

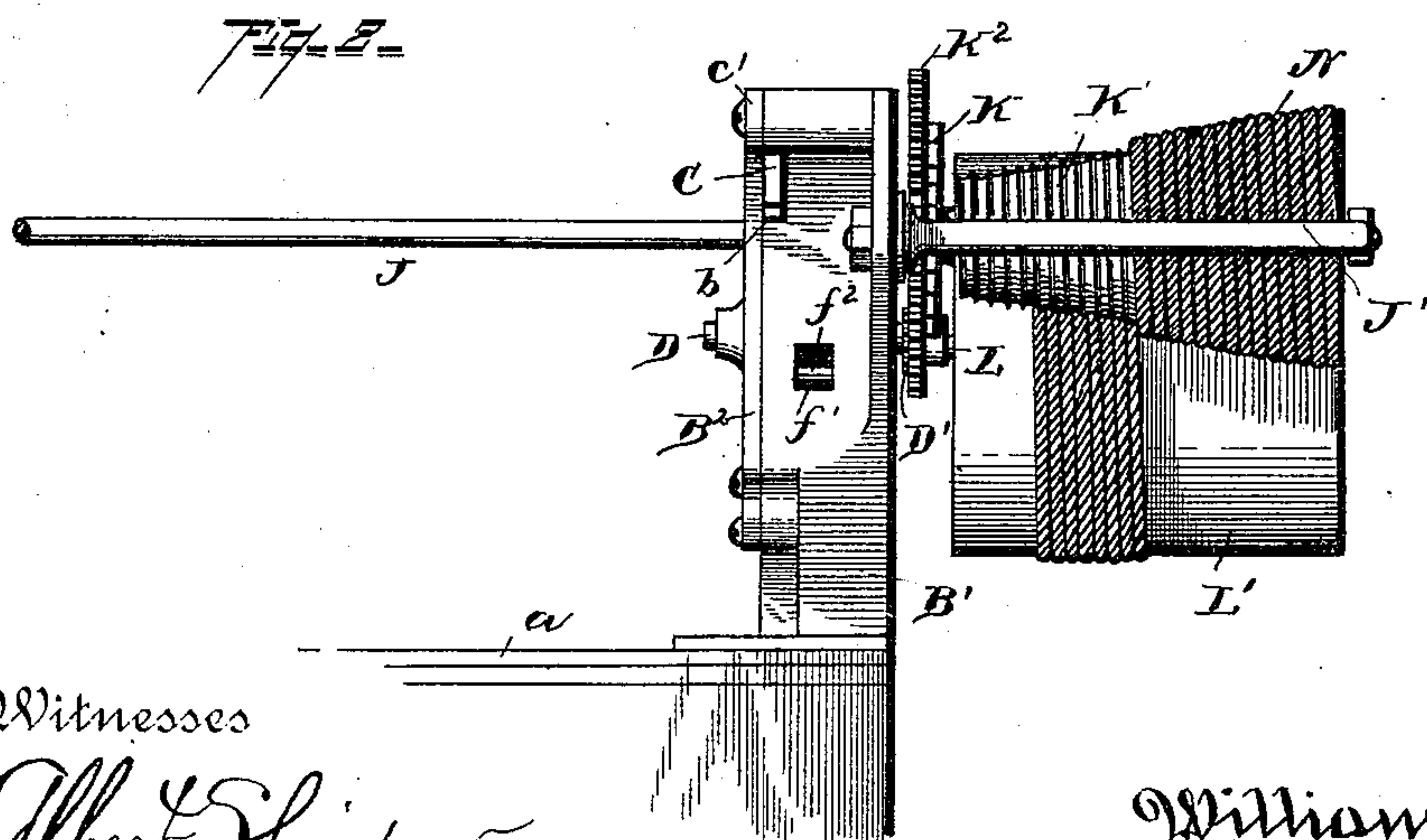
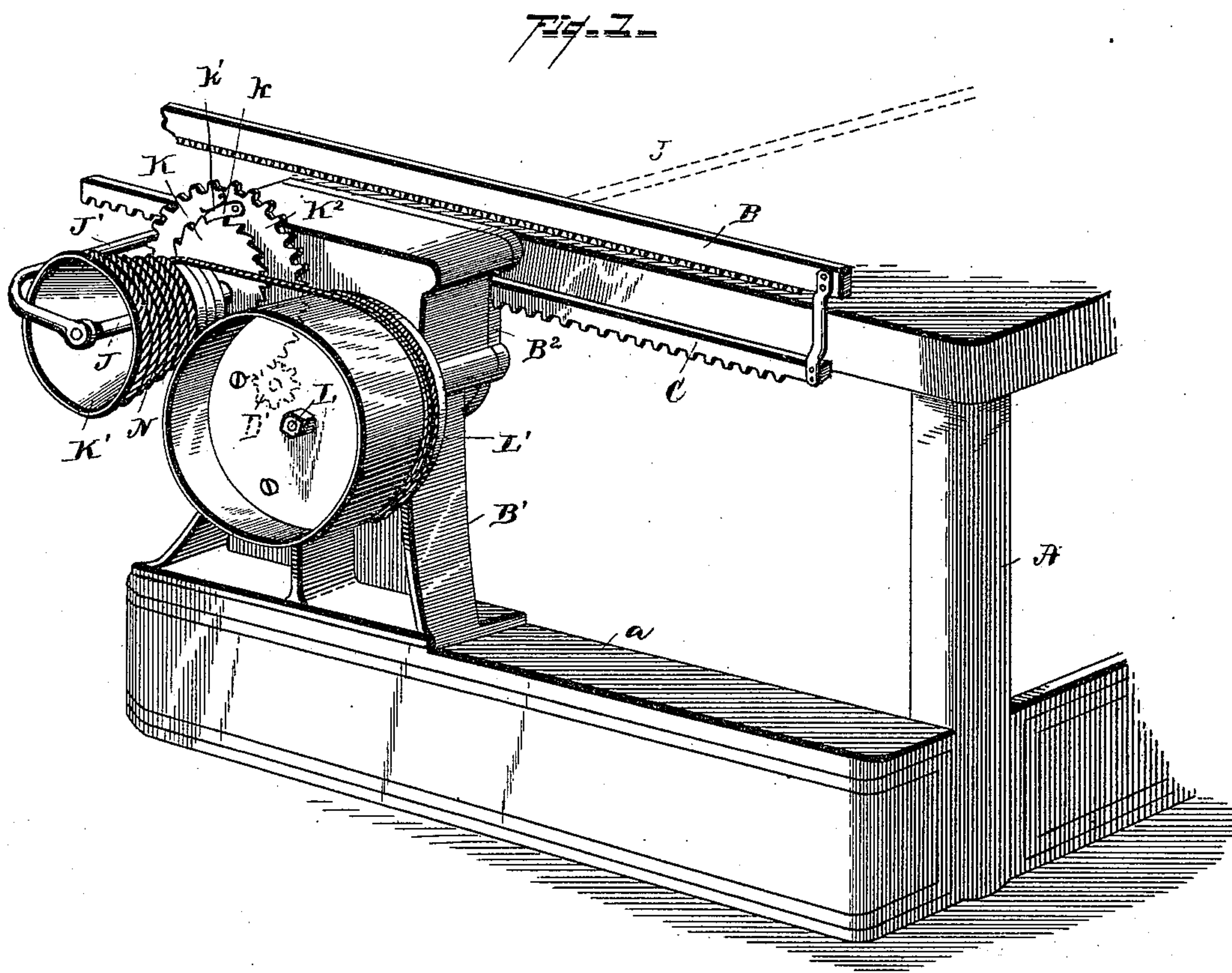
(No Model.)

2 Sheets—Sheet 1.

W. S. ROMME.
ATTACHMENT FOR TYPE WRITERS.

No. 441,705.

Patented Dec. 2, 1890.



Witnesses

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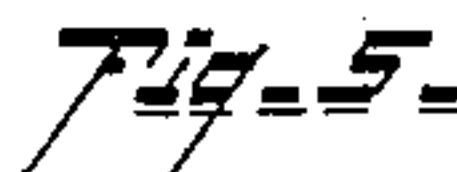
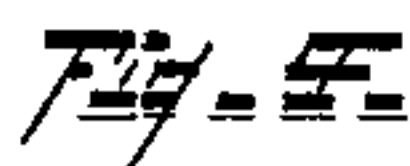
By me Attorney

EABond.

2 Sheets—Sheet 2.

No. 441,705.

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Inventor

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UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 441,705, dated December 2, 1890.

Application filed 7 13, 1890. Serial No. 336,743. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. ROMME, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Attachments for Type-Writers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in type-writing machines, and more particularly to automatic reverse-movement attachments to such machines. It is designed more especially as an improvement upon the attachment for which Letters Patent No. 418,260 were granted to Adelaide H. Woodall and myself jointly December 31, 1889. The foundation principle of the normally-inactive spring of greater power than that which advances the rack-bar and acting in opposition thereto is retained, the novelty in the present instance residing solely in certain new and novel arrangements of parts, whereby better results are obtained and the device simplified in its construction. I provide a power-equalizer which I have found from experience to be desirable, although not absolutely necessary, and have changed the construction of the compound lever. These are the essential points of difference between the old device and that presented in this application. Other minor changes, however, have been made, which will be made apparent in the following description.

The invention in the present instance residing solely in the features substantially as above outlined, I have not shown in the drawings any more of the old construction nor of a type-writer than is necessary to a proper understanding of the present invention, it being understood that the principle and mode of operation is the same as in the prior patent, to which reference may be made, if necessary, to enable one to better understand the same.

Although not shown, I propose to use, when desired, the automatic paper-feeding device shown in the prior patent. Its operation will be the same in connection with the present improvements as in the old form, the carriage returning in the same way and the lever coming in contact with the inclined arm as before.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of a portion of a type-writer of the Remington type provided with my improvements. Fig. 2 is an edge view of the attachment. Fig. 3 is an enlarged front elevation of the attachment partly broken away and with the cap or cover removed. Fig. 4 is a section on the line $x x$ of Fig. 3. Fig. 5 is a face view of the toothed wheel and its pawl removed. Fig. 6 is a face view of the disk.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates a portion of the supporting-frame of an ordinary Remington type-writer, provided with the ledge a .

B is the rack-bar of the carriage, and C my auxiliary rack-bar, which may be connected with the rack-bar of the carriage in any suitable manner, so as to move therewith.

B' is a standard designed to support the operating parts of the attachment and adapted to rest upon the ledge a of the type-writer frame, to which it may be secured in any well-known way—such, for instance, as by set-screws. This standard is chambered, as shown in Fig. 4, to provide a receptacle for and serve as a protection for the operating parts. Near its upper end this standard is provided with a passage-way b for the auxiliary rack-bar, as shown best in Fig. 3, and within the chamber of the said standard there are provided anti-friction rollers c , carried by a suitable support, and against which the upper edge of the auxiliary rack-bar rides, as shown in said Fig. 3. The standard is formed with lugs c' , apertured to receive the screws or other means which serve to retain in position a detachable cap B^2 , as shown in Fig. 4. Journaled in suitable bearings in this cap and in the rear

side of the standard is the horizontal shaft D, carrying at its rear end a gear-wheel D', provided with a hub or boss *d*, through which passes a set-screw *d'* into the shaft to hold it in position thereon. Fast on this shaft within the chamber of the standard is the disk E, provided with a segmental slot *e*, through which projects to the rear a pin or lug *f*, projecting from the toothed portion of the bent lever F', said toothed portion being in the form of a segment, as shown in Figs. 3 and 6, being pivoted to the front face of the disk at *e'* and provided at its pivot with an enlargement or detent *e''*, which is preferably, though not necessarily, provided with an anti-friction roller. The standard near the pivot of this lever is provided with an opening *f'*, against the lower wall of which opening the said detent of the bent lever bears. At this point I preferably provide an anti-friction roller *f''*, as shown in Fig. 3. On the opposite face of this disk is a spring *f'''*, which bears on the projecting lug of the lever, as shown best in Fig. 6, and serves to at all times keep the said lug at the extreme outer end of its slot, as shown in said figure. The outer face of this disk is provided with a stop *g*, which serves to limit the movement of the arm II, and a spring *g'*, which bears on the segmental portion of the lever and serves to cushion the same.

Where in this description and in the claims I refer to the disk E and the toothed wheel I and speak of the "inner" face, I mean the face on the side next the machine.

Upon the inner face of the disk is a stop or lug *g''*, which is adapted to ride under the free end of a stout spring *G'*, which is arranged, as shown in Fig. 3, upon a suitable pin or support within the chamber of the standard, and this pin and the spring serve to cushion the return of the disk to its normal position.

Loose on the shaft D is a geared hub *G''*, adapted to mesh with the toothed portion of the compound lever, as shown in Fig. 3, and fast on this hub and moving therewith is an arm H, a collar or other like means *h* being provided to retain the toothed portion of the lever in mesh with the geared hub. A collar *h'*, detachably secured to the shaft, prevents displacement of the hub and provides for its ready removal when necessary.

I is a toothed wheel loosely sleeved on the shaft D inside the disk and formed with an aperture *i*, through which works the beveled pawl I', hinged, as at *i'*, to a suitable support *i''* on the outer face of the wheel and provided with a lateral arm I², against which bears a spring I³ to keep it normally projected through the opening in the wheel. The cap or cover B² is formed with an opening *b''*, through which this pawl is designed to project at predetermined periods, as will hereinafter appear.

J is a shaft having a bearing in the standard B' and in the arm J', attached to said standard, and at its forward end is designed

to have a suitable bearing in the front part of the supporting-frame of the type-writer. (Not shown.) This shaft is the winding-shaft, and is designed to be rotated to wind up the device in any suitable manner. It has fast thereto a ratchet-wheel K and a cone K', the outer periphery of which is grooved or otherwise formed so as to hold a cord or other like device and prevent its overlapping in winding. Loose on this shaft is a gear-wheel K², designed to mesh with the gear-wheel D' on the end of the shaft D, as shown in Fig. 1. On the face of this gear-wheel K² is a pawl *k*, held in engagement with the ratchet by means of a spring *k'*, as shown best in Fig. 1. This allows the ratchet to revolve independent of the gear-wheel in winding, but causes the two to revolve in the unwinding of the spring M.

L is a shaft suitably journaled in bearings in the standard, and fast on this shaft, within the drum L', is a stiff coiled or spiral spring M, attached at one end to the shaft and at the other to the drum, so that as the drum is revolved the spring will be wound up, and as it revolves in the opposite direction the spring will be unwound.

N is a cord, chain, or other analogous device attached at one end to the drum and at the other end to the cone, so that as it is unwound from one it will be wound up on the other.

The parts thus constructed and arranged are designed to operate as follows: The spring is wound up by turning the winding-shaft. This does not actuate the gear-wheel D or the mechanism within the chamber of the standard. With the parts wound up and the auxiliary rack-bar attached to the carriage the letter-keys of the type-writer are operated upon in the usual manner, and the carriage travels from right to left, being propelled forward by the usual spring. The auxiliary rack-bar moves with the carriage and works in the teeth of the wheel I. The rotation of this wheel by reason of this engagement causes the pawl I' to be withdrawn from the opening in the cap B² and depresses it, so that in the further rotation of said wheel the pawl will engage with the arm H, and as the wheel is still further revolved in the direction of the arrow in Fig. 3 the said arm is carried around with the wheel, by reason of the engagement of the pawl therewith, until the detent *e''* is drawn in, so as to release the same from its bearing on the casing or standard, and as soon as said detent is released from its bearing the spring M, being connected through the gear-wheels and cord and cone and drum with the shaft on which the disk E is fixed, causes said disk to revolve until it is again stopped by the engagement of the detent with its bearing on the standard.

The gearing up of the compound lever gives me greater leverage and requires less power to operate the parts. Besides it serves as a sort of cushion in returning the parts and avoids any jar of the machine.

The power-equalizer, the cord, drum, and cone act on the well-known fusee principle and have proved most efficient, enabling me to adjust the tension of the spring when fully wound up and give me the same power till it has completely run down.

The spring M should be stronger and more powerful than the spring which actuates the carriage from right to left, in order that it may be sure to cause the carriage to return to the right when the parts have assumed the position at the end of the line, as above described. This spring M, it will of course be understood, is normally inactive, the same as in the prior patent.

What I claim as new is—

1. The combination, with the rack-bar and its advancing mechanism, of the spring independent of the advancing mechanism for returning the rack-bar and a power-equalizer for said spring, as set forth.

2. The combination, with the carriage and its advancing mechanism, of a rack-bar carried by the carriage and independent of the advancing mechanism, a spring of greater power than that which advances the rack-bar and acting in opposition thereto, a holder for said spring, which, when actuated to release the spring, actuates the rack-bar to return the carriage to its normal position, and a power-regulator for said spring, substantially as specified.

3. The combination, with the disk E, having curved slot, of the bent lever having a lug working in said slot, and a spring on the disk acting on the said lug, substantially as and for the purpose specified.

4. The combination, with the disk having a

curved slot and the bent lever having a segmental portion toothed and having a lug working in said slot, of the geared hub G^2 and its shaft and a spring on the disk acting on the lug of the lever, as set forth.

5. The combination, with the shaft D, the geared hub G^2 , loose thereon, and means for actuating said shaft, of the bent lever, the disk E, to which it is pivoted, having a curved slot, the said lever having a segmental toothed portion engaging the geared hub, and a spring g' , acting on said segmental portion, substantially as and for the purpose specified.

6. The combination, with the shaft D, the disk E, the geared hub G^2 on the shaft, and the bent lever having a toothed segmental portion engaging the geared hub, of the spring acting on a lug projecting from the lever and a cushion for said segmental portion, as shown and described.

7. The combination, with the disk and its actuating devices, of a lug g^2 on the rear face of the disk and a spring G' , behind which the said lug rides as the disk returns to its normal position, as and for the purpose specified.

8. The combination, with the toothed wheel I, having an opening i for the passage of a pawl, of a pawl I' , hinged to a support on the face of the toothed wheel and having a lateral projection I^2 , and a spring on the toothed wheel acting on said projection, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM S. ROMME.

Witnesses:

E. H. BOND,

JOHN H. FREEMAN.