

(No Model.)

2 Sheets—Sheet 1.

G. SEYFFARTH.
LUBRICATOR.

No. 603,997.

Patented May 10, 1898.

Fig. 1.

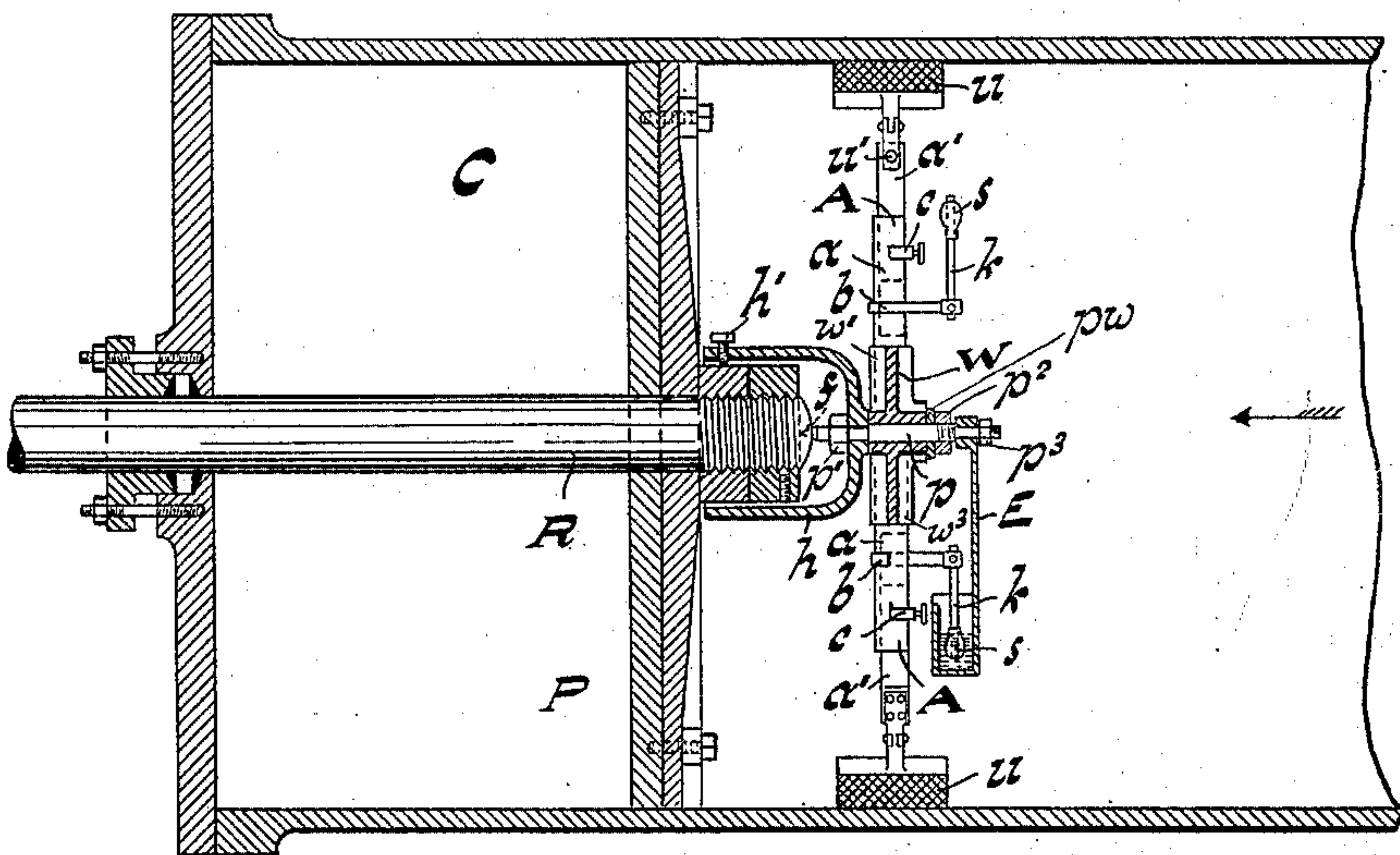
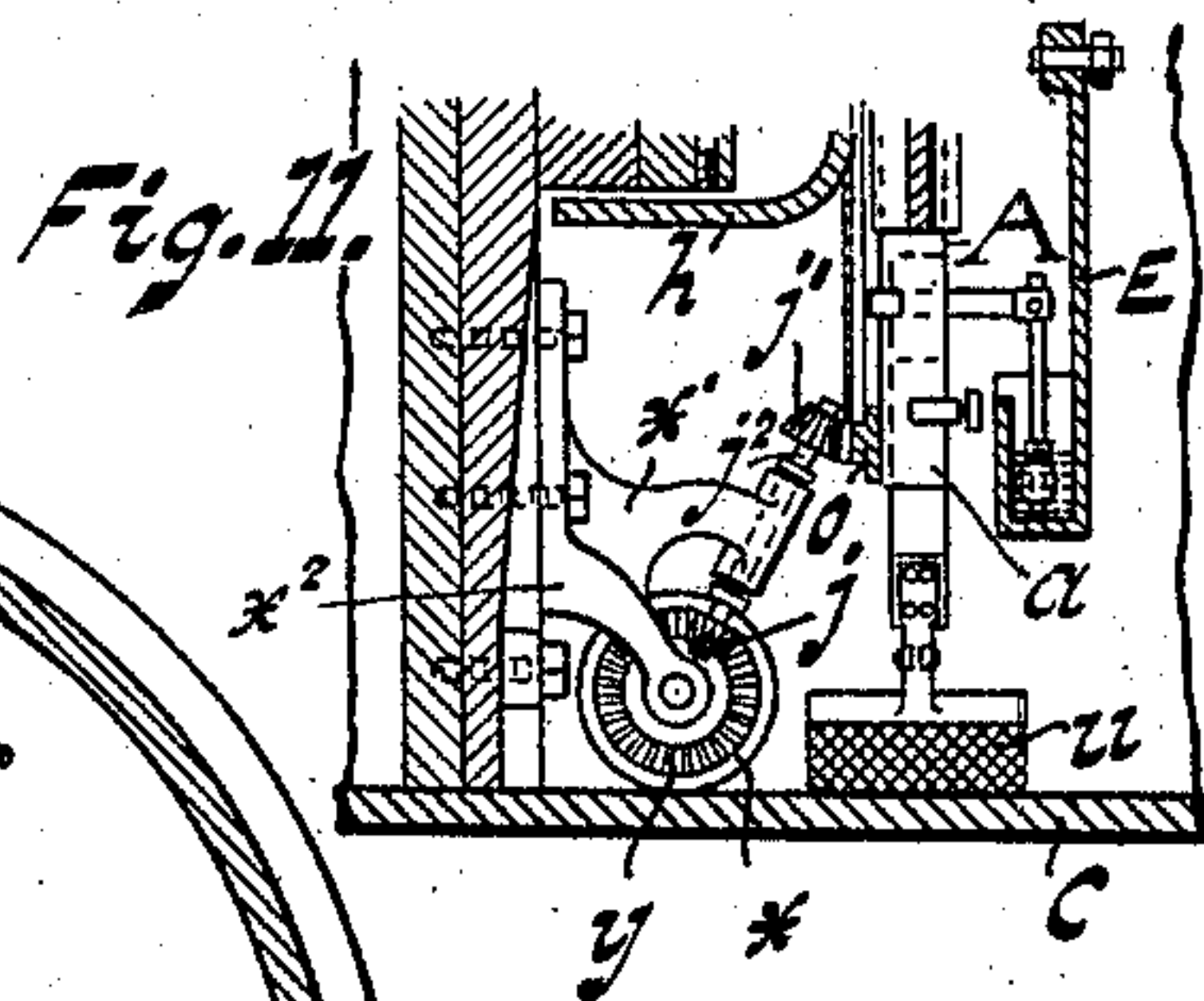
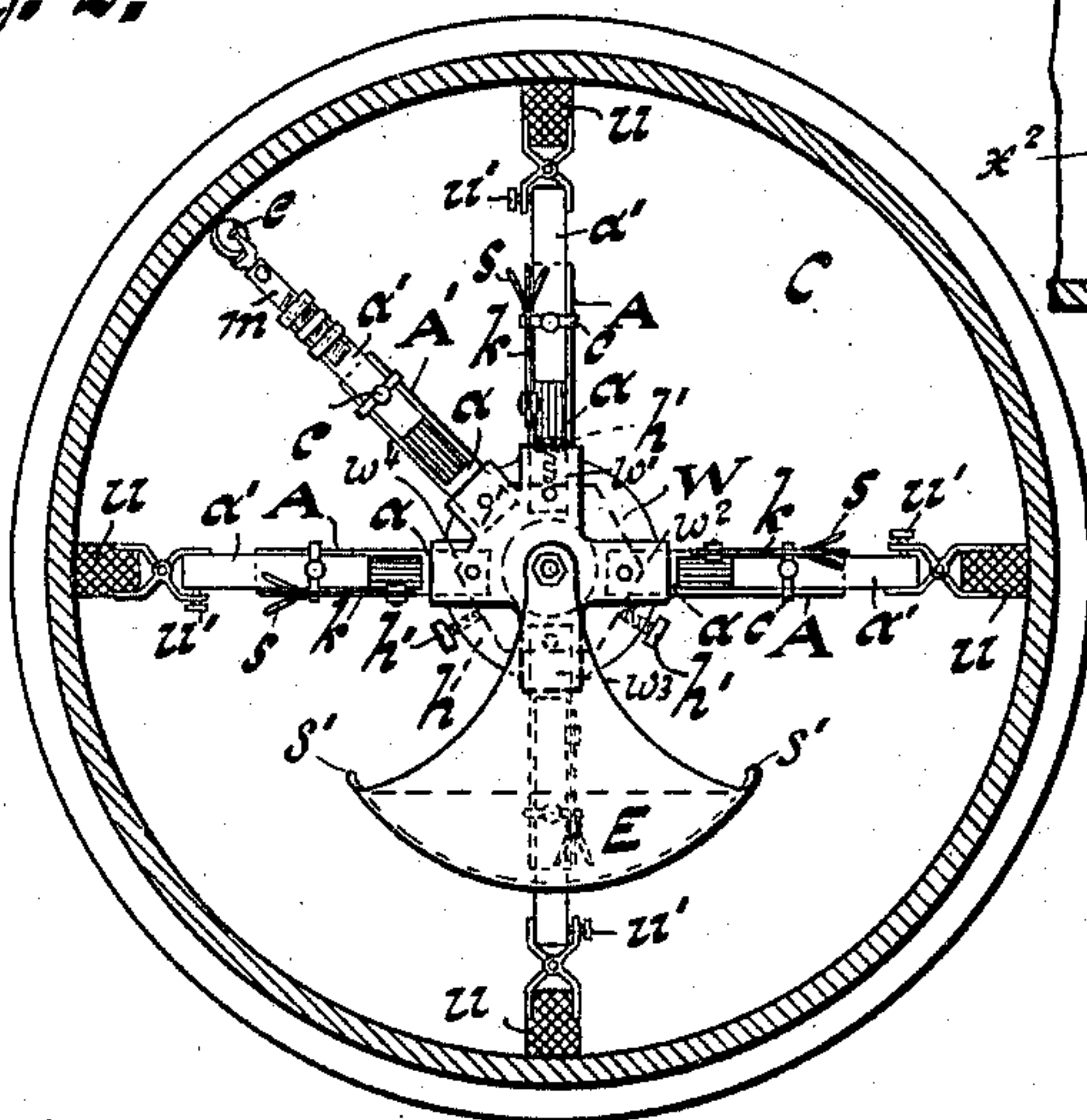


Fig. 2.



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Fig. 3.

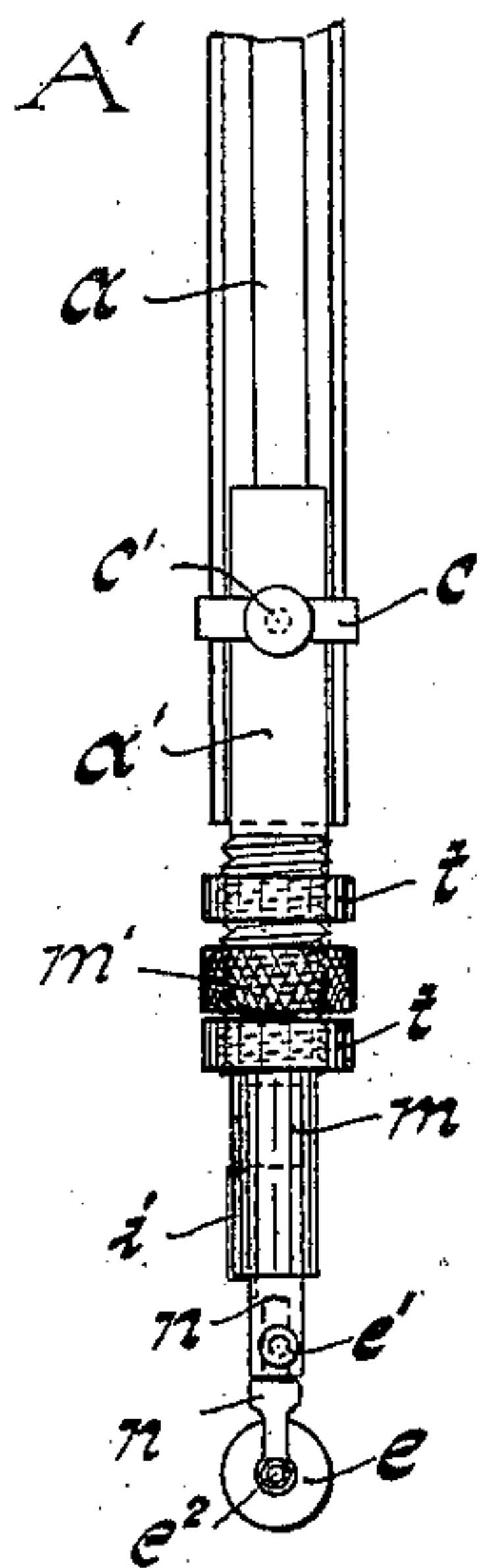


Fig. 4.

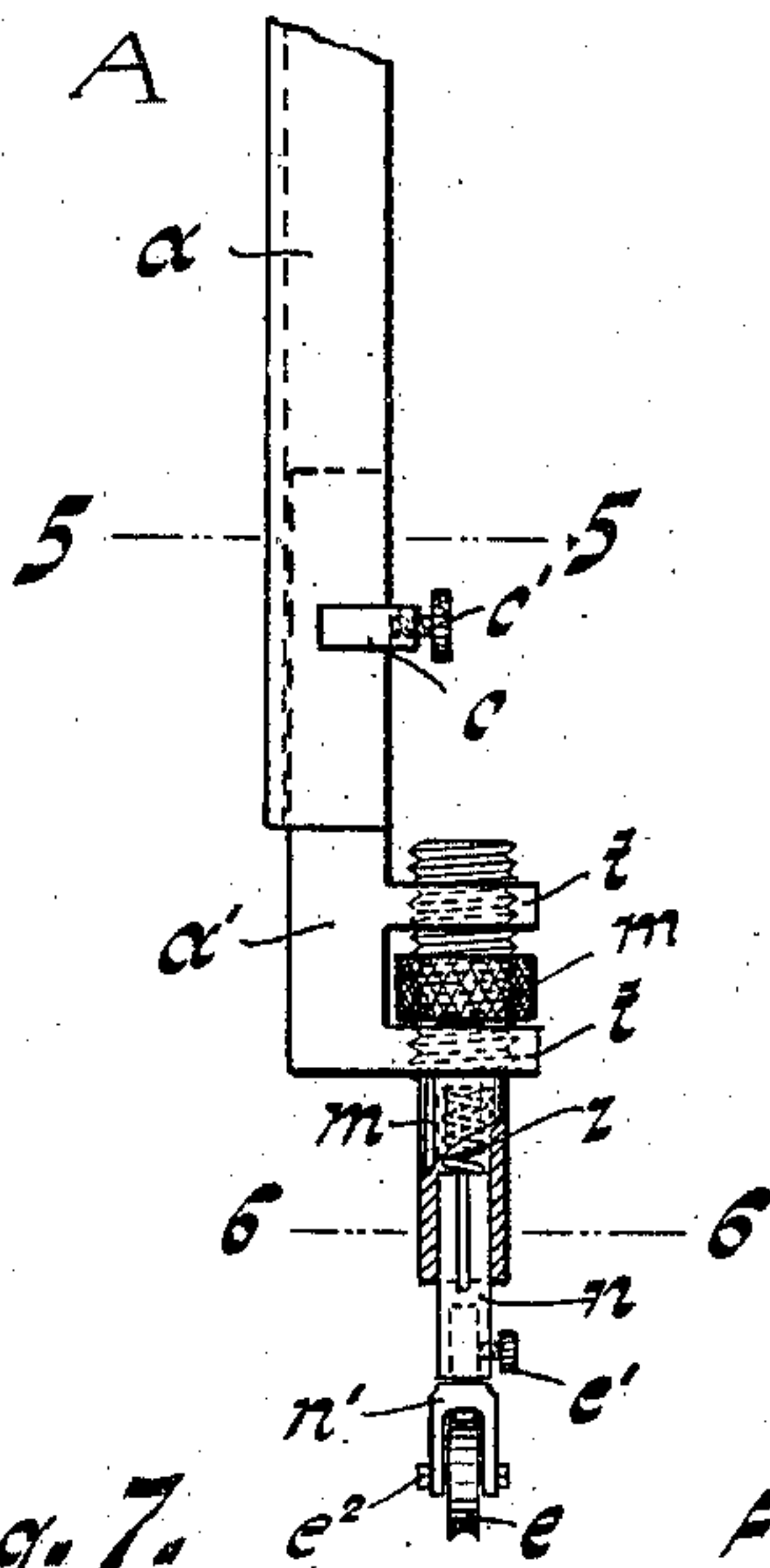


Fig. 5.

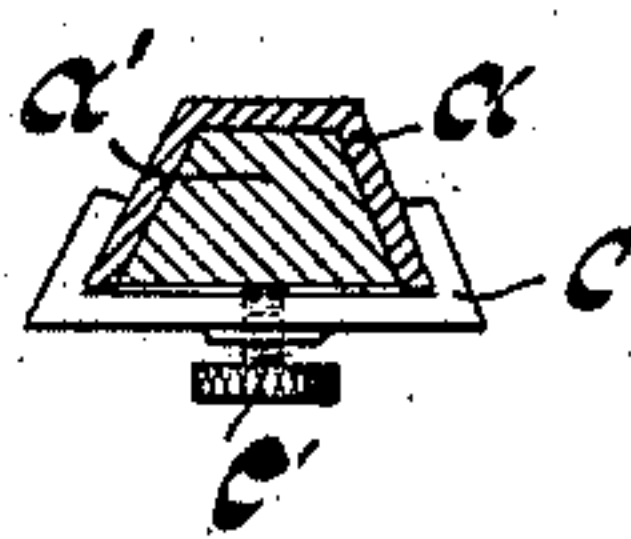


Fig. 6.

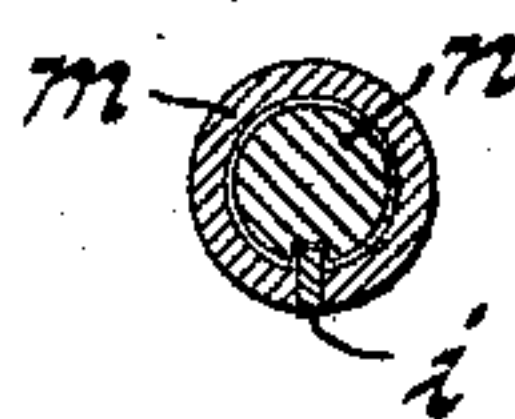


Fig. 7.

Fig. 8.

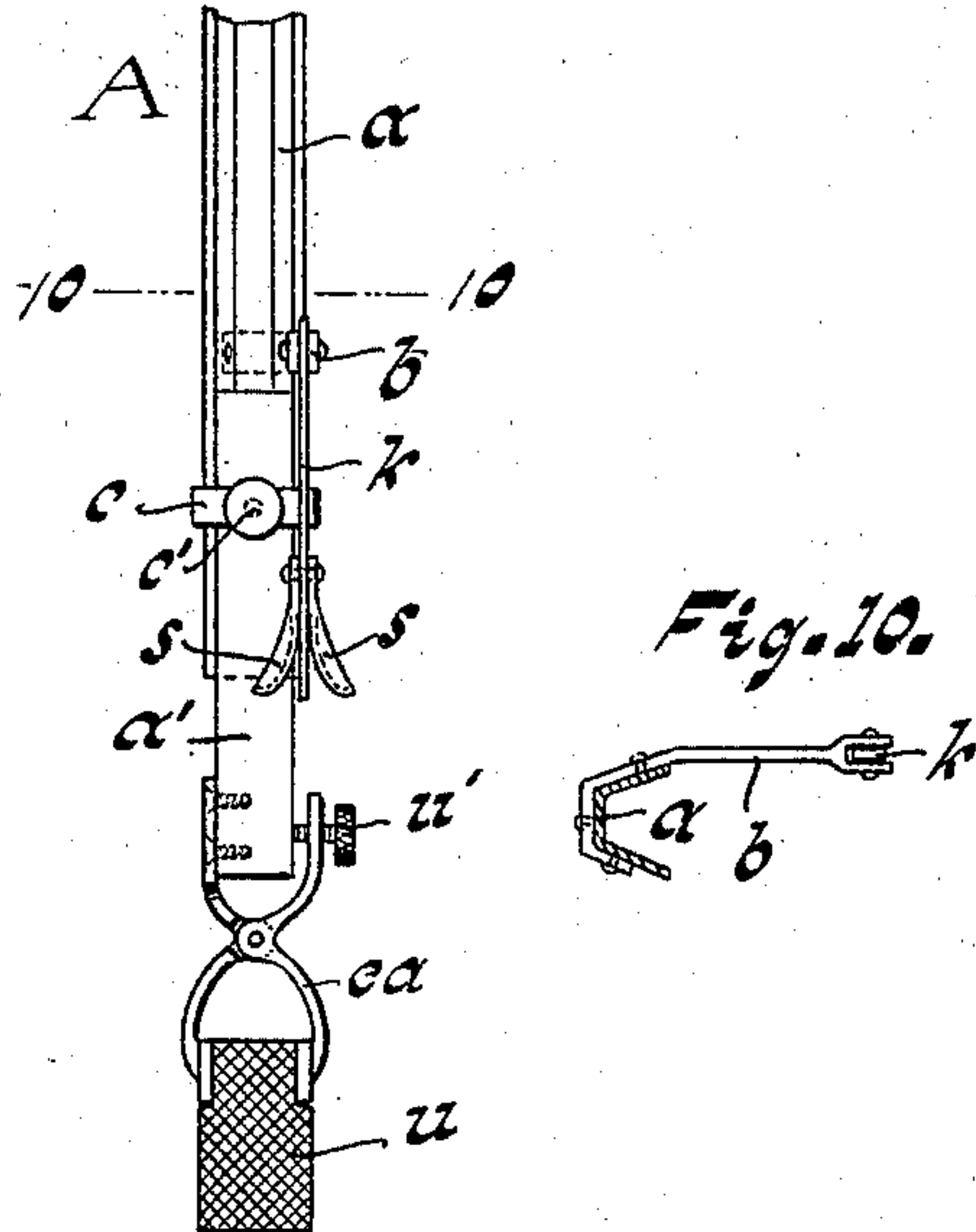
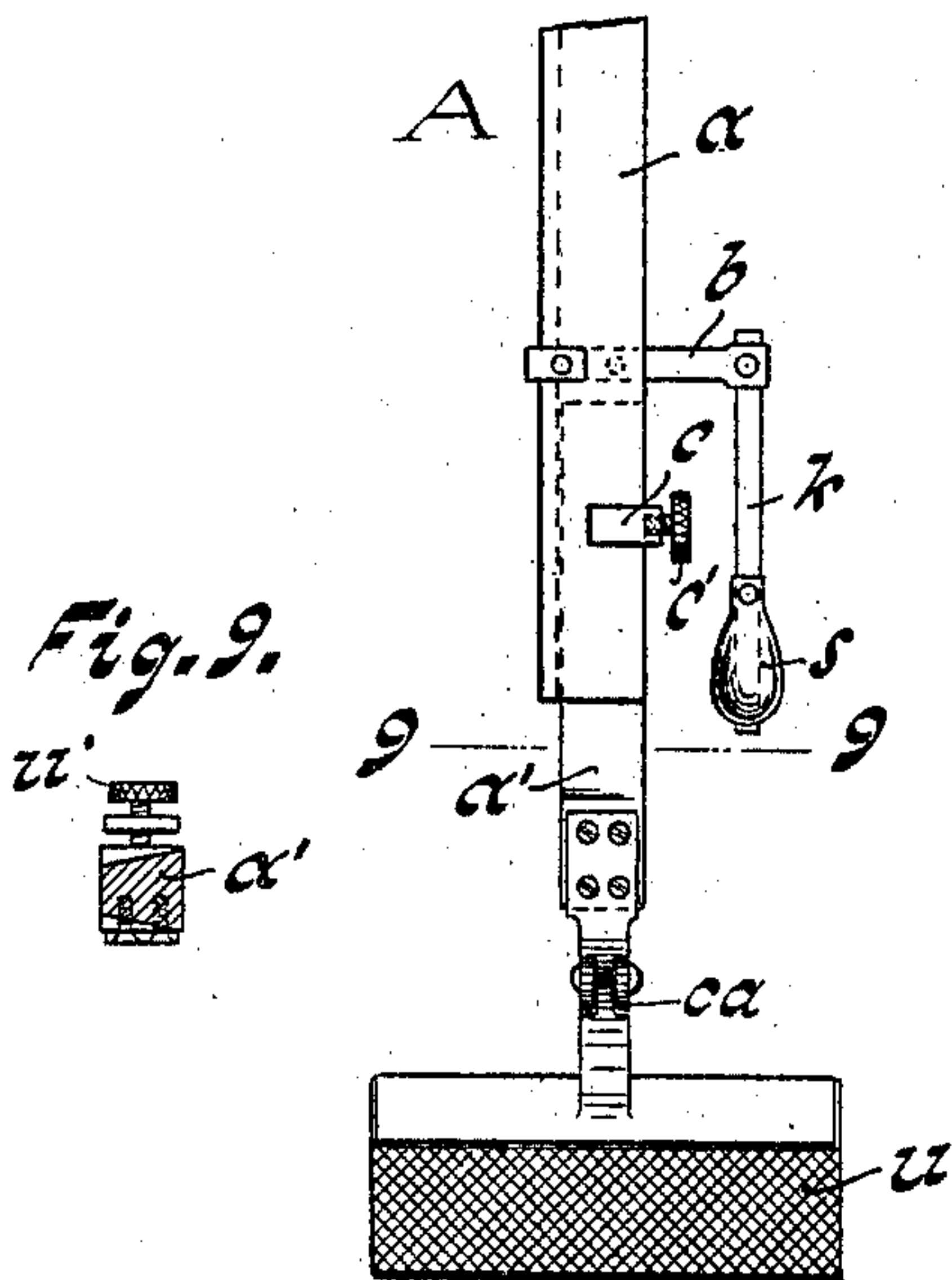
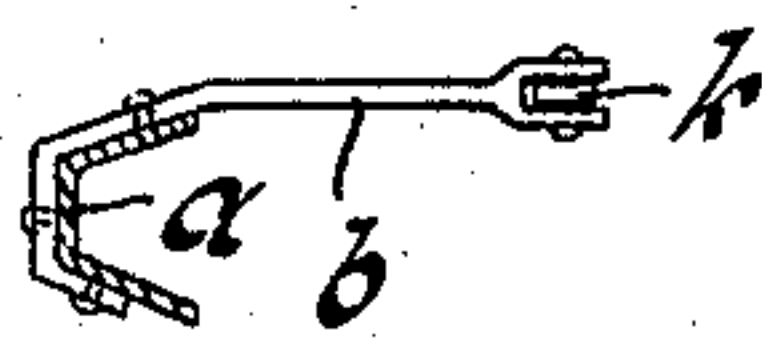


Fig. 9.



Fig. 10.



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UNITED STATES PATENT OFFICE.

GUSTAV SEYFFARTH, OF PHILADELPHIA, PENNSYLVANIA.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 603,997, dated May 10, 1898.

Application filed March 5, 1897. Serial No. 626,117. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV SEYFFARTH, a citizen of Germany, and a resident of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Lubricating Apparatus for Hydraulic Elevators, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, wherein—

Figure 1 is an elevation, partly-sectional view, of my lubricating apparatus, showing the same in position within the cylinder of a hydraulic elevator. Fig. 2 is an end view thereof, looking in the direction of the arrow indicated in Fig. 1. Figs. 3 and 4 are detail views, drawn on enlarged scale, a front and a side elevation, respectively, of the device actuating the lubricator. Figs. 6 and 7 are enlarged sections on lines 5 5 and 6 6, respectively, indicated in Fig. 4. Figs. 7 and 8 are similar detail views, a front and side elevation, respectively, of the arms carrying the oilers and wiping-mops. Fig. 9 is a cross-section on line 9 9, indicated in Fig. 7; Fig. 10, a cross-section on line 10 10, indicated in Fig. 8; and Fig. 11, a partial view, an elevation similar to that in Fig. 1, showing a modified construction of the mechanism for actuating the lubricator.

Similar letters of reference indicate corresponding parts in all views of the drawings.

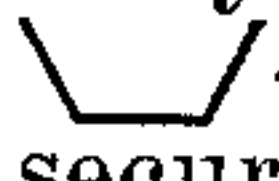
My invention relates to lubricating contrivances for hydraulic elevators; and it consists of the hereinafter-described apparatus for a continuous and automatic lubricating of the elevator-cylinder during the operation of the elevator.

The apparatus is adapted to be attached to the piston of the hydraulic cylinder; and it consists, mainly, of an oil-carrier E, a number of movable oil-ladles s, lifting the oil from the oil-carrier and distributing the same on the walls of the cylinder, a number of mop-wipers set on extensible arms and spreading the oil on the walls of the cylinder, and of a traveler e or some other suitable mechanism for imparting a rotary motion to the lubricator.

The parts of the apparatus are upon spin-

dle p, set in a cast-iron hood h, which is slid over screw-nut Ps, securing piston P to the piston-rod R, and is secured thereto by set-screws h'. Spindle p is rigidly secured by screw-nut p' in the apex of hood h and is steadied by its pointed end entering into a conical recess f, provided in the end of the piston-rod. On this spindle p is set the hub W, in whose hollow stumps w', w², w³, and W⁴ are set the extensible arms A, carrying mop-wipers u, and the extensible arm A', carrying the traveler e. Hub W rotates on the spindle p and is held in position thereon by screw-nut p², an antifriction disk or washer pw being set between the screw-nut and the base of the hub.

Beyond the screw-nut p² the end of spindle p is reduced in diameter to form a shoulder on which the oiler E is suspended. The oiler is secured in its position on the spindle p by screw-nut p³ and is always pending vertically downward.

Arms A and A' are similarly constructed. They consist of stationary parts a, made of -shaped channel-iron and permanently secured to the hub W, and of the movable or sliding parts a', snugly fitted into the stationary parts a and secured thereto in adjusted position by the clamp c and set-screw c'. These arms A and A' are made lengthwise extensible to permit adjustment of the operating parts of the apparatus for cylinders of different diameters, and also to allow readjustment of them in compensation for wear.

On the ends of the arm A are secured by clamps ca the mop-wipers u. One lever of the clamps is screwed to the part a' of the extensible arms, and the other is provided with a screw-threaded hole through which a set-screw u' passes. By turning this screw the jaws of the clamp are forced together and the body of the wiper, which may be of felt or of some other suitable substance, is firmly gripped and held between the jaws.

The sliding part a' of the arm A', which carries the traveler, is provided with screw-threaded brackets t. Holder m, provided with an axial boring wherein the socket n is fitted, is screwed in brackets t and locked in adjusted position by nut-collar m'. Spiral spring

z , set in the same boring, presses the socket n outward, and spline i prevents it from turning in the boring. The socket n is also provided with an axial boring into which is fitted the stem of the fork n' , carrying roller e on pin e^2 . The stem of the fork n' is secured in socket n by set-screw e' . This arrangement is provided to permit an angular adjustment of the roller e in relation to cylinder C.

Roller e may be set at a more or less acute angle to the axis of the cylinder C, and consequently when the piston P and the lubricating apparatus carried on it are moved through the cylinder this roller e will cause the arms of the lubricating apparatus to rotate on spindle p .

The function of the spring z is to exert a steady pressure upon the roller e to increase friction between it and the inner surface of the cylinder on which it travels.

Ladles s , lifting the oil from the holder E, are secured to flexible metallic strips k , and these in turn are riveted to brackets b , secured to the arms A in such position that when the arms rotate the ladles s will travel through the oil-holder E, lifting the oil therefrom. There is one ladle or spoon s riveted to each side of the strip k . This is done for the purpose to enable the lubricator to oil the cylinder while the piston moves both ways.

The bottom of the holder E is curved in conformity with the circle described by the ends of the ladles s ; but on each end thereof the rim of its bottom is bent inwardly to form an abutment s' . The elastic strip k projects beyond the extremity of the ladles s and abuts against these inwardly-bent rims s' , whereby a throwing motion is imparted to ladles s , causing the oil filled therein to be thrown quite forcibly against the walls of the cylinder.

The operation of the apparatus is as follows: During the motion of the piston P each of the ladles s will pass through the oil-holder E, be immersed successively in the oil, and lift a quantity thereof, distributing the same on the walls of the cylinder in the manner as described above. Mop-wipers u , being also secured to the rotating arms, will at the same time travel near the inner surface of the cylinder, there being only a slight clearance between the surfaces thereof and the surface of the cylinder, and will spread the oil. It must be observed that each of these wipers describes a separate spiral line on the surface of the cylinder, and consequently each succeeding wiper will continue the spreading of the oil escaping from the preceding one, and in this manner a thorough distribution of the oil is obtained.

In the modified construction shown in Fig. 11 there is a friction-wheel X, revolving on a pin set in bracket x^2 , and provided on one face thereof with a bevel-gear engaging the bevel cog-wheel j , set on a spindle j^2 in bracket

x' . On the other end of spindle j^2 is rigidly keyed to it a beveled cog-wheel j' , driving-gear o , secured to the parts a of the extensible arms A and A' of the lubricating apparatus. This somewhat more complicated mechanism for imparting a rotary motion to the lubricating apparatus would be required only in large cylinders, wherein the driving device (shown in Fig. 2 and described above) could not be used for rotating the lubricating apparatus. This latter device (shown in Fig. 2) is, however, preferable for ordinary purposes. If one roller e should not be sufficient in apparatuses of larger size, then two or more of them may be added, constructed in the same manner, and the arms for carrying them could be placed between the arms A in the same manner as the one shown in Fig. 2. The means of connecting the apparatus to the piston-rod can be varied as the size of the apparatus and other circumstances may require.

I claim as my invention and desire to secure by Letters Patent—

1. A lubricating apparatus for hydraulic elevators comprising a hood, adapted to be secured to the end of the piston-rod, a spindle, set in the hood concentrically with the piston, an oil-holder suspended from the spindle, a hub, rotatably set on the spindle, extensible arms secured in the hub, mop-wipers secured to the arms, means for securing the mop-wipers to the arms, brackets secured to the extensible arms, elastic strips secured to the brackets, spoons or ladles secured to the strips, in position to enter the oil-holder for the purpose of supplying oil to the wipers, and means for imparting a rotary motion to the hub.

2. In a lubricating apparatus for hydraulic elevators, the combination with extensible arms, rotatably set on a spindle, secured to the piston, and with wipers secured to the arms, of a stationary oil-holder, suspended from the spindle, of ladles secured to the arms in position to enter the oil-holder for the purpose of supplying oil to the wipers and of means for imparting a rotary motion to the arms.

3. In a lubricating apparatus for hydraulic elevators, the combination with extensible arms rotatably set on a spindle, secured to the piston, ladles and wipers secured to the arms, and a stationary oil-holder, suspended from the spindle in such position that the ladles may enter it for the purpose of supplying oil to the wipers, of an extensible arm, rigidly connected with the other arms, a holder adjustably secured to the arm, a socket set in the holder, a fork set turnably in the socket, means for securing the fork in adjusted position and a friction-roller set in the fork.

4. In a lubricating apparatus for hydraulic elevators, the combination with extensible arms rotatably set on a spindle, secured to the piston, ladles and wipers secured to the

arms and a stationary oil-holder, suspended
from the spindle in such position that the la-
dles may enter it for the purpose of supply-
ing oil to the wipers, of an extensible arm,
5 rigidly connected with the other arms, and a
friction-roller adjustably secured to the arm.

In witness that I claim the improvements

described in the foregoing specification I have
signed my name in the presence of two sub-
scribing witnesses.

GUSTAV SEYFFARTH.

Witnesses:

HENRY WILHELM,
DIETHELM STEINER.