

(No Model.)

G. A. BRACHHAUSEN.
DAMPING MECHANISM FOR MUSIC BOXES.

No. 538,035.

Patented Apr. 23, 1895.

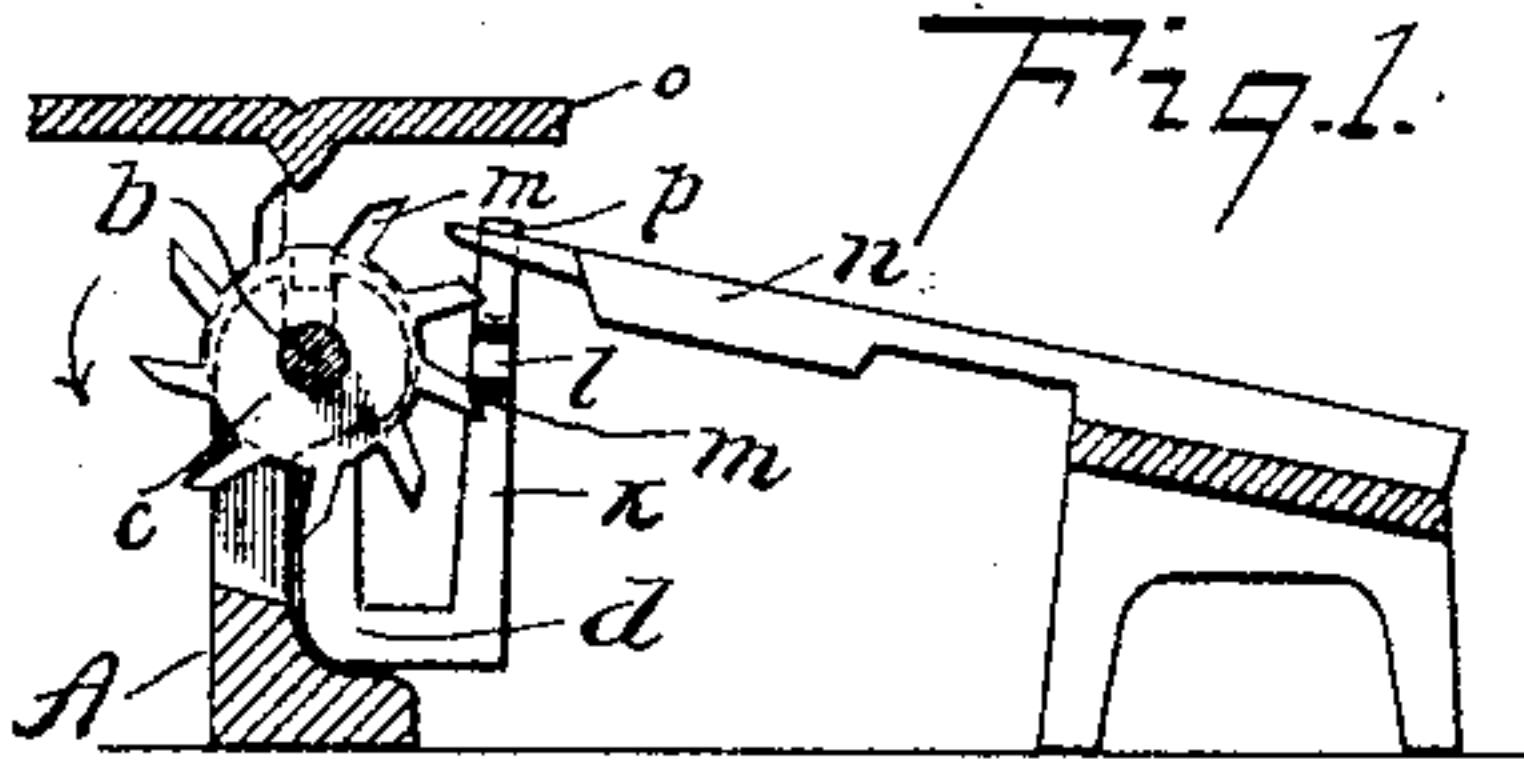


Fig. 1.

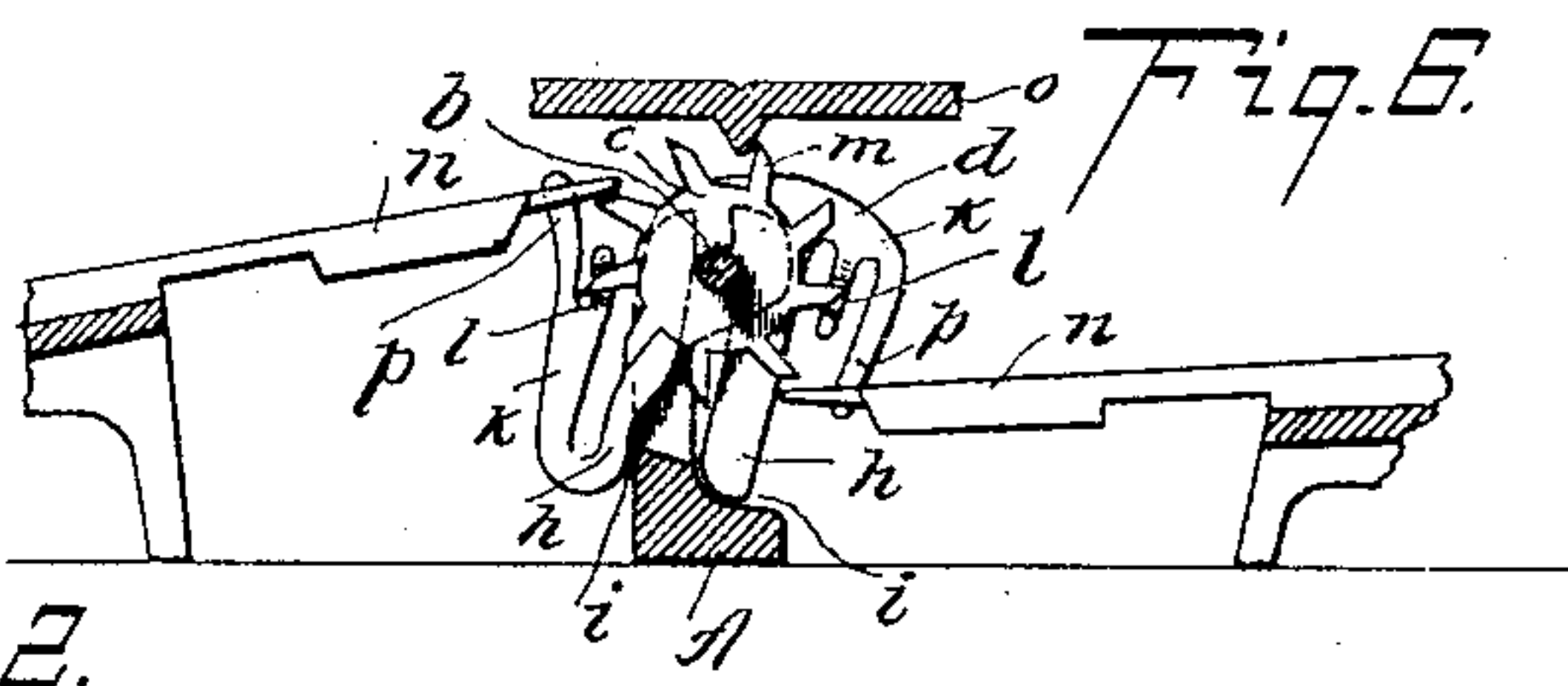


Fig. 6.

Fig. 2.

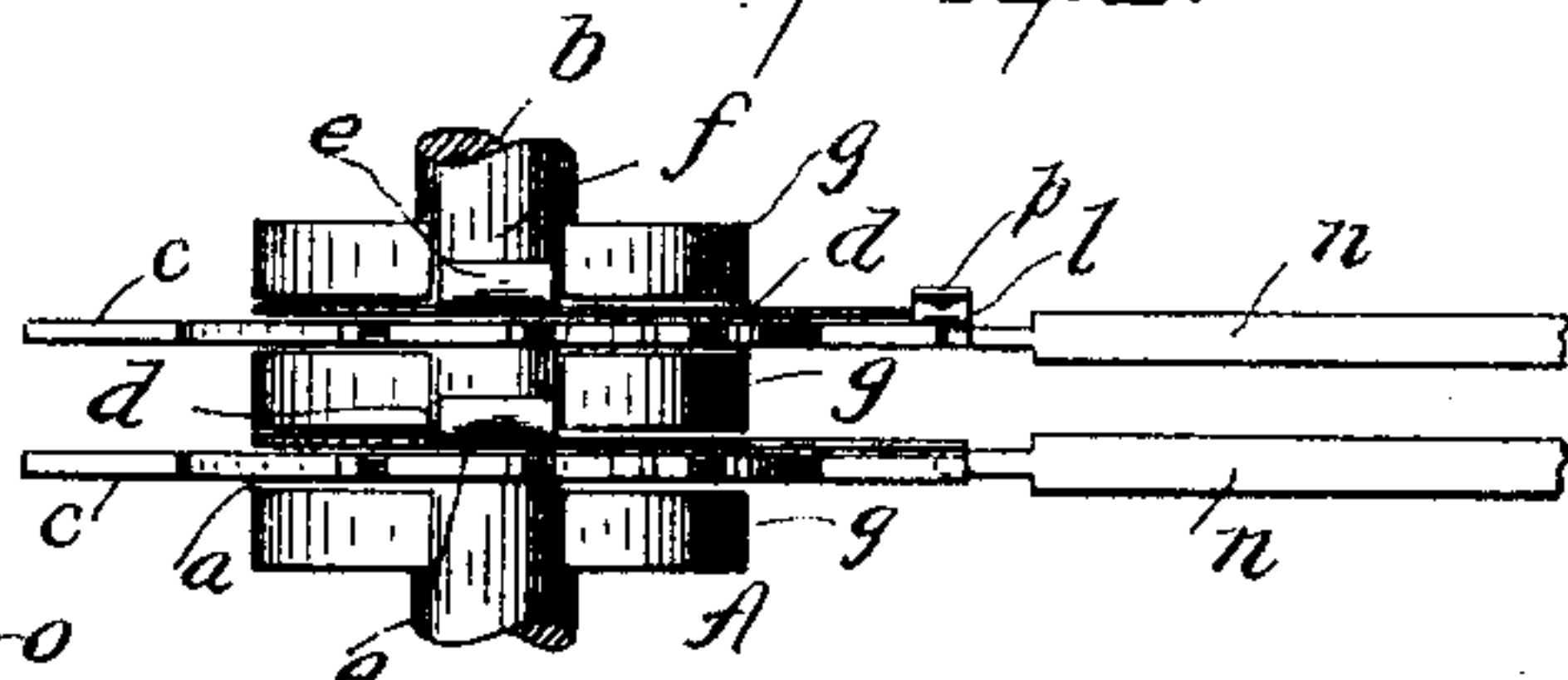


Fig. 3.

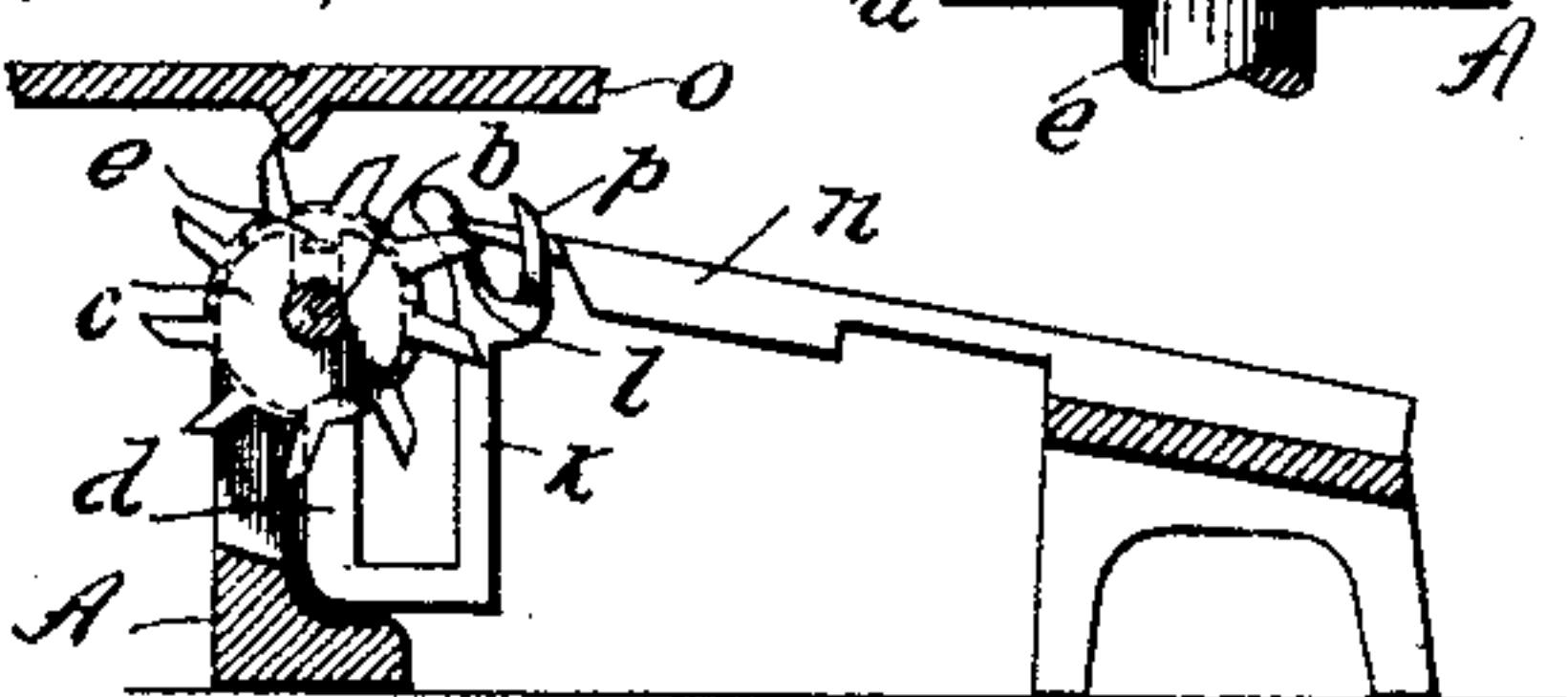


Fig. 7.

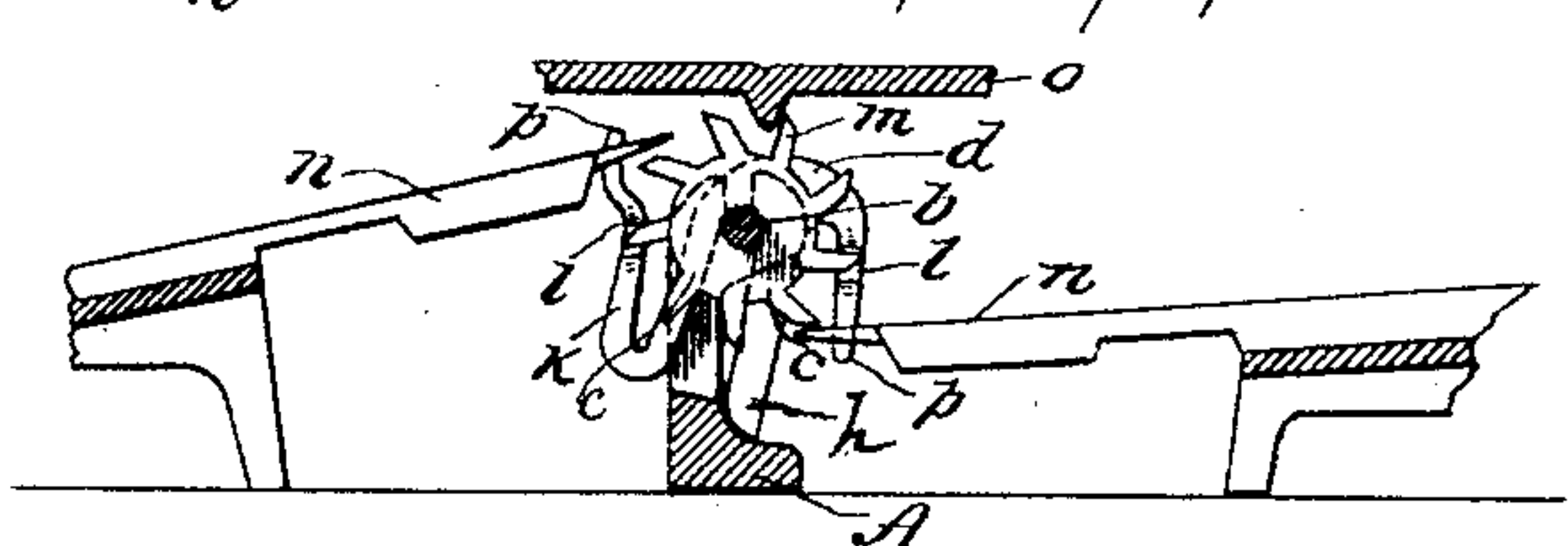


Fig. 4.

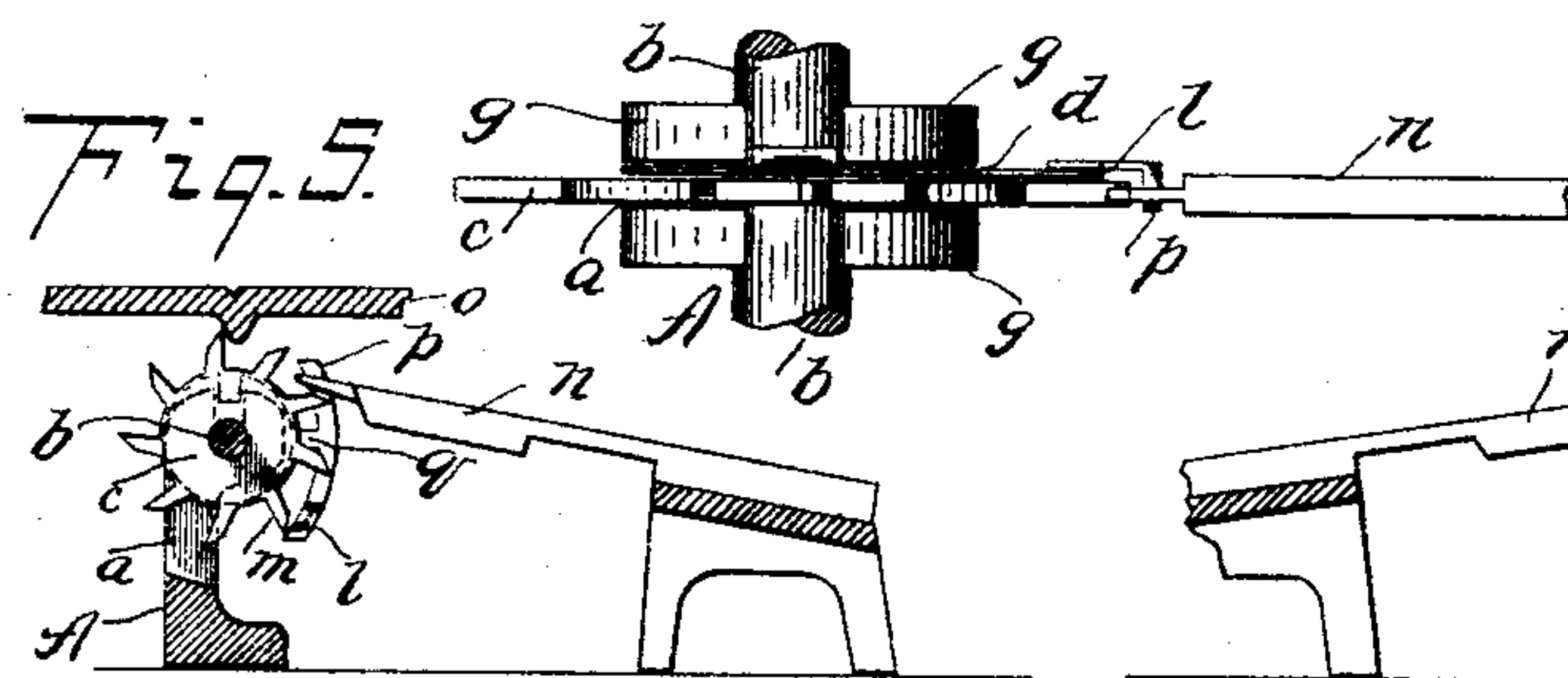


Fig. 5.

Fig. 8.

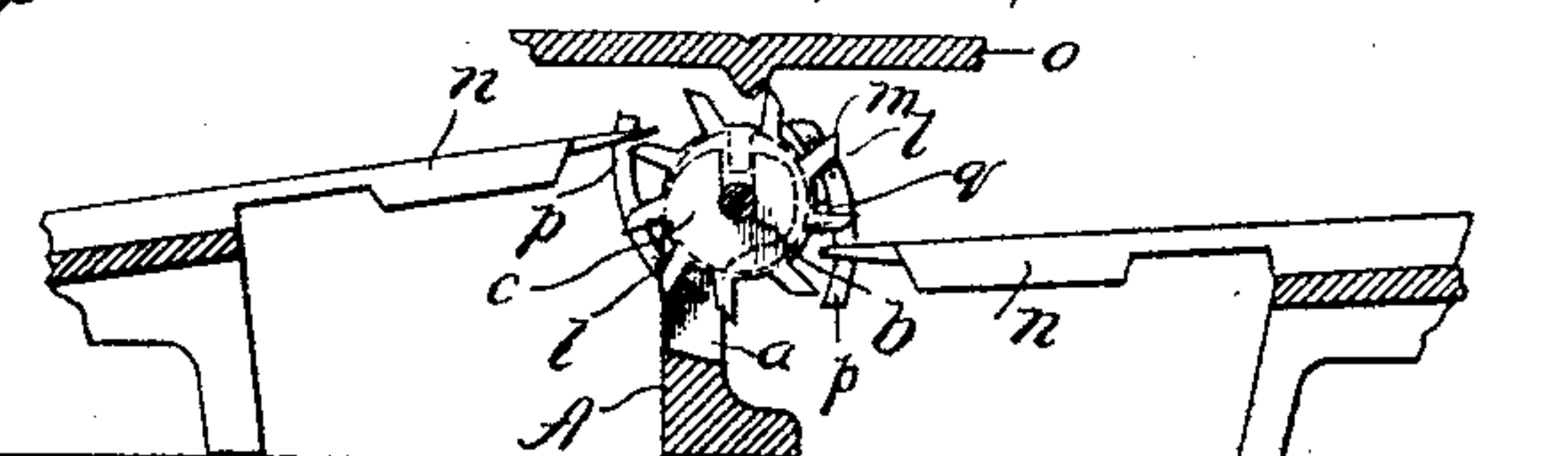


Fig. 9.

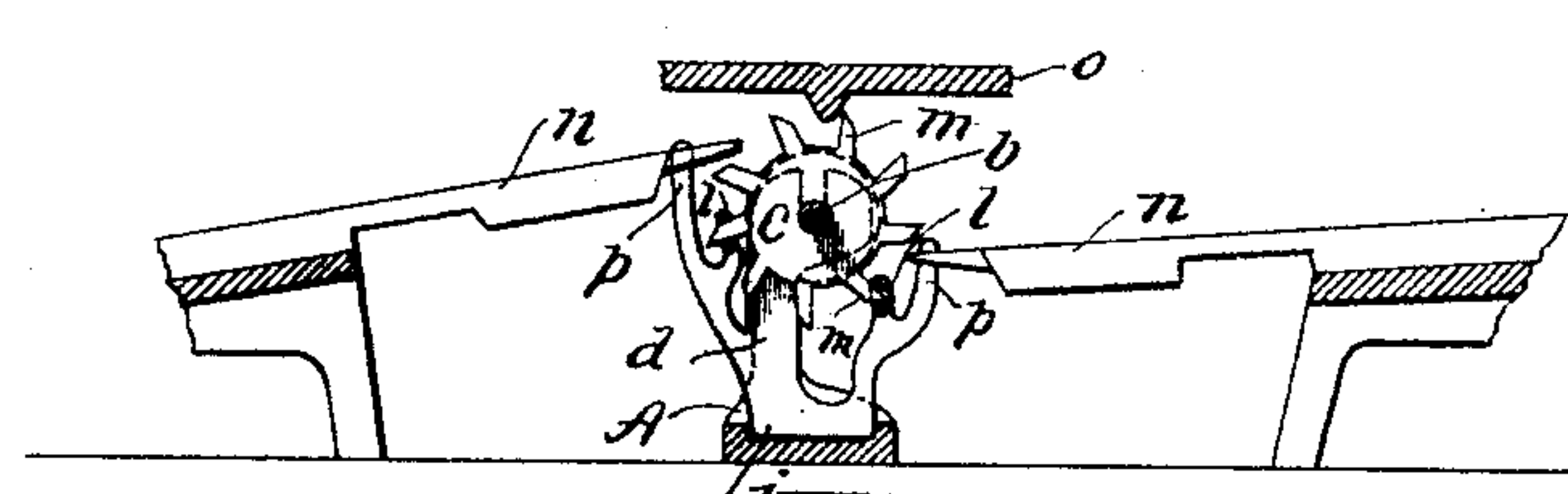
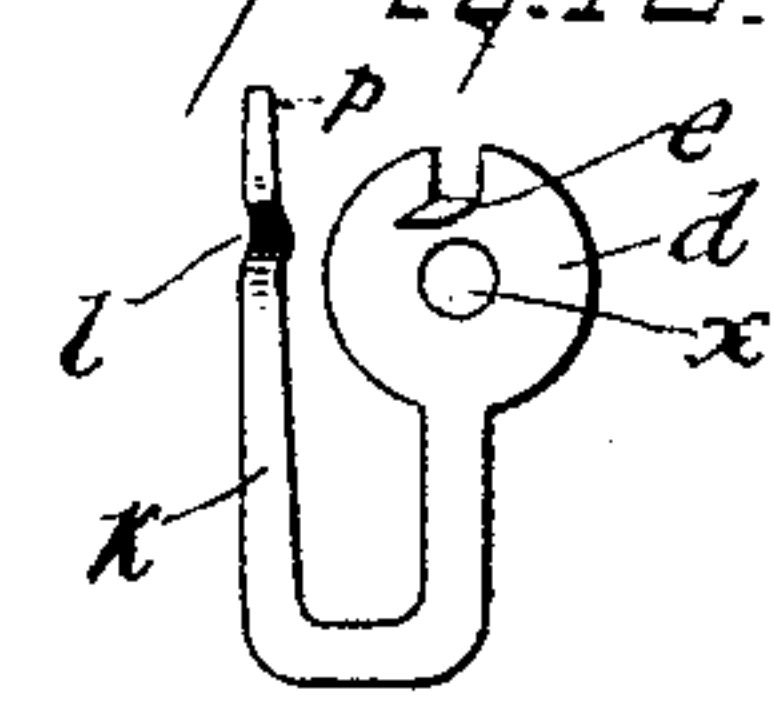


Fig. 10.



WITNESSES:

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DAMPING MECHANISM FOR MUSIC-BOXES.

SPECIFICATION forming part of Letters Patent No. 538,035, dated April 23, 1895.

Application filed November 19, 1894. Serial No. 529,217. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV A. BRACHHAUSEN, residing at Hoboken, Hudson county, State of New Jersey, have invented new and useful Improvements in Damping Mechanism for Music-Boxes, of which the following is a full, clear, and exact description.

My invention relates to damping mechanism for music boxes, and is more particularly adapted to that character of music boxes wherein a note-plate or its equivalent is used with intermediate rotating devices, such as star-wheels for operating the music tongues, and said invention consists in the arrangement and combination of parts hereinafter described and claimed. Heretofore in the construction of music boxes of this character it has been customary, when independent dampers were employed, to mount each of said dampers separately in a kerf or slot in a suitable standard and to solder them therein. This method required great exactness in construction, since it was necessary that each kerf or slot in the standard and each damper should be in a certain position with relation to the star-wheel or other rotary device which was intended to operate it. I will be readily understood that the great nicety required in mounting these dampers necessitated the employment of skilled labor and the loss of much time, therefore rendering their construction expensive.

The object of my invention is to overcome the difficulties found heretofore in dampers of the character described and to produce a damper wherein special means as heretofore employed for mounting the dampers may be dispensed with, thereby overcoming the necessity of employing skilled labor and greatly reducing the cost of their construction. To this end I will describe several forms of dampers embodying my invention, reference being had to the accompanying drawings forming part hereof, wherein—

Figure 1 is a side view of sufficient number of parts of a music box to illustrate a single damper embodying my invention. Fig. 2 is an enlarged top view of the same. Fig. 3 is a side view of sufficient number of parts of a music box to illustrate another form of single damper embodying my invention. Fig.

4 is a top view of the same on an enlarged scale. Fig. 5 is a view similar to those shown in Figs. 1 and 3 of a still further modification of damper embodying my invention. Figs. 6, 7, 8 and 9 are side views of various forms of dampers adapted to damp a plurality of music tongues and which are made in accordance with my invention. Fig. 10 is a detail perspective view of the form of damper illustrated in Fig. 1.

In the accompanying drawings, wherein like reference characters indicate corresponding parts in the various views, A designates a standard which may be of any suitable form, but is preferably of the character shown in the drawings with regularly spaced transverse slits *a* therein. Extending longitudinally through the standard is a shaft *b*, which shaft forms the bearing for star-wheels *c*, each of which is of such width as to only partly fill one of the transverse slits *a* in the standard, as clearly indicated in Figs. 2 and 4. In each of the slits *a* and adjacent to the star-wheel *c* therein contained is a damper *d* which, together with the star-wheel, just fills the space.

The dampers are supported or partly supported by the shaft *b* of the star-wheels in any suitable manner, as by projecting the shaft *b* through a hole *x* (see Fig. 10) in the damper, as shown in Figs. 1, 3, 5, 8 and 9 or by providing a slot therein so that the damper may straddle the shaft, as shown in Figs. 6 and 7. The damper may be prevented from displacement, that is to say, from being rotated with the star-wheel during the rotation of the latter, by any suitable means; several forms being shown in the drawings.

In Figs. 1, 2, 3, 4, 5, and 8 I have shown a form of damper wherein a lug *e* is struck up from the body portion thereof and projected at right angles from one side thereof into a longitudinal slit *f* in the standard (see Figs. 2 and 4) or into one of the arms *g* thereof.

Other forms are represented in Figs. 6, 7 and 9. Fig. 6 shows a form of damper wherein the damper body is partly supported by and prevented from displacement or rotation by the arms *h* thereof, abutting against the foot of the standard A, as shown at *i*, so that movement of the damper in either direction is pre-

vented. Fig. 7 illustrates the same general construction of damper as that shown in Fig. 6; a single arm *h*, however, being employed in this case to prevent the rotation of the damper in one direction, this in some cases being sufficient, since the star-wheel, when in use, rotates in but one direction. In Fig. 9 is illustrated a form of damper wherein the base *j* thereof engages in a slit in the base of the standard *A* and prevents rotation of the damper in either direction and at the same time forms an additional support therefor.

I have illustrated several different forms of damper embodying my invention, but wish to have it distinctly understood that my invention is in no way limited to the construction of the damper employed, since various forms of dampers may be used and the operation thereof greatly varied without in any way departing from the spirit of my invention. With this understanding I will proceed to briefly describe the construction and operation of the dampers proper shown in the accompanying drawings which are for the purpose of illustrating the various applications to which my invention can be put.

In Fig. 1 the damper *d* is shown provided with an arm *k* having a cam *l* which projects into the path of the teeth *m* of the star-wheel *c* and which in its state of rest presses by its spring pressure against a music tongue *n*. The star-wheel *c* being rotated in the direction of the arrow by a music plate *o* or other analogous device, causes one of the teeth of the star-wheel to come into engagement with the cam *l* of the damper and force the finger *p* thereof out of contact with the music tongue and to hold it in such position until the preceding tooth of the star-wheel has vibrated the music tongue when a further rotation of the star-wheel will cause the first mentioned tooth thereof to leave the cam *l* and allow the damper to again come in contact with the music tongue, thus alternately vibrating and damping the music tongue.

The damper illustrated in Fig. 3 is similar to that above described, except that the damping finger *p* is projected to the opposite side of the music tongue *n*, from which extends the arm *k* with its cam *l*, so that a pressure upon the cam *l* will cause the finger *p* of the damper to be brought into contact with the music tongue by positive pressure.

Fig. 5 illustrates another form of damper wherein the finger *p* is brought into engagement by positive pressure through a tooth *m* of the star-wheel engaging a cam *l* thereon and twisting the spring shank *q* thereof until the finger *p* is brought into engagement with the music tongue *n* to damp the same; the spring of the shank *q* causing the damper to assume its normal position when the tooth which causes the damping, passes the cam *l* of the damper.

In Figs. 6, 7 and 9 I have shown a single damper capable of damping two music tongues at the same time. The construction and opera-

tion of these dampers are somewhat similar to that shown in Fig. 1, except that in each case the dampers illustrated in Figs. 6, 7 and 9 are provided with two damping fingers *p*, two arms *k*, and two cams *l* on each of the arms *k*. It is thought that with this explanation, and the purpose being understood, the construction and operation will be readily understood and that further description thereof is unnecessary.

The construction and operation of the damper shown in Fig. 8 is similar to that illustrated in Fig. 5, except that a damping finger *p*, cam *l*, and shank *q* extend from opposite sides of the damper body and to opposite sides of the star-wheel to dampen two music tongues *n*.

While I have, in describing each of the dampers illustrated, referred to a single star-wheel, a single damper, &c., it should be understood that a star-wheel, damper, &c., is provided for each music tongue or set of music tongues as indicated in Figs. 2 and 6 respectively.

It will be observed that by my invention the dampers automatically space themselves, so to speak, by the adjacent star-wheel on one side and the part which forms the means for separating the star-wheels on the other side, so that the parts may be readily put together without the necessity of exercising the great care or the employment of special means and skilled labor, as was heretofore found necessary.

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

1. In damping mechanism for music boxes, the combination of a rotating device having projections thereon for causing the vibration of a music tongue and an independent damper supported by the shaft which forms the support for said rotating device, substantially as and for the purposes specified.

2. In damping mechanism for music boxes, the combination of a rotating device having projections thereon for causing the vibration of a music tongue, an independent damper supported by the shaft which forms the support for said rotating device and means for preventing the displacement of said damper, substantially as and for the purposes specified.

3. In damping mechanism for music boxes, the combination of a series of star-wheels, means interposed between the star-wheels for spacing the same, an independent damper interposed between each of the star-wheels and the means for separating the same, and a projection extending from the damper and adapted to reach contact with the means for separating the star-wheels to prevent displacement of the damper, substantially as described.

4. In damping mechanism for music boxes, the combination of a series of star-wheels, a shaft for supporting said star-wheels, means for spacing the same, and an independent

damper interposed between each of the star-wheels and the means for separating the same, said damper being supported by the shaft which forms the support for the star-wheels, substantially as described.

5 5. In damping mechanism for music boxes, the combination of a series of star-wheels, a shaft for supporting said star-wheels, means interposed between the star-wheels for spacing the same, an independent damper interposed between each of the star-wheels and the means for separating the same, said dampers being supported by the shaft which forms the support for the star-wheels and
10 means for preventing the displacement of the damper, substantially as described.

6. In damping mechanism for music boxes,

the combination of a series of star-wheels, a shaft for supporting said star-wheels, means interposed between the star-wheels for spacing the same, an independent damper interposed between each of the star-wheels and the means for separating the same, said dampers being supported by the shaft which forms the support for the star-wheels and a lug projecting from each of the dampers and engaging with the means for separating the star-wheels, whereby the dampers are prevented from displacement, substantially as described.

GUSTAV A. BRACHHAUSEN.

Witnesses:

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CHARLES E. SMITH.