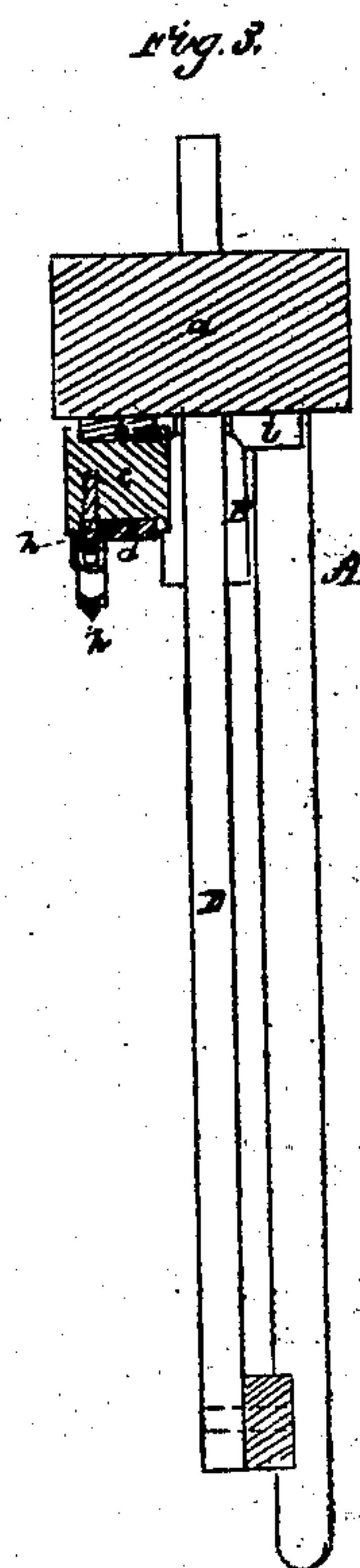
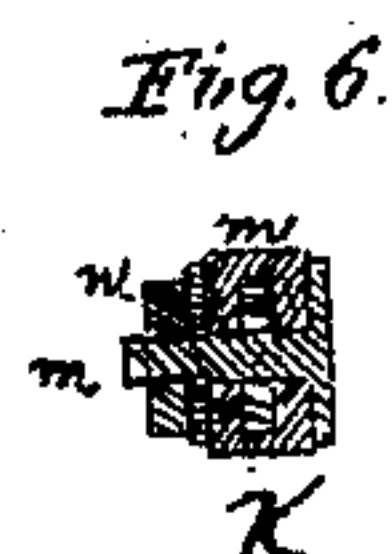
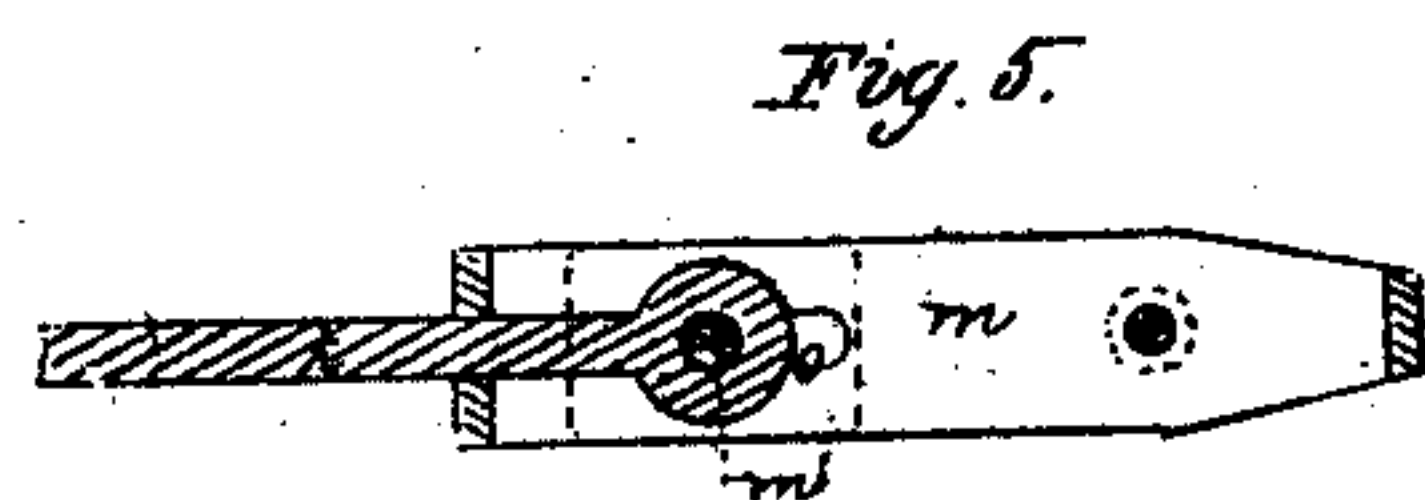
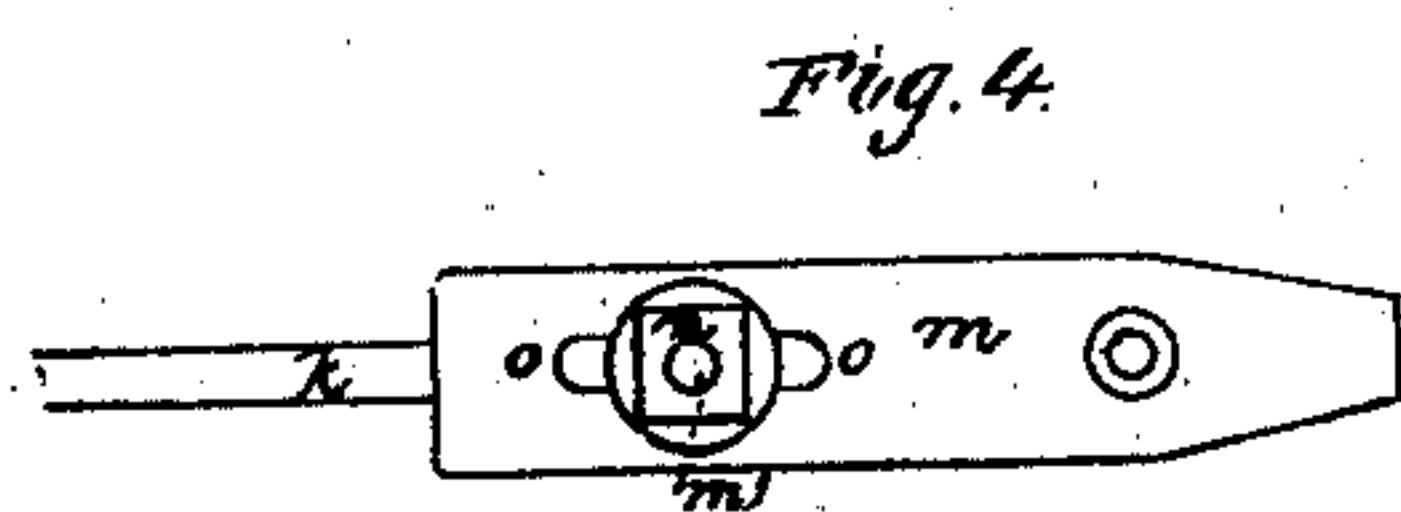
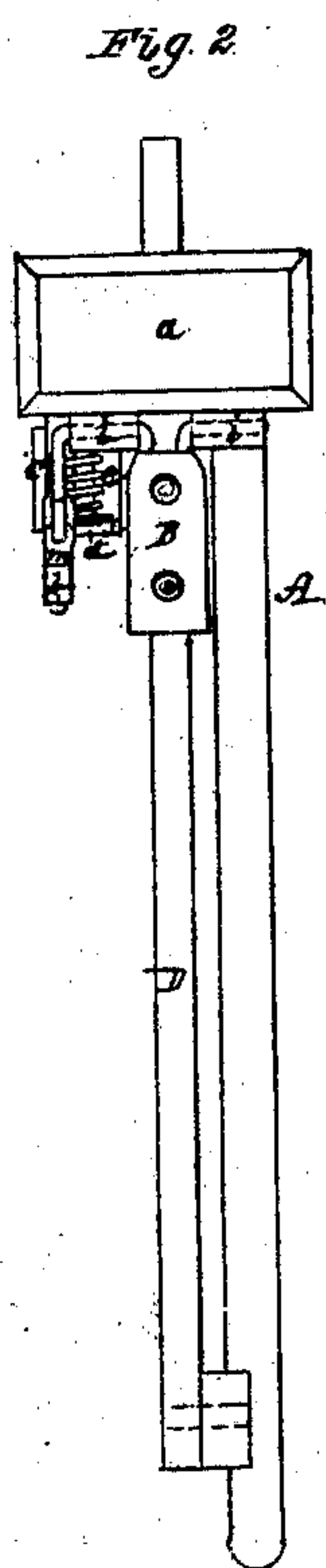
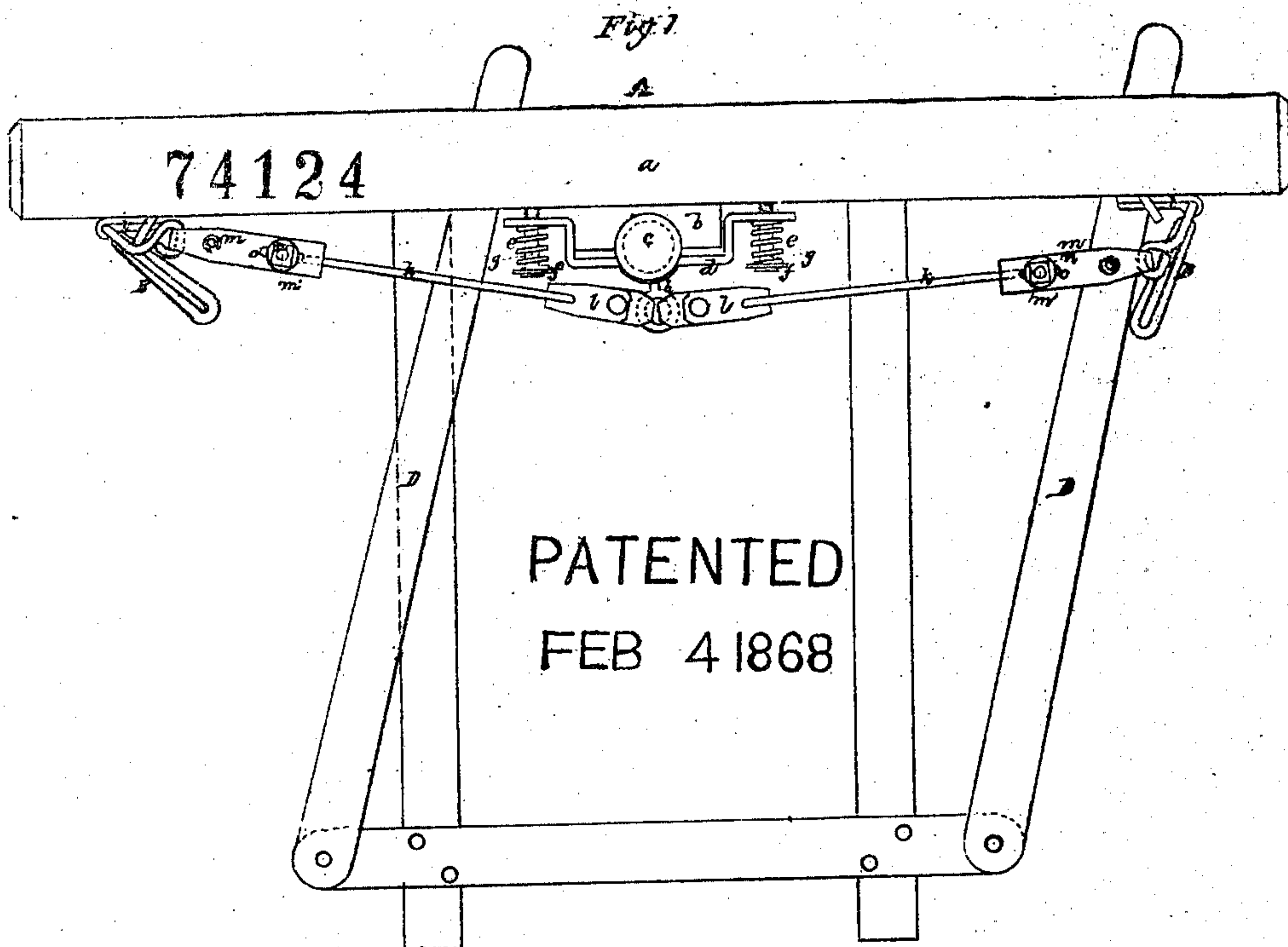


*Ezekiel and Henry C. Phillips Improvement in Looms*



*Witnesses*  
*S. N. Piper*  
*J. B. Snow*

*E. & H. C. Phillips*  
*by their attorney*  
*R. H. Eady*



# United States Patent Office.

EZEKIEL PHILLIPS AND HENRY C. PHILLIPS, OF BLACKSTONE, MASSACHUSETTS, ASSIGNORS TO THEMSELVES AND DANIEL B. POND.

*Letters Patent No. 74,124, dated February 4, 1868.*

## IMPROVEMENT IN PICKER-STAFF CHECK FOR LOOMS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL PERSONS TO WHOM THESE PRESENTS MAY COME:

Be it known that we, EZEKIEL PHILLIPS and HENRY C. PHILLIPS, of Blackstone, of the county of Worcester, and State of Massachusetts, have made a new and useful Improvement in Looms for Weaving; and do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 denotes a front elevation of our invention, as applied to the lay and picker-staves of a loom.

Figure 2 is an end view, and

Figure 3 a transverse section of it.

(Figures 4 and 5 are hereinafter described.)

The purpose of our invention is to prevent, after each throw of the picker or its staff, any improper forward motion of such picker or its staff, such as to prematurely advance the shuttle. Our invention also enables the stoppage of the picker or its staff to be gradually effected, so as to prevent injury thereto.

A premature advance of the picker or its staff is likely to correspondingly advance the shuttle, from which advance serious accidents are liable to take place, in consequence of the shuttle being protruded into the shade of the warps. Again, a gradual stoppage of the picker is desirable, to prevent the cap, or a portion thereof, from being thrown off the spindle of the shuttle.

In carrying out our invention, we combine with the lay A and its two picker-staves, a friction-apparatus, of the kind hereinafter explained. At or near the middle of the lay A, and below the race-beam *a* thereof, we arrange, in a bearing, *b*, a friction-roller or cylinder, *c*, and hold the same in place by a brake-cap or cover, *d*. This cap we support on springs *e e*, which rest on washers *f f*, that in turn are sustained on and by two screws, *g g*, which go through the washers and springs, and screw up into the lay. From the friction-cylinder *c* an arm, *h*, extends downward, and terminates in an eye, which is connected with two bent levers B B, hinged to the lower side of the lay, and arranged at or near the external termini of the vibratory movements of the two picker-staves D D, which play within the lay, and extend therefrom in the ordinary manner. Each of the levers B B, we make of wire, bent in manner and covered with leather as represented in the drawings, and we connect them with the lay by leather loops *i i*, fastened thereto. Each of the rods *k k*, by which the said levers and the arm of the friction-cylinder are conjoined, we connect to the said arm and the lever by leather loops *l m*. One of such pair of the said loops we connect to its rod *k*, by means of a clamp-screw, *m'*, and a nut, *n*, the latter going through the loop and an eye formed on the rod, the eye being within the loop, and the latter having a slot, *o*, made lengthwise in it to receive the shank of the clamp-screw.

Figure 4 is a front view,

Figure 5 a longitudinal section, and

Figure 6 a transverse section of the connection of the rod *k*.

The clamp-screw and nut, with the slot in the loop, enable the connection between the lever B and the arm of the friction-cylinder to be either shortened or lengthened as circumstances may require. During the retreat of each picker-staff, it will be thrown against the longer arm of the next adjacent lever, B, the movement of which, occasioned by the staff, will be overcome by the resistance of the friction-apparatus, the staff being brought to a state of rest without any recoil, such as takes place when a spring is employed to overcome the momentum of the staff. While each picker-staff may be moving a lever, B, the other lever B will be in corresponding movement, and will be set, ready for a blow of the other picker-staff.

By applying the friction-cylinder-box cap to the lay, by means as described, the degree or amount of friction or resistance that may be required to overcome the momentum of the picker-staff can be readily obtained.

We claim the friction-apparatus, substantially as described, that is, as composed of the levers B B, the friction-cylinder and its bearing and cap, and the connection of such cylinder and levers, as specified.

We also claim the combination of the friction-apparatus, substantially as described, or its equivalent, with the lay and its pickers, or picker-staves, the whole being arranged and so as to operate as and for the purpose as explained.

EZEKIEL PHILLIPS,  
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Witnesses:

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