(No Model.) 2 Sheets—Sheet 1.

M. G. & H. W. MERRITT.

TYPE WRITING MACHINE.

No. 511,305. Patented Dec. 19, 1893.

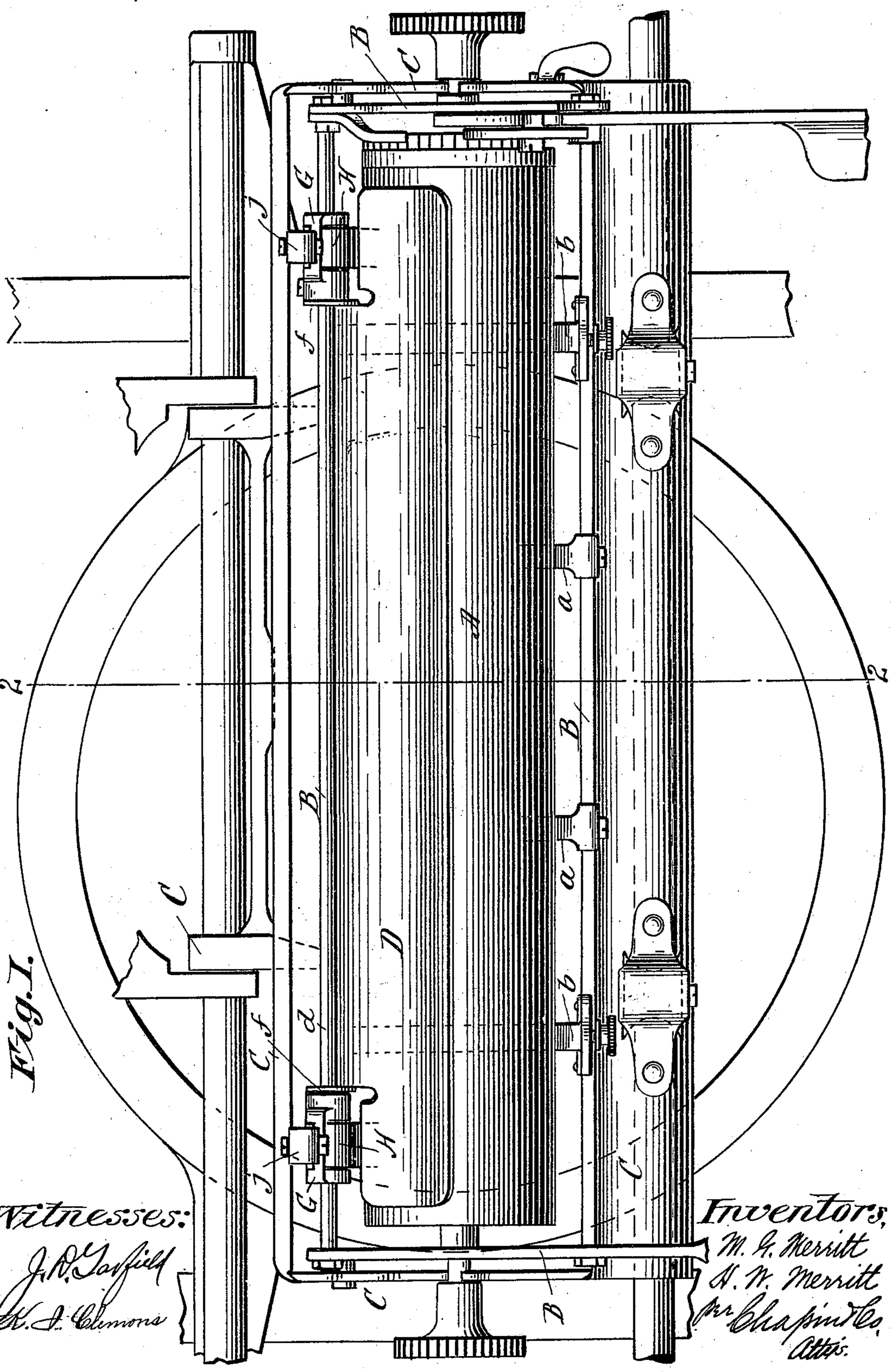

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

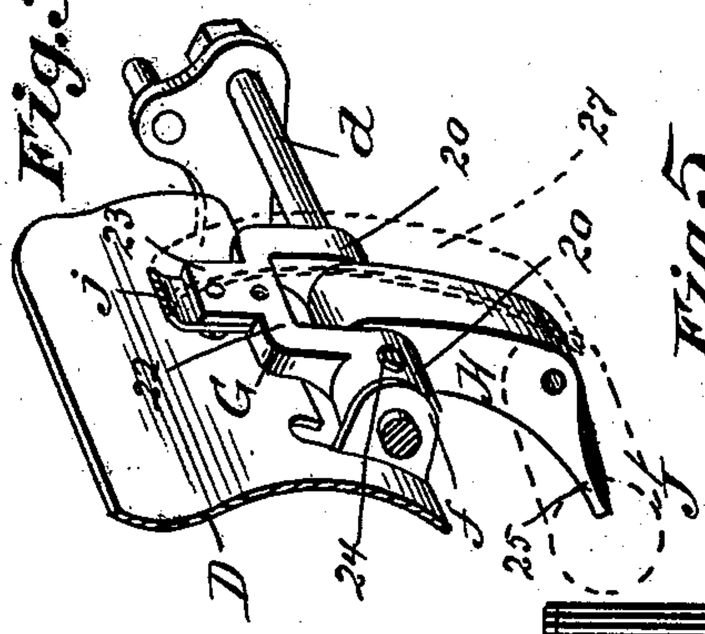


Fig. 5.

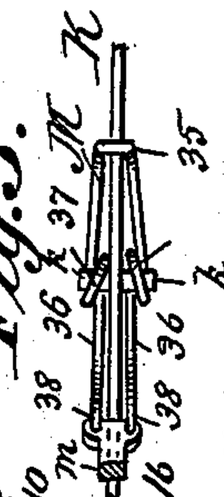


Fig. 4.

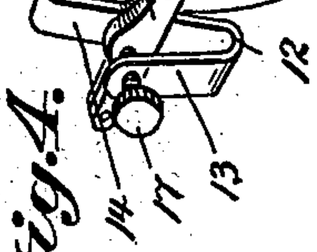
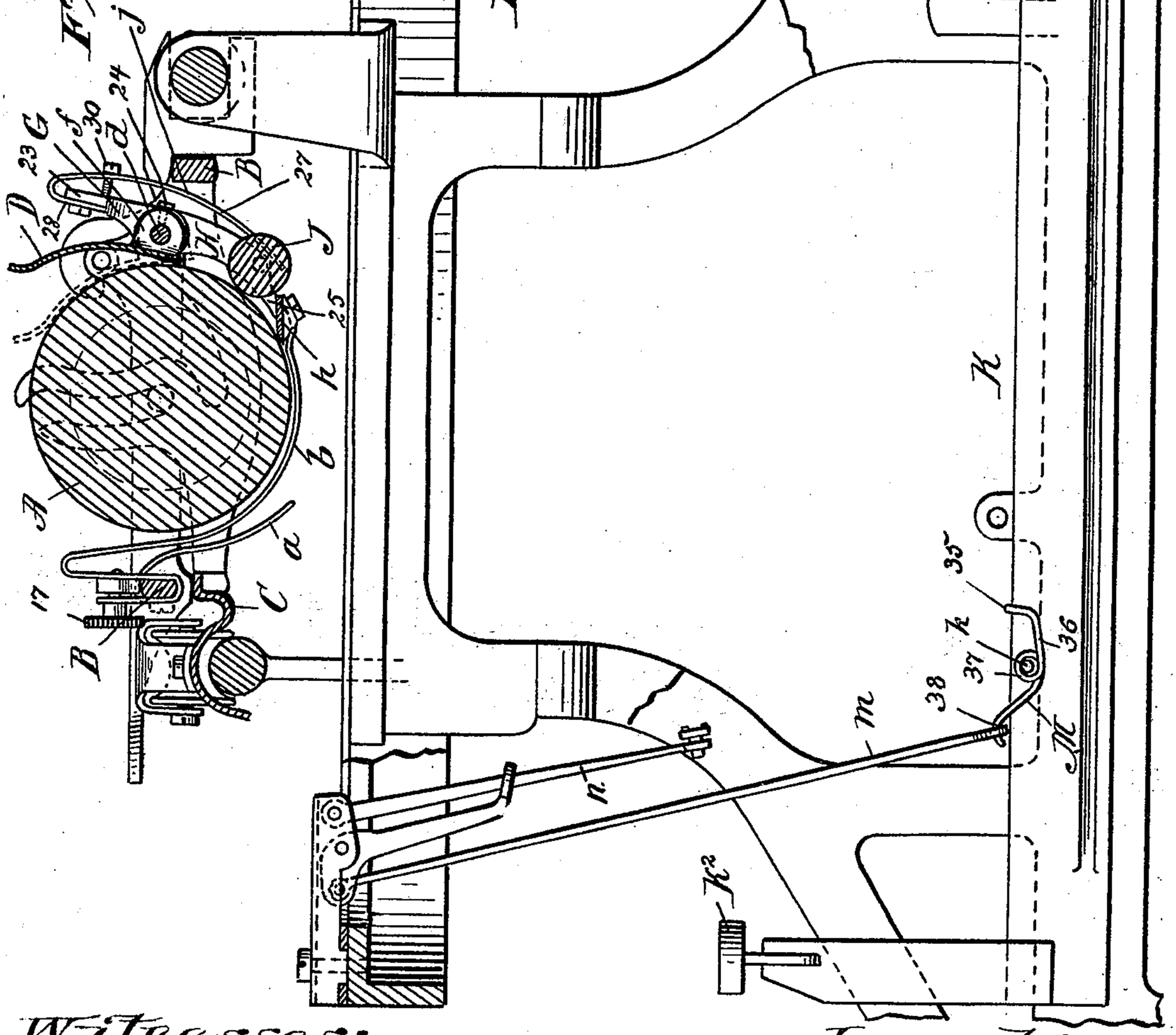


Fig. 2.



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UNITED STATES PATENT OFFICE.

MORTIMER G. MERRITT AND HENRY W. MERRITT, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNORS TO THE MERRITT MANUFACTURING COMPANY, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 511,305, dated December 19, 1893.

Application filed April 28, 1893. Serial No. 472,272. (No model.)

To all whom it may concern:

Be it known that we, MORTIMER G. MERRITT and HENRY W. MERRITT, citizens of the United States, both residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to improvements in the paper guiding and feeding devices of a typewriting machine, portions of which are, or may be, rendered available for properly supporting and guiding narrow sheets of paper, envelopes, or postal cards, other portions thereof being constructed with reference to an unusually efficient, simple, and practical mounting, yieldingly, of the roll which lies along and bears against the platen whereby such roll may be held, as to either end portion thereof, with any desired degree of spring force against the platen.

The invention furthermore relates to improvements comprised in the medium of connection between the key-levers and respective type-bars by means of which the unduly hard impact by the type-bar against the platen, on the striking of a key, may be avoided with consequently a more agreeable feeling or touch at the key-board. And to these ends the invention consists in constructions and combinations of parts, all substantially as will hereinafter be made manifest and covered in and by the claims.

In the accompanying drawings, Figure 1 is a plan view of a part of a typewriting machine, the same more especially comprising the platen, platen-frame and its carriage, and indications of the novel devices pertaining to the paper-feed. Fig. 2 is a sectional elevation from front to rear of the machine showing the various improved devices. Fig. 3 is a perspective view showing the paper-table and the details of construction of the spring-pressed support for the paper bearing roll which lies alongside the platen. Fig. 4 is a perspective view of one of the yielding paper-guiding fingers, which is understood as adjustable longitudinally upon the front of the platen-frame. Fig. 5 is a plan view of a desirable form of spring connection between the key-lever and type-bar connecting-rod.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the platen. In the machine, here partly illustrated, the platen is mounted in the rectangular frame, B, which is removably mounted in the carriage, C, that is supported for endwise slide, as usual. The invention is in nowise to be limited, however, to the mounting of the platen in a secondary frame, as stated, because, so far as the features of improved paper guiding and supporting devices are concerned, they may be as well combined with the platen which is non-removably mounted directly upon the carriage, and therefore the terms,—platen-frame and carriage may be regarded as synonymous or interchangeable to all intents and purposes so far as this invention is concerned. The platen-frame has at its front the two or more spring-fingers, *a*, which are fixedly supported, and which are located well within the ends of the platen curving downwardly thereunder, as shown and as usual. Near the end, or ends, one or both, of the frame, are the yielding fingers, *b*, *b*, which are adjustable longitudinally of the frame so as to have, each, its position as far from the end of the platen as may be desirable to accord with the work in hand, that is, if the paper, cards, or envelopes are wider or narrower, the fingers, *b*, are adjusted longitudinally accordingly,—and in Fig. 4 one of the adjustable yielding fingers is clearly shown in perspective the same comprising a strip of thin steel, or other suitable metal having its upper extremity return-bent twice, as indicated at 10 and 12, whereby the three laterally separated sections or leaves, 13, 14, and 15, are constituted, the latter being extended the farthest to constitute the finger proper, *b*.

The U-like uniting portion for the leaves, 13 and 14, are adapted to embrace the under edge and inner and outer sides of the front-bar of the platen-frame, while above the platen-frame, the bar or block, 16, has a connection with the leaf, 14, (by being riveted to

ears thereof, or otherwise formed thereon or attached thereto) this part, 16, forming a ledge or cleat-like support for the rear of this finger device upon the upper edge of the aforesaid bar of the platen-frame. The screw, 17, is so applied between the leaves, 13 and 14, (or what is the same as leaf 14, the part 16, which is a fixture thereof,) efficiently serves to maintain the finger device in its adjustment, this means of confinement being, of course, readily detachable on the unloosening of the screw.

The rear longitudinal bar, *d*, or member of the frame is preferably constituted by a round rod, substantially as indicated, and the paper-table, D, is, by the ear-pieces, *f*, hung upon this rod, *d*, whereby it may have swinging movements forwardly and rearwardly against and away from the platen, the rearward extent of its movement being indicated by the full lines in Fig. 2, while its forward movement is indicated by the dotted lines in said figure, this position enabling the greater portion of the face of the paper-table to bear against the rear upper face-portion of the platen the major portion of the contour of the paper-table being comprised in an arc corresponding to the peripheral part of the platen.

Near both ends of the platen brackets or castings, G, are rigidly secured, to and upon the aforesaid rod, *d*, the preferred form of this bracket being indicated in Fig. 3 wherein the same is shown to comprise the opposing ears, 20, 20, which are drilled to fit upon the aforesaid rod, and the upper uniting span-section, 22, having the further upwardly extended lug, 23. The bracket or casting, G, is fixed upon the aforesaid rod by the set-screw, 24. An arm, H, is hung upon the rod toward each end thereof each being between the ear-pieces of the aforesaid bracket, G,—displacement longitudinally of the rod of these arms being prevented by said ear-pieces.

The bar or roller, J, which has bearing against the rear under side of the platen, and below the under edge of the paper-table, D, is mounted, preferably rotatably, upon, and extends between, the aforesaid arms, H, H. The downwardly and forwardly extended noses, 25, of these arms, H, H, support the graduated plate or bar, *h*, which constitutes the usual scale to lie along the platen.

The strips of thin spring metal, indicated at *j*, form the springs which impart the yielding pressure upon the arms, H, H, to force them, and with them the roller, J, against the platen. As shown, these springs comprise a bow-shaped leaf or section, 27, and the return-bent and shorter section, 28, which has its position somewhat in advance of the said bow-shaped section, 27, so that when this part, 28, is screwed firmly to the upwardly extended lug of the bracket, G, the leaf, 28, in passing first upwardly and rearwardly and then downwardly to its bearing upon the arm, H, will have a suitable extent of separation from the rear face of the bracket, as clearly indicated in Fig. 2, so that as the screw, 30,—which has its shank passed loosely through a perforation therefor in the spring and with a screw-engagement into the bracket, the head of the screw lying against the rear side of the spring,—is turned, the tension upon the spring may be increased or diminished.

In the construction of the paper feeding devices of the type-writing machine great difficulty has been frequently experienced in securing a uniform contact and bearing of the bar or roller, J, or the part corresponding thereto against the platen so that the paper may be guided straight, but it will be apparent from the nature and construction of the means just described that each end-support for the roller, J, may have imparted thereto, just that amount of spring pressure as, in the adjustment of the devices will be found most efficient.

In the type-bar actuating mechanism we provide a medium of connection between the key-lever and type-bar a portion of which is comprised in a spring which is unyielding up to a given stress or impact imparted thereagainst directly through the key-lever, or conversely through the type-bar after its impact, but which yields as such stress is exceeded whereby the hard feeling or touch at the key-board is avoided. In Figs. 2 and 5 a form of the spring device comprised in the connection between the key and type-bar is shown and will be now described in detail.

It will be seen that the key-lever, K, has intermediately and at opposite sides thereof the studs or trunnions, *k*. The spring device is indicated at M, and consists of a single piece of spring wire intermediately return-bent, as indicated at 35, the terminal members, 36, 36, being extended approximately in parallelism comprising each the intermediate coil, 37; and the coil-provided portions, 36, lie at either side of the key-lever, the coils engaging the studs, *k*, *k*, and the part at 35, uniting the portions 36, lying across the upper edge of the key-lever, while the extremities, 38, 38, of this spring wire device are extended into engagement with the perforated lower end of the connecting-rod, *m*, the upper end of which has connection directly or mediately with the type-bar, *m*. Now, as the key-lever, K, is depressed by the action of the finger upon the key, K^2, the spring device, M, serves as an unyielding portion of the medium of connection until the type is brought against the platen with a force exceeding the potentiality of the spring device, whereupon the latter yields for relief to the touch.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a typewriting machine, the combination with the platen and a supporting frame therefor, of a yielding finger comprising the doubly return-bent strip with the leaves, 13, 14, and 15, the latter being suitably extended to form the finger proper and the intermedi-

ate one, 14, having the ledge or rest, 16, and the confining screw, 17, substantially as described and shown and for the purpose set forth.

2. In a typewriting machine, the combination with the platen and the platen-frame comprising the rod, *d*, the arms, H, H, pivotally hung upon said rod to swing toward and from the platen and carrying the roller, J, the brackets, G, G, each comprising the perforated and separated ear-lugs, 20, 20, having fixed supporting engagements with said rod and comprising the span-section, 22, and the lug, 23, the springs, *j*, *j*, each of which consists of the strip having the section, 28, which is secured to the bracket-lug, 23, and which has to the rear thereof the downwardly extended section, 27, in spring-bearing against the arm, H, and the screw, 30, the shank of which passes loosely through the spring-section, 27, and with a screw-engagement into the bracket,—the head thereof engaging the face of the said spring-section, 27,—all substantially as and for the purpose set forth.

3. In a typewriting machine, the combination with the type-bar and connecting-rod engaged therewith of the key-lever having the studs, *k*, *k*, and the spring device, M, comprising the side sections, 36, 36, each of which has a portion thereof formed by a coil, 37, and the intermediate uniting section, 35, the said coils embracing the said studs and said section, 35, lying across the upper edge of the key-lever, and the terminals of the spring-device having engagements with the connecting-rod, substantially as described and for the purpose set forth.

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