

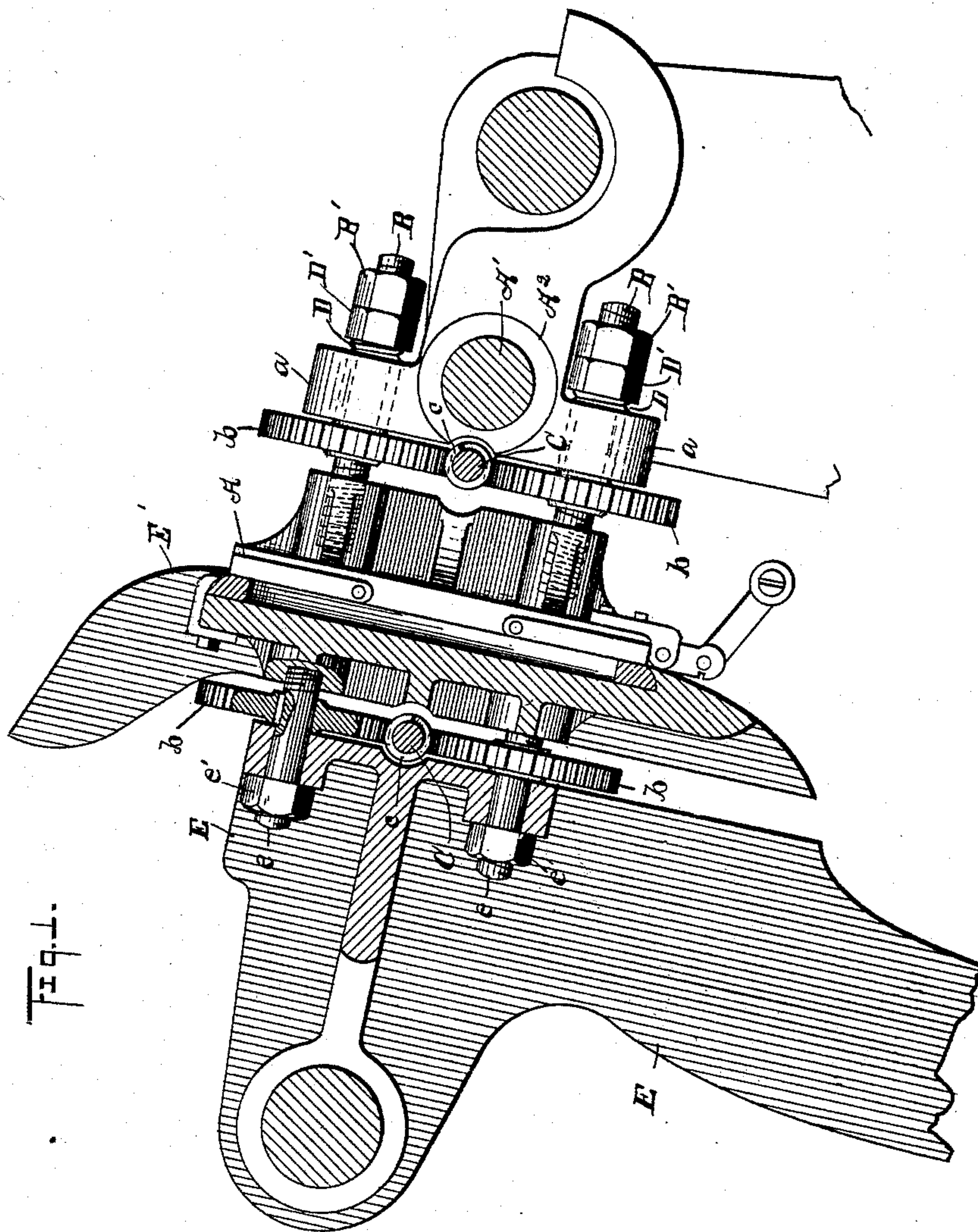
(No Model.)

2 Sheets—Sheet 1.

W. H. PRICE, Jr.
PLATEN PRINTING PRESS.

No. 523,006.

Patented July 17, 1894.



WITNESSES

Belk J. Lowe.

A. S. Lowrie.

INVENTOR

William H. Price Jr.

By Geo. W. King.

ATTORNEY.

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Fig. 2.

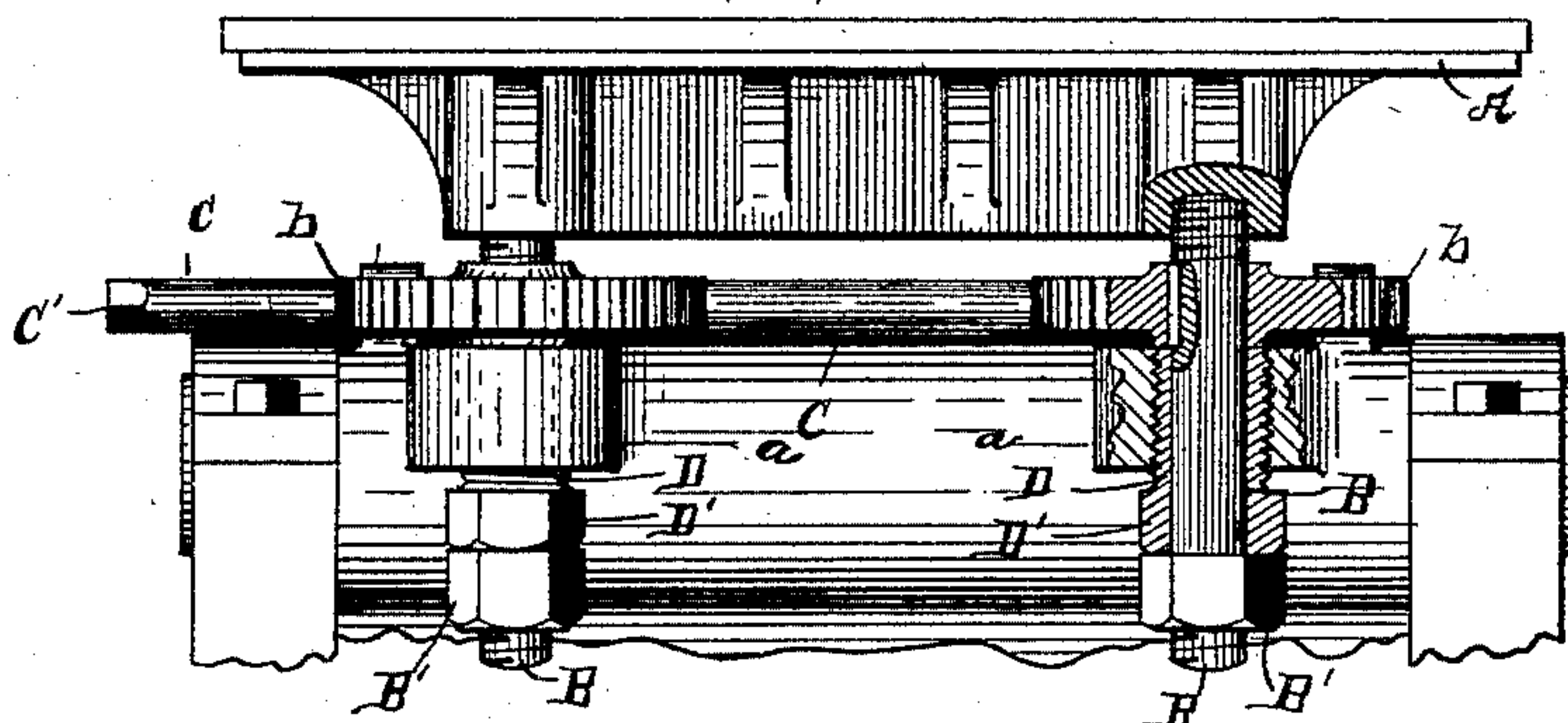


Fig. 3.

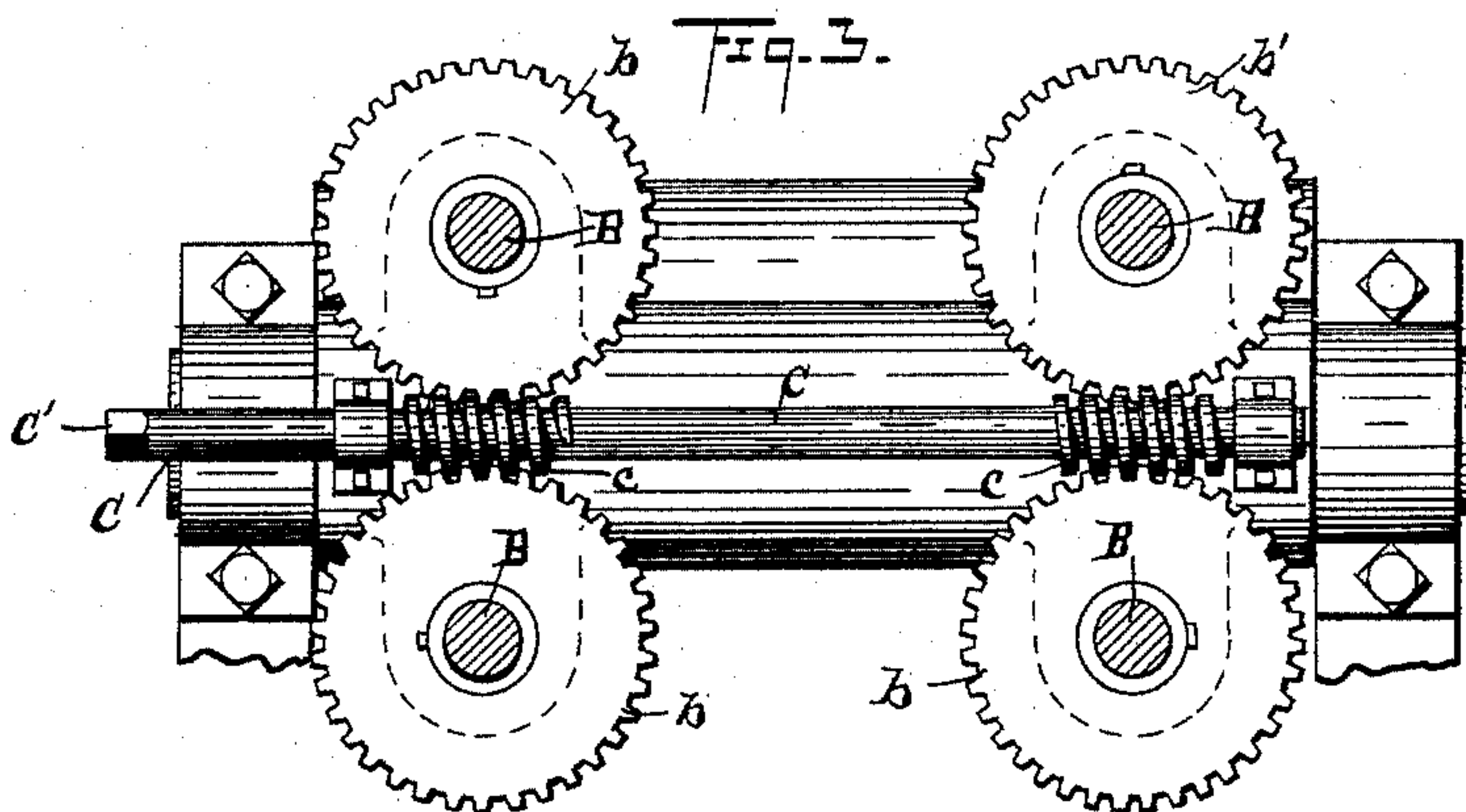


Fig. 4.

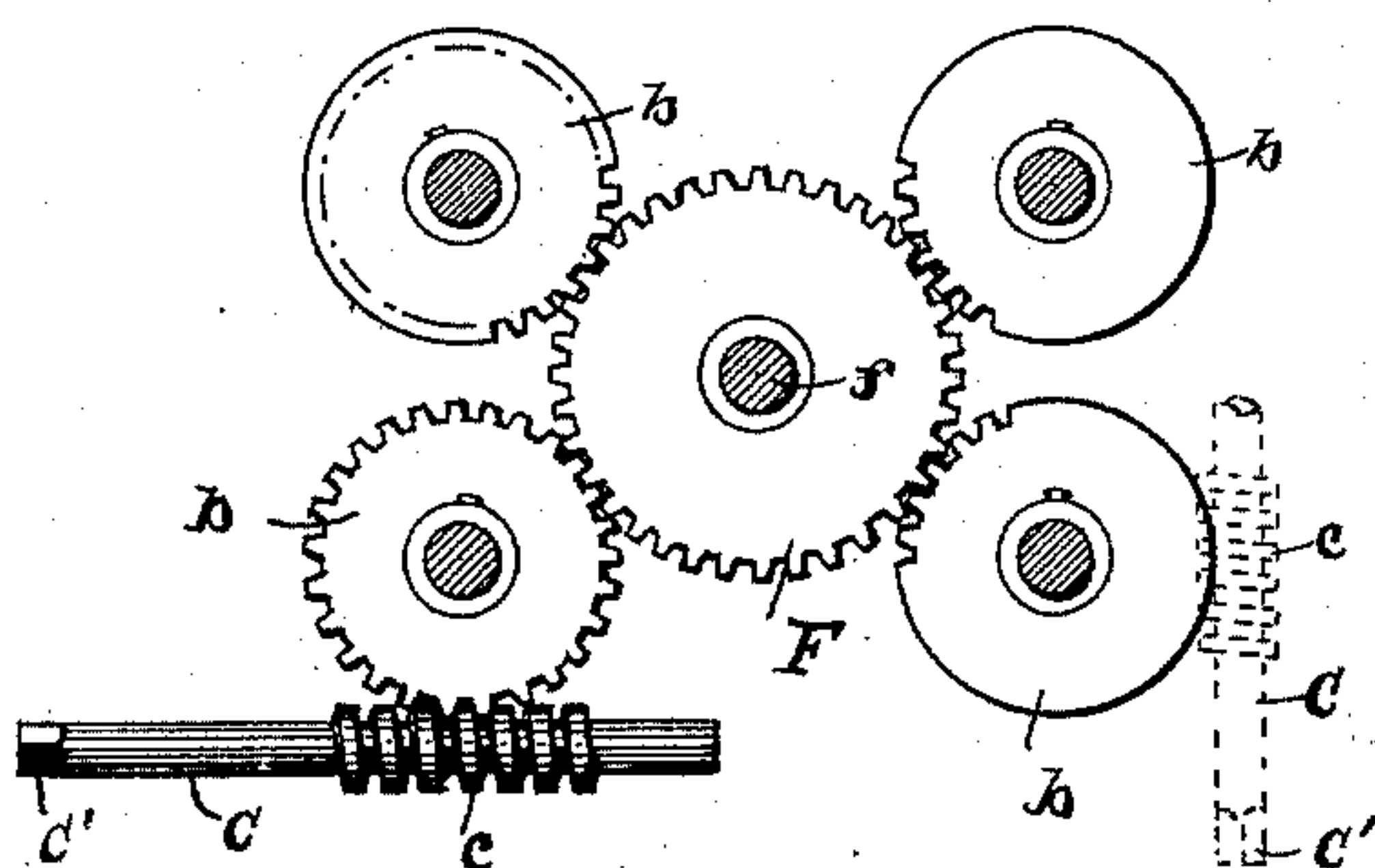
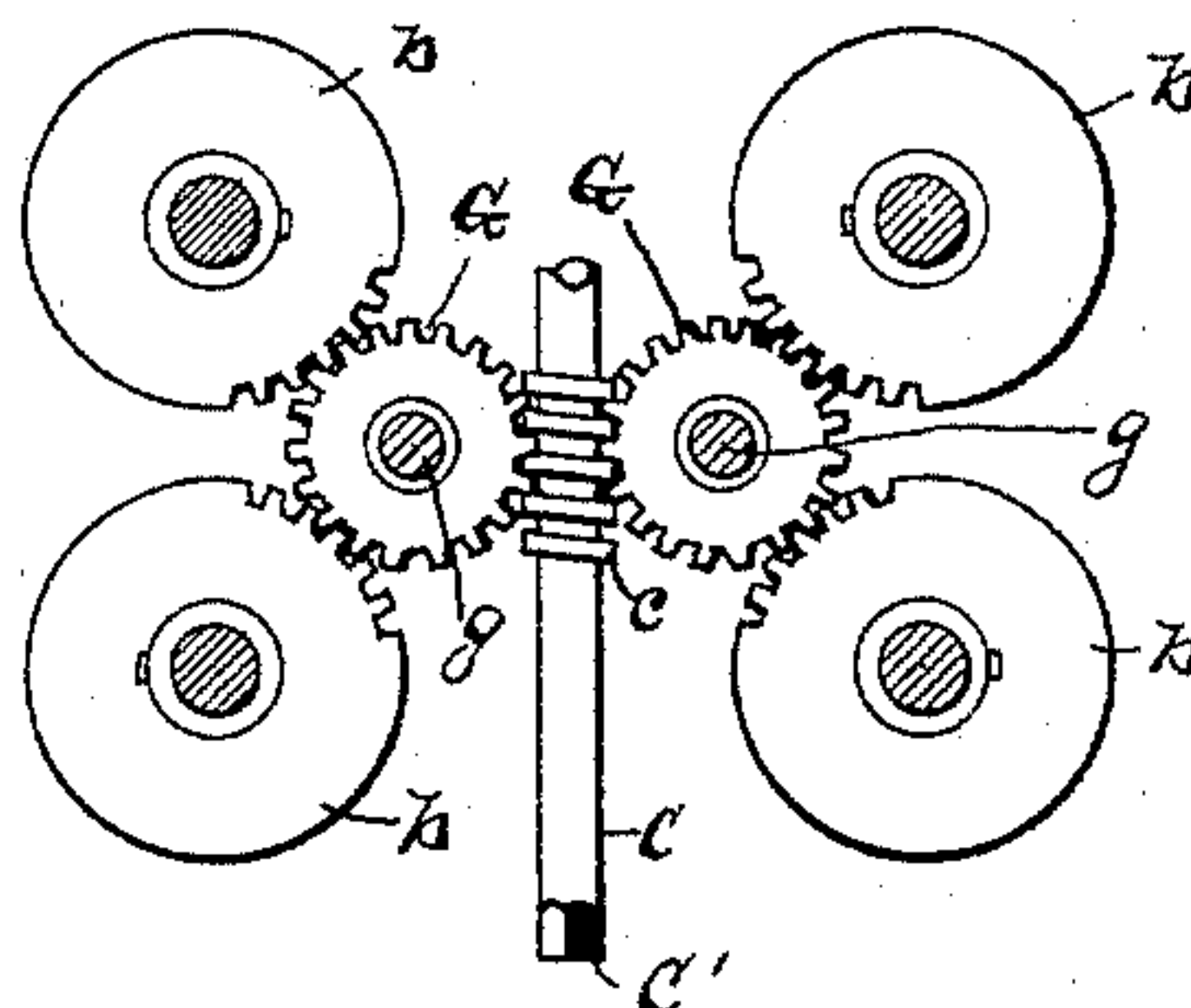


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM H. PRICE, JR., OF CLEVELAND, OHIO, ASSIGNOR TO CHANDLER & PRICE, OF SAME PLACE.

PLATEN PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 523,006, dated July 17, 1894.

Application filed November 29, 1892. Serial No. 453,547. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PRICE, JR., of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Platen Printing-Presses; 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 pertains to make and use the same.

My invention relates to improvements in platen printing presses, and more especially to mechanism for shifting the bed and platen toward and from each other, whereby may be effected by means of shifting either the bed, or the platen, such slight changes as would be necessary in printing paper of different thicknesses, or in printing alternately, paper and thin cardboard; and by shifting both the bed and the platen, greater changes can be effected, such as would admit of printing on heavy card-board or on bound pamphlets, &c. As my invention pertains only to the platen and bed and mechanism connected therewith, it is not considered necessary to illustrate or describe only these two members, and my improved attachments connected therewith, the general construction of the press being substantially as heretofore used.

In the accompanying drawings Figure 1 is a side elevation, partly in section of the bed and platen in position closed and with my improved mechanism attached. Fig. 2, is a plan of the platen and the so-called rocker, and my improved attachments. Fig. 3, is an elevation, showing the rocker and attachment with the platen removed, the securing bolts being shown in section. Figs. 4 and 5 are plans in detail of different trains of gearing, that may respectively be used to advantage in carrying out my invention, whereby the securing bolts of the platen or of the adjustable section of the bed, may be operated in unison by means of a single worm shaft.

A, represents the platen of the printing press, and A', the axle shaft thereof. Shaft A', bears a so-called rocker, the latter being constructed usually of cast iron and comprising a long sleeve A², usually "cast on" to

shaft A', this sleeve having integral ears *a*, usually four in number and arranged as shown in Fig. 1. The securing bolts B, are screw-threaded at each end thereof, and these bolts engage screw-threaded holes in the platen and extend into the platen some distance. Here- tofore these bolts extended loosely through holes in the respective ears *a* with nuts on either side of the ears, (see Fig. 1 of Patent No. 399,282, granted to me March 12, 1889,) and by manipulating these nuts the platen was adjusted toward or from the bed. It was a matter requiring considerable time and care to properly adjust the platen by such means.

Various devices have been provided for making slight adjustments of the bed or platen toward and from each other without disturbing the securing bolts, for instance see Patent No. 469,215 of February 16, 1892, and without losing the alignment of these members relative to each other.

My present invention for this purpose is as follows: Ears *a* are bored somewhat larger than bolts B, and these holes in the ears are screw-threaded to receive sleeves D, the sleeves being correspondingly screw-threaded externally. Each sleeve has a head or section D', fitted to engage a wrench, the heads being usually hexagonal. Bolts B extend with an easy fit through the bore of the respective sleeves D, and at the rear of a sleeve, each bolt is provided with a jam-nut as at B'. In Fig. 2 a bolt B is shown, that is supposed to be screw-threaded the entire length thereof.

The screw-threads along the central portion of the bolt are not wanted, but the bolts being short and the screw-threading having been done in a lathe, it was easier to cut the threads the entire length of the bolt, than to thread the two ends thereof separately. On each bolt next inside the sleeve is rigidly mounted a spur gear *b'*. The hub of each gear *b'*, is supposed to engage the inner end of the opposing sleeve D, and with the jam-nut (B') of the bolt, engaging the other end of the same sleeve, it is evident, first, that the bolt could be adjusted endwise by turning the sleeve on its axis, or second, that by turn-

ing all of the gears b' in unison, in the one direction or the other, the bolts would be screwed farther into or out of the platen, and in such case, each bolt being held by its sleeve from moving endwise, it follows that by turning these bolts on their axes, the platen can be moved toward or from the bed.

The manner of intergearing or connecting the different gears b' , so that they will turn in unison may be varied indefinitely, according to circumstances. For instance in Fig. 3, the four gears b' are engaged in pairs, and the two gears of a pair engage opposite sides of a worm c , the two worms having a shaft C in common. The one end of the shaft is squared as at C' , for engaging a wrench or key for turning the shaft whereby the gears b , are rotated in unison.

With the construction shown in Fig. 3, the bolts B on opposite sides of the worm must be respectively right and left handed where they screw into the platen.

In Fig. 4, the four gears b' , engage in common a gear F , the latter being journaled on stud f . With such construction the bolts all turn in one direction, and hence, these bolts are all screw-threaded alike, either right handed or left handed, as may be preferred. Also but one worm is required, and it may engage either of the gears, and the axis of the worm may be horizontal or vertical (see worms in solid and dotted lines), according to where it is most convenient to extend the worm shaft for accessibility in manipulating the same.

In Fig. 5, next adjacent gears b engage in common a gear G and these two gears G are engaged by the worm c . Each gear G is mounted on an axial stud g . With such construction the worm shaft can extend upward or downward to the edge of the platen whichever is most convenient but the worm shaft will be located at the lateral center of the platen. In this connection I will say I have no choice between the different arrangements shown, respectively in Figs. 3, 4, and 5, but use whichever arrangement is best adapted to the construction of the platen in regard to the arrangement of ribs, flanges, &c., of the platen. The bed I construct in two sections, E and E' , there being space enough between sections E and E' , for locating therein the gearing arranged in a similar manner to that already described in connection with the platen, that is to say, sections E and E' , are connected by bolts e . The one end of each bolt screws into a threaded hole in member E' , and the other ends of these bolts extend loosely through holes in member E , and the rear ends of the bolts are provided with nuts e' , these nuts engaging the rear side of member E . Each bolt e bears a gear b , the hub of which engages the front side of member E , and the four gears b are intergeared or operatively connected, substantially as in the case of the platen, so that by turning a rod as at

C , supposed to bear one or more worms c , for operating the train of gears, section E' of the bed may be moved toward or from the platen.

In constructing the different gears I make them flat faced instead of concaving the faces like ordinary worm gears, hence the worm will operate anywhere along the face of the gear, consequently it is not necessary for the worm to move sidewise to keep pace with the end movement of the holes and attached gears. However I cut the teeth on these gears with a slight spiral lead to correspond with the lead of the threads of the worm.

It will be borne in mind that it is intended, as aforesaid, to move the platen or the section E' of the bed, only a very short distance, and for ordinary work where only different thicknesses of paper and thin card board are used, it would not be necessary to have both the platen and bed section adjustable in the manner aforesaid, but it frequently occurs that a greater range of adjustment is required than could be had by adjusting the platen or the bed, alone.

As is well known manufacturers and wholesale dealers frequently have large numbers of pamphlets printed and bound to send their retail customers for distribution, and they wish to have the name of such retail customer printed on the outside of the cover of such pamphlet. In such cases very likely both the aforesaid adjustments would be required. In adjusting the press in the first instance the platen and section E' , of the bed, are first advanced toward each other almost their full throw. After this the sleeves D are adjusted to bring the platen and bed the required distance apart for printing, say thin paper such as used for ordinary printing, after which by means aforesaid, by backing the bed or the platen or both, these members are further separated as may be necessary, according to the work.

I may add that the gears b , F and g and the worms may be made and kept in stock in quantities, and used alike on the platen and the bed. Also the bed might be provided with sleeves D , but it is not necessary to have both the platen and the bed provided with these sleeves.

What I claim is—

1. In a printing press, the combination with the platen and rocker, said platen having screw-threaded sockets, of the externally threaded sleeves having nuts at their outer ends, screw-threaded bolts for engaging the sockets at one end and provided with nuts at the other end, the gear wheels mounted on the said bolts and the worm-gearing, whereby said gear wheels are operated simultaneously to adjust the platen, substantially as specified.

2. In a printing press, the combination with a bed constructed in two sections, one section having screw-threaded sockets, of the bolts

screw-threaded at each end for connecting
said sections, one end adapted to engage the
said sockets and the other end provided with
nuts, gear wheels rigidly mounted on said
5 bolts between the said sections, and interme-
diate inter-gearing worms whereby the gears
are operated simultaneously, substantially as
described and for the purpose set forth.

In testimony whereof I sign this specifica-
tion, in the presence of two witnesses, this 15th 10
day of November, 1892.

WILLIAM H. PRICE, JR.

Witnesses:

FRANK C. GREGG,
G. P. NASH.