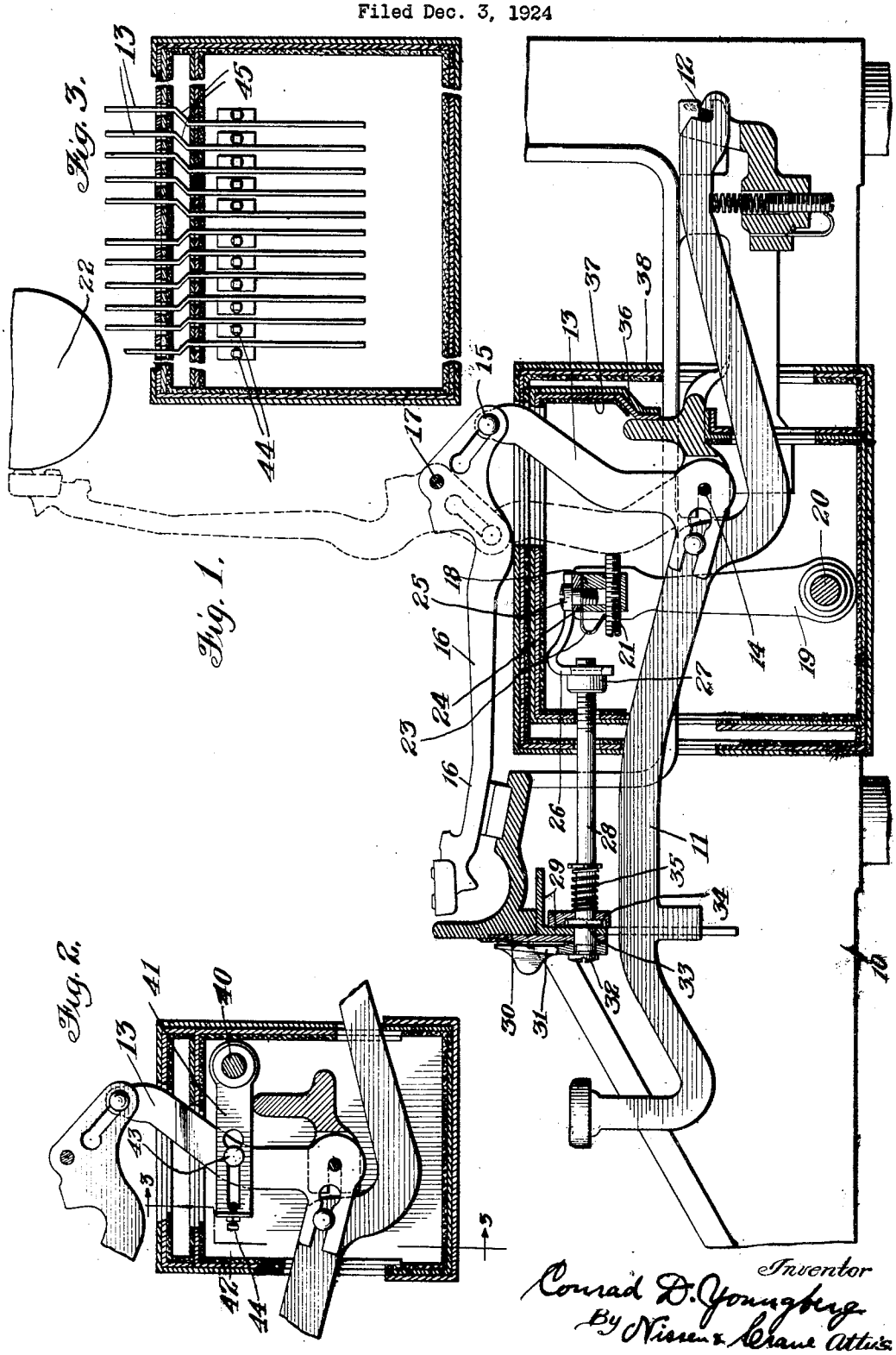
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TYPEWRITER

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TYPEWRITER

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9 Claims. (Cl. 197—186)

This invention relates to the type bar action of typewriting machines, and has for its object the provision of such action which shall be of improved construction and operation and in which the noise incident to the operation of a typewriter will be reduced to a minimum.

The invention is exemplified in the combination and arrangement of parts shown in the accompanying drawing and described in the following specification, and it is more particularly pointed out in the appended claims.

In the drawing—

Fig. 1 is a somewhat diagrammatic vertical section, showing one embodiment of the present invention;

Fig. 2 is a view similar to Fig. 1, showing a modified form of the invention; and

Fig. 3 is a section substantially on line 3—3 of Fig. 2, with parts omitted.

The numeral 10 designates the frame of a typewriter, having a key lever 11 pivotally mounted at 12 thereon in the manner commonly employed in "Woodstock" typewriting machines. It will be understood, however, that the invention is applicable to other makes of typewriters, as well as the Woodstock machine. A series of sub-levers 13 are pivoted at 14 in position to cooperate with the key levers 11 in the usual manner. The sub-levers 13 are pivotally connected at 15 with the type bars 16, the type bars being pivoted at 17 on the usual or any suitable form of type bar segment. A stop bar 18 is supported at its opposite ends by rocker arms 19 mounted on a shaft 20 extending transversely of the frame 10. Stop screws 21 are adjustably supported in the bar 18, there being one screw for each of the sub-levers 13 arranged in position to arrest the forward movement of the sub-lever at the time when the type bar 16 engages the paper on the platen 22. Springs 23 are provided for locking the screws 21 in their adjusted positions, the springs being held by a plate 24 and screws 25. A bracket 26 is secured to the stop bar 18 and carries a collar 27 rigidly fixed thereto and into which a rod 28 is threaded. The forward end of the rod 28 extends through a pair of plates 29 and 30 on the front of the frame 10. A finger lever 31 is secured to the front end of the rod 28 by means of a screw 32 and a flange or washer 33 is rigidly fixed to the rod 28 adjacent the back of the plate 29. A cover bracket 34 encloses the flange 33 and is provided with a serrated surface for engaging a correspondingly serrated surface on the rear face of the flange 33. A spring 35 normally holds the two serrated faces in yielding engagement with one another. By this arrangement the rod 28 is held against accidental rotation, but may be adjusted by rotation of the hand lever 31. It will be apparent that the position of the stop bar 18 may be adjusted by means of the hand lever 31 and the threaded rod 28. The stop screws 21 are used for individual adjustment of the different type bars so that they will be arrested at the proper position to give the desired impression on the paper. If for any reason it is desirable to vary the impression of the entire set of type bars, as for instance, when a greater number of sheets are inserted, this may be done by moving the lever 31. It will be understood, of course, that the stops 21 are properly regulated when the machine is originally adjusted and the only adjustment that the operator need make is to shift the lever 31 when it is desired to vary the force of the type bars.

The provision of stops 21 for arresting the sub-levers 13 and consequently the type bars 16 will reduce to a minimum the principal source of noise incident to the operation of the type bars as heretofore done. Where no such stops are provided the total momentum attained by the type bars in their upward movement must be overcome by the blow on the platen, and consequently the force of the blow gives rise to the principal noise incident to the operation of the machine. It is an established fact that the movement of a pivoted member can be arrested by a stop in close proximity to the pivotal point with much less noise than if the stop is located at a greater distance from the pivotal point. Advantage is taken of this fact to overcome the major portion of the noise incident to the operation of the machine. The stops are made adjustable so that the type bars can be arrested at the proper point in their movement to give the desired impression without permitting them to exert the full force of their blow upon the platen. The energy stored up in the moving parts will be absorbed by the stops 21, and yet the type bars will be permitted to move to the desired position to make the proper impression upon the paper.

Not only is there a reduction of the total amount of noise produced, but the point at which the noise is produced is brought to a position in the typewriter mechanism where it may be enclosed in a sound absorbing casing. For this purpose the parts including the stops 21 are enclosed in a casing consisting of an outer wall 36 which may be of sheet metal, and an inner lining 37 of sound-absorbing material such as felt, asbestos, or other

suitable sound-deadening substance, and an intermediate wall of inert material such as lead. The casing 36 is provided with the necessary slots and openings for the operating parts to extend through. In some instances it may be found desirable to provide a supplemental casing 38, which is spaced outwardly from the casing 36 and which provides a dead air space between the two casings for further confining the sound produced within the inner casing.

In the form of the invention shown in Fig. 2 the stop bar 18 and screws 21 are replaced by a shaft 40 extending transversely of the machine and provided with a series of links 41 pivotally connected thereto and having slots 42 therein which receive pins 43 on the sub-levers 13. The shaft 40 may be provided with means for adjusting it back and forth similar to that shown in Fig. 1 for the stop bar 18. It will be seen that the sub-levers 13 will be arrested at the end of their forward movement by the pins 43 engaging the ends of the slots 42 and that the effect will be similar to that of the form shown in Fig. 1. Individual adjustment of the stops for the different sub-levers may be provided by means of adjustable stop screws 44 at the ends of the slots 42. It will be noted from Fig. 3 that the sub-levers 13 may be provided with offset portions 45 to bring the slots therefor out of registration with one another. This assists in preventing escape of sound through these slots. In that figure also the sound-deadening walls are shown to comprise an outer plate of sheet metal, a middle plate of inert metal, such as lead to damp out vibrations, and an inner layer of fibrous material, such as felt. At the slots the fibrous material projects beyond the edge of the metal strips as close to the levers as possible as no noise or interference is produced even if the levers should touch the edge of the fibrous material in their movement.

I claim:—

1. In a typewriting machine, a pivoted type bar, an adjustable stop for arresting the movement of said type bar, a rod having threaded connection with said stop, and a finger-piece secured to said rod and located in accessible position for the operator to facilitate adjustment of said stop.

2. In a typewriting machine, a platen, a pivoted type bar, a stop for arresting the movement of said type bar when in printing relation with said platen, a rod having threaded connection with said stop, a finger-piece connected with said rod at the front of said typewriter, and yielding means for retaining said rod in adjusted positions.

3. In a typewriting machine, a pivoted type bar, a stop for arresting the movement of said type bar when in printing position, a stop bar on which said stop is adjustably mounted, a pivoted arm for supporting said stop bar, a rod having threaded engagement with said arm and extending to the front of said typewriter, a finger-piece for rotating said rod, and a spring-held ratchet device for retaining said rod in adjusted positions.

4. In a typewriter, the combination with a sound confining housing having spaced-apart walls providing an air space between them, of operating members for the typewriter, and means for supporting said operating members to extend through offset openings in said spaced-apart walls, said members each having an offset portion to conform to the position of said openings.

5. The combination with a typewriter having sound producing parts including operating members having offset portions, of a housing for said parts, said housing comprising spaced-apart walls affording an air space between the same and having offset openings for said operating members, and means for supporting said operating members to extend through the openings in said spaced-apart walls with the offset portions of said operating members in said air space.

6. In a typewriter, a sound confining housing having spaced walls, and an operating member extending through said walls, said walls having openings offset relatively of each other to permit the passage of said member, the member having an offset therein to conform to the position of said openings.

7. The combination with a typewriter having sound producing parts, of a housing enclosing said parts, said housing comprising spaced-apart walls affording an air space between the same and said walls having offset openings to permit some of said parts to extend through the same outside of said housing, said walls each comprising a layer of fibrous material for loosely engaging the parts which extend through said openings, to co-act with said air space to deaden the nose of operation of the typewriter.

8. In a typewriter, the combination with a sound confining housing having spaced-apart walls with spaced-apart openings therein, the spaced-apart openings of one wall being offset respectively as to the spaced-apart openings in the other wall, and a plurality of operating members extending through said offset openings, said operating members each having an offset portion located between said walls to conform to the position of said offset openings.

9. In a typewriting machine, the combination with a pivoted type bar, of an adjustable stop for arresting the movement of said type bar, a rod having threaded connection with said stop, a sound-deadening enclosure for said stop, and means for operating said rod from an accessible position on the typewriting machine outside of said enclosure.

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