

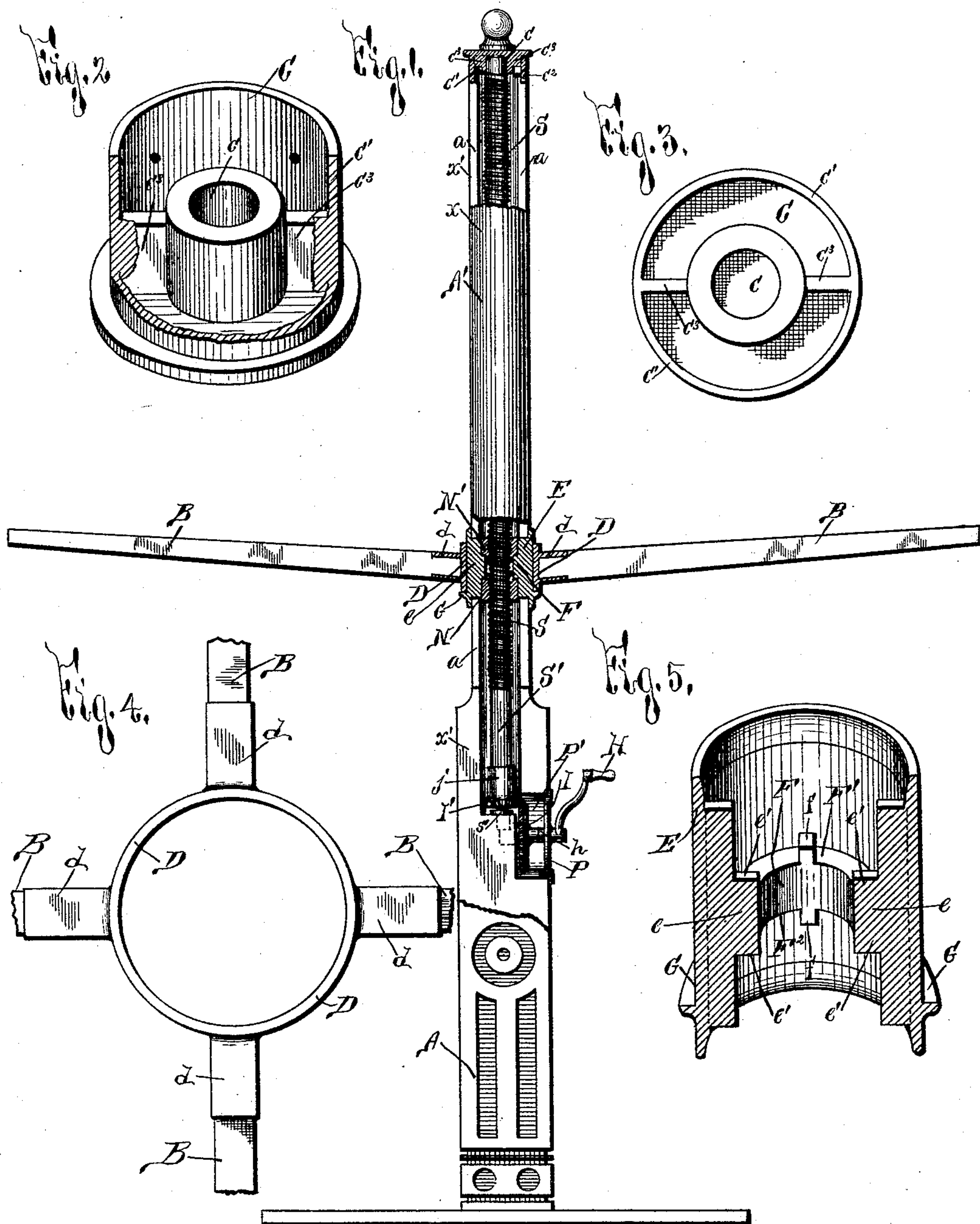
(No Model.)

2 Sheets—Sheet 1.

E. F. ROUSE.  
CLOTHES DRIER.

No. 437,247.

Patented Sept. 30, 1890.



WITNESSES:

*W. E. Tomlinson*  
*H. H. Harmons*

INVENTOR

*Edwin F. Rouse*

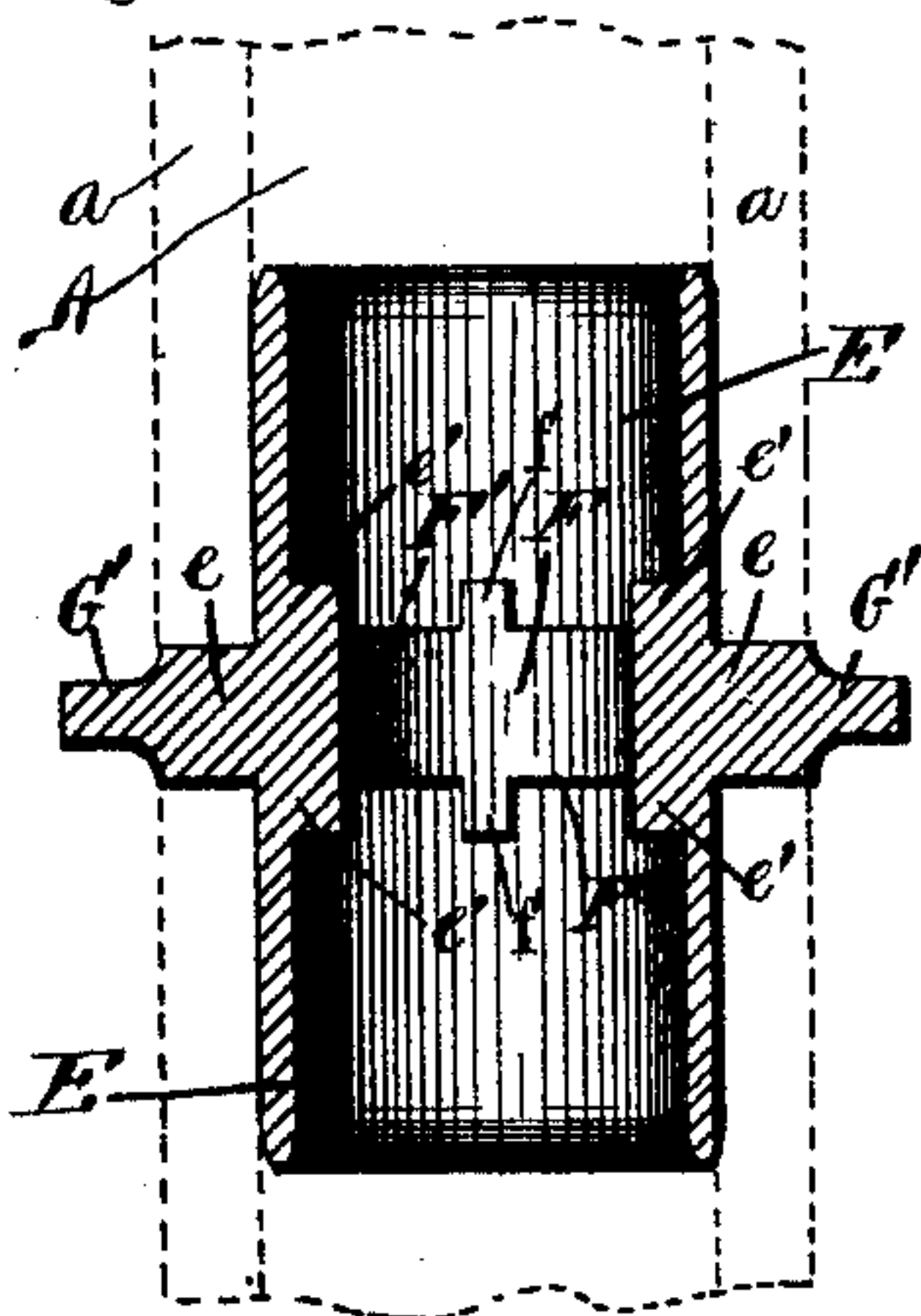
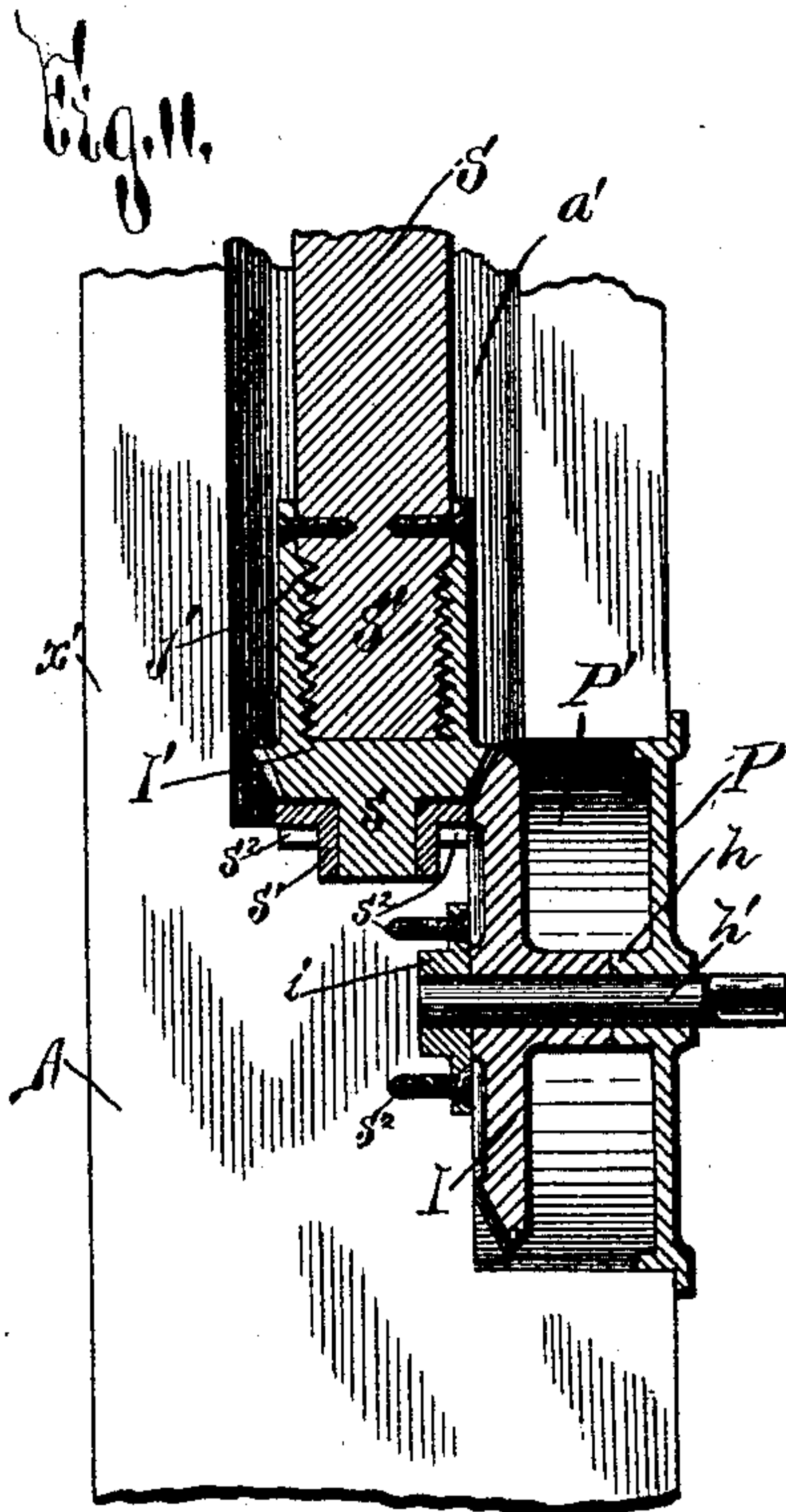
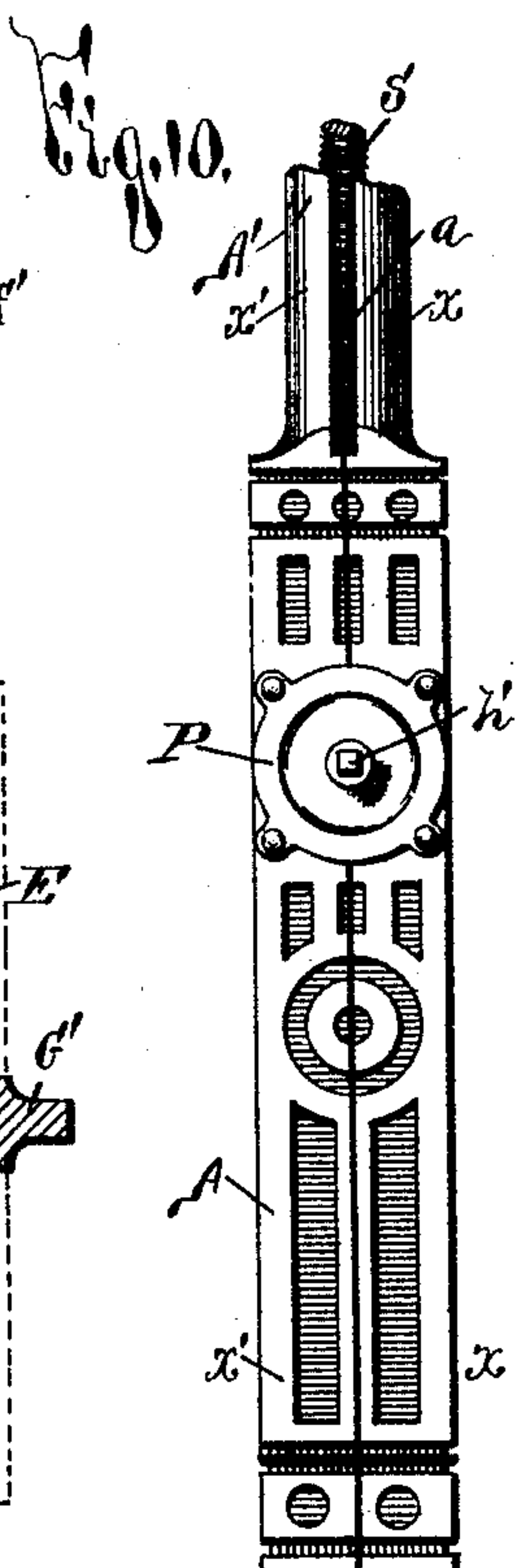
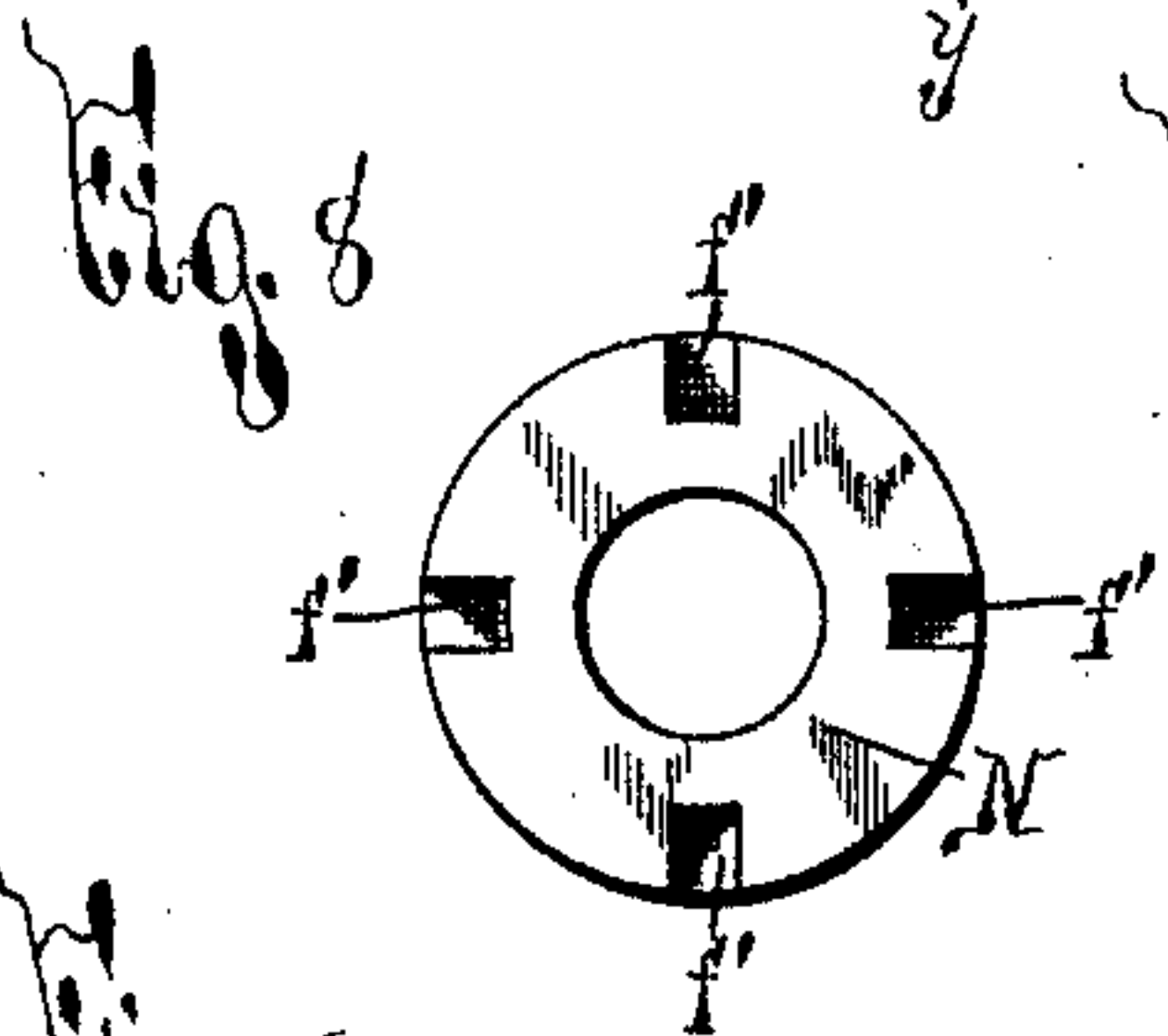
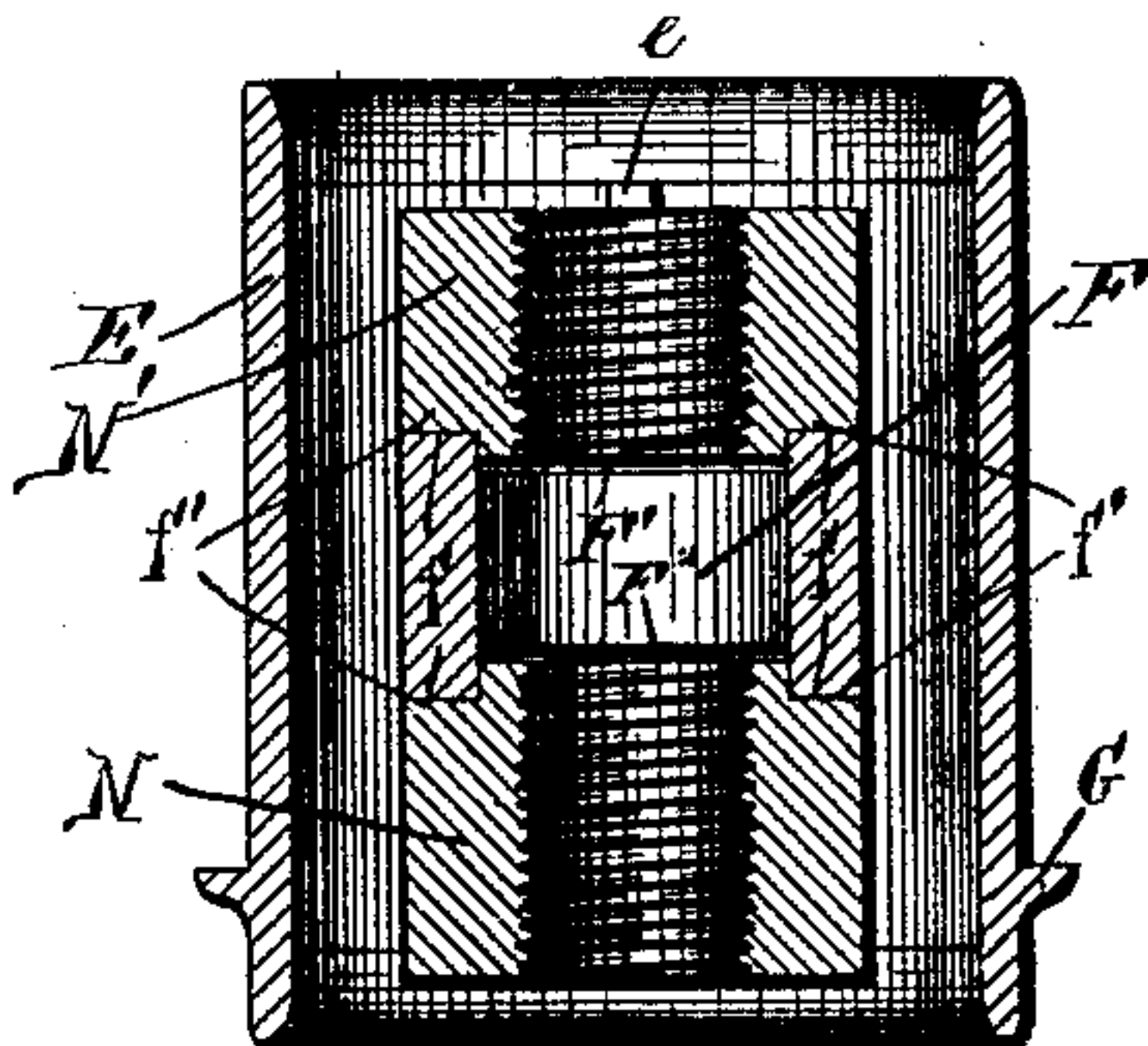
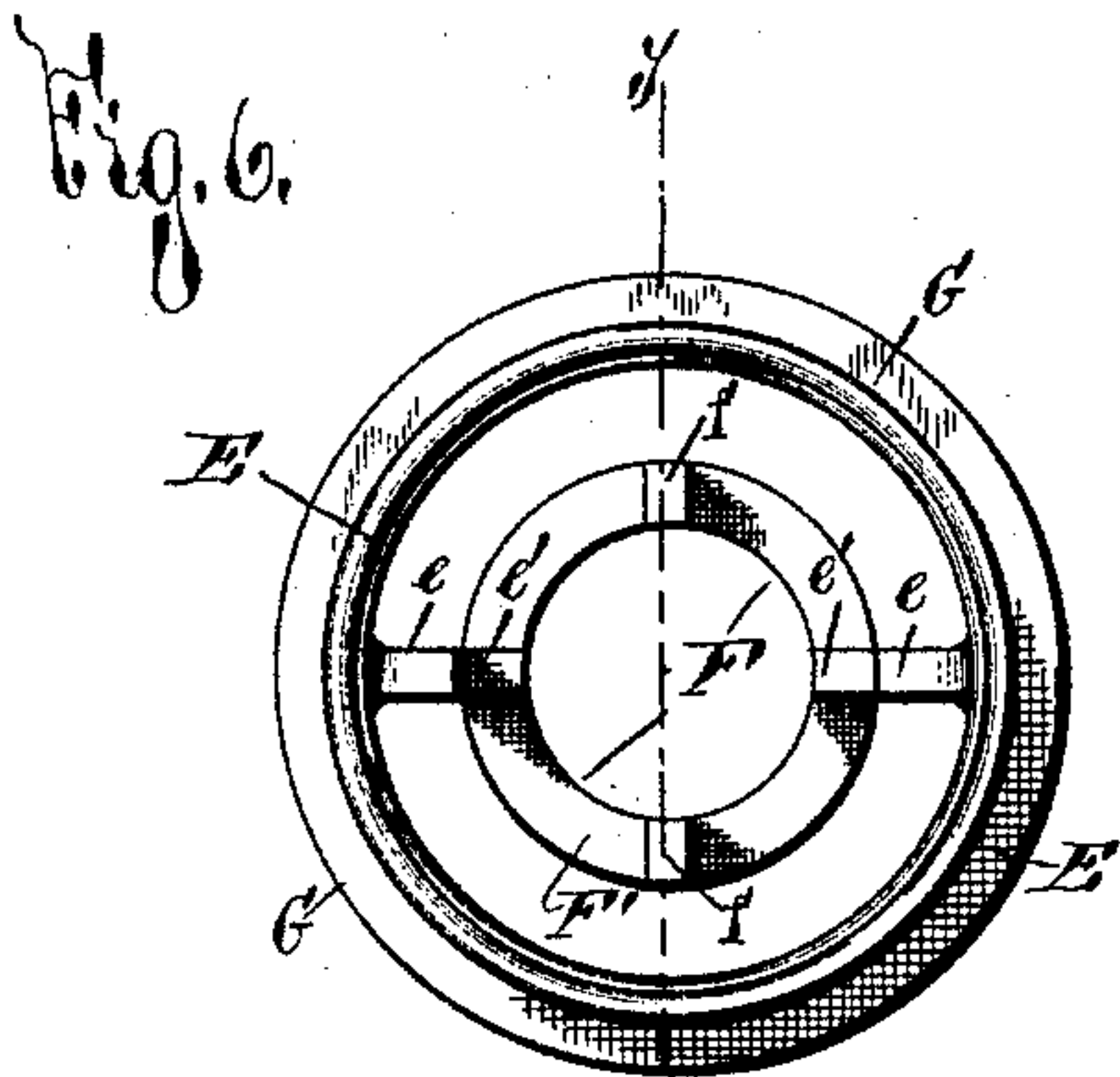
BY

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2 Sheets—Sheet 2.

No. 437,247.

Patented Sept. 30, 1890.



INVENTOR

L. C. Somlinson  
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Edwin T. Rouse  
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# UNITED STATES PATENT OFFICE.

EDWIN F. ROUSE, OF BAY CITY, MICHIGAN.

## CLOTHES-DRIER.

SPECIFICATION forming part of Letters Patent No. 437,247, dated September 30, 1890.

Application filed August 20, 1888. Serial No. 283,179. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN F. ROUSE, of Bay City, in the county of Bay, in the State of Michigan, have invented new and useful  
5 Improvements in Clothes-Driers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in  
10 clothes-driers of the class in which the drier-arms are adapted to move vertically upon a supporting-post, which arms, as preferably formed, may rotate freely thereon independently of the hoisting mechanism for elevating  
15 the aforesaid drier-arms; and the object of my invention is to provide simple and effective hoisting means for easily hoisting and lowering the drier-arms; also, to make all parts of the apparatus exceedingly simple to  
20 manufacture, and at the same time to secure strength and durability; and to this end my invention consists, essentially, in combining with the supporting drier-post a screw for elevating and lowering the drier-arms.

25 It consists, also, in the detail construction and arrangement of the parts, all as herein-after more fully described, and pointed out in the claims.

In specifying my invention reference is  
30 had to the accompanying drawings, forming a part of this specification, like letters indicating corresponding parts in all the views, in which—

Figure 1 is an elevation of my improved  
35 clothes-drier, part thereof being shown in section and a portion of the post broken away for the purpose of illustration. Fig. 2 is an enlarged perspective, partly in section, of the top cap of my improved clothes-drier, clearly  
40 illustrating the detail construction. Fig. 3 is a top plan of the cap illustrated in Fig. 2. Fig. 4 is a top plan view of the inner ends of the drier-arms in position in their sockets, which are preferably formed radial with the posts.  
45 Fig. 5 is an enlarged detached perspective, partly in section, of the arm-carrying sleeve, illustrating the detail construction of its parts which co-operate with the elevating-screw and the post to hoist and lower the drier-  
50 arms. Fig. 6 is a plan view of the arm-carrying sleeve, illustrated in Fig. 5. Fig. 7 is

an enlarged detached sectional view on line  
y y, Fig. 6, showing the loose nuts in position on the central hub of the arm-carrying sleeve, the parts being in section for the purpose of  
55 more clearly illustrating the manner in which the nuts are connected to the hub, in order that they may raise and lower the sleeve when actuated by the central screw. Fig. 8 is an enlarged plan view of the loose nuts  
60 shown in Fig. 7. Fig. 9 is a longitudinal section of a modified form of the arm-carrying sleeve with the post indicated by dotted lines. Fig. 10 is a detached side view of the base of  
65 the drier-post; and Fig. 11 is an enlarged sectional view of the drier-post, illustrating the operating-gears for transmitting motion to the sleeve and screw.

A represents the drier-post, which is preferably made up of two like parts  $x x'$ , said  
70 parts being of the same size, each constituting a half of the drier-post. The contour of the parts is best shown in Figs. 1 and 10, the upper portion  $A'$  thereof being provided with the slot  $a$ , while the base is socketed at  $a'$ ,  
75 Fig. 11, for the reception of the standing screw S, the office of which will be presently explained. In the side of the post I provide the cut-out  $P'$ , Figs. 1 and 11, and at the bottom of the socket  $a'$ , I provide a metal step-bearing  
80  $s'$ , which serves as a journal-bearing for the elevating-screw S. It will be observed that the slot  $a$  extends longitudinally through the post above the socket  $a'$ , and that by constructing the post A in halves the manufac-  
85 ture thereof is greatly simplified and lighter stock may be used, thereby economizing greatly in manufacturing the driers for commercial purposes.

The elevating or hoisting apparatus of my  
90 improved drier consists of a standing screw S, which has its lower journal set in the step-bearing  $s'$ , as best shown in the enlarged sectional view, Fig. 11, wherein  $S'$  is the lower  
95 end of the elevating-screw, which I preferably provide with a screw-thread and screw the same into the hub  $j$ , which extends from the bevel-gear  $I'$ , terminating in the journal  
100  $s$ , which enters the step-bearing  $s'$ , secured into the socket  $a'$  of the post A. In order that the bearing  $s'$  may be prevented from turning in its seat and causing undue fric-



tion, it is desirable to fasten the same by means of suitable lugs  $s^2$  or screws projecting into the post A.

In the cut-out  $P'$  in the side of the post I mount the bevel-gear I, which meshes with the gear  $I'$  and transmits motion thereto from the crank-handle H, Fig. 1.

It will be observed that the journal  $h'$  is journaled in the hub  $h$  of the plate P, which serves the twofold office of closing the cut-out  $P'$ , while at the same time it forms a thrust-bearing for the journal  $h'$  of the gear I. The inner end of the journal  $h'$  rests in the step-bearing  $i$ , which is secured to the post A, Fig. 11, while the outer end of the journal  $h'$  is squared, as shown in Fig. 11, and has the crank-handle H connected to the squared end.

The upper end on the screw S bears in the socket  $c$ , formed in the cap C, which is mounted on the top of the post A by means of the rim or flange  $c'$ , which encircles the top of the post, and screws  $c^2$  serve to securely confine the cap in place and prevent the same from being raised off by the rotation of the screw S. As seen in Figs. 2 and 3, the cap C is provided with depending lugs  $c^3$ , which fit into the slot  $a$  of the post A and serve to hold the sections  $x x'$  apart the desired distance, and thereby keep the slot open in its normal position.

It will be observed upon reference to Fig. 1 that the standing screw S extends, preferably, from its seat in the step-bearing  $s'$  to the socket  $c$  in the cap, and that the screw comes within the slot  $a$  of the post A, and that the screw turns freely in its bearings when the shaft  $h'$  is rotated by turning the crank-handle H.

In order to utilize the rotation of the screw S for the purpose of elevating or lowering the drier-arms B, I provide the arm-carrying sleeve E. (Best shown in the enlarged detached sectional view, Fig. 5.) The sleeve E is provided near its base upon its exterior with the flange G, which forms a support for the arm-bearing collar D, and the sleeve E is provided on its interior with a girt or flanges  $e e$ , which extend inwardly and ride in the slot  $a$  of the post A, preventing the arm-carrying sleeve E from turning in its vertical movement on the post A. In some cases the arm-carrying sleeve may be constructed, as represented in Fig. 9, with the sleeve proper  $E'$  running or bearing on the inside of the post and connected to a carrying annular bearing  $G'$  by means of the girt  $e$ , which slides in the slot  $a$  of the post A.

Connected to the projecting flanges or girt  $e$  is the central hub F, provided with projecting lugs  $f f$  from its upper and lower edges and with the shoulders  $F' F^2$ . It will be observed upon reference to Fig. 5 that I provide the girt with the vertical extensions  $e' e'$ , extending above and below the shoulders of the hub F and projecting inwardly from the flanges  $e$

$e$ , the office of which will be presently explained.

The screw S passes through the hub F of the sleeve E, and in order to connect the arm-carrying sleeve E with the screw I provide the loose nuts  $N N'$  shown in Fig. 4. The nuts  $N N'$  are substantially alike in construction, and are provided with a thread which engages the thread of the screw S, and they are also provided with notches  $f' f'$  in their peripheries, which take on the lugs  $f f$ , projecting from the hub F, and also on the projections  $e' e'$  shown in Fig. 5. It will be observed that I employ two nuts  $N N'$ , which are substantially the same in shape, and that the said nuts are secured in position by the interlocking of the projections  $f f$  and the extensions  $e' e'$  with the notches  $f'$ , formed in the periphery of the nuts. The lower nut N serves to engage with the thread and also with the hub F of the arm-carrying sleeve E, and by the rotation of the screw S serves to raise the drier-arms to any desired height, which is readily regulated by stopping the rotation of the screw when the desired elevation is attained. While in all ordinary cases the lower nut N will be sufficient to raise and lower the carrying-sleeve, it will be understood that in its downward movement the nut N is liable to become disengaged from the lugs  $f f$  and projections  $e' e'$  by reason of undue cramping of the arms, which may be caused by warping of the slot  $a$  or uneven loading of the clothes. To obviate such disengagement, I provide the upper nut  $N'$ , which engaging with the upper lugs and projections of the hub E serves to make the downward movement positive. By reference to the drawings it will be noticed that the surfaces F and  $F'$  of the hub E do not touch the adjacent surfaces of the nuts  $N N'$ , and by such construction I allow of a certain slight rocking of the arms without binding the nuts on the screw S, thereby further adapting the parts to any warping of the slot or cramping of the arms.

The drier-arms B are secured in the arm-sockets  $d$ , which project from the arm-bearing collar D, as best shown in Figs. 1 and 4.

The position of the various parts when the device is assembled together is clearly shown in the sectional portion of Fig. 1, and the object of constructing the parts as heretofore described, which constitutes the preferred example of my invention, is for the purpose of making the manufacture of the device exceedingly simple.

It will be readily noticed that all of the parts may be cast, since the nice adjustment and fit thereof are of minor consequence.

By using two loose nuts  $N N'$  and providing the flanges and notches the parts can be readily assembled without any machining or fitting, and thereby the expense of manufacture is greatly lessened, while at the same time the durability of the device is greatly increased, since the bearing or wear of the



thread of the screw in the nuts is greatly lessened. By reason of such minimum wear, because of the peculiar construction of the parts, it is often advisable to make the screw and nuts of wood when only light loads are to be used.

The operation of my improved clothes-drier will be readily understood from the foregoing and from a consideration of the drawings.

It will be observed that upon assembling the drier, as shown in Fig. 1, the drier-arms may be readily raised by simply turning the handle H of the crank in the desired direction, and it will also be noticed that no stop device is necessary, since the screw supports the drier-arms at any desired point of adjustment. The arm-bearing collar being independent entirely in its connection to the arm-carrying sleeve E, the arms B are free to rotate on the arm-carrying sleeve E, while the arm-carrying sleeve E is maintained in its proper position by reason of the girt or flanges *e e* riding in the slot *a* of the post A. I do not, however, restrict my invention to the exact construction of the various parts, as illustrated and described in this my preferred example, since the specific construction of the parts may be readily varied without departing from the spirit of my invention.

It will be readily observed that the gears I I' may be changed—that is, by substituting different sizes—and that the speed of the screw thereby changed, as desired. It will also be observed that the hub F may be threaded and the screw turning therein operating to hoist or lower the drier-arms; but such construction is not as easy to manufacture or assemble in putting up the driers nor as effective in operation, and for these reasons I prefer to use the loose nuts N N' and construct the arm-carrying sleeve as shown.

The engagement of the lugs and flanges with the notches *f' f'* in the nuts N N' serve to keep the nuts from turning; but any suitable construction which accomplishes the same purpose will answer in place thereof.

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

1. The combination, with a longitudinal hollow post, of a standing screw journaled in the post and prevented from longitudinal movement therein, an arm-carrying sleeve mounted movably on the post, a nut secured to the sleeve having a thread engaging the standing screw, an arm-bearing collar turning

freely on the sleeve, and means, substantially as described, for operating the screw, substantially as and for the purpose specified.

2. The arm-carrying sleeve E, having flanges or girts *e e* and hub F, in combination with the post A, having the slot *a*, and the elevating-screw S, prevented from longitudinal movement in said post, substantially as and for the purpose specified.

3. The combination, with the arm-carrying sleeve E, having the hub F, projections or lugs *f f*, and flanges *e' e'*, of a nut N beneath the hub F and engaging the same, the screw S, and the post A, substantially as and for the purpose specified.

4. The combination, with the arm-bearing sleeve E, having hub F, projections or lugs *f f*, and flanges *e' e'*, of the nuts N N' on either side of the hub F, having notches *f' f'*, the screw S, and the post A, substantially as and for the purpose specified.

5. The combination, with the post A, having the step *s'* and the cut-out P', of the screw S, having its lower end *s* journaled in the step *s'* and its upper end journaled in the socket *c* of the cap C, the gear I', and the gear I, journaled in the cut-out P' in the post A, the hub *h*, and the plate P, substantially as and for the purpose set forth.

6. The combination, with the slotted post A, of a screw S, journaled in the base and cap of the post, the arm-bearing sleeve E, having flanges riding in the slot *a* of the post, and a hub F, through which the screw S passes, the loose nuts N N', engaging, respectively, the lugs *f f* and flanges *e' e'* on the shoulders F' and F<sup>2</sup> of the hub F when the drier-arms are lowered or raised, and the arm-bearing collar D, turning freely on the flange G of the sleeve E, substantially as and for the purpose set forth.

7. The post A, made of two parts *xx'*, provided with the slot *a*, socket *a'*, step *s'*, cut-out P', in combination with the screw S, nuts N N', cap C, sleeve E, drier-arms B, collar D, gears I I', and handle H, all substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Bay City, in the county of Bay, in the State of Michigan, this 8th day of August, 1888.

EDWIN F. ROUSE.

Witnesses:

GEORGE W. MANN,  
JOS. J. FORCIER.