

No. 662,493.

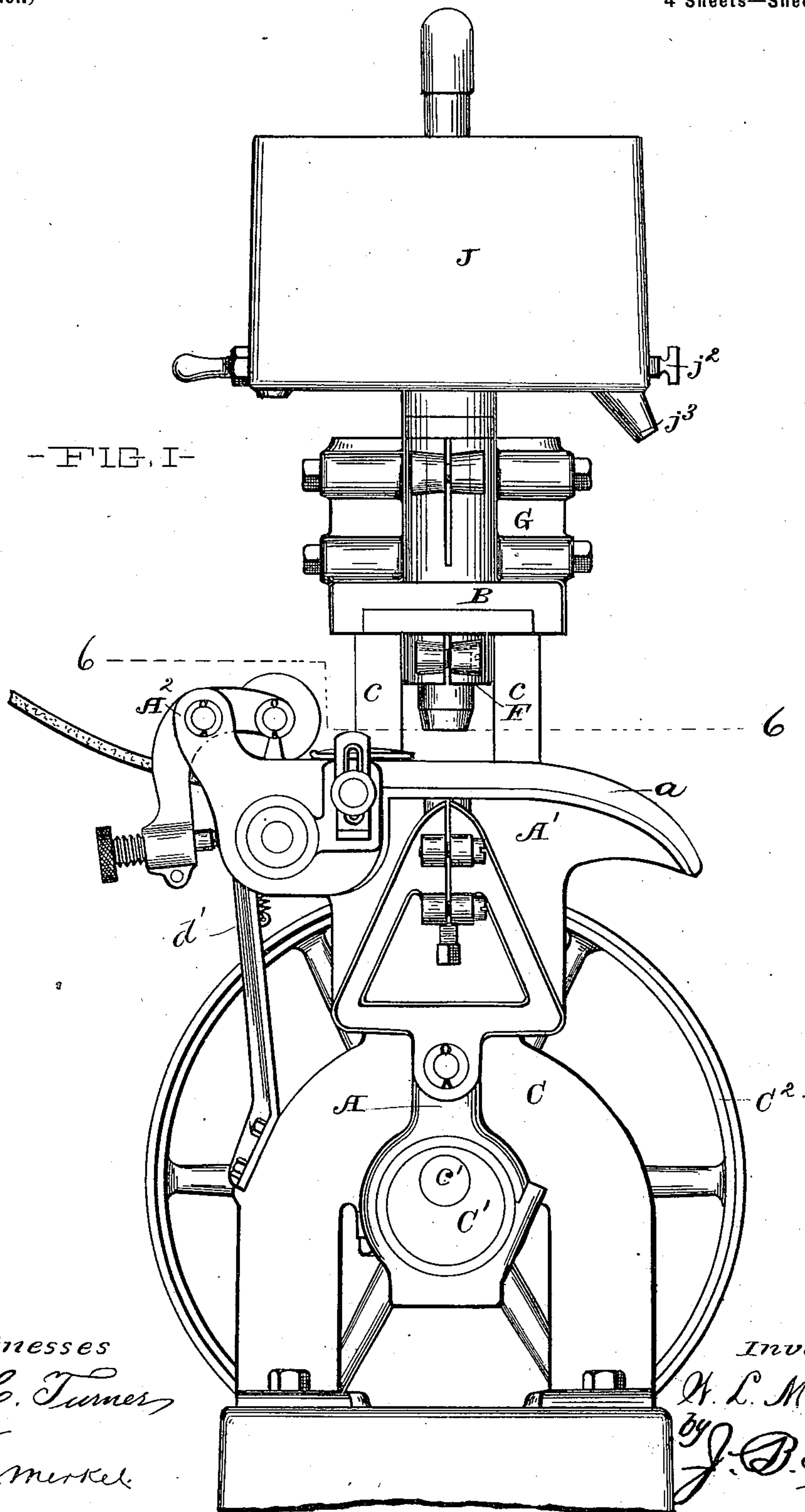
Patented Nov. 27, 1900.

W. L. MORRIS.
WAD PUNCHING AND LUBRICATING DEVICE.

(Application filed Dec. 9, 1899.)

(No Model.)

4 Sheets—Sheet 1.



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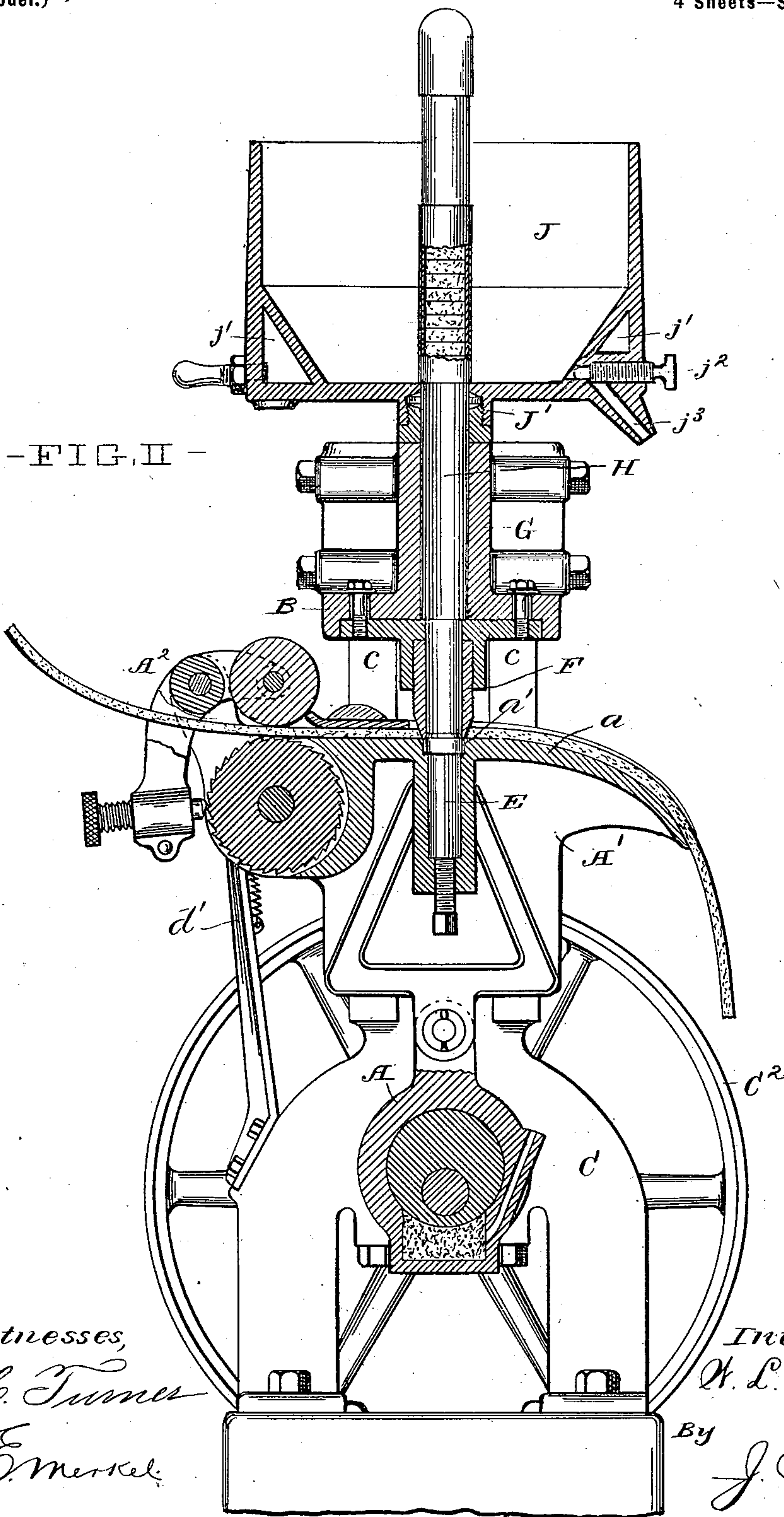
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Witnesses,
J. C. Turner
A. E. Merkel

Inventor,
W. L. Morris

By
J. D. Fay
Atty

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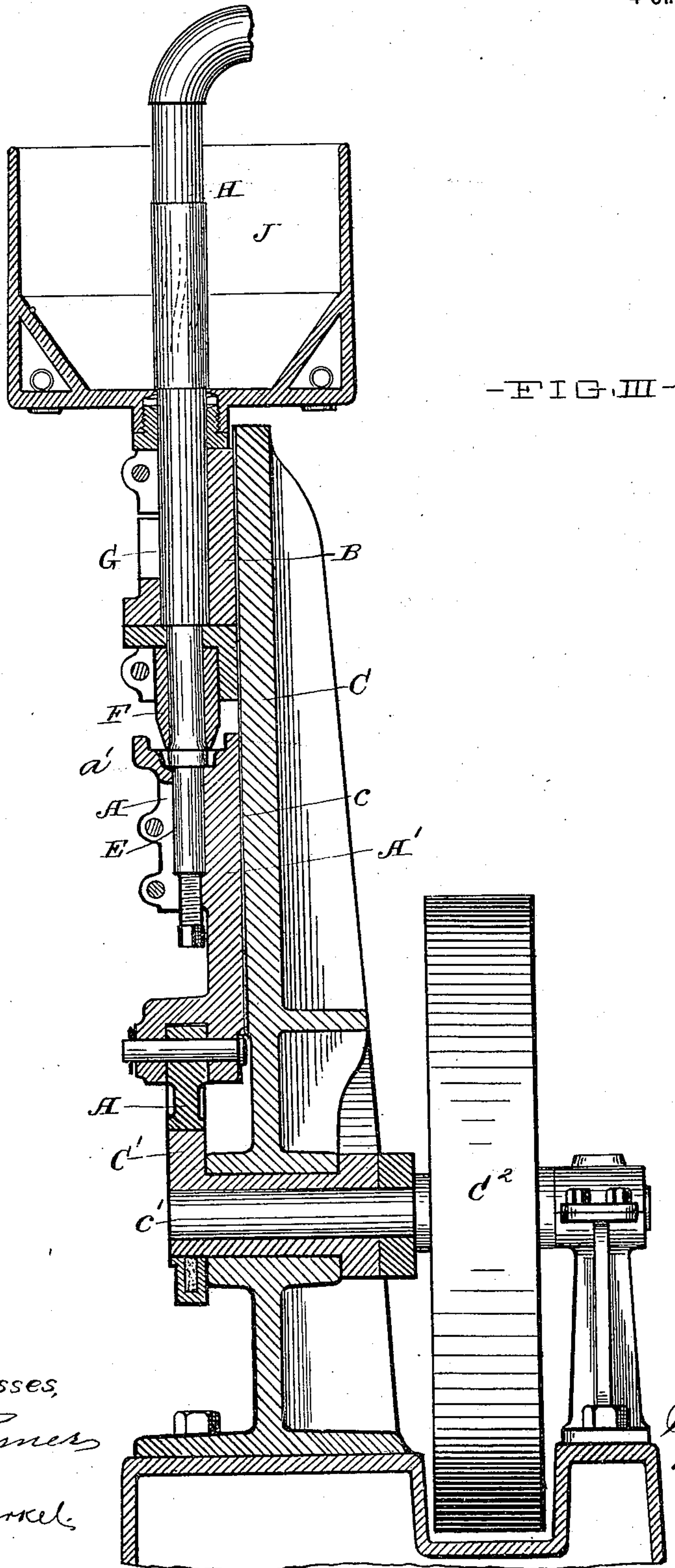
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Witnesses,
J. C. Turner
A. C. Munkel

Inventor,
W. L. Morris,
by *J. D. Gay*
Att'y

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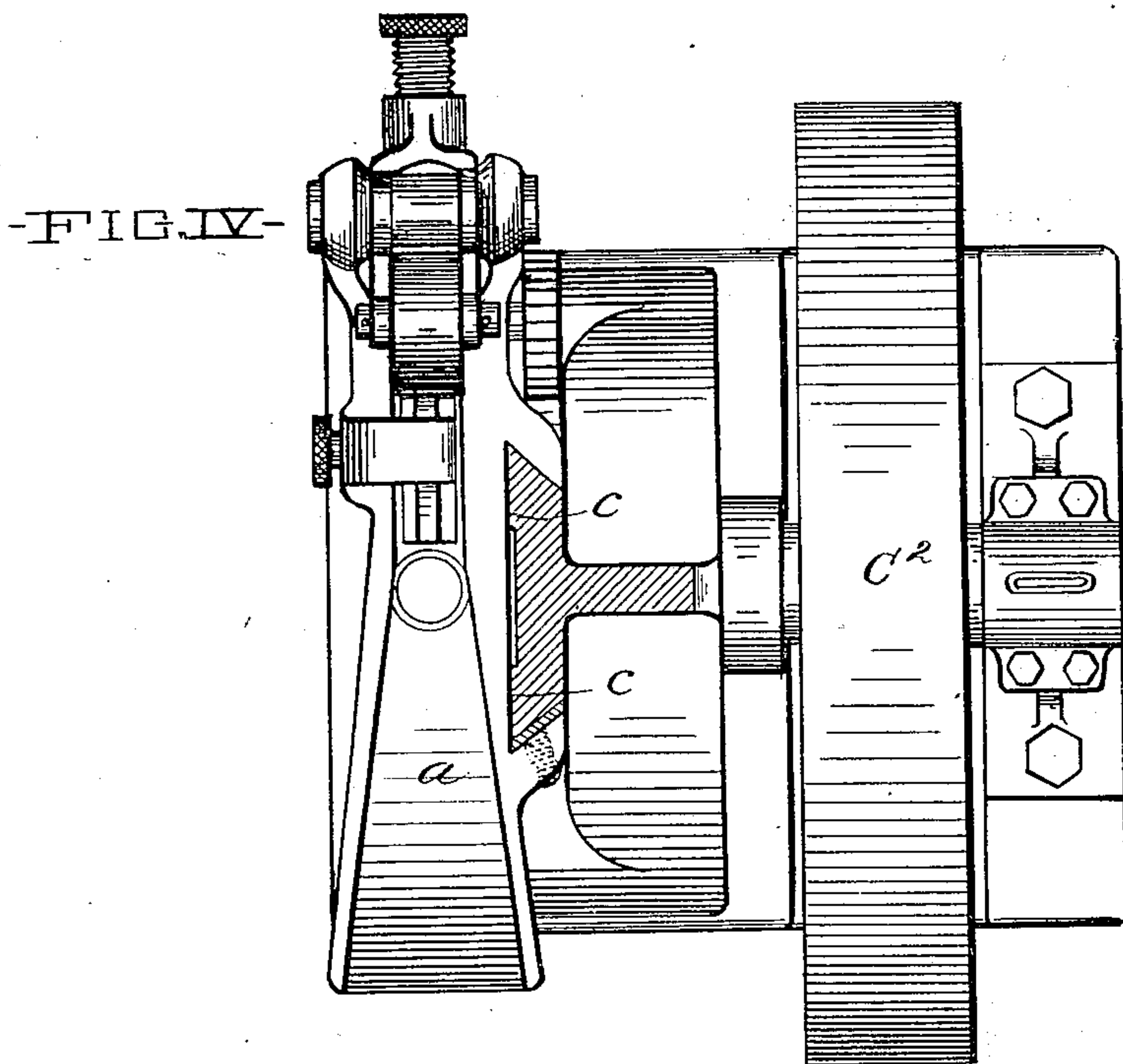
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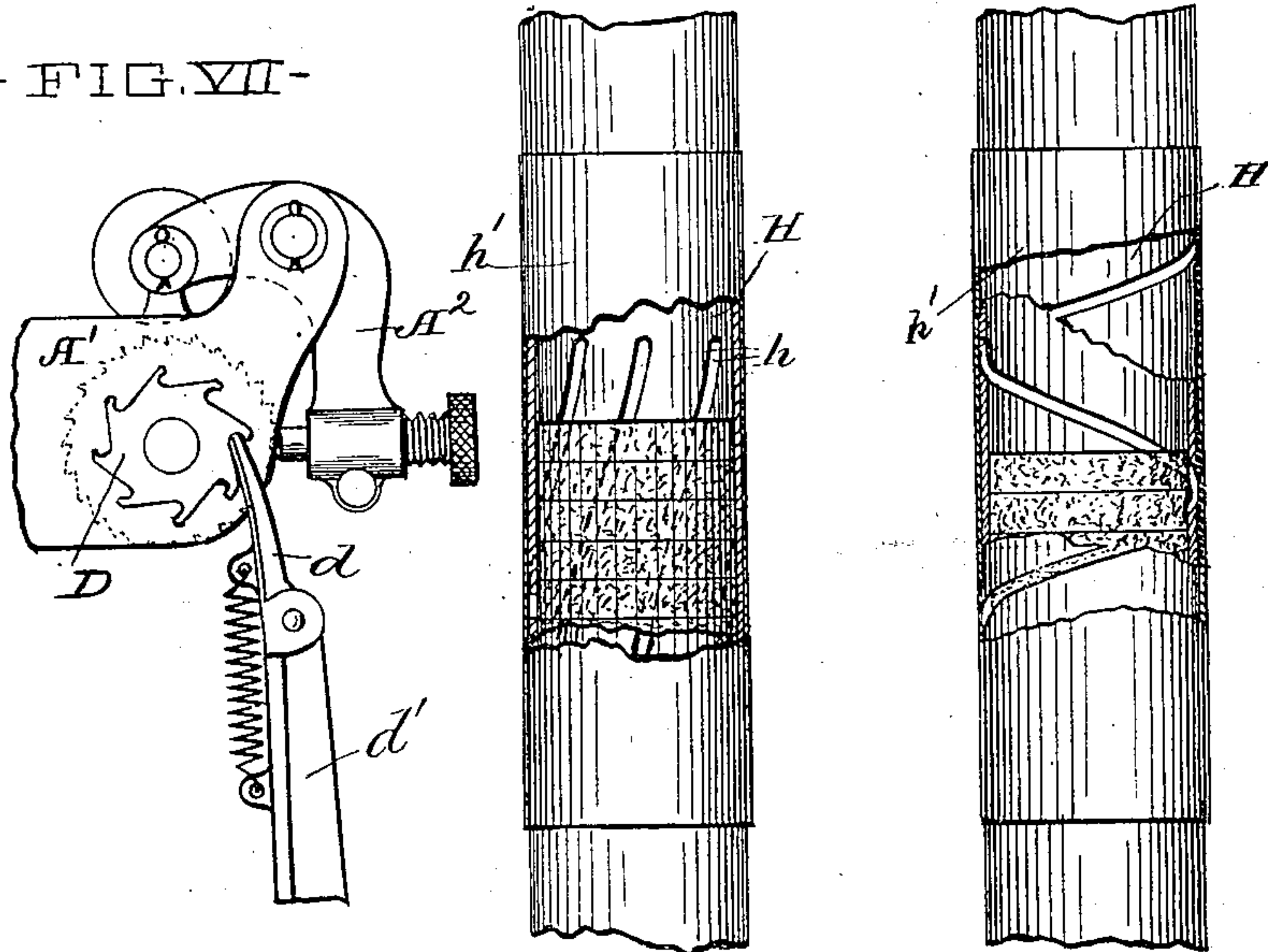
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-FIG. V-

-FIG. VI-

-FIG. VII-



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J. C. Turner
A. C. Merkel

Inventor,

W. L. Morris
By J. D. Fay
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM L. MORRIS, OF CLEVELAND, OHIO, ASSIGNOR TO THE AUSTIN CARTRIDGE COMPANY, OF SAME PLACE.

WAD PUNCHING AND LUBRICATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 662,493, dated November 27, 1900.

Application filed December 9, 1899. Serial No. 739,739. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. MORRIS, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Wad Punching and Lubricating Devices, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to that class of devices used for preparing wads for shot-cartridges; and it consists of means hereinafter fully described.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a side elevation of my improved device. Fig. II represents a vertical axial transverse cross-section of said device. Fig. III represents a vertical axial longitudinal cross-section of same. Fig. IV represents a horizontal section taken upon the plane indicated by line 66, Fig. I. Figs. V and VI represent enlarged detail views, and Fig. VII represents a modified form of wad-conducting tube.

The apparatus consists, primarily, of a punching device and a lubricating device. Said punching device comprises a lower reciprocable member A and an upper stationary member B, Figs. I and III. Said lower member A consists of a head A', which slides upon vertical guideways *cc*, formed upon the frame C of the machine, the reciprocating movement being imparted to it by means of an eccentric C', secured to or formed upon a shaft *c'*, journaled in an eccentric-strap, said shaft journaled in the lower part of said frame and driven by means of a driving-pulley C², Fig. III. The upper portion of said head A' is formed with a wad-strip guideway *a*, at the one end of which is located wad-strip feed mechanism A², similar to that shown, described, and claimed in my application for United States Letters Patent on a shell-loading machine, Serial No. 703,169, which is in-

termittently operated by means of a ratchet-wheel D and pawl *d*, the latter supported on a standard *d'*, secured to frame C, Figs. IV and VII, on each downward stroke of the head, as is readily understood. In the middle of the strip-guide is located a plug E, secured in a suitable bore formed in the head, its upper surface being flush with the upper surface of the wad-strip guide, as shown in Fig. II. Said bore is counterbored, so as to leave an annular space *a'* around the top of the plug, as shown.

The upper punch member consists of a hollow or tubular cutter or plunger F, Fig. II, secured in an adjustable head G, clamped to said frame C. Said cutter F is located coaxially with the plug E, the operation of cutting and the construction of the two cutting members being such as described and shown in Letters Patent No. 612,955, issued October 25, 1898. Secured in said head G and located coaxially with said tubular cutter F is a wad-conducting tube H, its bore forming a continuation of the bore in cutter F. Said tube passes through a reservoir J, secured to the top of the machine, the point of entrance of the tube into said reservoir being provided with suitable packing *j*, Fig. II. Around the lower portion of said reservoir is formed a steam or heating space *j'*, provided with an inlet-opening and a suitable outlet. A drain-cock *j*², controlling an outlet *j*³, is also provided. The portion of said conducting-tube included within said reservoir is provided with a series of lateral helical openings *h*, Fig. V, so located that every element of the interior cylindrical surface of said tube passes through at least one such opening, whereby it is seen that during the passage of a wad through such portion of said tube every part of that portion of the wad-surface in contact with the said inner surface of said tube communicates during some part of its travel with one or another of said openings. The driving-pulley being rotated the head A is reciprocated and the wad-strip previously inserted in the feed mechanism is intermittently fed along the strip-guide. Wads are thereby punched from said strip and are pushed up and moved along in the conducting-tube H, as shown in Fig. II. The reser-

voir J having been previously filled with a suitable lubricant used for the purpose of lubricating the wads and steam or other hot gas turned into the steam-space to maintain the proper liquid form of such lubricant, the peripheries of the wads are saturated with lubricant, every portion of such sides coming into communication with the reservoir, during its travel through that part of the tube in said reservoir. The wads after being so lubricated continue their travel in the tube and are finally ejected from the end thereof (not shown) into a suitable receptacle or otherwise disposed of, as required. It is required to lubricate the peripheries only of the wads, and the openings *h* should therefore be of a size or provided with means adapted to admit only oil to the tube interior sufficient for that purpose. Such regulation may be obtained by adopting a proper width of opening. Such width would, however, necessarily be small and the openings would hence become easily clogged by dust and wad material and the flow of oil therethrough stopped. A more expedient method of regulation is after making the width of the openings sufficient to prevent the possible clogging thereof to provide the exterior of the tube with a cloth *h'* or other preferable material wrapped around and covering said opening, the thickness or number of turns of such cloth determining the rate of flow of the oil.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, pro-

vided the means covered by any one of the following claims be employed.

I, therefore, particularly point out and distinctly claim as my invention—

1. The combination with a wad-punch, comprising a stationary and a reciprocable member, a tubular cutter secured to said stationary member, and a wad-conducting tube having communication with said hollow cutter, of a lubricant-reservoir, said tube passing through said reservoir and having lateral communication therewith, substantially as set forth.

2. The combination of a wad-punch comprising a lower reciprocable and an upper stationary member, the latter consisting of a hollow cutter, a wad-conducting tube having its bore in continuation of that of said plunger and a lubricant-reservoir, said tube passing through and having lateral communication with said reservoir, substantially as set forth.

3. The combination of a wad-punch comprising a lower reciprocable and an upper stationary member, the latter consisting of a hollow cutter, a wad-conducting tube having its bore in continuation of that of said cutter, and a lubricant-reservoir, said tube passing through said reservoir and provided with a helical opening communicating with the interior of said reservoir, substantially as set forth.

Signed by me this 13th day of November, 1899.

WILLIAM L. MORRIS.

Attest:

D. T. DAVIES,

A. E. MERKEL.