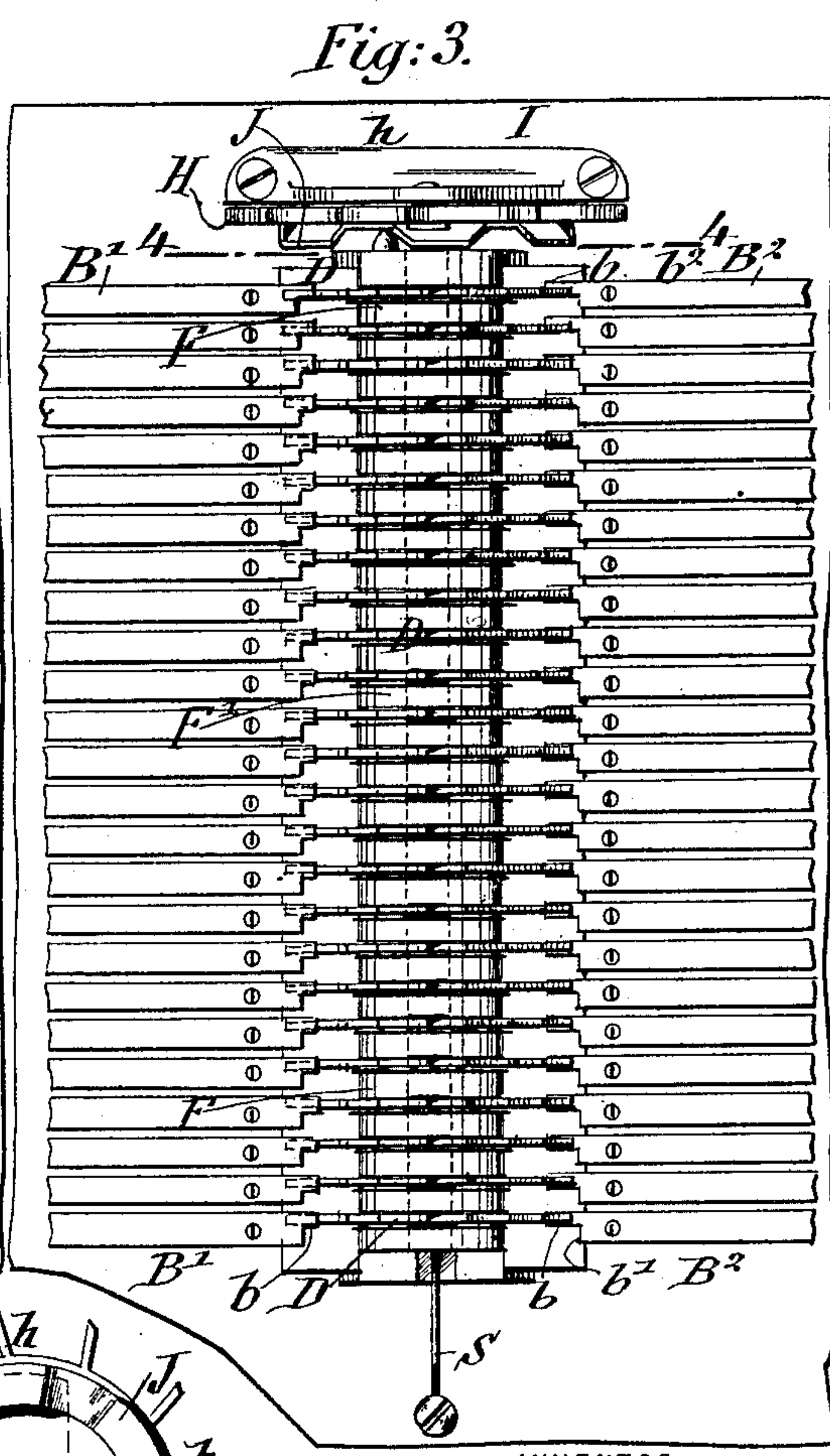
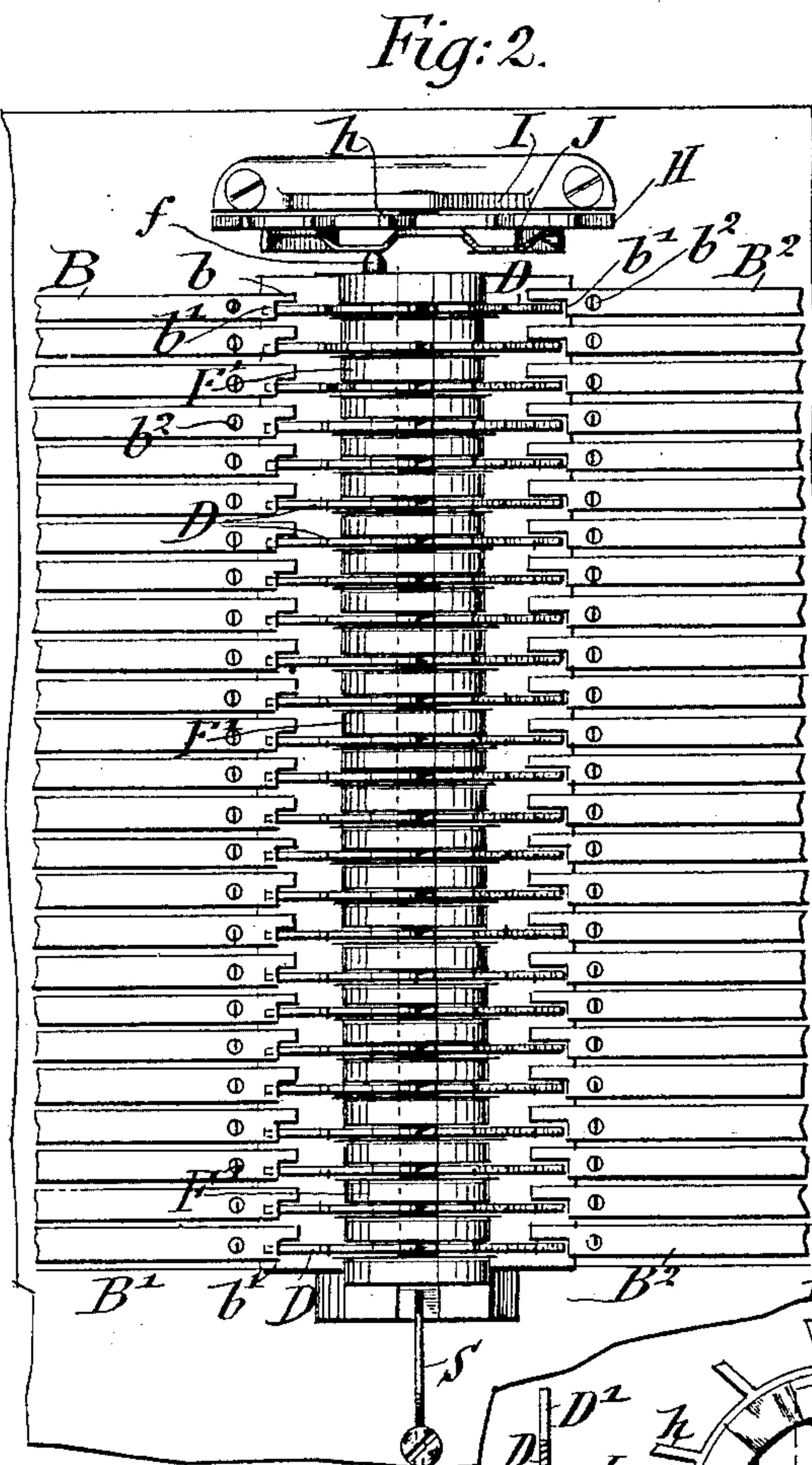
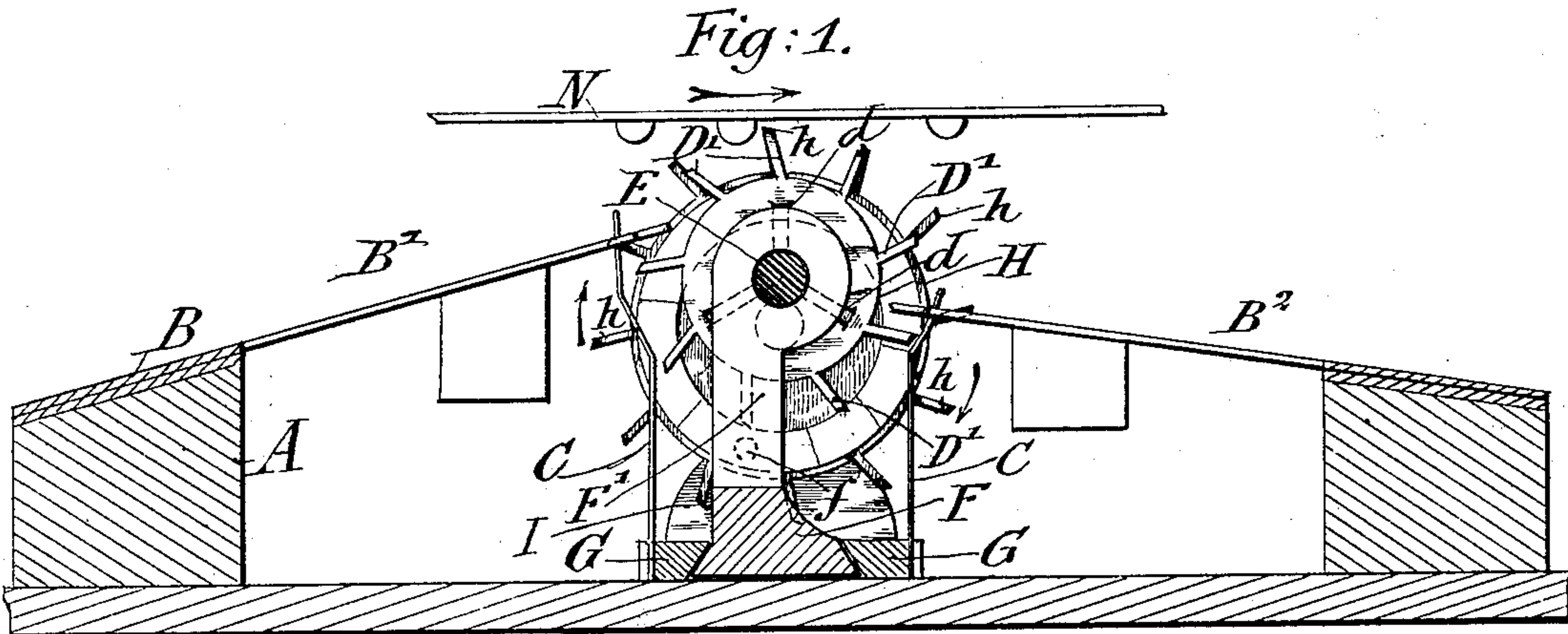


(No Model.)

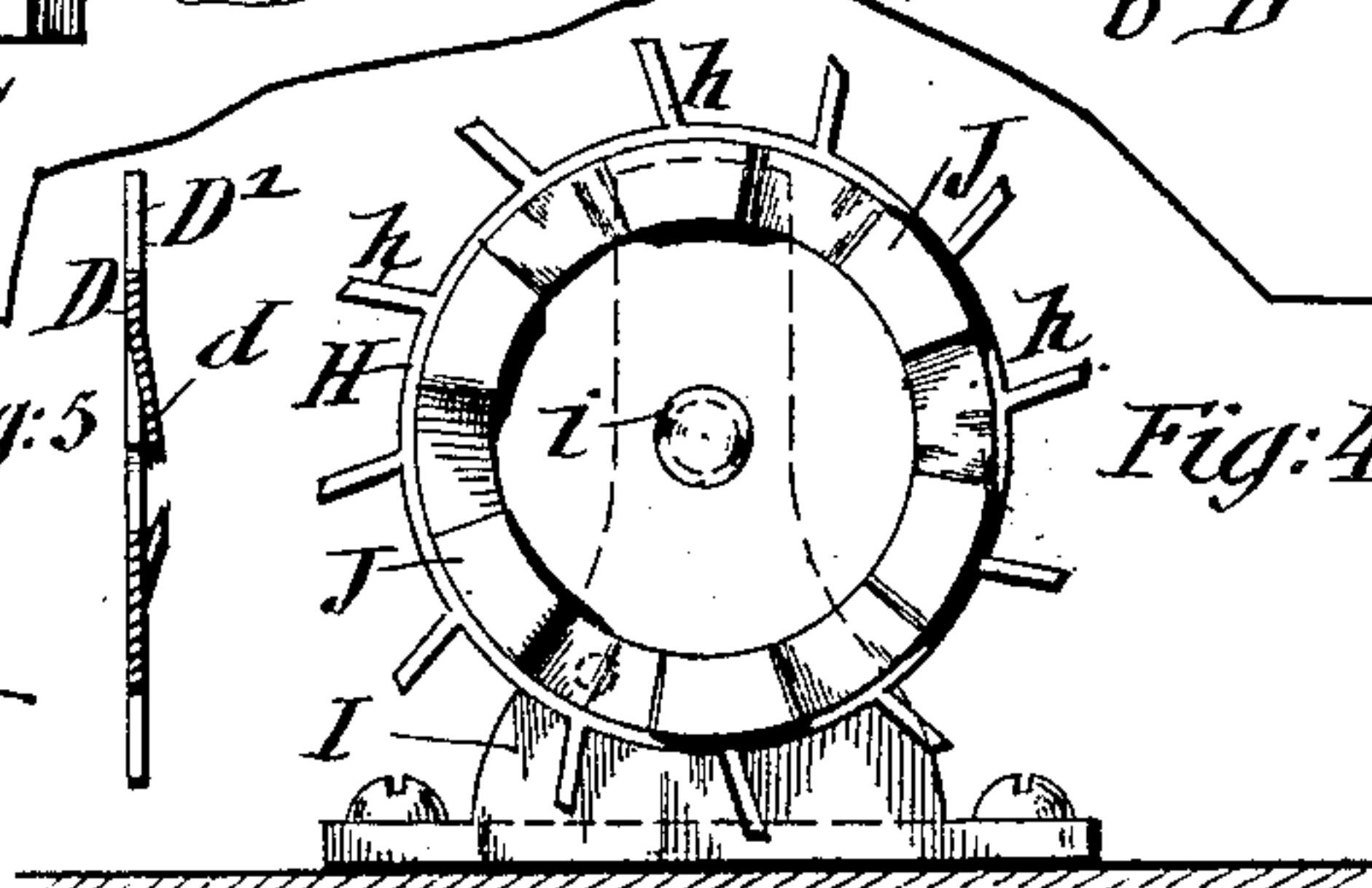
P. T. A. RODECK.
MUSIC BOX.

No. 559,608.

Patented May 5, 1896.



WITNESSES:
Geo. W. Wheelock
Geo. W. Jackel



INVENTOR
Paul Th. A. Rodeck
BY *Geo. W. Wheelock*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

PAUL TH. A. RODECK, OF UNION, HUDSON COUNTY, NEW JERSEY.

MUSIC-BOX.

SPECIFICATION forming part of Letters Patent No. 559,608, dated May 5, 1896.

Application filed March 3, 1896. Serial No. 581,618. (No model.)

To all whom it may concern:

Be it known that I, PAUL TH. A. RODECK, a citizen of the United States, residing at Union, (Weehawken P. O.,) in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Music-Boxes, of which the following is a specification.

This invention relates to certain new and useful improvements in music-boxes; and the object of the same is primarily to enable "forte" and "piano" passages of music to be played by vibrating the reeds more or less energetically, so as to produce loud or soft tones.

In a contemporaneous application filed February 18, 1896, Serial No. 579,784, the invention therein disclosed had in view a somewhat similar object; but the reed was operated by two toothed striker-wheels in common with the same, whereas in the present invention only one toothed striker-wheel serves to vibrate the reed for producing either a loud or a soft tone, whereby different degrees of expression and modulation may be obtained with a comparatively simple construction.

To these ends the present invention consists in a reed-plate provided with reeds, the free end of each reed having at one side a portion extended farther than its adjacent end portion, a shiftable toothed striker-wheel mounted on a suitable axis, and means for shifting said wheel so that the teeth thereof are adapted to engage either the non-extended or the extended end portion of a reed; and my invention also consists of a shiftable supporting-rail provided with a spindle on which the toothed wheels are loosely mounted so as to turn, ways for guiding said rail, and a toothed actuating-wheel which is provided with means whereby when suitable projections on the note-sheet engage the teeth of said toothed actuating-wheel the supporting-rail is moved longitudinally and the toothed striker-wheels supported on the spindle of said rail shifted to one side so as to engage different end portions of the reed, as will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of my improved music-box construction, the parts being shown in the position of rest and just before a reed is

to be sounded. Fig. 2 is a broken plan view of the same, the note-sheet being removed and the toothed striker-wheels and supporting-rail being shown shifted for the purpose of producing the piano effect. Fig. 3 is a similar plan view showing the parts in position for producing the forte effect. Fig. 4 is a section on line 4 4, Fig. 3. Fig. 5 is an edge view of one of the toothed striker-wheels.

Similar letters of reference indicate corresponding parts.

A represents a suitable bed-plate or base fixed on the appropriate portion of the music-box and supporting the reed-plate B and the reeds B' in inclined position, so that the reeds project in front of the bed-plate. The construction of the reeds and the damper devices is the same in this invention as in the invention previously referred to, each reed being, as is clearly shown in Figs. 2 and 3, provided at one side of its extremity with a forward extension *b*, whereby an adjacent non-extended portion *b'* remains to the reed. Each reed also has a damper-hole *b*², through which extends the upper end of a vibrating damper C, which is fixed at its lower end in any suitable manner.

The toothed striker-wheels D are supported on a fixed spindle E in the usual manner, said spindle being located in holes formed in upwardly-extending brackets F' of the supporting-rail F, between which brackets toothed striker-wheels D are mounted, so as to freely turn when either of the teeth D' are engaged by a projection of the music-sheet N, so that one of said teeth D' will strike the corresponding reed B'.

In my previous application two of the toothed striker-wheels were provided for each reed; but in the present construction it is only necessary that one toothed striker-wheel be provided for a reed, and this is permitted by reason of the fact that the supporting-rail F is movable longitudinally in guideways G, so that the toothed striker-wheel can be shifted relatively to the reeds.

For the purpose of shifting the supporting-rail F a separate actuating-wheel H is provided, said wheel having teeth *h*, that are adapted to be engaged by suitable projections on the note-sheet N. This toothed actuating-wheel is mounted on a suitable journal *i*, supported by a bracket I, said journal being preferably located below the spindle E of the

toothed striker-wheels, thus necessitating that a toothed actuating-wheel H of larger diameter than the toothed striker-wheels be provided. By reason of the larger diameter of the toothed actuating-wheel H a greater leverage is obtained, so that the supporting-rail F and the parts mounted thereon can be more readily shifted than if said toothed actuating-wheel was of the same diameter as the toothed striker-wheels. The medium whereby the toothed actuating-wheel H by its rotation is caused to impart longitudinal motion to the supporting-rail F preferably consists of a circular waved series of cam projections J, that are arranged on the face of the wheel H adjacent to the supporting-rail F, said rail being provided at its contiguous end with a stud *f*, that is adapted to travel upon the faces of said cam projections and to enter the depressions between the same.

As shown clearly in dotted lines in Fig. 1 and in detail in Fig. 5, the star or toothed striker wheels D are each provided with friction pieces or tongues *d*, which are struck up from the body of the wheel, so as to project beyond one face thereof, said friction-pieces contacting with the brackets between which the wheels are mounted, so as to impart the necessary friction and prevent too free turning of the same.

The operation of my improved instrument is as follows: When it is desired to produce the soft tone, the parts are caused to assume the position shown in Fig. 2. It will here be seen that one of the cam projections J on the toothed actuating-wheel H has engaged the stud *f* on the supporting-rail F and moved the latter longitudinally a short distance away from the toothed actuating-wheel H, thus shifting the toothed striker-wheels D from the position in which the teeth thereof register with the extended portions *b* of the reeds to a position in which the teeth register with the non-extended portions *b'* of the reeds. It is to be noted that when this shifting movement is desired a projection must be arranged on the note-sheet N in such a manner as to cause the toothed actuating-wheel H to be rotated at the proper moment, and that relatively to said projection on the note-sheet another projection or projections must be arranged for turning the toothed striker wheel or wheels D at the proper moment for striking the corresponding reed or reeds B', whereby the soft piano sound is produced, whether it be produced from one or more reeds.

In Fig. 3 it will be seen that the stud *f* is located in one of the depressions between the cam projections J, the supporting-rail and the parts mounted thereon having been shifted inwardly toward the toothed actuating-wheel H by means of a suitable spring S, fixed at one end and engaging at its free end with the opposite end of the supporting-rail, this being the normal position of the parts.

For the purpose of increasing the sound necessary for producing forte I prefer to ar-

range another set of reeds on the opposite side of the toothed wheels D, there being thus two sets of reeds with corresponding tones; but in order that there may be a greater difference in the strength of the sound between piano and forte the reeds B² of the second set have their non-extended portions *b'* so located that they will not be at any time touched by the teeth of the toothed striker-wheels D; but when the forte expression is to be produced the toothed striker-wheels will simultaneously strike the extended portions *b* of the corresponding reeds on both sides.

By the present invention a greater degree of expression is enabled to be produced than heretofore, and that by a mechanism which is comparatively simple; but, while I have shown one form of mechanism, I do not desire to limit myself thereto, as it is evident that suitable modifications, the same in principle, are within the province of mechanical skill.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a vibratory reed, having at its free end an extended and a non-extended portion, of suitable means actuated by a note-sheet for striking the extended or non-extended portion of the reed, substantially as set forth.

2. The combination, with a vibratory reed, constructed for vibrating to a greater or less degree, of a suitably-supported and laterally-shiftable striker-wheel, substantially as set forth.

3. The combination, with a vibratory reed, constructed for vibrating to a greater or less degree, of a longitudinally-movable supporting-rail, a toothed striker-wheel suitably supported by said rail, and means of shifting said rail and wheel, substantially as set forth.

4. The combination, with a vibratory reed, provided at one side of its free end with a forward extension, of a longitudinally-movable supporting-rail, a toothed striker-wheel suitably mounted upon said rail and adapted to engage the non-extended or extended portion of the reed, and means for shifting said rail, substantially as set forth.

5. The combination, with a vibratory reed, constructed to vibrate to a greater or less degree, of a suitably-guided and longitudinally-movable supporting-rail, a toothed striker-wheel suitably mounted on said rail, and a toothed actuating-wheel provided with a cam projection adapted to engage a stud on the supporting-rail for shifting the latter, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

PAUL TH. A. RODECK.

Witnesses:

PAUL GOEPEL,
GEO. W. JAEKEL.