

R. H. HOWARD.
PENCIL MAKING MACHINE.
APPLICATION FILED MAR. 11, 1908.

936,722.

Patented Oct. 12, 1909.

2 SHEETS—SHEET 1.

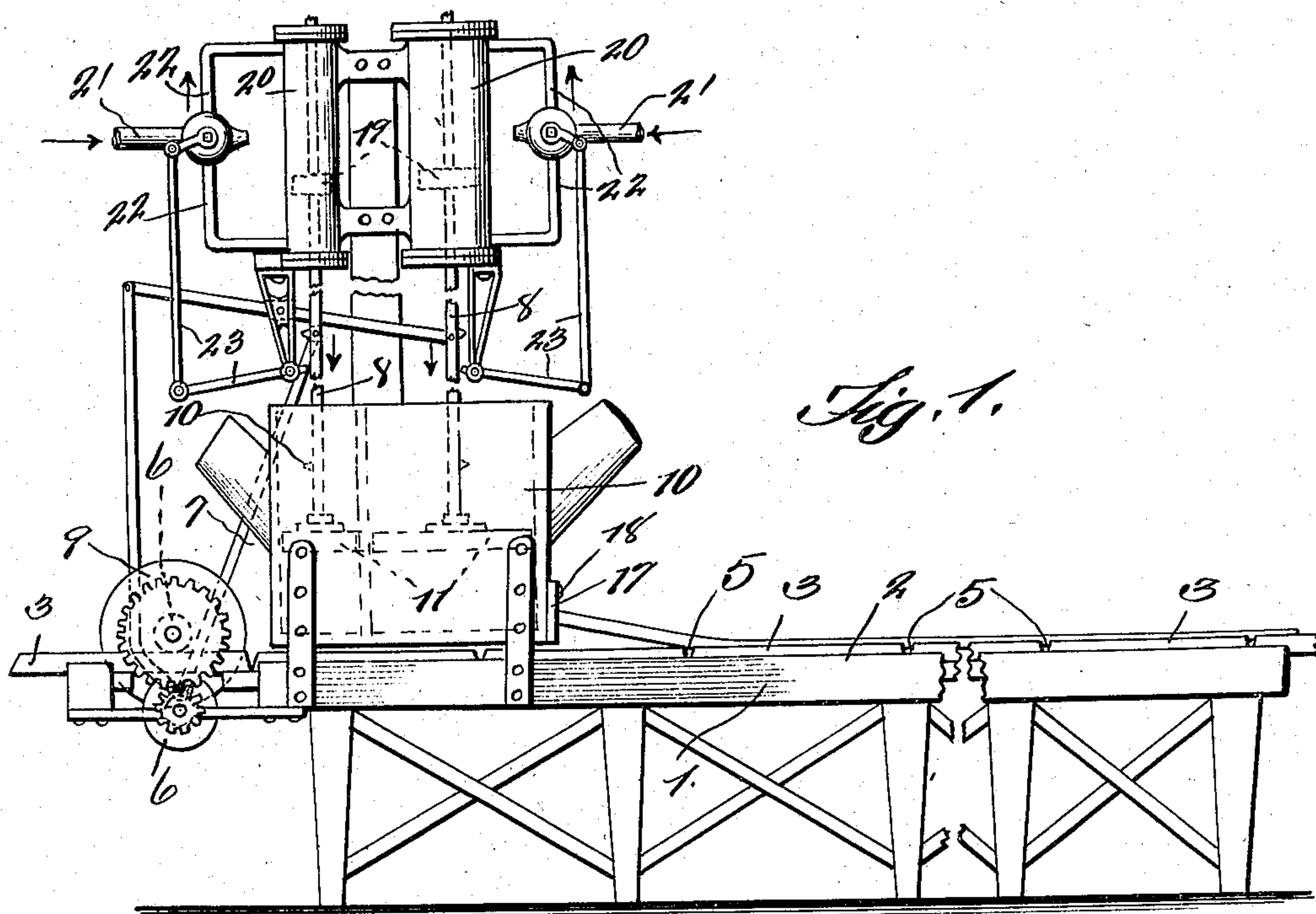


Fig. 1.

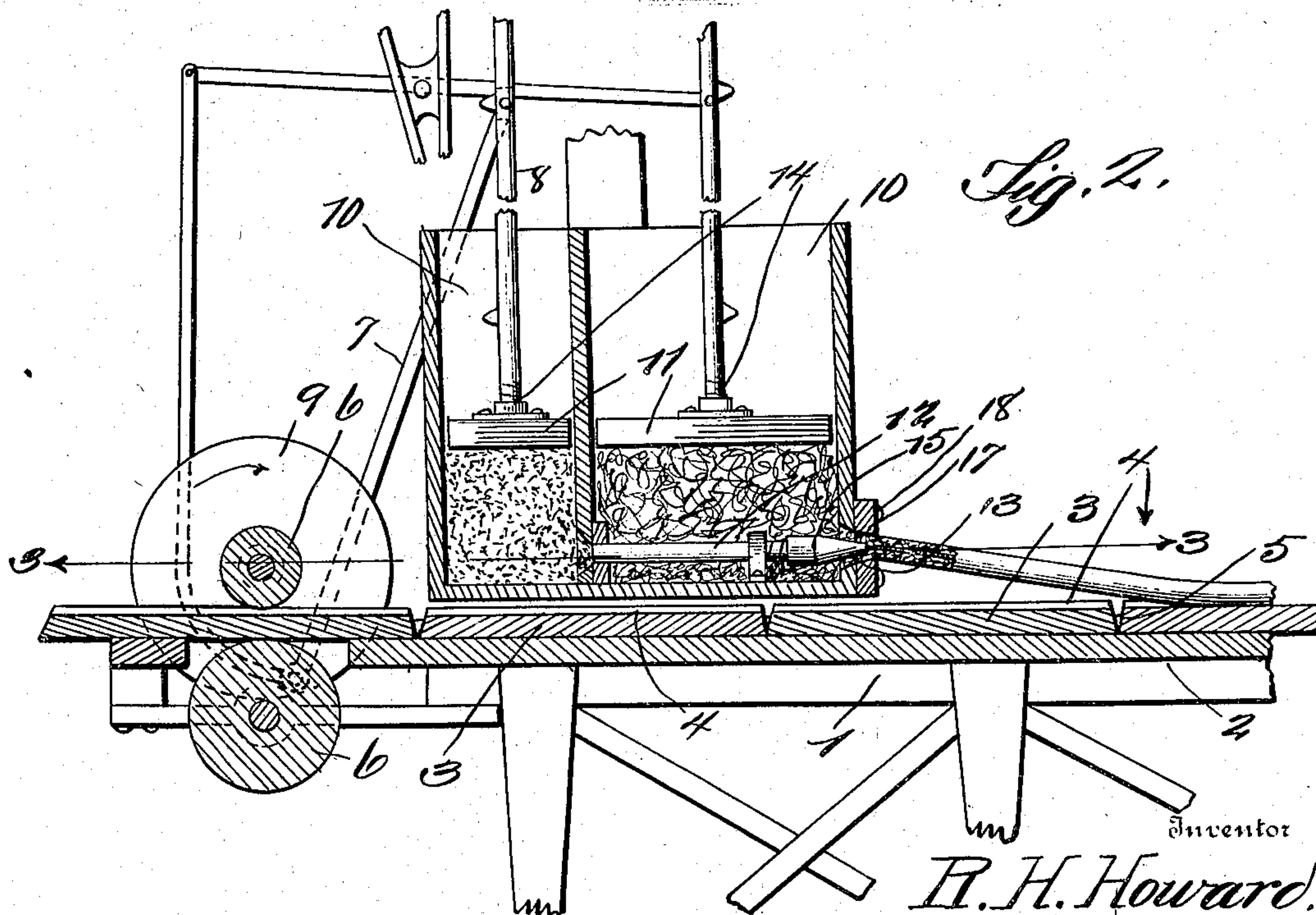


Fig. 2.

Witnesses

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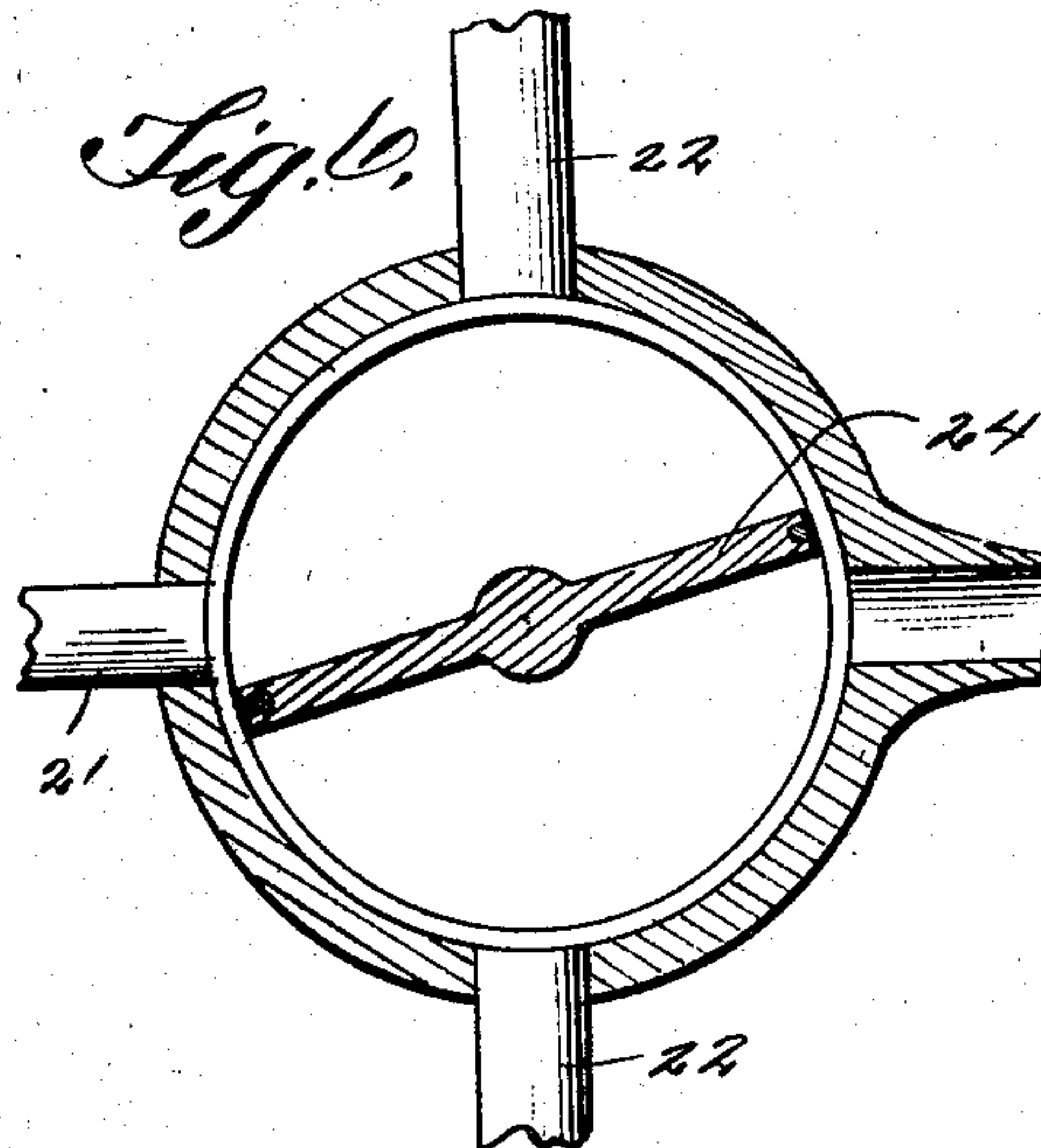
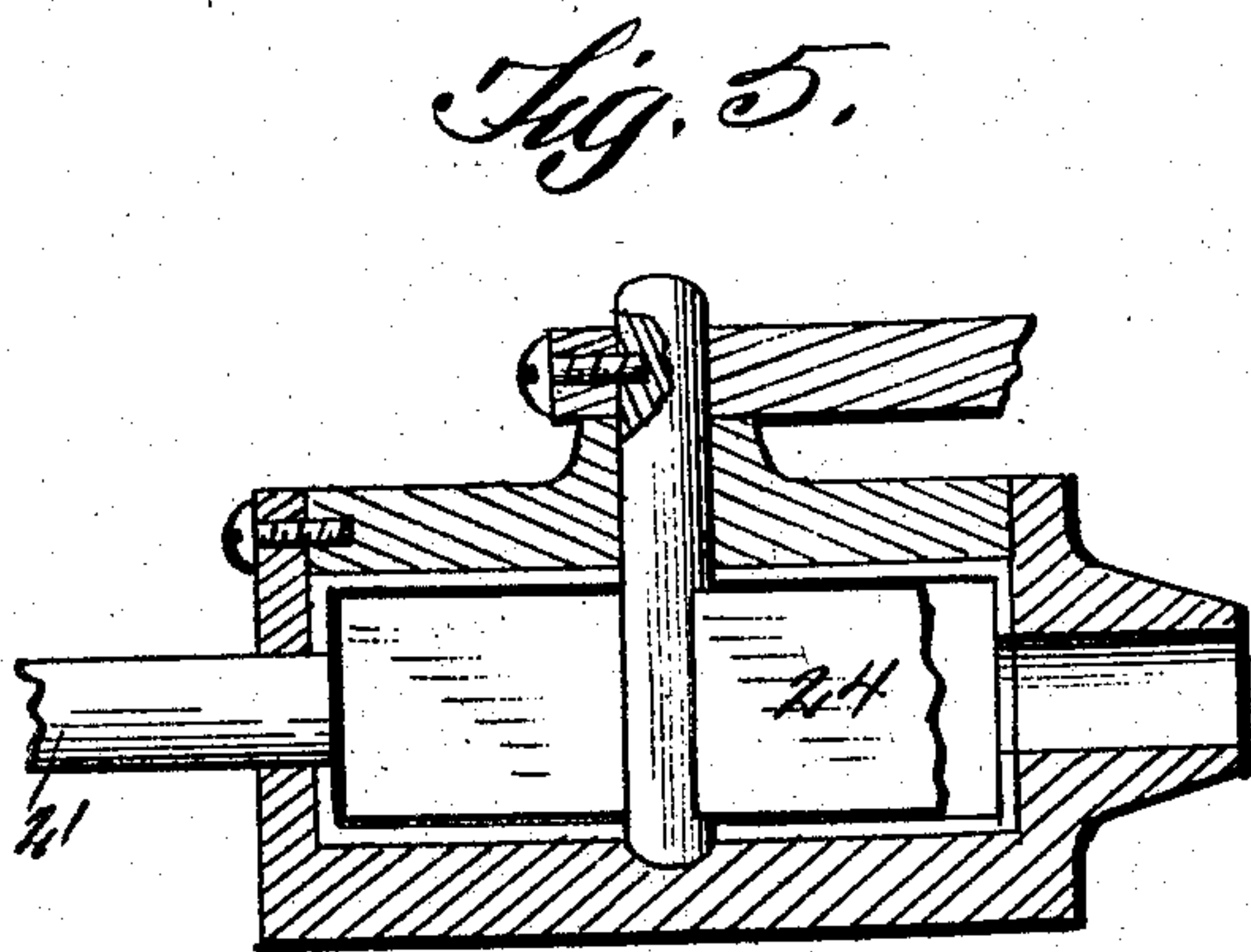
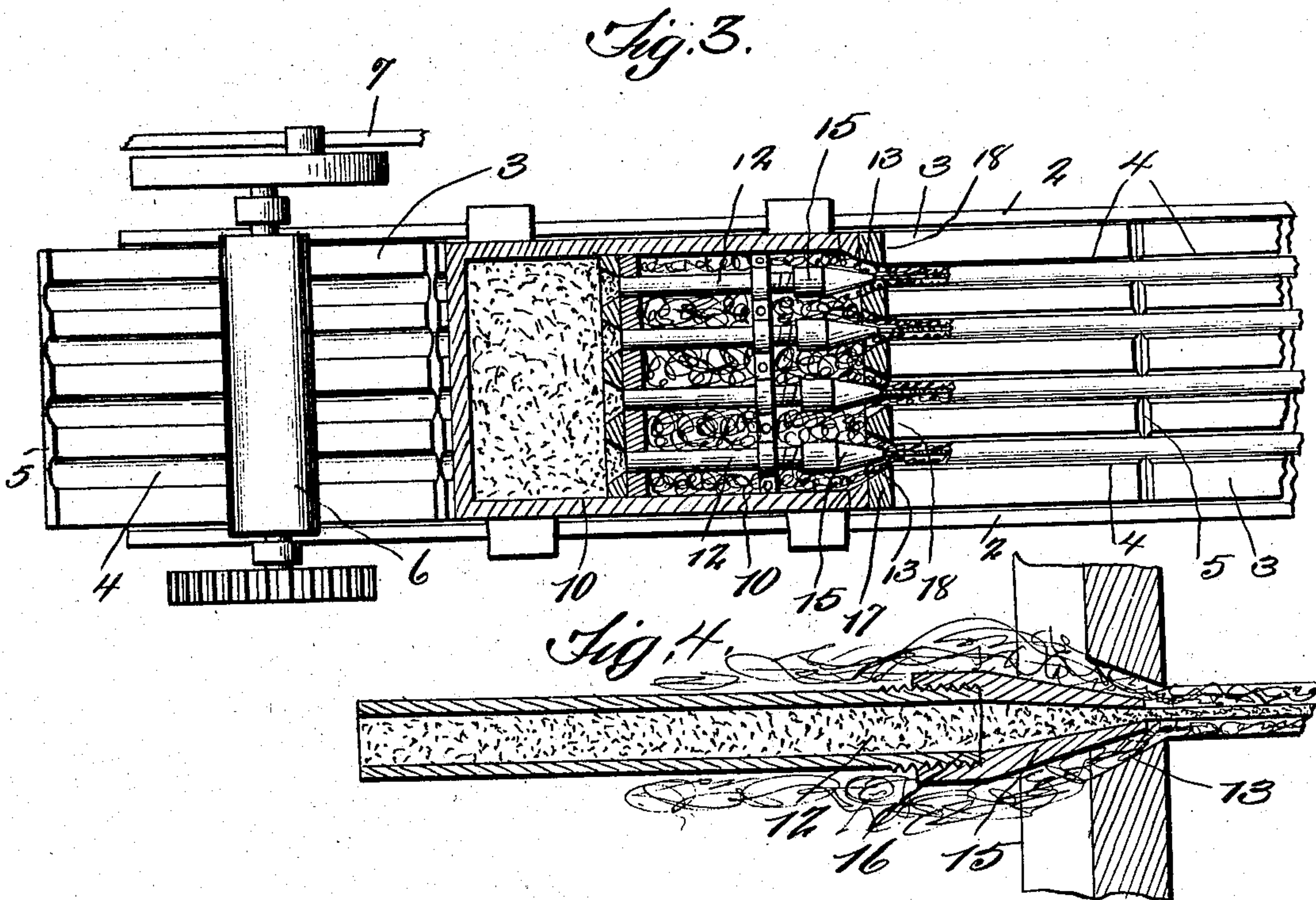
Attorneys

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UNITED STATES PATENT OFFICE.

RILEY H. HOWARD, OF RIVERSIDE, CALIFORNIA.

PENCIL-MAKING MACHINE.

936,722.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed March 11, 1908. Serial No. 420,330.

To all whom it may concern:

Be it known that I, RILEY H. HOWARD, a citizen of the United States, residing at Riverside, in the county of Riverside and State of California, have invented a new and useful Pencil-Making Machine; and I do hereby 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.

This invention pertains to a new and useful pencil making machine, and the invention in its broadest latitude creates an efficient and novel device of this nature, by which the lead of pencils is covered with paper pulp or other plastic material, at the same time the lead for the pencils is formed, as will be hereinafter set forth.

The lead, or graphite or other material for forming the core of pencils and the covering therefor, are formed in one substantially continuous length, and afterward cut in pencil lengths, that is after the pencils are pressed and finished for placement on the market.

A further object of the invention, consists in the process of forming the lead for pencils and the covering therefor, simultaneously and automatically, as will be clearly manifest.

The invention comprises further objects and combinations of elements, which will be hereinafter more fully described, shown in the accompanying drawings, and the novel features thereof will be pointed out by the appended claims.

To obtain a full and correct understanding of the details of construction, combination of features, elements and advantages, reference is to be had to the hereinafter set forth description, and the accompanying drawings in connection therewith, wherein—

Figure 1 is a side elevation of the pencil making machine, showing the same supported by an elongated table. Fig. 2 is a sectional view through the pencil making machine. Fig. 3 is a sectional view on line 3—3 of Fig. 2, clearly illustrating a plurality of lead forming tubes and their tapering nozzles. Fig. 4 is an enlarged detail sectional view of one of the lead forming tubes, shown in conjunction with one of the tapering apertures for forming the paper pulp around the lead, for forming a complete pencil. Fig. 5 is a detail sectional view of

the oscillating valve, for alternately allowing compressed air to enter the ends of the cylinders. Fig. 6 is a transverse sectional view through the valve casing and valve 24, as shown in Fig. 5.

Like reference characters are used, for indicating similar features and elements throughout the several views of the drawings.

In regard to the drawings, 1 designates the supporting table, which is provided with side flanges 2, between which the trays 3 are moved, which trays are provided with grooves 4, to receive the continuous lengths of pencils, as they emerge from the machine; the said trays have their adjacent edges beveled, as shown at 5, so as to allow of cutting the pencils in pencil lengths, by means of a cutting machine (not shown), as will be clearly manifest.

The trays are moved between the flanges by the rollers 6, which are rotated by means of a pitman rod 7, which is connected between one of the piston rods 8 and the disk 9, carried by the shaft of one of the rollers, as will be clearly seen in Fig. 2 of the drawings. The paper pulp or other plastic material and lead is to be of the proper consistency so as to be readily formed into pencils.

Positioned above the table and at one end thereof, so as to leave a space therebetween, through which the trays move, are the presses or chambers 10, in which the lead or graphite and the paper pulp or other plastic material is placed, for the purpose of being compressed by the pistons 11, which reciprocate therein, so as to force the same through the lead forming tubes 12 and the tapering apertures 13, which operation causes the pencils to be formed. As the pencils emerge from the presses or chambers, they are deposited automatically upon the trays, which move through the space between the chambers and the table, as will be clearly evident.

The pistons and their piston rods, in practice, are to be constructed so as to allow of the removal of the said pistons, so as to allow the chambers or presses to be cleaned. In the drawings, one form of construction for accomplishing the above object is shown at 14, but other forms, within the scope of the claims may be adopted, as will be clearly manifest. The speed of the pistons is to be regulated so as to coincide with the move-

ment of the trays, which receive the pencils as they emerge from the vats or presses. By forming pencils with this new and novel machine, seams are obviated, as will be observed. After the continuous lengths of pencil are formed, they are passed through rollers, (not shown) which will compress and polish them, after which they are in a condition to be cut in pencil lengths; in manufacturing pencils by this machine, the pulp is to be mixed with suitable color and sizing or cement, as may be desired, so as to provide proper consistency.

The lead forming tubes are provided with removable nozzles 15, so as to allow different sized nozzles to be connected to the tubes; this is for the purpose of manufacturing various sizes of pencils. These nozzles are connected to said tubes by means of threaded connections, as shown at 16; the said nozzles are positioned in close proximity to the tapering apertures 13, which are formed in the removable plate 17, which is secured to the side of the chambers or presses by means of screws or other suitable means 18, so as to allow the plastic material to readily form about the lead or graphite core, as will be clearly understood.

The piston rods 8 are provided with additional pistons 19, which are operable within the piston cylinders 20, into which compressed air is forced, so as to reciprocate said pistons. The compressed air is supplied from any suitable source, (not shown) and enters the cylinders through the pipes 21, as indicated by the arrows, which pipes 21 communicate with the branch pipes 22, as clearly shown; at the junction of the pipes 21 and 22, oscillating valves 24 are provided which allow compressed air to act upon one face and then the other, of the said pistons 19, so as to impart reciprocatory movements thereto. These valves may be operated by hand or other suitable means, but as shown said valves are operated by the piston rods 8, through the medium of a connection therebetween, as at 23, as clearly illustrated in the drawings.

From the foregoing, the essential features, elements and the operation of the device, together with the simplicity thereof, will be clearly apparent.

Having thus described the invention, what is claimed as new and useful by the protection of Letters Patent, is:—

1. In a pencil making machine, a table having flanges, a casing comprising two chambers disposed above the table leaving a space therebetween, one of said chambers designed to contain plastic material while

the other chamber contains lead or graphite, the chamber containing the graphite having a plurality of pencil lead forming tubes projecting therefrom and through the plastic material of the other chamber, said chamber containing the plastic material having a plurality of tapering apertures through which the plastic material is forced so as to form a covering for the pencil lead, said pencil lead forming tubes having their mouths of their end portions disposed within said apertures, said apertures and said end portions of the said tubes having spaces therebetween, so as to allow the plastic material to emerge therefrom and about the pencil lead, a plurality of trays movable upon the table between said flanges and through said space so as to receive the pencils, rollers to cooperate with the trays, pistons having rods to act upon the lead or graphite and the plastic material, and means actuated by said rods to actuate said rollers so as to move the trays.

2. In a pencil making machine, a table having flanges, a casing comprising two chambers disposed above the table leaving a space therebetween, one of said chambers designed to contain plastic material while the other chamber contains lead or graphite, the chamber containing the graphite having a plurality of pencil lead forming tubes projecting therefrom and through the plastic material of the other chamber, said chamber containing the plastic material having a plurality of tapering apertures through which the plastic material is forced so as to form a covering for the pencil lead, said pencil lead forming tubes having removable nozzles having their mouths disposed within said apertures, the chamber containing the plastic material having a support for said pencil lead forming tubes, said apertures and the said nozzles having spaces therebetween, so as to allow the plastic material to emerge therefrom and about the pencil lead, a plurality of trays movable upon the table between said flanges and through said space so as to receive the pencils, rollers to cooperate with the trays, pistons having rods to act upon the lead or graphite and the plastic material, and means actuated by said rods to actuate said rollers so as to move the trays.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RILEY H. HOWARD.

Witnesses:

PRIESTLEY HALL,
AGNES O. HALL.