

(No Model.)

J. F. PRYOR.

CAR COUPLING.

No. 279,800.

Patented June 19, 1883.

Fig. 1.

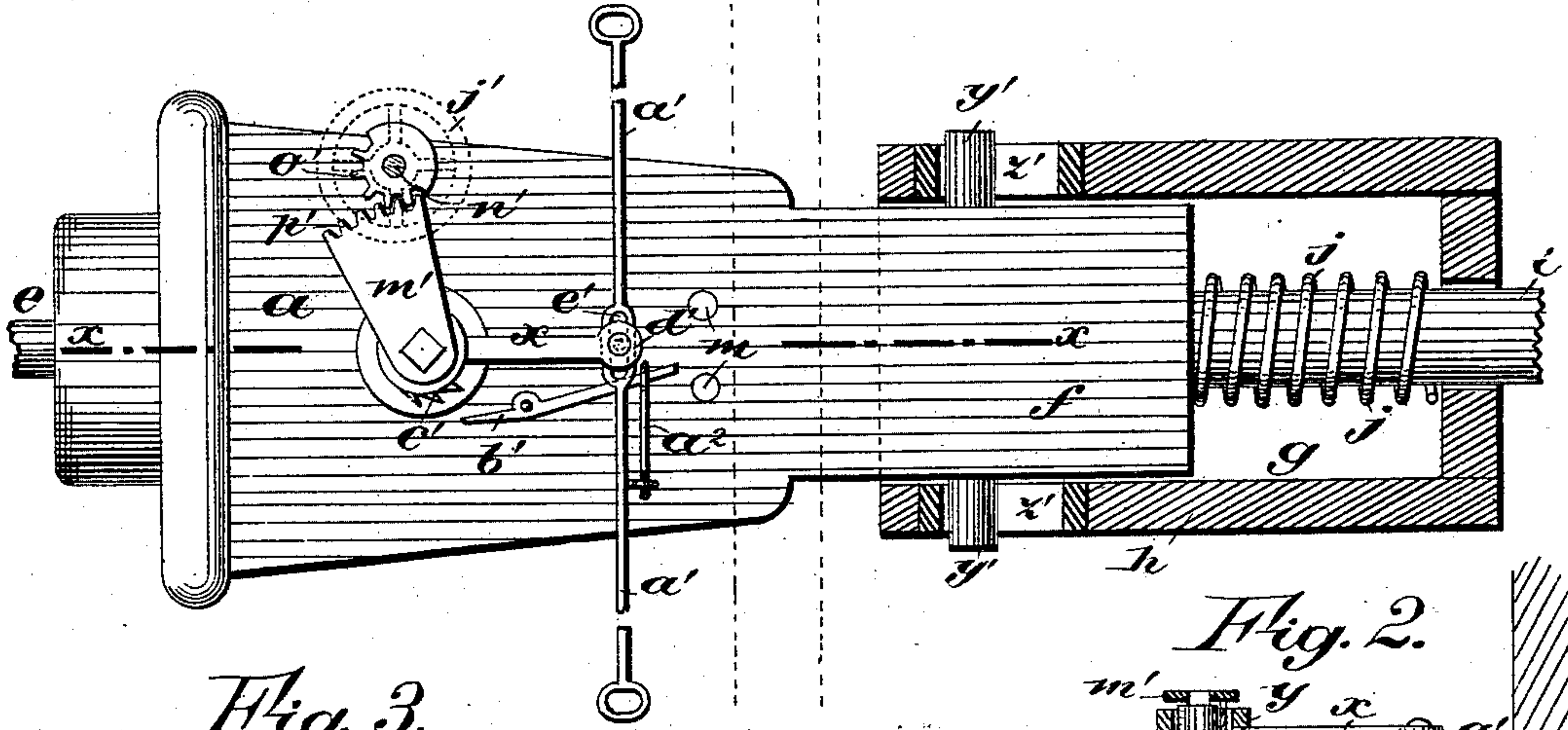


Fig. 3.

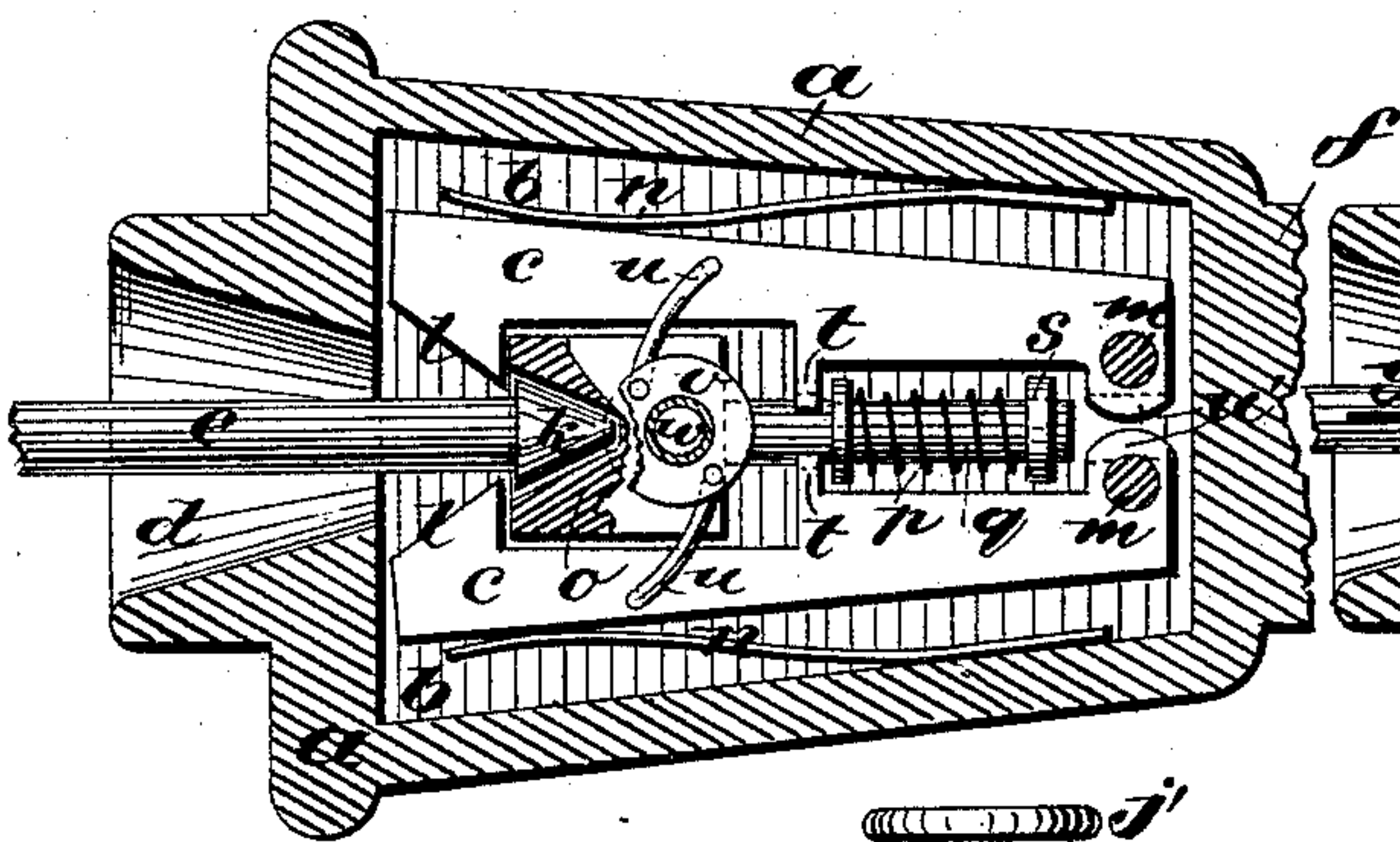


Fig. 2.

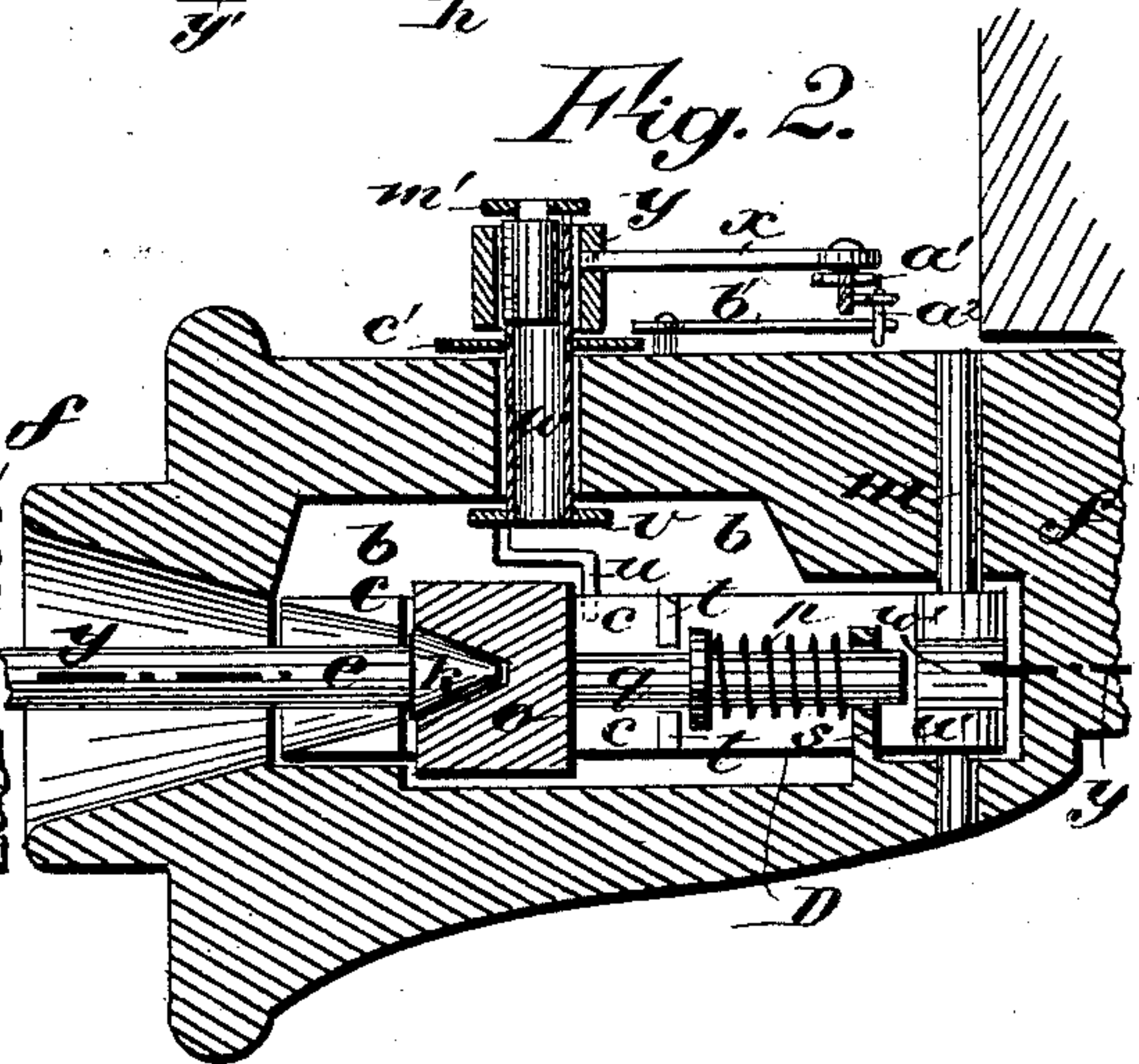


Fig. 5.

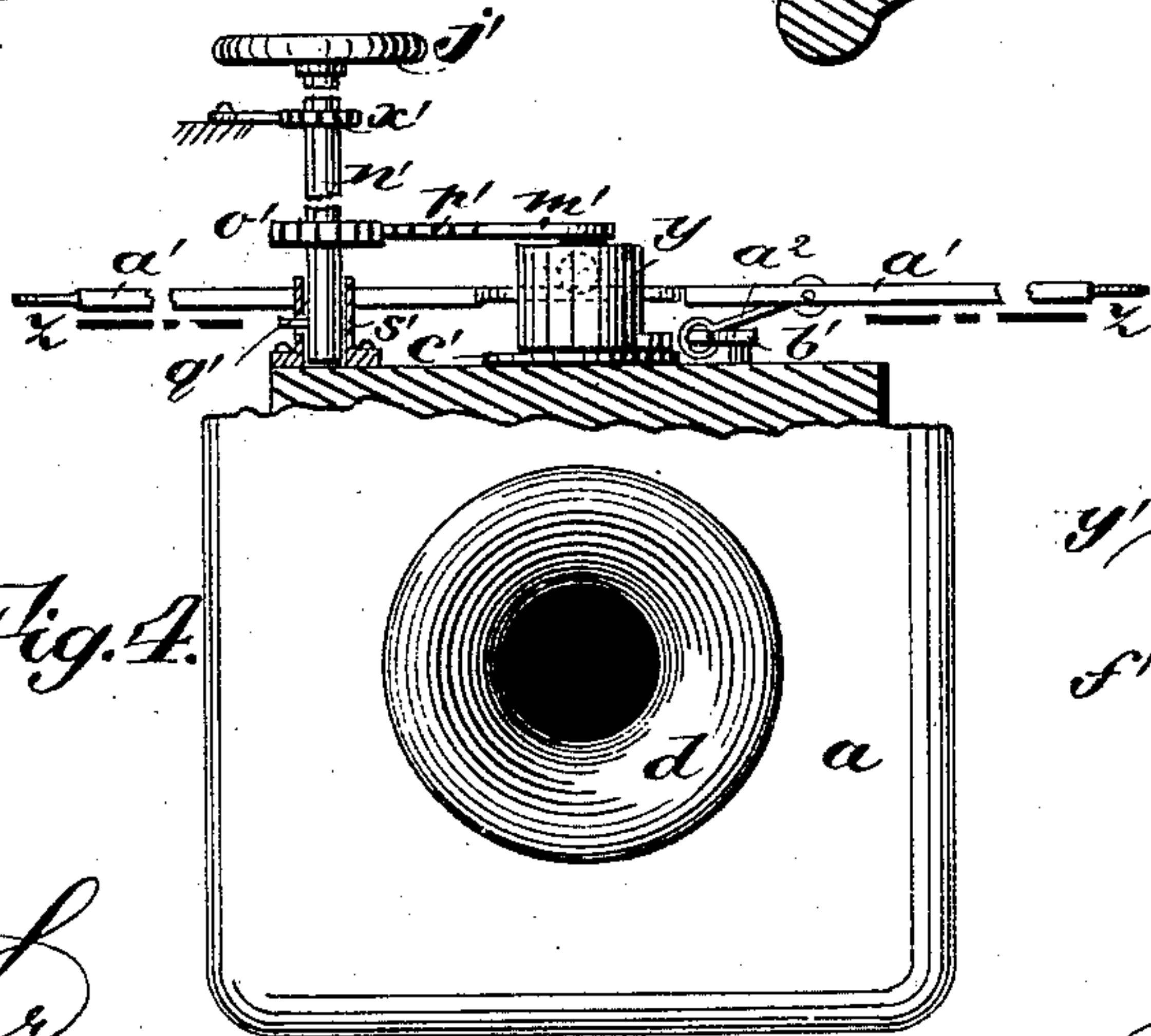
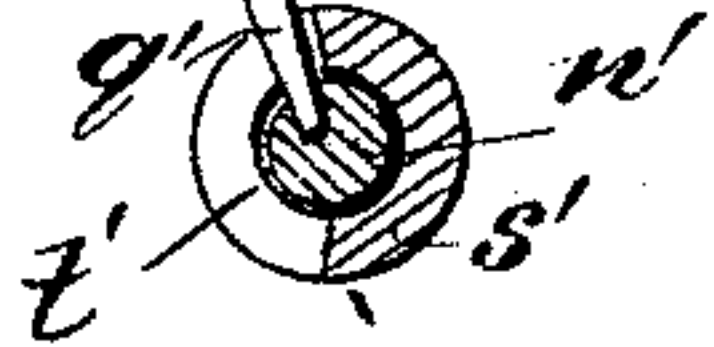
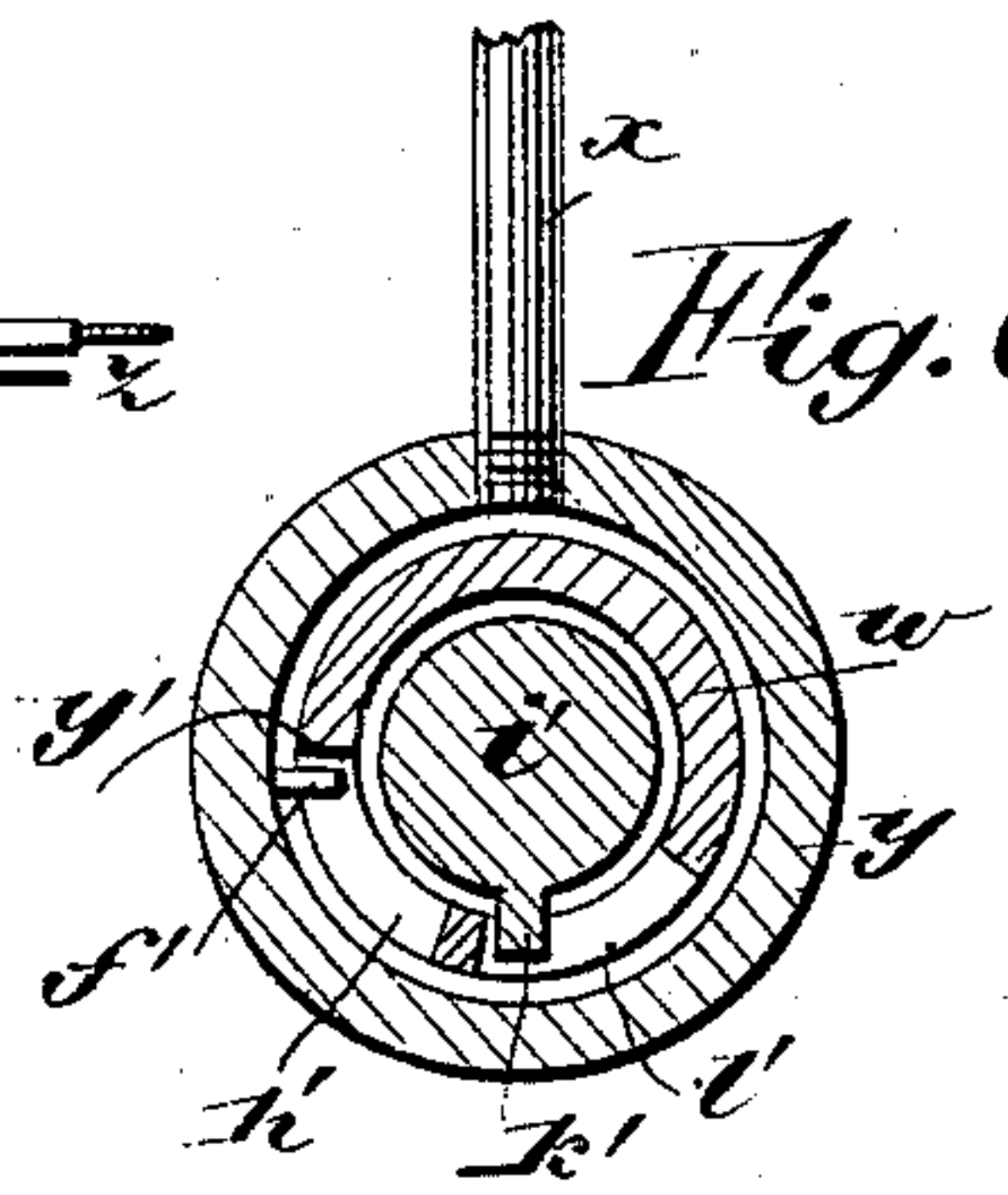


Fig. 4.

Fig. 6.



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# UNITED STATES PATENT OFFICE.

JOSEPH FRANCIS PRYOR, OF HOUGHTON, MICHIGAN.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 279,800, dated June 19, 1883.

Application filed March 14, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH F. PRYOR, of Houghton, in the county of Houghton and State of Michigan, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

The object of the invention is to improve that class of car-couplings in which hook-jaws and arrow-head couplers are employed, as hereinafter described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is plan view of my improved coupler and buffer and a horizontal section of the contrivance by which it is attached to the car. Fig. 2 is a vertical section through the coupler on line *x x*, Fig. 1. Fig. 3 is a horizontal section on line *y y* of Fig. 2. Fig. 4 is a front elevation with a part of the head broken out. Fig. 5 is a detail of the shaft device for opening the hook-jaws from the top of the car, in section on line *z z*, Fig. 4. Fig. 6 is a horizontal section of the jaw-opening contrivance, also on line *z z*, Fig. 4.

I make a strong casting, *a*, for a coupling-block, suitable for a buffer, when I so desire to use it, with a covered chamber, *b*, for containing the coupling-hooks *c*, back of the bell-mouthed opening *d*, for the draw-bar *e*, and having a solid rear extension, *f*, of the hind part fitting in the box or chamber *g* of the casting *h*, attached to the car-body, and with a stem, *i*, projecting beyond part *f* through the back of box *h*, and having a strong coiled or other buffing spring, *j*, fitted around it to relieve the shocks of the cars upon each other.

The draw-bar *e* has a cone-head, *k*, at each end, which opens the hooks *c* self-actingly for coupling by pushing between their beveled and concaved heads *l*, said hooks being pivoted at *m*, and the hooks are closed on the head of the draw-bar by the springs *n*.

To keep the head of the draw-bar *e* in its working position against the hooks a presser, *o*, having a conical socket in its head is placed behind the hooks to receive the head *k* in its socket, and having a spring, *p*, coiled around its rod *q*, which has sufficient power to keep the draw-bar in its position, except when it is thrust in with great force. Then it yields suffi-

ciently to relieve the draw-bar properly, but instantly recovers and forces the head *k* back to its place.

The bearing for the extreme rear end of the pusher-rod is in the eye-stud *s* of the casting *a*; but about the middle of the pusher-rod it is supported in the bearings *t* of the hooks *c*, and being slack in bearing *s* it is free to vibrate laterally and vertically with the hooks, which are also slack on their pivots *m*, to allow the requisite play of the draw-bar for coupling with cars of different heights and for turning short curves.

To open the hooks for uncoupling, and for setting them so they will not couple, which is sometimes required, they are connected by rods *u* with a collar, *v*, of a tube or shaft, *w*, extending down through the top of the casting *a* into chamber *b* from above, and being fitted to be turned suitably for forcing the hooks apart.

In order to be able to open the hooks from the side of the car, I have connected a lever, *x*, with this tube *w* by means of a collar, *y*, exterior to the tube, to which lever I attach a short rod, *a'*, extending to each side of the car, to which rod a pawl, *b'*, is connected by a rod, *a''*, to engage a ratchet, *c'*, attached to the tube to set the tube and hold the hooks open when it is desired that the cars shall not couple. The rod *a'* has a little play on the connecting-pin *d'* of lever *x* by the slot *e'* in said rod to enable the pawl to be detached from the ratchet *c'* before the back-thrust of the rod takes effect on the lever *x*.

The collar *y* is fitted to tube *w* so as to turn on it, and connects with it by the stud *f'*, which bears against shoulder *g'* to open the hooks, the said shoulder being the end of a slot, *h'*, of the tube that allows the latter to be turned independently of lever *x* by another device by which it is designed to open the jaws from the top of the car or above the platform, and which may consist of the shaft *i'* of a hand-wheel, *j'*, fitted in the socket of the tube, and connecting with it by another stud, *k'*, working in another slot, *l'*, by which the tube is allowed to be turned by the lever *x* and independently of the shaft *i'*.

In the case of freight-cars this shaft will be extended directly to the top of the car; but for passenger-cars on which it is desirable to place the shaft aside of the center an arm, *m'*,



may be attached to reach away to the shaft  $n'$ , which may gear with the arm by a pinion,  $o'$ , and toothed segment  $p'$ , and the shaft will have a stop-stud,  $q'$ , to limit the movement of the collar  $v$  by the range of the slot  $t'$  on the step  $s'$  of the shaft, the object being to stop the rotation of said collar when the hooks  $c$  are wide open. Stops for the same purpose may be provided with the lever  $x$ . The ratchet  $x'$  and its pawl will hold the hooks open when opened by the wheel  $j'$ . The joint-lugs  $u'$  of the hooked jaws  $c$  are notched at  $w'$  to provide room for the rod  $q$  of the presser to pass between them when it is pushed back by the draw-rod.

The cars may be coupled very short or close together by this coupler, which it is always desirable to do, the casting  $a$  being set a distance beyond the buffer, when a separate buffer is used, equal to its range in the box  $g$  of the connecting device  $h$  to be then attached to the buffer. The shank  $f$  of the coupling-block  $a$  has string trunnion-studs  $y'$  connecting it with the attaching device  $h$  by the slots  $z'$  of the latter for drawing the car.

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

1. The hollow casting  $a$ , chambered at  $b$ , bell-mouthed at  $d$ , and carrying on the inside

the hinged spring-pressed jaws  $c$   $c$  and the spring-actuated conically-socketed presser  $o$ , as shown and described.

2. The combination, with the spring-pusher  $i$ , of the eye-stud bearing  $s$  on the casting  $a$ , and the bearings  $t$   $t$  on the hooks  $c$   $c$ , said pusher being arranged loosely in bearing  $s$ , whereby cars may turn short curves and be coupled with those differing in height, as described.

3. The combination, with the chamber  $b$  and hinged hooks  $c$   $c$ , of the rods  $u$ , the tube  $w$ , having collar  $v$  and shoulder  $g'$ , the loose collar  $y$ , having stud  $f'$ , and the lever  $x$ , whereby the hooks may be opened, as described.

4. The tube  $w$ , slotted at  $h'$   $l'$ , in combination with the shaft  $i'$ , having the stud  $k'$  and hand-wheel  $j'$ , as and for the purpose specified.

5. The combination, with the lever  $x$ , having pin  $d'$ , the rod  $a^2$ , the pawl  $b'$ , and the ratchet  $c'$ , of the end slotted rods,  $a'$ , whereby the pawl may be detached from the ratchet before the back-thrust of the rod takes effect on the lever, as described.

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Witnesses:

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A. R. GRAY.