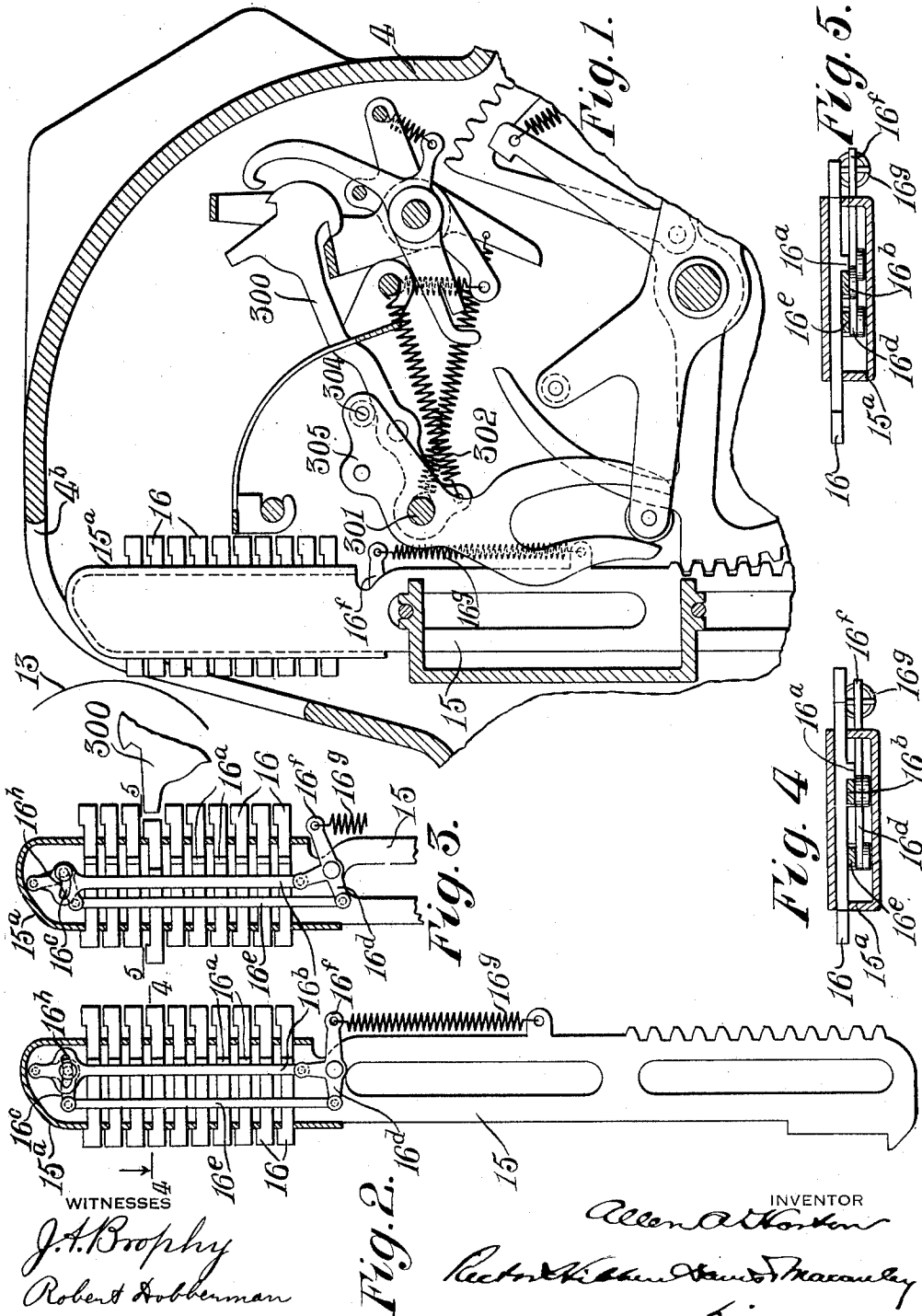


1,334,758.

Patented Mar. 23, 1920.



UNITED STATES PATENT OFFICE.

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RECORDING MECHANISM.

1,334,758.

Specification of Letters Patent.

Patented Mar. 23, 1920.

Original application filed July 31, 1911, Serial No. 641,455. Divided and this application filed February 23, 1916. Serial No. 80,901.

To all whom it may concern:

Be it known that I, ALLEN A. HORTON, a citizen of the United States, residing at Highland Park, in the county of Wayne and State of Michigan, have invented a certain new and useful Improvement in Recording Mechanism, of which the following is a specification.

This application is a division of my prior application filed July 31, 1911, Serial No. 641,455, entitled "Improvement in adding machines." The present invention relates to the printing or recording mechanism, and particularly to the means for retracting the types. It is common in adding and listing machines to employ a series of types for each numeral order and to drive the types against the platen by hammers. It is desirable to provide for percussive action, and it is usual to project the type slightly beyond the position which would correspond to the actual stroke of the hammer. Ordinarily the hammers drive the type against light spring resistance, and the type recoil under their own spring action. The object of the present invention is to improve upon the familiar arrangement of an individual spring for each type. My invention makes provision for the employment of a single spring to serve a complete series of type. Provision is also made for a uniform spring resistance to the driving of each type of the series.

In the drawing which accompanies and forms a part of this specification Figure 1 represents in the left side elevation the interior mechanism of that portion of the adding and listing machine of my said prior application, which includes the parts directly concerned with the present invention. Fig. 2 represents one of the type carrying slide bars with the type housing in section; Fig. 3 is a similar view representing one of the types projected; Figs. 4 and 5 are corresponding horizontal sections taken on lines 4, 4 and 5, 5 of Figs. 2 and 3.

The numeral 4 designates the casing of the adding machine which has an opening 4^b through which the type-carrying slide bars rise for the proper setting of the types opposite the roller platen 13. Reference numeral 15 designates one of the type-carrying slide bars of which a suitable number will be employed according to the denomi-

national capacity of the machine. The upper part of said slide bar is formed into a housing 15^a for its series of types 16. The numeral 300 designates one of a series of hammers pivoted at 301 and driven by springs 302 under control of tripping devices of the general character of those commonly used in machines of this class. Power is stored in said springs by retraction of the hammers as effected by a bail, one side piece of which is designated by the numeral 305, and the cross-rod of which is designated by the numeral 304. In operation of the machine the bail swings rearward and appropriate hammers are released and swung rearward by their springs, and they deliver blows upon the heads of such types as are in position at the printing line, with the result of projecting those type as illustrated in Fig. 3. As there shown the type so operated upon is projected somewhat farther than as measured by the stroke of the hammer.

Recoil of the type bars 16 after their projection by the hammers is effected through the following described means: The said bars have a limited sliding movement through guiding openings in the housing 15^a, being limited by abutment of shoulders formed upon them against the exterior of said housing. These bars are formed with laterally projecting lugs 16^a which are normally alined vertically in engagement with a retracting bar 16^b. The latter is pivotally connected at its upper and lower extremities to upwardly projecting arms of a pair of bell crank levers 16^c and 16^d respectively. Rearwardly projecting arms of the bell cranks are connected together by a link 16^e, and the lower bell crank lever has a forwardly projecting arm 16^f which is connected by a spring 16^g to a lower portion of the rack bar, Fig. 1. It will be seen that the above described construction is of parallelogram order calculated to secure a uniform action of the spring 16^g against the type bars for holding them normally retracted. The striking of the hammer against any one of the type bars projects the same against the platen in opposition to said spring, it being understood that the hammer does not follow the type bar all the way, so that the desired percussive action is had. To assist in keeping the bar 16^b alined

with the lugs of the type bars, and also to accommodate the structure to the limited lateral space within the housing 15^a, said bar 16^b is widened near its upper end and
5 formed with an arc-shaped slot 16^b to embrace the pivot stud of the upper bell crank 16^c which stud is headed over the bar 16^b as illustrated in Fig. 2.

Manifestly the character of the lever system may be modified within the scope of the invention.

I claim:

1. In a recording machine, the combination of a type carrier, a series of type movably mounted thereon, a spring-held lever
15 carried by said type carrier on a fixed pivot and holding said type retracted, and means for individually projecting type in opposition to said lever.

2. In a recording machine, the combination of a type carrier, a series of type movably mounted thereon, a pair of spring-held
20 levers carried by said type carrier on fixed pivots and holding said type retracted, and means for individually projecting the type in opposition to said levers.

3. In a recording machine, the combination with a type-carrier, a series of type supported by said type-carrier, and shoulders
30 limiting movement of said type in both directions, of a lever pivoted on said type-carrier for holding said type in idle position, a spring acting on said lever to hold said type in idle position and to restore them
35 to idle position after being driven to print,

and a hammer operable to drive said type to print, in opposition to said lever and spring.

4. In a recording machine, the combination with a type-carrier, a series of type supported by said type-carrier, and shoulders
40 limiting movement of said type in both directions, of a bell-crank lever pivoted on said type-carrier for holding said type in idle position, a spring acting on said lever
45 to hold said type in idle position, and to restore them to idle position after being driven to print, and a hammer operable to drive said type to print, in opposition to said lever and spring.

5. In a machine of the character described, the combination of a type-carrier; type bars slidable therein; a retracting bar engaging said type bars; parallel motion links
50 and levers connected to said bar; and a spring applied to said links and levers.

6. In a machine of the character described, the combination of a type carrier; type bars slidable therein; a retracting bar engaging said type bars; a pair of bell-crank levers
60 to corresponding arms of which said retracting bar is connected; a link connecting other corresponding arms of said bell-crank levers; and a spring applied to one of said levers.

ALLEN A. HORTON.

Witnesses:

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