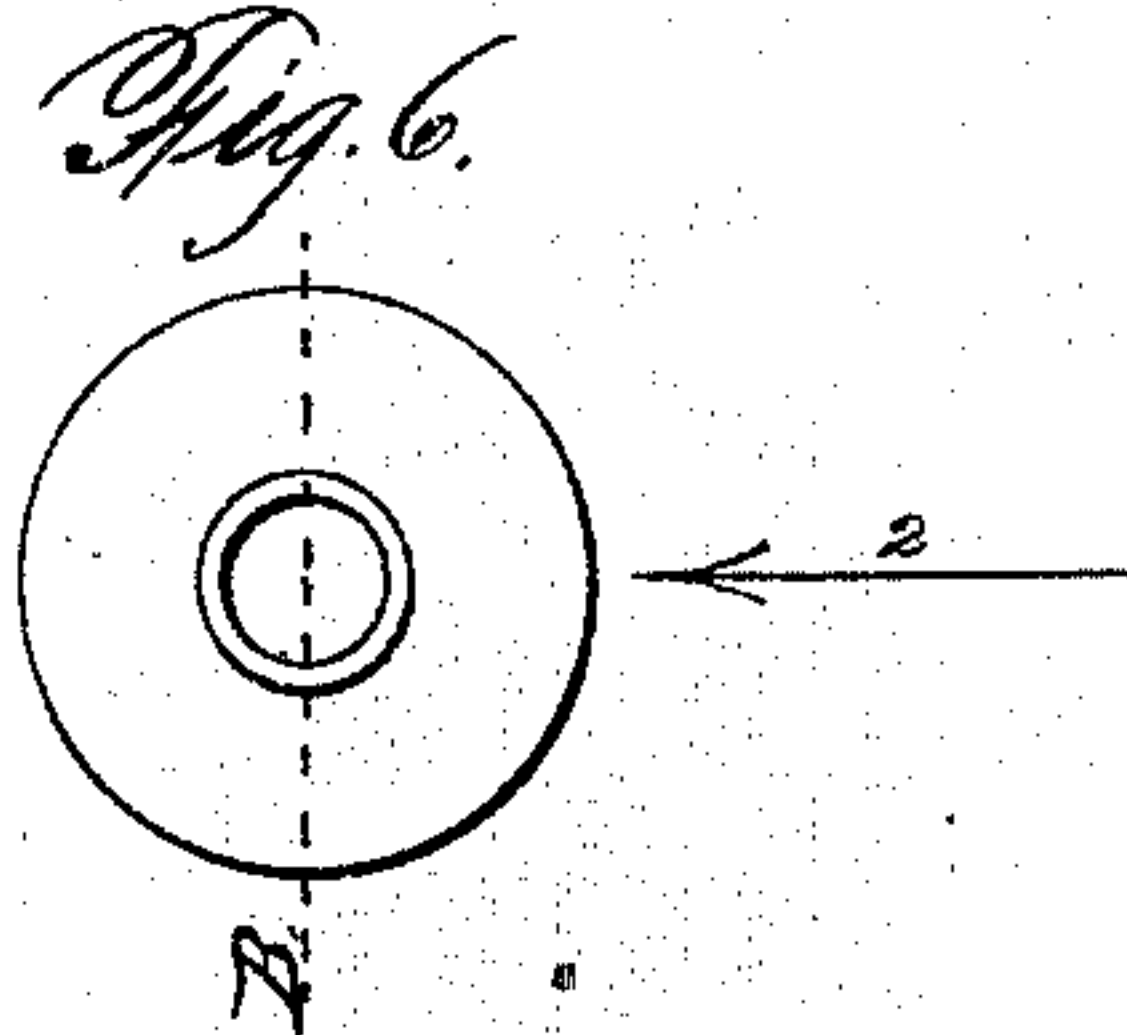
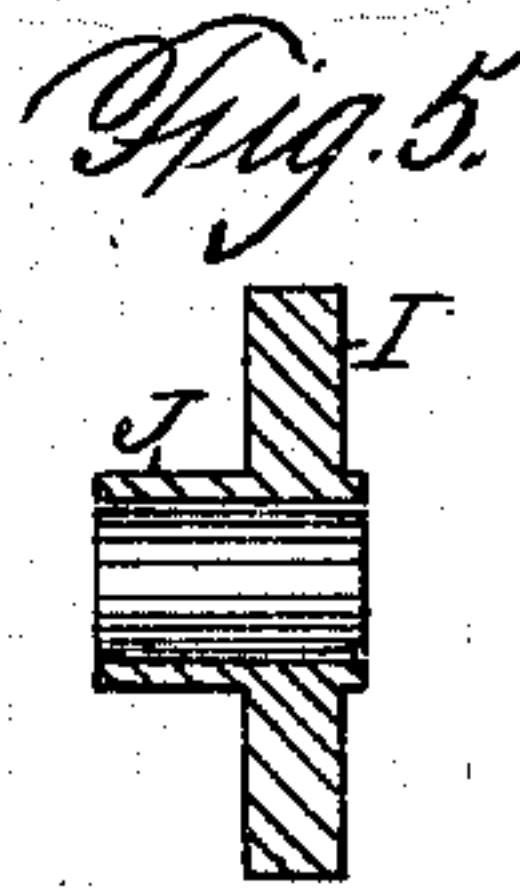
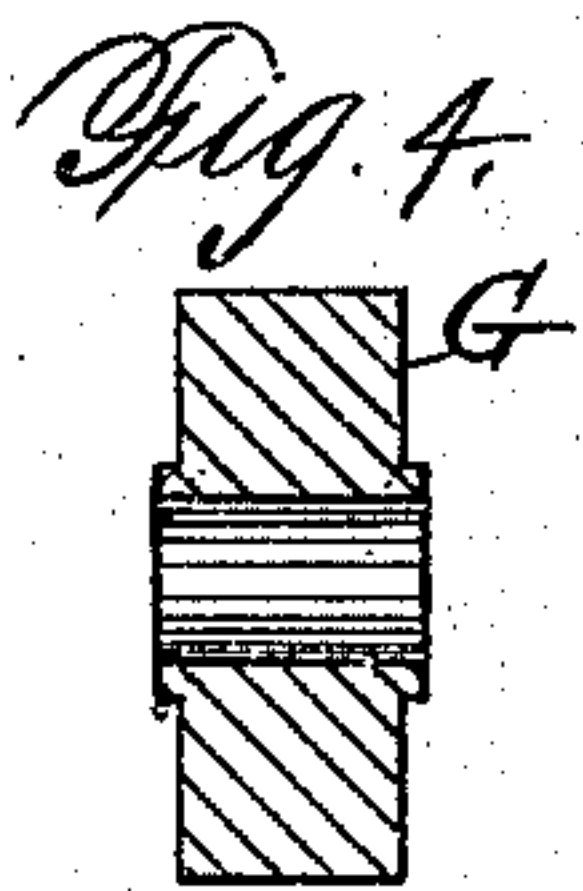
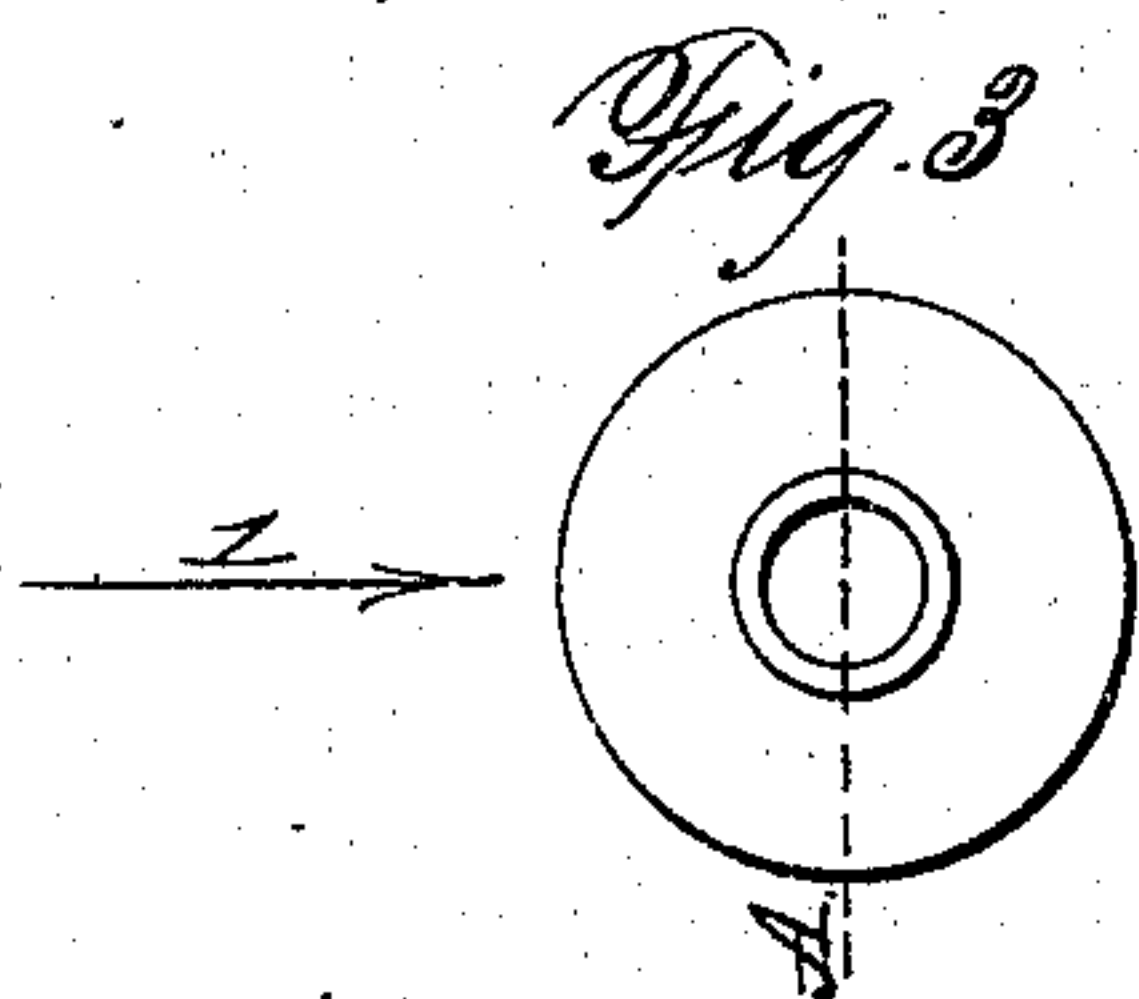
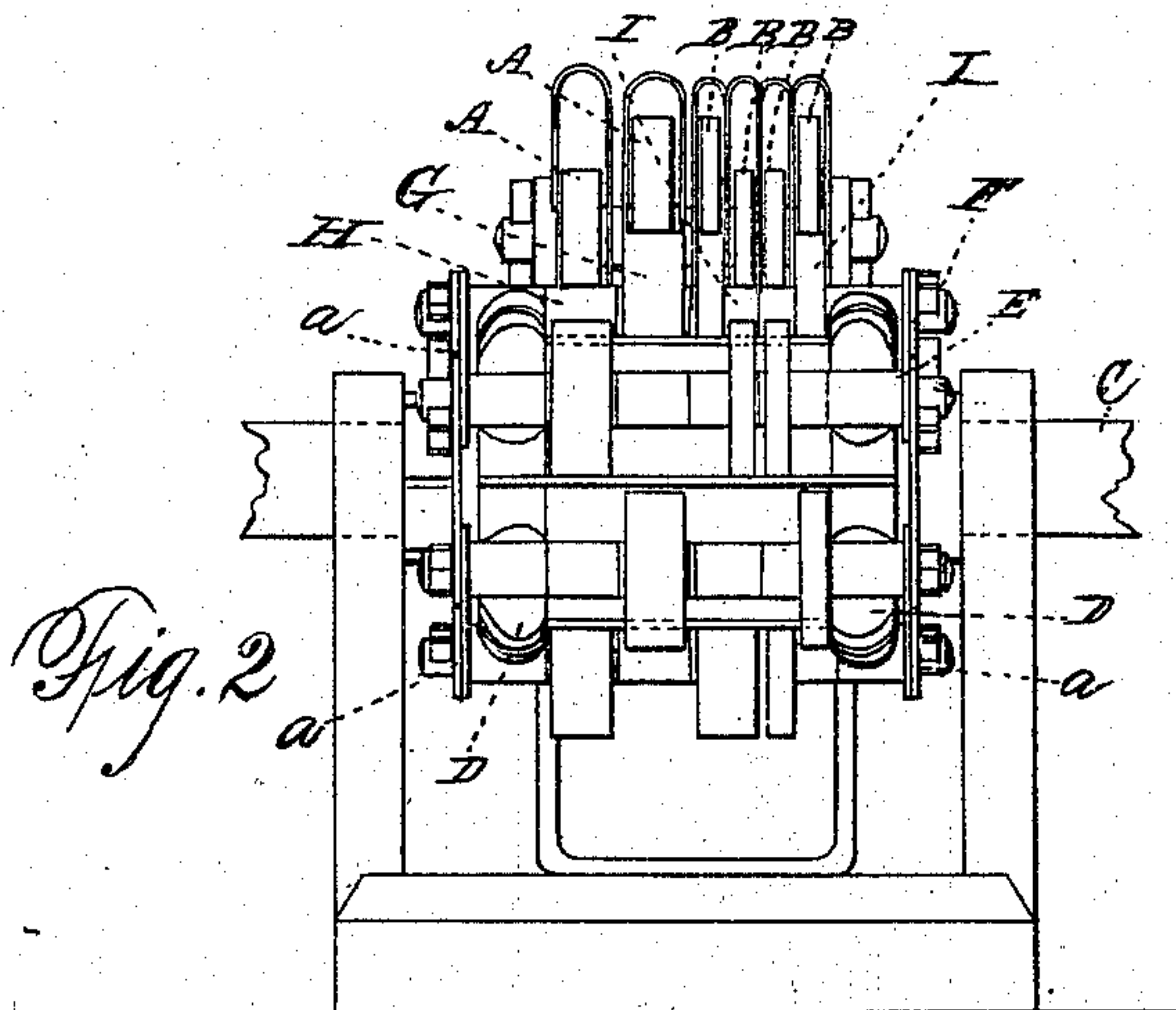
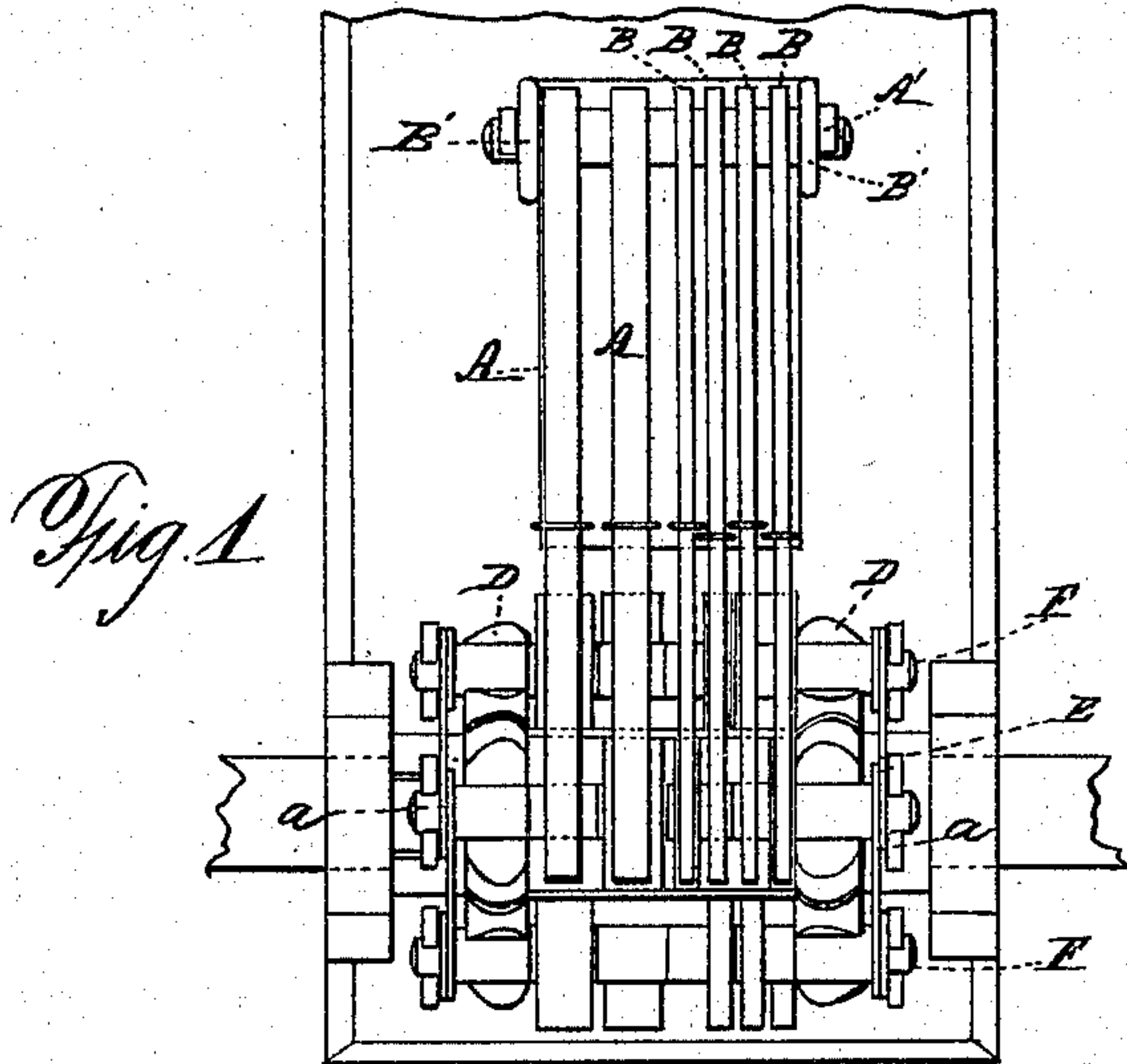


L. J. KNOWLES.

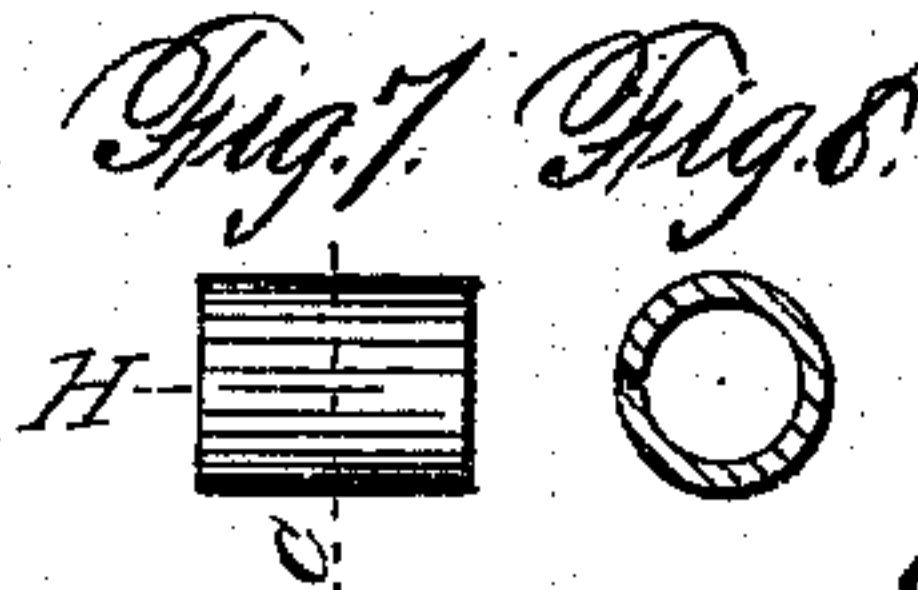
SHEDDING MECHANISMS FOR LOOMS.

No. 182,679.

Patented Sept. 26, 1876.



WITNESSES;
E. E. Moore
Thos. H. Dodge



INVENTOR;
Lucius J. Knowles

UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SHEDDING MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. 182,679, dated September 26, 1876; application filed July 12, 1876.

To all whom it may concern:

Be it known that I, LUCIUS J. KNOWLES, of the city and county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Shedding Mechanisms for Looms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a top or plan view of so much of a loom as is necessary to illustrate my present invention. Fig. 2 represents a front view of the parts shown in Fig. 1. Fig. 3 represents, on an enlarged scale, a side view of a single riser. (Shown in section in Fig. 4.) Fig. 4 represents a section of the single riser taken on line A, Fig. 1, looking in direction of arrow 1. Fig. 5 represents a section of a combined sinker and riser, taken on line B, Fig. 6, looking in direction of arrow 2. Fig. 6 represents also, on an enlarged scale, a side view of a combined riser and sinker. (Shown in section in Fig. 5.) Fig. 7 represents also, on an enlarged scale, a top or plan view of a single sinker, (shown in section in Fig. 8;) and Fig. 8 represents a section of a single sinker taken on line C, Fig. 7.

To enable those skilled in the art to which my invention belongs, to make and use the same, I will proceed to describe it more in detail.

The nature of my invention consists in the combination, in a fancy loom, of jacks of unequal thickness, as will be hereafter explained; and also in the combination, with the operating harness-jacks, of combined risers and depressors, as will be hereafter explained; and also in the combination, in a pattern-chain, of combined risers and depressors with single risers and depressors, as will be hereafter explained.

In the drawings, the parts marked A and B represent so much of the harness-jacks of a fancy loom as is necessary to illustrate my present invention, so far as the combination in a fancy loom of jacks of unequal thicknesses are concerned, as will be more fully described hereafter, said jacks being hinged or arranged to turn upon a spindle, A', in suitable bearings B'. Upon shaft C is ar-

ranged a series of notched hubs, D, which support and carry the pattern-chain E, composed of a series of rods or bars, F, having their ends united by link or chain pieces a, and having single risers G, single depressors H, and combined risers and depressors I and J arranged thereon, as indicated in the drawings, or such risers and depressors may be arranged in different orders, as may be desired by the manufacturer.

Prior to my present invention, manufacturers had experienced many difficulties in their attempts to make a loom having a large number of harnesses and jacks, the same being comprised within a comparatively narrow width, as their efforts proceeded upon the plan of making the jacks of uniform width. If the jacks were made thin, those which were subjected to the greatest strain—that is, those required to lift the greatest number of heddles—were liable to break or give out, while the narrow risers, not having sufficient bearing upon their bars F, were liable to have an injurious lateral motion, thereby rendering the action of the jacks uncertain and defective.

By my present invention, these and other objections are overcome, since, by combining jacks of unequal thicknesses, as shown at A and B, I can increase the number of jacks in a given width without materially impairing the operative strength of the loom, since the thin jacks are employed to lift and operate the least number of heddles, which require but little power and strength, while the thick jacks are employed to operate the greatest number of heddles. Then, in regard to the narrow risers I, I combine with each of such risers a narrow depressor, J, as fully represented in Figs. 5 and 6, whereby the narrow risers which operate the thin jacks run as steadily and truly as the common thick risers G, as those skilled in the art will perceive, when it is observed that the combined width of the bearing of a narrow riser, I, and narrow depressor J, upon the rod F, is equal to the bearing of a common wide riser, G, or depressor H. When a single line of pattern-chain is to be arranged for operating a line of two jacks, it is made up as follows: When one jack is to be depressed and the other raised, the device shown in Figs. 5 and 6 is employed, which is com-

posed of the riser part I and depressor part J in one piece. When two jacks in the same line are to be raised, then the device shown in Figs. 3 and 4 is to be employed, and constitutes in such case a double riser; and when two jacks in the same line of a pattern-chain are to be depressed, then the device shown in Figs. 7 and 8 is employed, when it constitutes a double depressor. Then again, by the use of the combined narrow riser I and narrow depressor J in one piece, the manufacturer can very conveniently make quite a number of changes, since he can reverse the narrow depressors, and by the use of two combined narrow risers and depressors side by side, he can make several changes by simply revers-

ing the order in which such combined risers and depressors are arranged upon their respective bars.

Having described my improvements in fancy looms, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

In a fancy loom, the combination, substantially as set forth, of jacks of unequal thicknesses, and corresponding risers and depressors for operating the same.

LUCIUS J. KNOWLES.

Witnesses:

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