

No. 806,269.

PATENTED DEC. 5, 1905.

H. J. LEDERER.

VIBRATORY DISTRIBUTER FOR PRINTING PRESSES.

APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 1.

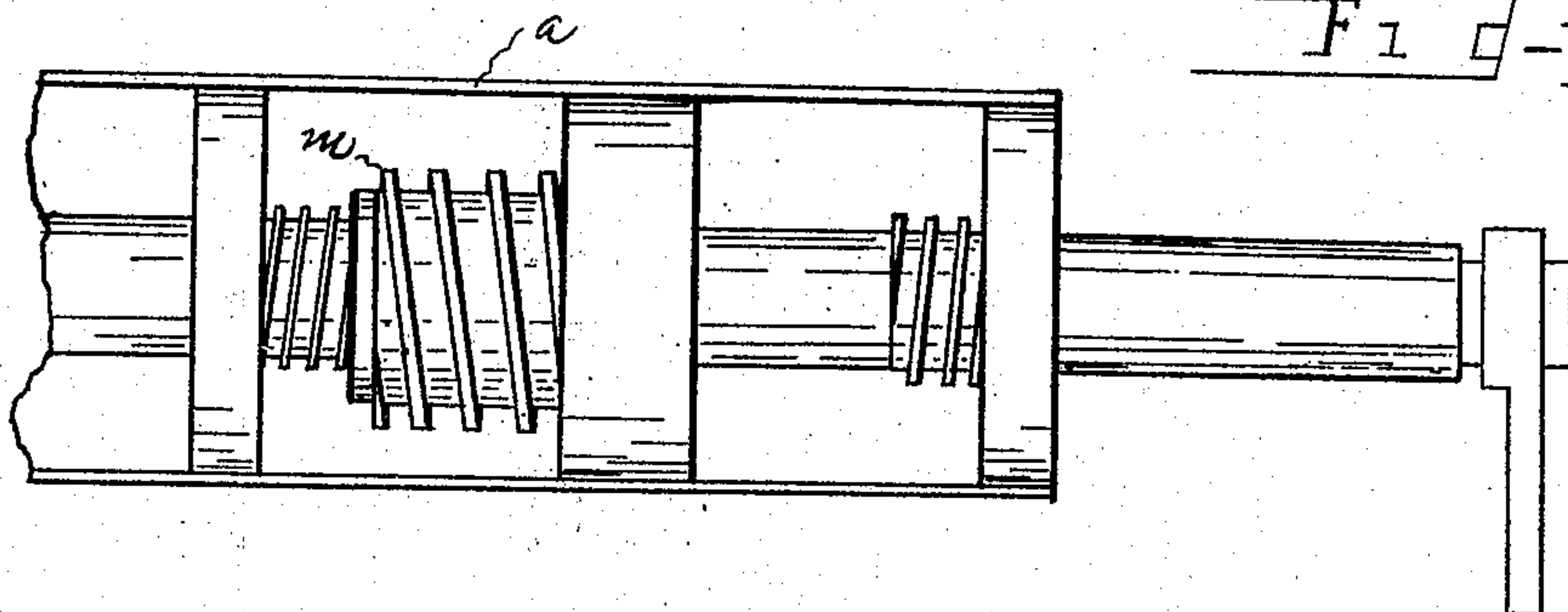


Fig. 1—

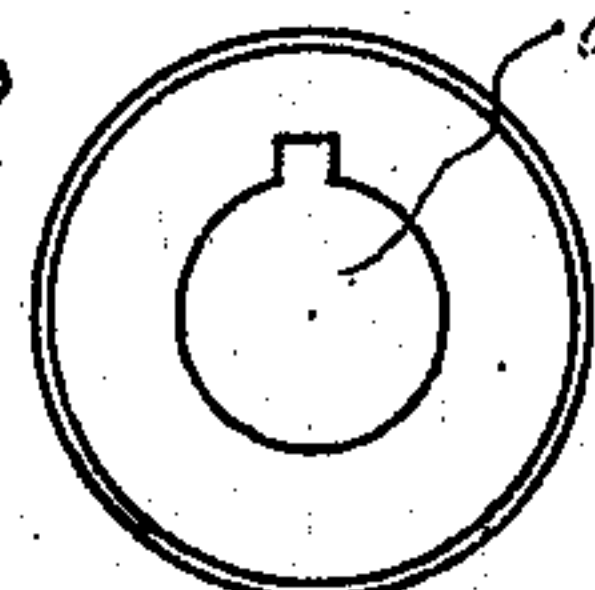


Fig. 3—

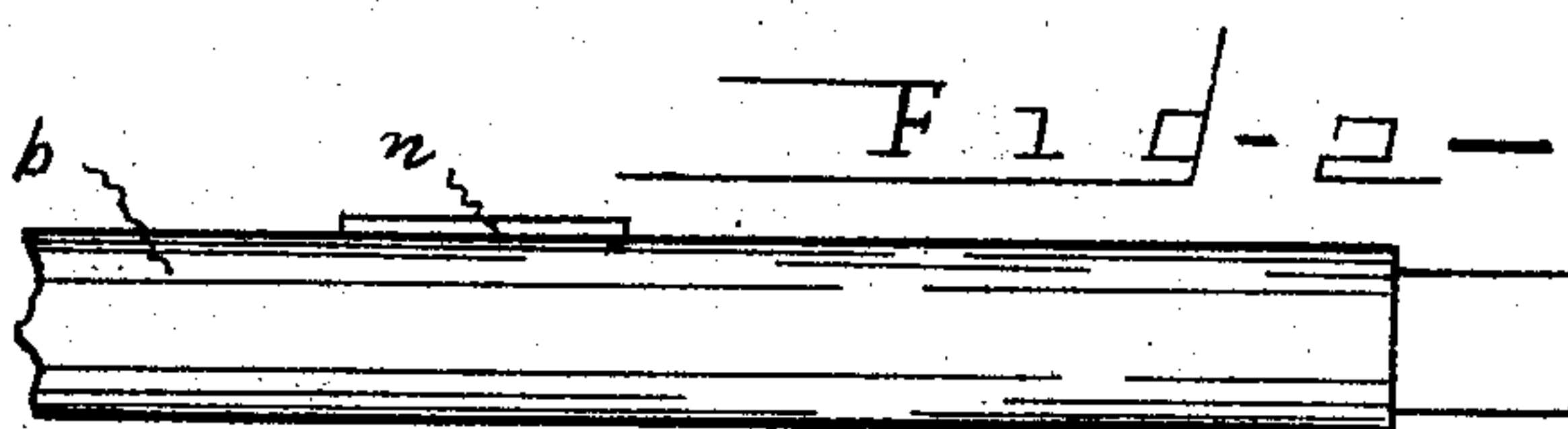


Fig. 4—

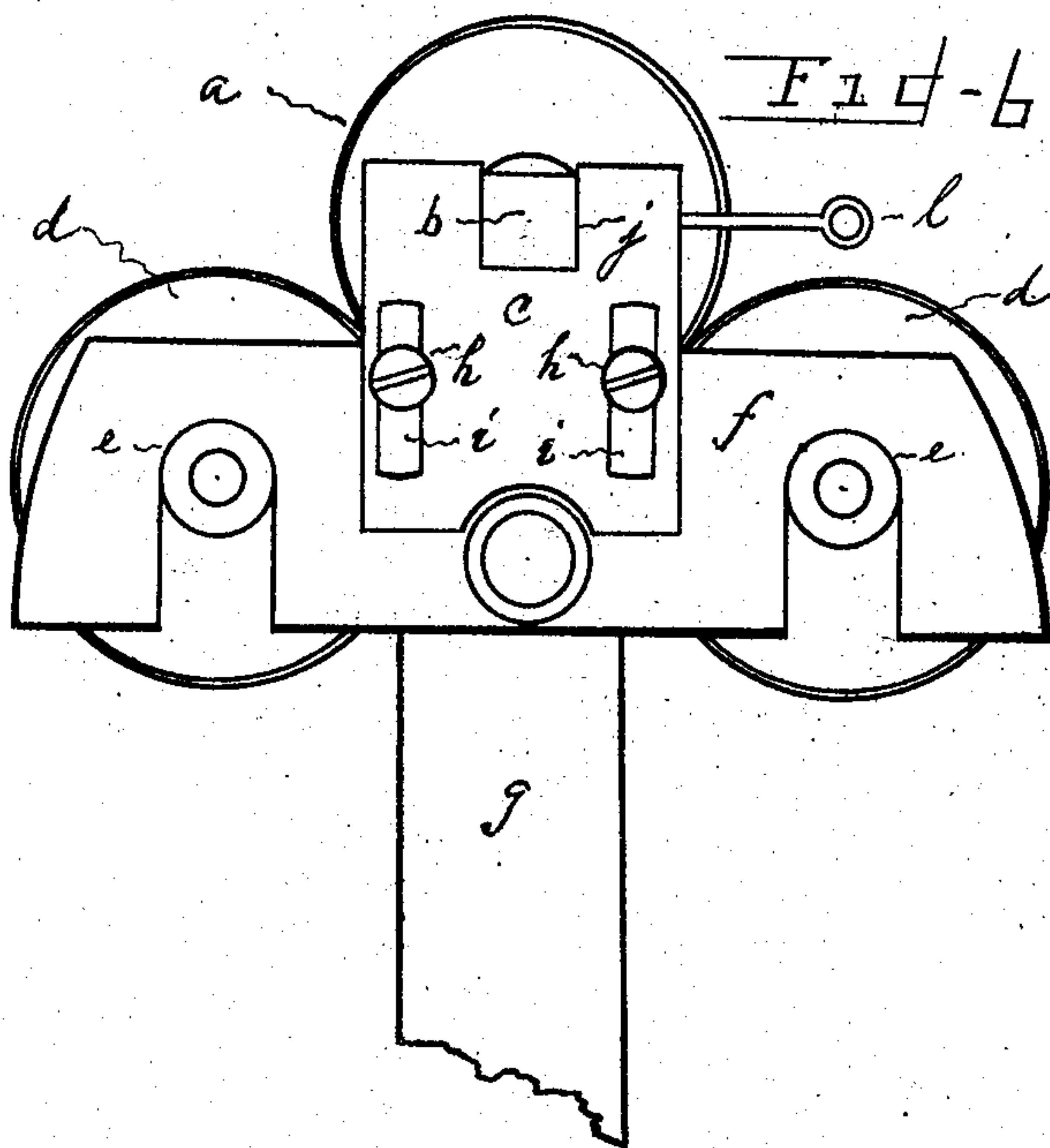


Fig. 5—

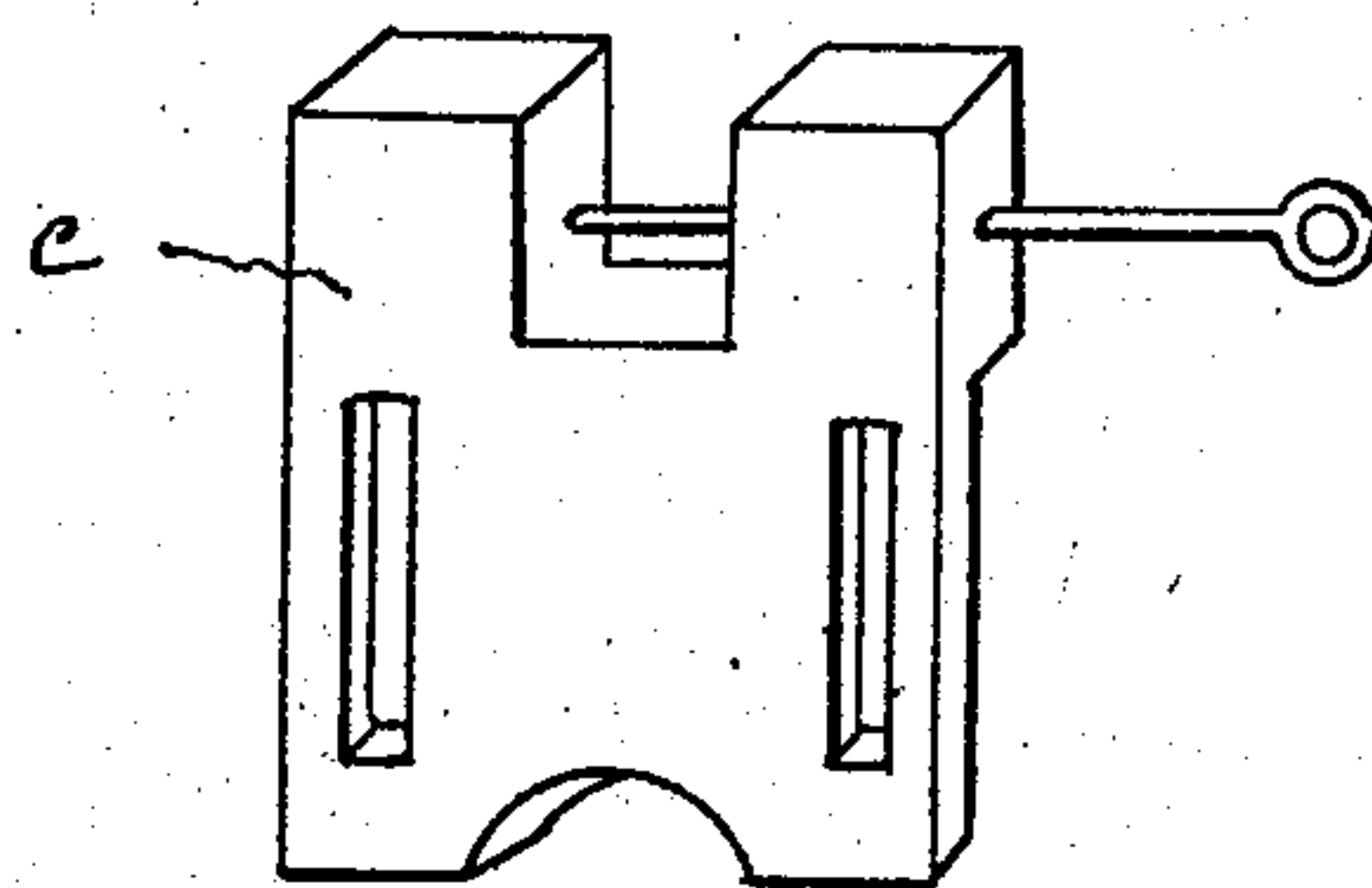


Fig. 6—

Witnesses

W. H. Gates,
Frederic Baer

Henry J. Lederer, Inventor

By

Hiram A. Sturges,
Attorney

No. 806,269.

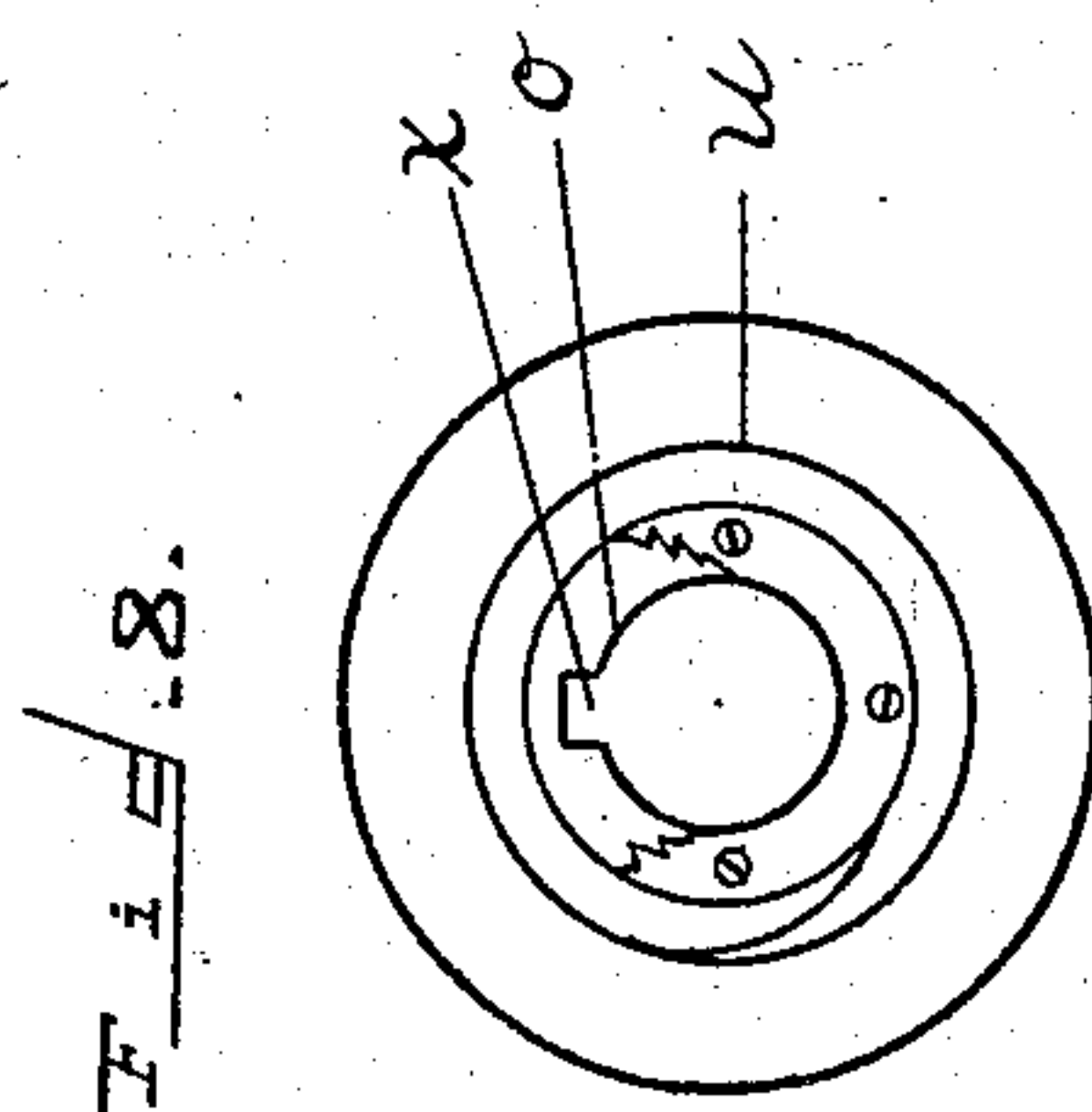
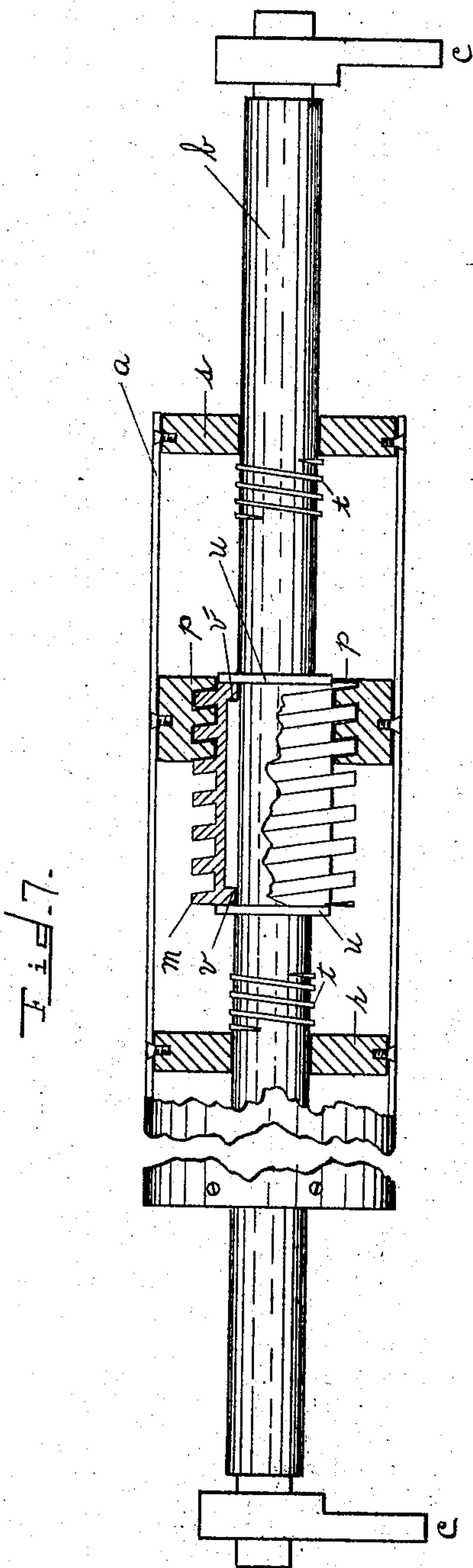
PATENTED DEC. 5, 1905.

H. J. LEDERER.

VIBRATORY DISTRIBUTER FOR PRINTING PRESSES.

APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 2.



Witnesses

Arthur Sturges.
Charles T. Wilkinson

Henry J. Lederer
Hiram A. Sturges
Attorney

UNITED STATES PATENT OFFICE.

HENRY J. LEDERER, OF OMAHA, NEBRASKA.

VIBRATORY DISTRIBUTER FOR PRINTING-PRESSES.

No. 806,269.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed March 6, 1905. Serial No. 248,734.

To all whom it may concern:

Be it known that I, HENRY J. LEDERER, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Vibratory Distributers for Printing-Presses, of which the following is a specification.

My invention relates to that class of ink-rollers for a printing-press known as a "vibratory distributor," or an ink-roller having a lateral as well as a rolling movement while coacting and making contact with one or two other ink-rollers.

The object of my invention is to provide a means for the attainment of a lateral movement of an ink-roller mounted upon the double ink-roller of a Gordon or similar printing-press, so that the amount of printing-ink coming upon the surfaces of the double roller, by use of my invention, will be equalized and fully distributed thereon and will therefore come upon the type-surfaces in a smooth and even supply.

Another object in the attainment of this purpose is to construct the same so that my invention will be inexpensive, comparatively speaking, and in a manner to economize space.

With these objects in view my invention consists of a cylinder and mechanism constructed therein and thereon composing a vibratory distributor for the above purposes embodying novel features of construction and arrangement of parts, substantially as disclosed herein.

In the drawings like letters of reference indicate like parts throughout the several figures.

Figure 1 represents a side view of my vibratory distributor with part of the cylinder-walls cut away to illustrate its interior construction. Fig. 2 represents a part of the horizontal shaft, showing the lug *n* and axial extremity. Fig. 3 shows an end view of the worm with longitudinal shaft-chamber *o*. Fig. 4 is a perspective view of the standard for supporting the horizontal shaft upon the roller-saddle. Fig. 5 is a sectional view of the cylinder-section with curved grooves therein. Fig. 6 illustrates the method of attachment of my invention upon the saddle-roller of a printing-press and its relative position with reference to the double ink-rollers when mounted for operation. Fig. 7 is a detail of Fig. 1, showing a sectional view of the grooved cylinder-section; and Fig. 8 is an end

view of the cylinder-section inclosing the worm, the supporting-ring *u*, and lug-chamber *x*.

In my invention I use a hollow tube or cylinder *a*, preferably constructed of metal, with closed ends and free to roll upon a horizontal shaft *b*, and mount the same upon the standard *c*, as shown in Fig. 6. In Fig. 6 the double ink-rollers *d d* are positioned in their bearings *e e* upon the roller-saddle *f* and are free to roll and receive their rolling movement from friction of these rollers upon the roller-bearers, type-chase, and inking-disk used upon the Gordon press and other printing-presses of that class, the saddle-rollers receiving their forward and backward movement from the driven shaft *g*, and I mount my newly-invented vibratory distributor upon the roller-saddle *f* by means of standards *c*, adjustably attached thereto by means of the screws *h h* and the slots *i i*. The shaft *b* is squared at either end and has its stationary bearing upon the standards, as shown by the mortised portion at *j* of the standard *c*, and the key *l*. My vibratory distributor receives its rolling movement about its shaft-center from frictional contact of its outer surface with the surface of rollers *d d*.

In order that my vibratory distributor may also have a lateral movement while revolving, I mount a worm *m* upon one end of the shaft *b*, as shown in Figs. 1 and 7. This worm is constructed non-revoluble upon the shaft *b* by means of the lug *n* thereon, fitting within the lug-chamber *x* of the worm. The worm has a slight lateral movement upon the shaft *b*, for the reason that the lug is of a less length laterally than the lug-chamber *x*, within which the lug is confined. The lug-chamber is closed at either end of the worm by means of the supporting-rings *u u*, securely screwed to the ends of the worm, as shown by Fig. 8. Upon the inner walls of the cylinder *a* I construct integrally therewith a threaded or grooved section *p*, so that when the cylinder is revolved backward or forward it will have a revolving movement with the cylinder and also a corresponding lateral movement upon the worm. I also construct within the cylinder the vertical walls *r* and *s* integral with the shell of the cylinder and place upon the shaft *b* the spiral springs *t*, and upon the ends of the worm I construct the supporting-rings *u*.

In operation when the roller-saddle is moved forward the friction upon the roller-surface of my vibratory distributor causes it to revolve

about the shaft b in one direction, and as the spiral ribs of the worm engage the corresponding grooves of the cylinder-section the cylinder itself is moved laterally in a steady motion and continues this lateral movement until the grooved portion of the cylinder-section rests upon the opposite supporting-ring of the worm, at which time the lateral movement ceases, but the cylinder continues to revolve so long as the forward motion of the roller-saddle is continued. While resting upon the supporting-ring in this manner the spiral spring upon the opposite end of the worm is exerting a lateral pressure, so that the end of the worm is pressed against the engaging grooves of the cylinder-section ready for the return sweep of the saddle, and by this continued pressure, upon commencing the reverse or backward movement of the roller-saddle, the engagement of the spiral ribs of the worm within the grooves of the cylinder-section at the opposite end of the worm for the opposite lateral movement of the cylinder is made certain. The spiral springs thus come into alternate use to insure this lateral engagement and consequent lateral movement first in one direction and then the reverse. The spaces v and v' within the chamber x permit a slight lateral movement of the worm upon the shaft b and permit the pressure of the spiral springs to become effective in causing the close contact of the threads of the worm with the grooves of the cylinder-section to produce the immediate engagement of these parts at the moment when the reverse sweep of the roller-saddle begins.

It is apparent that by the use of the mechanism and the arrangement of parts herein disclosed my vibratory distributor will have a free rolling movement upon its shaft-center and will have a lateral movement equal in extent to the added lengths of the worm and cylinder-section during each forward or backward sweep of the saddle upon which it rides and that the extent of the lateral movement may be varied by simply increasing or decreasing the lengths of the worm or cylinder-section. It is also obvious that the contact of the engaging threads and corresponding grooves of the worm and cylinder-section is certain at the moment of reversal in the forward and backward movement of the saddle-roller and that there will be no locking of parts.

Since the surface of the cylinder at all times makes contact with and revolves upon the surfaces of its companion rollers and has a lateral movement, the supply of printing-ink will be equalized and uniformly spread upon the rollers which make contact with the type. I have shown and described my invention as making surface contact with two companion ink-rollers upon the roller-saddle; but it will be operative when made to contact with a single ink-roller, and on account of the lateral

movement of the cylinder a it is evident that the operation of spreading and equalizing the supply of ink will be certain whether upon a single or double ink-roller. The mechanism in my invention is simple in construction, as is apparent, and effective for the purposes designed, is economical in space, and its principal working parts being within the cylinder are beyond the reach of external injury.

What I claim as my invention is—

1. In a vibratory distributor for a printing-press, a horizontal shaft, a cylinder free to roll thereon, a receiving-chamber within said cylinder, and, suitably disposed therein a section of said horizontal shaft, a worm mounted upon the shaft adapted to have a slidable but non-revoluble movement thereon, a grooved cylinder-section integral with the cylinder to engage the threads of the worm, means for causing and continuing the close contact of the threads of the worm with the grooves of the cylinder-section at the time of and after the cylinder-section has passed beyond their plane of engagement; said slidable movement of said worm upon the shaft being for the purpose of causing said means to be operative in continuing said close contact of the threads of the worm with the grooves of the cylinder-section at said time of and after said cylinder-section has passed beyond their said plane of lateral engagement; in combination with a companion ink-roller, a roller-saddle of a printing-press, and suitable means for mounting said shaft thereon.

2. The within-described vibratory distributor, consisting of a horizontal shaft mounted upon a roller-saddle, a cylinder, a receiving space or chamber within the cylinder, a worm and grooved cylinder-section within the receiving-space, said worm being mounted upon the shaft and having a lengthwise but non-revoluble movement thereon, said worm and cylinder-section to be operated by the rolling movement of the cylinder upon the shaft, and the suitably-disposed means within the receiving-chamber for causing a continued contact of the worm-threads with the grooves of the cylinder-section after they have passed out of their plane of lateral engagement; said lengthwise movement of said worm upon said shaft being for the purpose of causing said means to be operative in continuing said contact of the worm-threads with the grooves of the cylinder-section after they have passed out of their plane of lateral engagement; said vibratory distributor to contact with its companion roller when mounted upon a roller-saddle of a printing-press.

3. In a new article of manufacture, a vibratory distributor for a printing-press, consisting of a horizontal shaft, a worm and cylinder mounted upon said shaft, said cylinder being free to roll thereon, and suitably disposed therein a grooved cylinder-section integral with the cylinder and adapted to overlap the

threads of the worm, said worm locked upon the shaft but having a slight lateral motion thereon and so disposed that its threads engage the revolving and corresponding grooves of the cylinder-section, means for causing the close and continued contact of the threads of the worm with the grooves of the cylinder-section at the time of and after the cylinder-section has passed beyond its plane of lateral engagement with the worm-threads; said lateral motion of said worm upon said shaft being for the purpose of causing said means to be operative in continuing said close contact of the threads of the worm with the grooves of the cylinder-section at the time of and after the cylinder-section has passed beyond its plane of lateral engagement with the worm-threads; the cylinder to have surface contact with a companion ink-roller, and the shaft carrying the cylinder to be suitably mounted with its companion roller upon a roller-saddle of a printing-press.

4. In a vibratory distributor for a printing-press, the combination of the shaft *b* mounted upon the roller-saddle *f* by means of the standards *e*, the cylinder *a* mounted upon said shaft and free to roll thereon; the companion rollers *d* being in frictional contact with said cylinder, the receiving-chamber within the cylinder and the therein-disposed grooved cylinder-section *p*, the shaft within said receiving-chamber, the threaded worm *m* non-revolubly locked thereon, the lug *n* with lug-chambers *x*, and spaces *v* and *v'* therein, the vertical walls *r* and *s*, the supporting-rings *u*, and springs *t* upon the shaft, substantially as shown and described.

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

HENRY J. LEDERER.

Witnesses:

ARTHUR STURGES,
F. QUIGLEY.