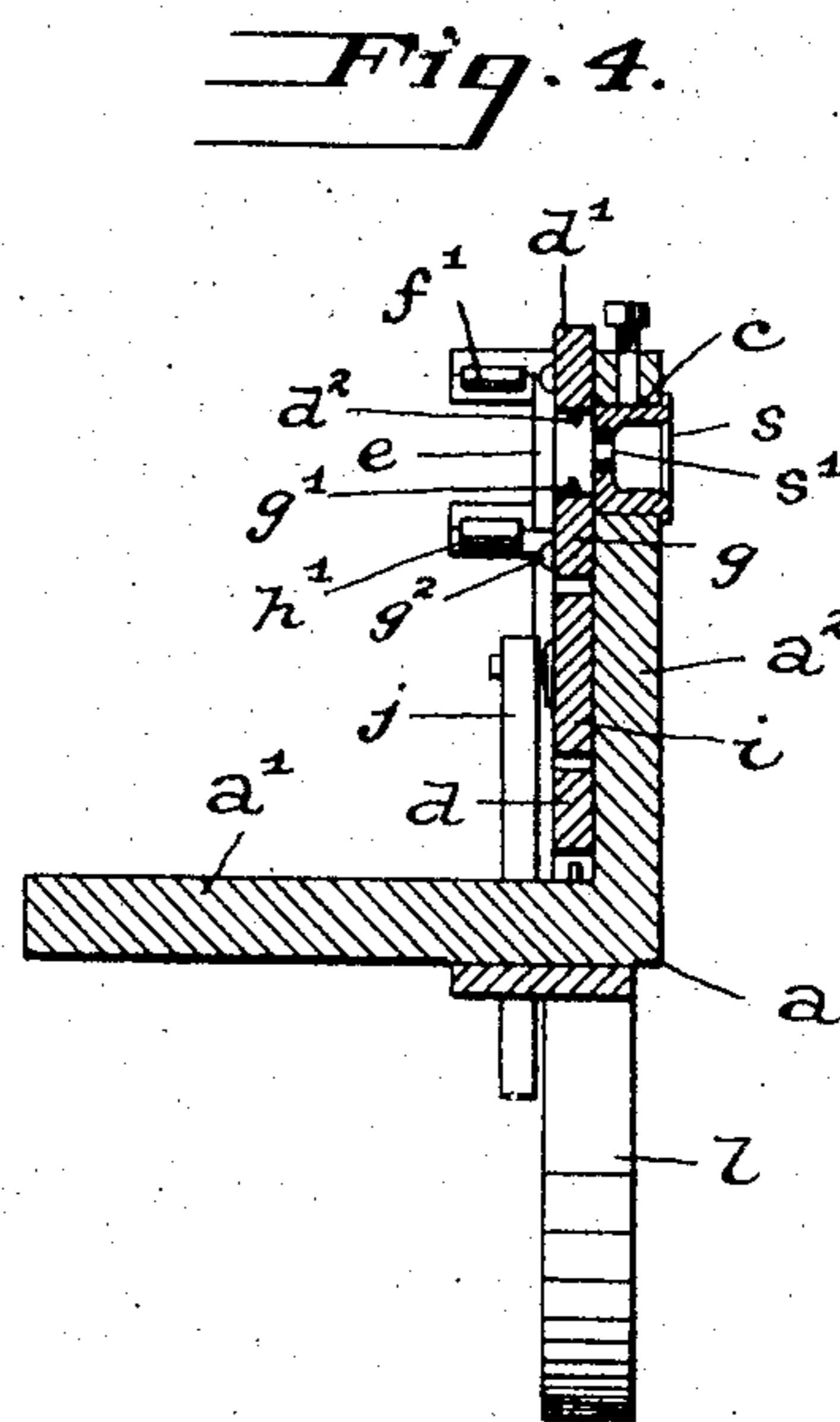
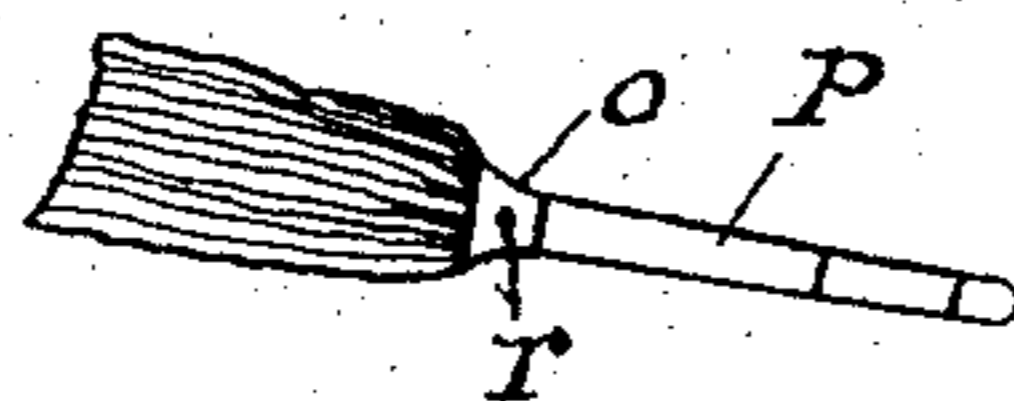
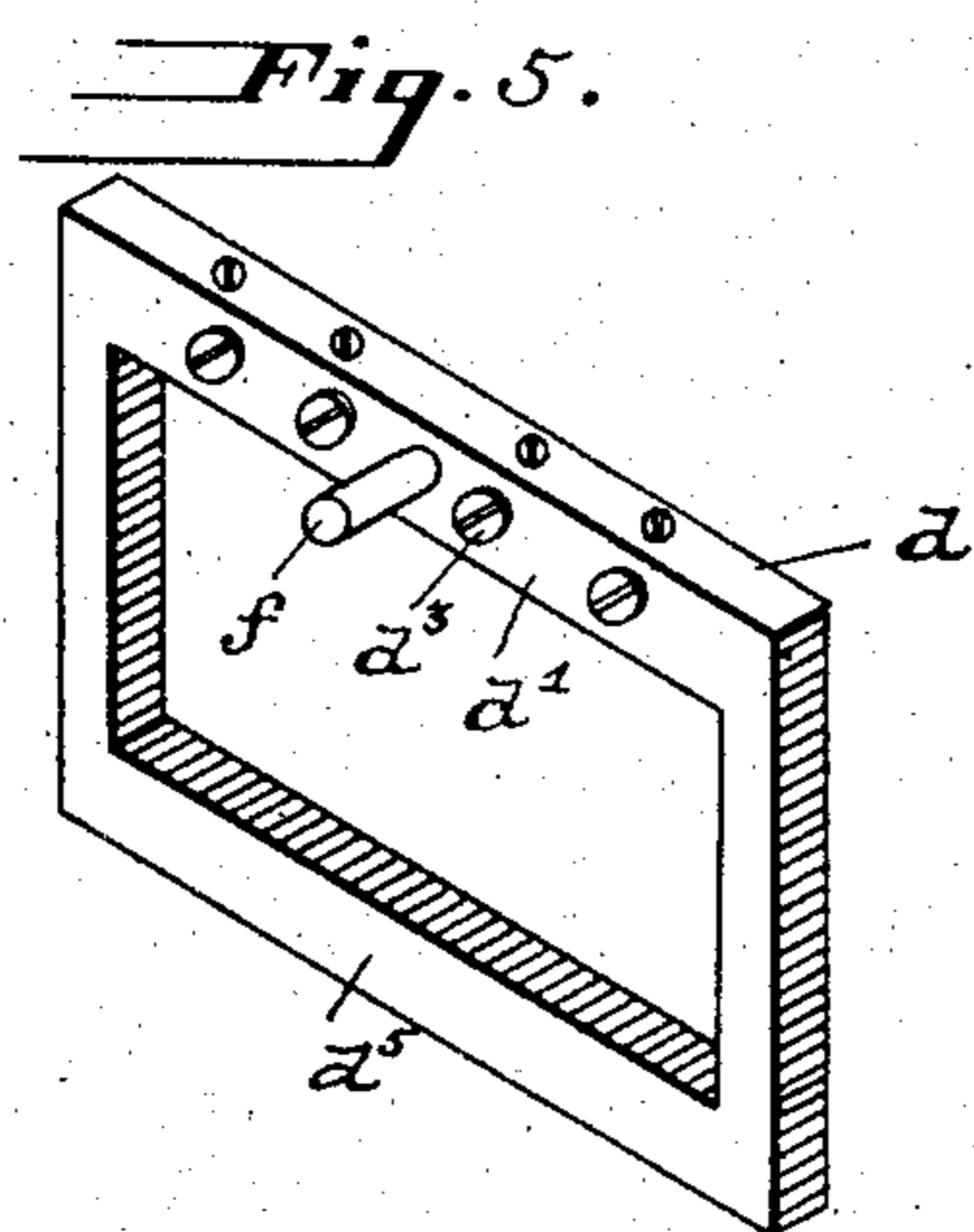
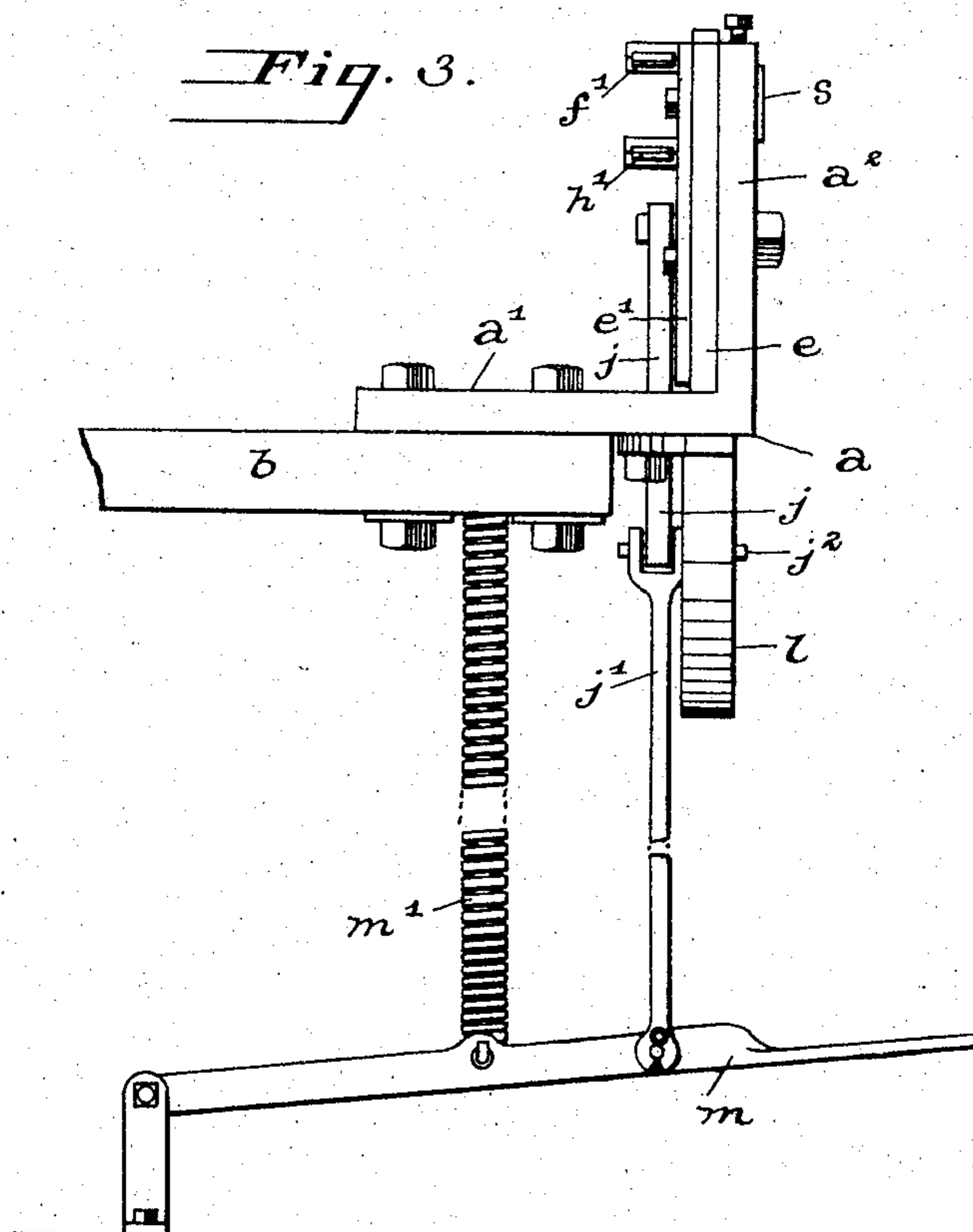
Moses L. Gans
Mann & Co.
Attorneys

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

MOSES G. GANS, OF BALTIMORE, MARYLAND.

PUNCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 780,561, dated January 24, 1905.

Application filed April 20, 1904. Serial No. 203,976.

To all whom it may concern:

Be it known that I, MOSES G. GANS, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Punching-Machines, of which the following is a specification.

This invention relates to a ferrule-attaching machine.

One object of the invention is to provide a machine of simple construction by means of which ferrules on rods of umbrellas, parasols, or canes may be secured by oppositely-placed prick-punch indentations.

The invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, and pointed out in the claims.

The accompanying drawings illustrate the invention, in which—

Figure 1 illustrates a rear elevation of the upper part of the machine constructed in accordance with my invention. Fig. 2 is a sectional plan view on the line 2 2 of Fig. 1. Fig. 3 is a side elevation of the complete machine in position ready for use. This view shows the parts seen in Fig. 1 looking from the right-hand side toward the left. Fig. 4 is a vertical sectional view through the machine, taken on a line passing through one of the rod-receiving holes. Fig. 5 is a detail perspective view through the movable frame. Fig. 6 illustrates an end of an umbrella and shows the ferrule or thimble secured in position on the rod.

In the drawings, *a* designates an L-shaped bracket one side, *a'*, of which extends in a horizontal plane and in the present instance (see Fig. 3) is bolted to a bed or table *b*, while the other side, *a''*, of said bracket extends vertically and is provided with a plurality of sockets or mortises *c*, which extend or are arranged in a horizontal direction near the upper edge of said vertical side *a''*. In the present instance a cup-shaped shell *s* fits into each of the said sockets, and said shells are each provided with a perforation *s'* in its side.

These perforations in the several shells vary in diameter, the largest perforation preferably being at one end and the next smaller adjoining and the others successively smaller coming in their order.

A rectangular movable frame *d* has position at the rear of the vertical side *a''* of the bracket, and said frame is held in position by two vertical end bars *e* and inwardly-projecting plates *e'*. In Fig. 1 the inward-projecting plate at the left side is omitted. This frame *d* is arranged to have vertical movement at the rear of and with respect to said cup-shaped shells *s*. The upper horizontal bar *d'* of said frame *d* is provided with a plurality of downwardly-projecting pins *d''*, each of which projects downwardly at the rear of one of the perforations *s'* of the shells. These pins are pointed at the ends and are preferably of a screw form and are screwed down through the top of said bar *d'*, and the pointed ends project at the bottom. Horizontally-extending screws *d'''* are entered in the vertical side of the bar *d'* and impinge against the pins *d''* and aid in keeping the said pins rigidly in place.

An outwardly-projecting center pin *f* is secured in the vertical rear side of the top bar *d'* of the frame, and a flat spring *f'* extends horizontally beneath said center pin, and each end of said spring curves upwardly slightly and takes over a stationary pin *f''* on the side plates *e'*. By this arrangement of pins and spring it will be readily understood that the frame *d* will be kept normally raised, as shown in Fig. 1.

A horizontal movable bar *g* has position within the frame *d* beneath its top bar *d'*, and said bar *g* is disconnected from and has vertical movement within said frame. This bar, similar to the top bar *d'*, is provided with a plurality of upward-projecting pins *g'*, each of which is directly beneath one of the upper pins *d''*. These lower pins are also provided with pointed ends and are held against displacement by horizontally-extending screws *g''*. A center pin *h* is secured in this bar *g*, and a flat spring *h'* extends horizontally above

said center pin h and has its ends curved downwardly, so as to pass beneath a stationary pin h^2 on each of the side plates e' . By this construction it will be seen that the bar g is kept
5 normally pressed down or away from the top bar d' .

Two cams i are pivotally secured to the vertical side a^2 of the bracket a , and said cams have position between the lower side of the
10 movable bar g and the upper side of the bottom cross-bar d^5 of the movable frame d . These two cams operate to press bar g upward and bar d' downward.

Links j are pivoted eccentrically at one end
15 to each of said cams, and the lower ends of said two links are connected to the upper end of a rod j' . A pin j^2 extends through the lower ends of said links and rod j' , and said pin also projects through a slot k in the vertical depending bracket l , which slot serves
20 as a guide for said pin and also as a stop acting on the pin to limit the downward movement of the links.

The lower end of the rod j' is attached to a
25 treadle m , by means of which the rod and links j may be moved vertically to partly rotate the cams i . A spiral spring m' serves to keep the treadle normally elevated.

Two stationary pins n have position beneath
30 the movable frame d and serve as stops for the latter.

In the operation of attaching a ferrule or collar o to an umbrella-rod p the collar is first slipped over the lower end of the said
35 rod, and said end is then inserted in one of the cup-shaped shells s , with the rod and collar projecting through the perforations s' and having position between the two pointed ends d^2 and g' . The pointed ends of said pins thus
40 have position at diametrically opposite sides of said rod and collar. The treadle m is now suddenly depressed, pulling the rod j' and links j down with it. This downward movement of the links causes the cams i to be par-
45 tially rotated, and as the narrower sides of the cams are in contact with the lower side of the movable bar g and the upper side of the bottom cross-bar d^5 when the cams are turned the bar g will be raised and the frame d will
50 be lowered, which causes the pins d^2 and g' to make prick-punch indentations r on diametrically opposite sides of the collar, which indentations take into the rod p and secure the collar in position.

When the treadle is released, the spring m'
55 will raise the treadle and rod j' and rotate the cams i in the reverse direction, and flat springs f' and h' will return the frame and bar g to their normal spread-apart positions and re-
60 lease the rod p .

It will be readily understood that the sev-

eral perforations s' of different diameters are provided in order that the one machine may accommodate umbrella-rods or canes of various
65 diameters.

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

1. In a machine of the class described the combination with an open frame provided with
70 a pin, of a bar movable within the opening in said frame and also provided with a pin, and means for moving the open frame in one direction and also moving the bar within the frame in a different direction to direct the
75 pins toward a common center.

2. In a machine of the class described the combination with a bar provided with a pin, of a frame surrounding the bar and movable
80 with respect to said bar and also provided with a pin, and means interposed between the frame and bar for changing their relative positions.

3. In a machine of the class described the combination of a plate provided with a per-
85 foration; a frame extending around said perforation and movable at one side of said plate and carrying a pointed pin; a bar also carrying a pointed pin and inclosed by and movable within said frame and a cam device be-
90 tween the said frame and bar and arranged to act on both simultaneously to move them in opposite directions.

4. In a machine of the class described the combination with a perforated plate, of a
95 frame at one side of said plate and having parallel bars which extend respectively at opposite sides of the perforation in said plate and one of said bars having a pin; a bar interposed between the parallel bars of said
100 frame and also carrying a pin, and a cam operating between said interposed bar and one of the bars of said frame to change their relative positions.

5. In a machine of the class described the combination with a plate provided with a plu-
105 rality of perforations, of parallel bars at one side of said plate and extending respectively at opposite sides of the center of said perforations, said bars having pins projecting toward the center of said perforations, and means for drawing the bars together.

6. In a machine of the class described the combination of a plate provided with a per-
115 foration; a frame movable at one side of said plate and carrying a pointed pin; a bar also carrying a pointed pin and movable with respect to said frame; a cam device interposed between the frame and bar for moving them toward each other, and springs for moving
120 the frame and bar away from each other.

7. In a machine of the class described the

combination with a plate provided with a plurality of perforations, of a frame at one side of said plate and having parallel bars, one at each side of said perforations, one of the
5 bars of said frame having a pin adjacent each perforation; a bar movable within said frame between said parallel bars and also carrying pins, and a cam mounted on the perforated

plate between the frame and the movable bar within the frame.

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

MOSES G. GANS.

Witnesses:

G. FERDINAND VOGT,
CHARLES B. MANN, Jr.