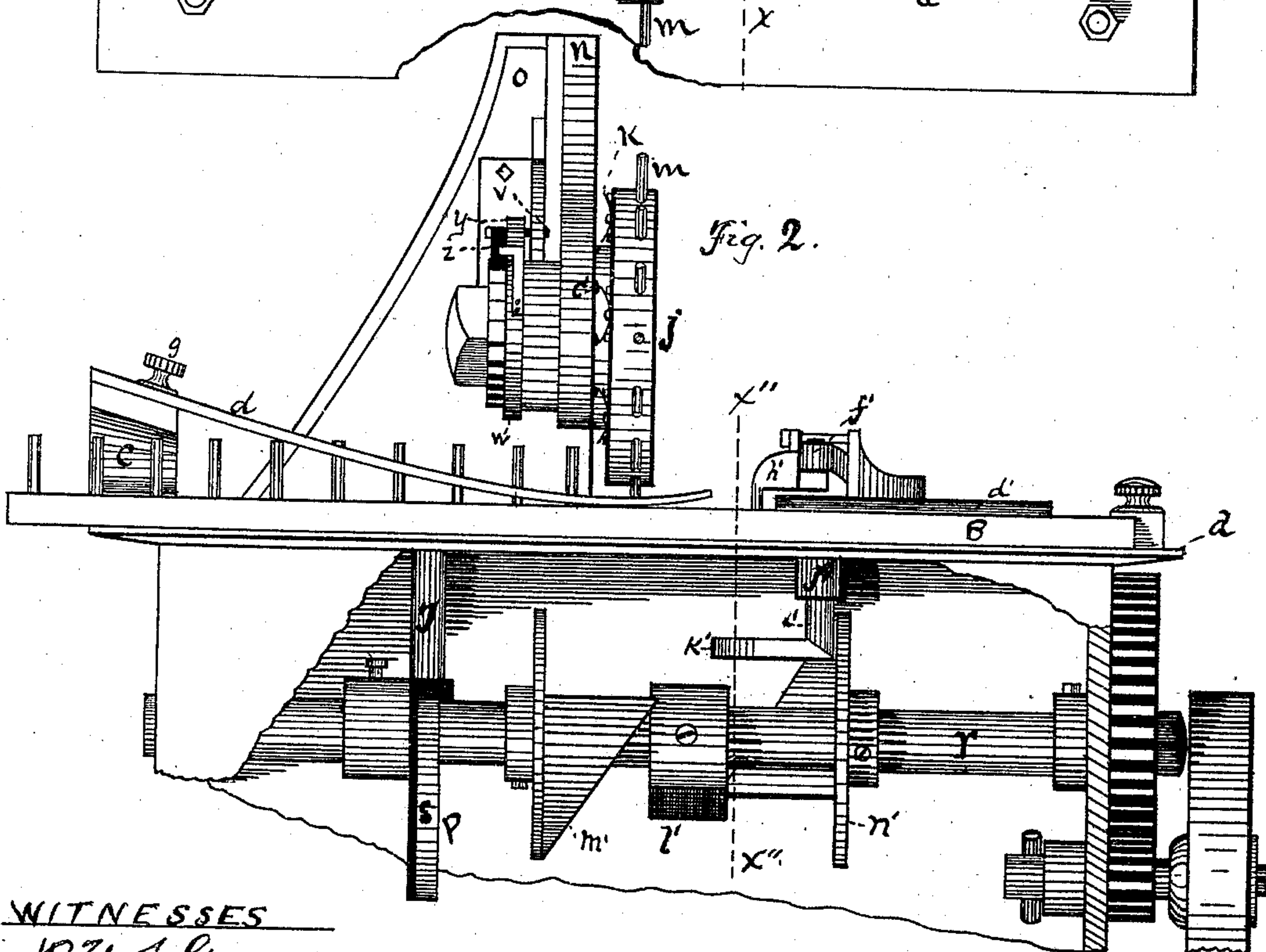
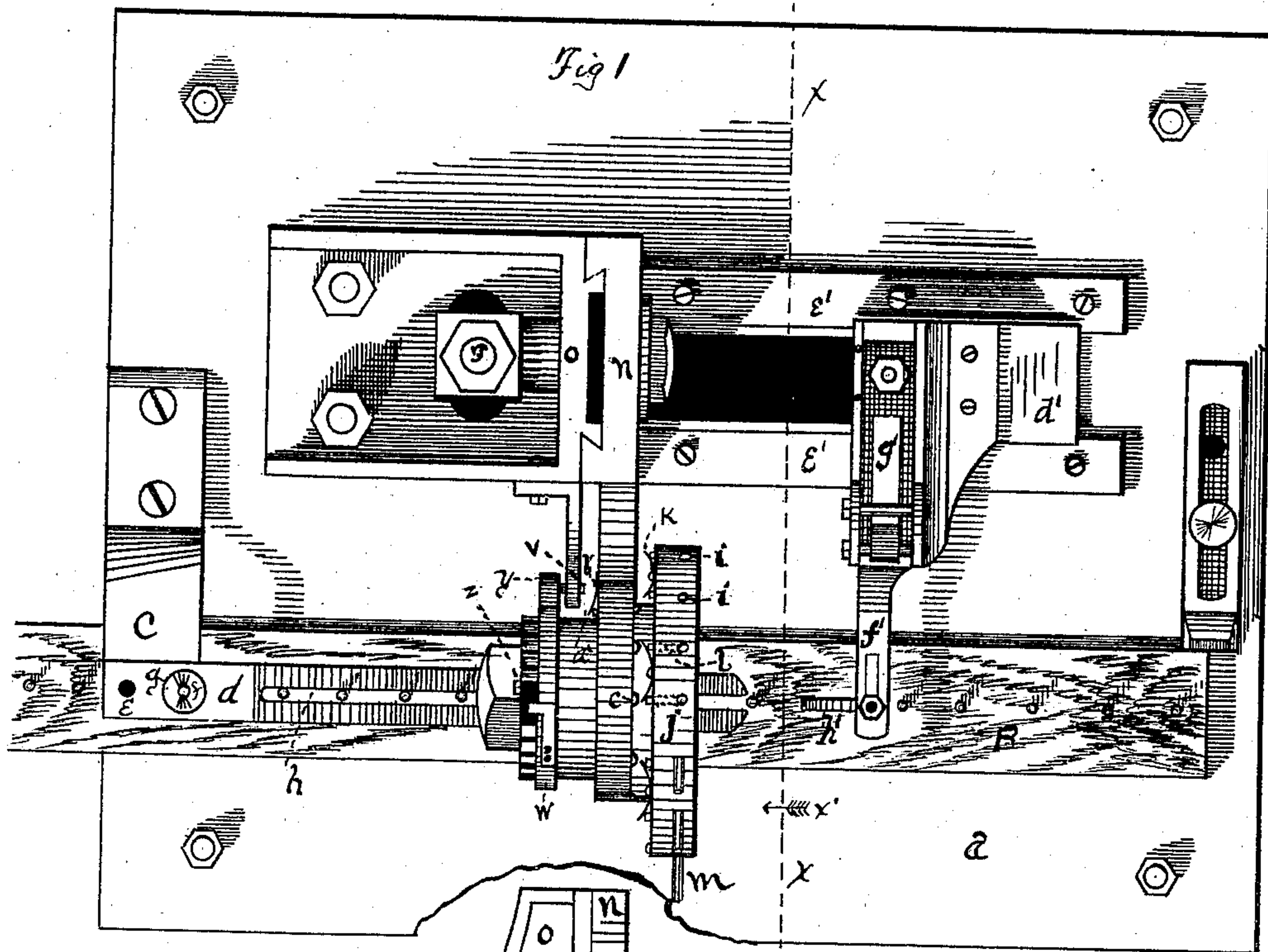


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PIN-STICKING MACHINES FOR KEYBOARDS.

No. 182,705.

Patented Sept. 26, 1876.



WITNESSES

R. L. F. Gaylord
 Allen W. Page

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INVENTOR

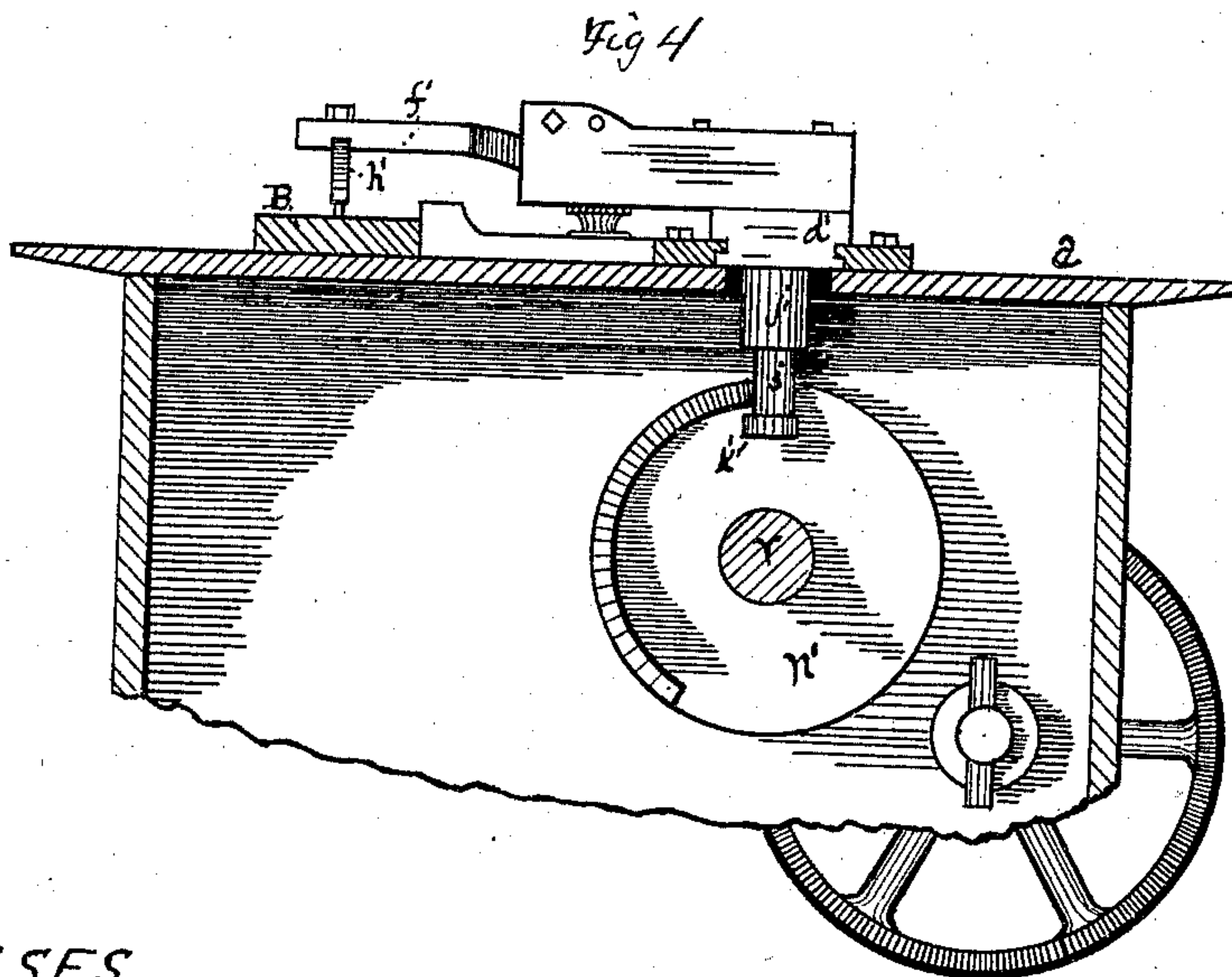
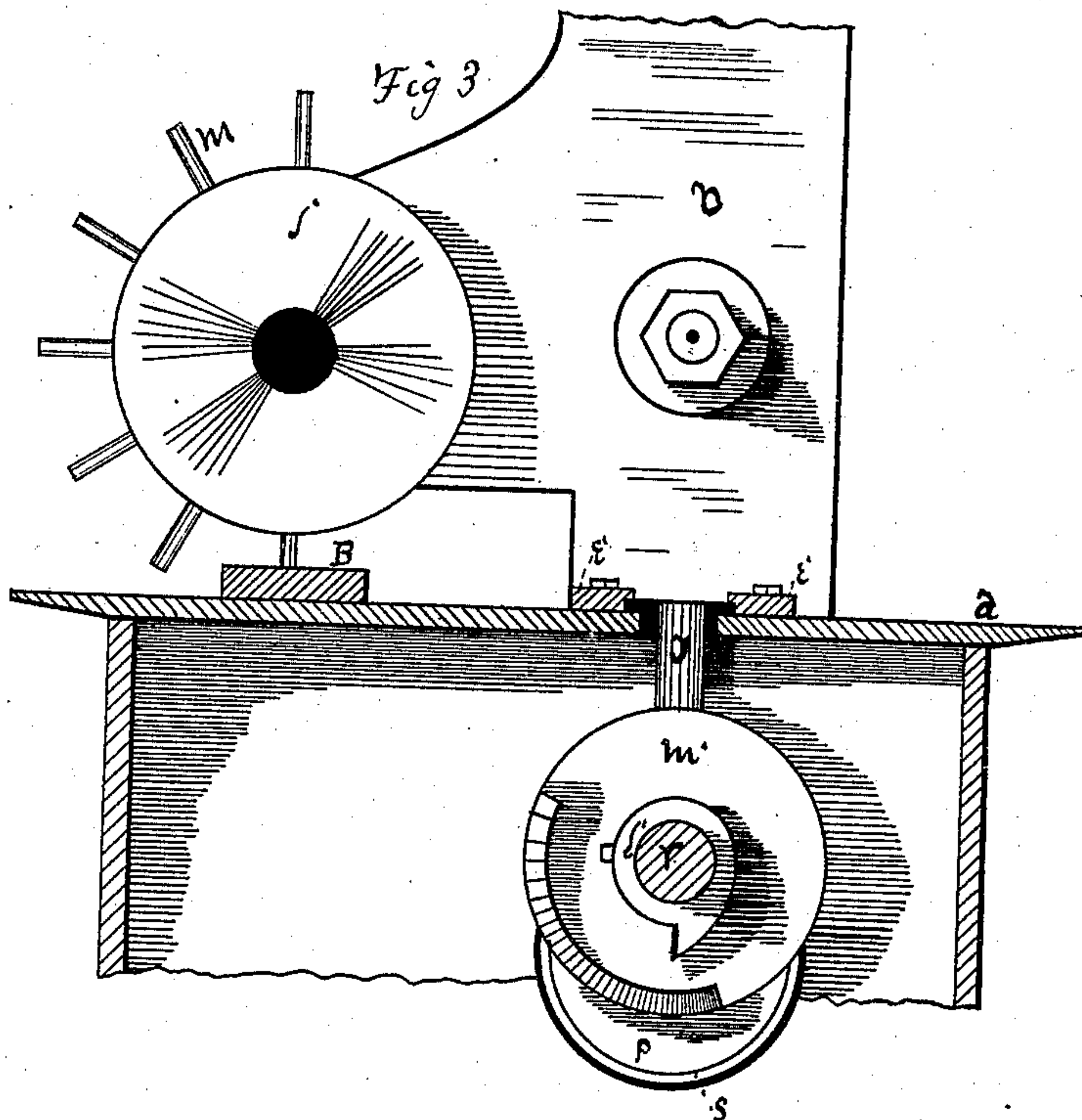
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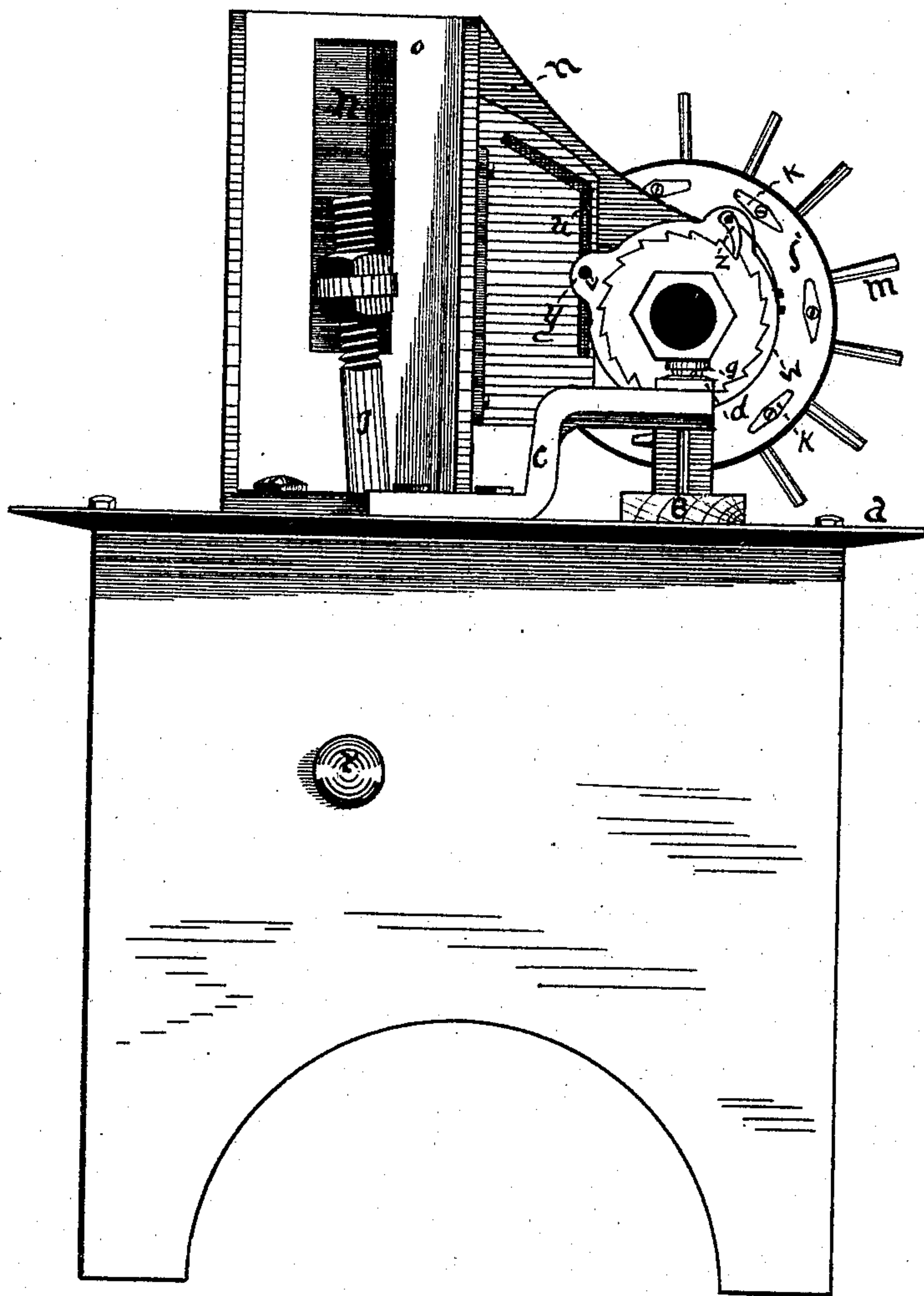
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Fig 5



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UNITED STATES PATENT OFFICE.

CHARLES W. PRATT, OF DEEP RIVER, CONNECTICUT, ASSIGNOR TO PRATT, READ & CO., OF SAME PLACE.

IMPROVEMENT IN PIN-STICKING MACHINES FOR KEY-BOARDS.

Specification forming part of Letters Patent No. 182,705, dated September 26, 1876; application filed March 20, 1876.

To all whom it may concern:

Be it known that I, CHARLES W. PRATT, of Deep River, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements pertaining to a Machine for Sticking Pins in Key-Boards for Musical Instruments, of which the following is a specification, reference being had to the accompanying drawings, where—

Figure 1 is a top view. Fig. 2 is a front view. Fig. 3 is a sectional elevation on the plane $x\ x$, looking in the direction denoted by the arrow x' . Fig. 4 is a sectional elevation on the plane $x''\ x''$, looking in the opposite direction from that indicated by the arrow x' . Fig. 5 is an end elevation of the left end.

In the manufacture of key-boards for pianos, melodeons, and organs, it is requisite that a row or rows of pins—generally of brass—be driven into a part of the wooden frame-work as guides and pivots for the keys. This machine is intended for driving such pins.

The letter a denotes the table of the machine; B , a wooden strip, into which a row of pins is being driven; c , an arched arm rising from the table, and d a spring-finger hung thereto upon pin e and screw-pin f , pressing upon the strip B , its pressure regulated by thumb-nut g , and bifurcated by the mortise h for the passage of the driven pins, and to guide the longitudinal motion of the wooden strip. The pins are fed, by hand or by appropriate mechanism, into holes i in the rotary carrier-disk j , and are held from accidentally escaping by springs k bearing upon pins l , which, in turn, bear against the pins m after they are in the holes i . This carrier-disk is hung in or to the vertically-reciprocating slide n , which, in turn, is hung by ways on the standard o , and has vertical reciprocation given it by the eccentric p on shaft r through the medium of strap s and pitman T , so that the carrier-disk has an up-and-down motion at proper intervals, descending to drive a pin in the wooden strip, and then rising to permit the feed motion of the wooden strip. The carrier-disk has proper step-by-step rotation given to it through the medium of the cam-slot u , pin v , disk w , and pawl y , acting on the

ratchet z , which is fast with the carrier-disk. Disk w is loose on the shaft of the carrier-disk.

The step-by-step feed motion of the strip B is given by means as follows: The letter d' denotes a slide moving in ways e' , carrying the arm f' —pressed down by spring g' —carrying the finger h' , which engages, as hereinafter described, with the pin-holes in the wooden strip. The arm f' is fast on the top of vertical rod i' , running down through the sleeve j' , which is fast on the bottom of slide d' , and it (the rod i') has at its foot the lateral spur or arm k' .

The proper up and down motions of the rod i' and arm f' are given by the cam l' . Their proper lateral motions are given by the two French cams m' and n' . All three of these cams are on the shaft r . I will describe these motions, commencing at the position given to the feed-finger h' in Fig. 2. At this point the finger h' has fallen into one of the pin-holes in the wooden strip. The cam n' , striking the side of rod i' , moves it (and with it slide d' , arm f' , and finger h') toward the carrier-disk till the feed-finger h' is directly under the carrier-disk; then the cam l' strikes the bottom of arm k' and raises the finger h' out of the pin-hole. While thus raised, and before the arm k' has dropped off the shoulder of cam l' , French cam m' strikes the end of arm k' and moves finger h' back, (to the right in Fig. 2,) and just after this backward lateral motion has commenced arm k' drops off shoulder of cam l' and finger h' drops upon the surface of strip B . The backward lateral motion of finger h' continues till it finds a fresh pin-hole, into which it drops, letting arm k' drop below the French cam m' , thus stopping the backward lateral motion. This brings the finger h' to the position shown in Fig. 2, which is the point at which I commenced the description of the motions of this feed-finger.

It would seem, at first glance, that some simple feed motion which would move the strip B the same distance each time would answer; but it is not so, for the pins vary in distance apart.

I claim as my invention—

1. The combination of rotating carrier-disk

j, having pin-holes *i* and springs *k*, with pins *l*, all substantially as described.

2. The combination of rotating carrier-disk *j* with slide *n*, standard *o*, disk *w*, pawl *y*, and ratchet *z*, all substantially as described.

3. In a pin-sticking machine for musical instruments and other key-boards, the combination of table *a* with bifurcated pressure-finger *d*, all substantially described.

4. The combination of slide *d'* with reciprocating arm *f'* and finger *h'*, all substantially as described.

5. The combination of rod *i'* with cam *l'*

and French cams *m' n'*, all substantially as described.

6. The combination of French cams *m' n'* and cam *l'* with rod *i'*, slide *d'*, arm *f'*, and finger *h'*, all substantially as described.

7. The combination of carrier-disk *j*, slide *n*, and pitman T with eccentric *p*, shaft *r*, cams *l' m' n'*, rod *i'*, arm *f'*, and slide *d'*, substantially as described.

CHAS. W. PRATT.

Witnesses:

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GIDEON PARKER.