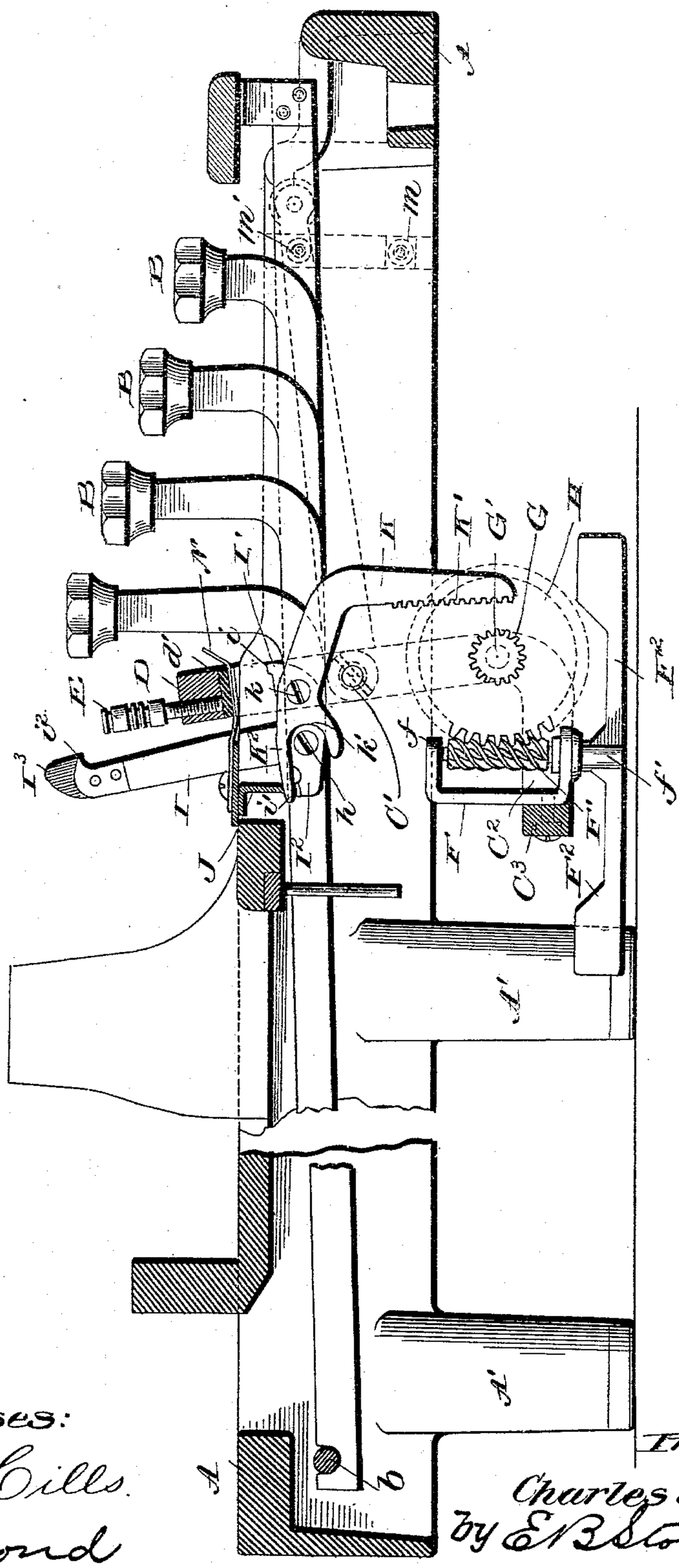
(No Model.) 2 Sheets—Sheet 1.

C. SPIRO.

TELETYPER.

No. 551,515. Patented Dec. 17, 1895.

Fig. 1.



Witnesses:
L. C. Hills.
E. A. Bond

Inventor:
Charles Spiro,
by E. B. Stocking
Atty.

(No Model.) 2 Sheets—Sheet 2.

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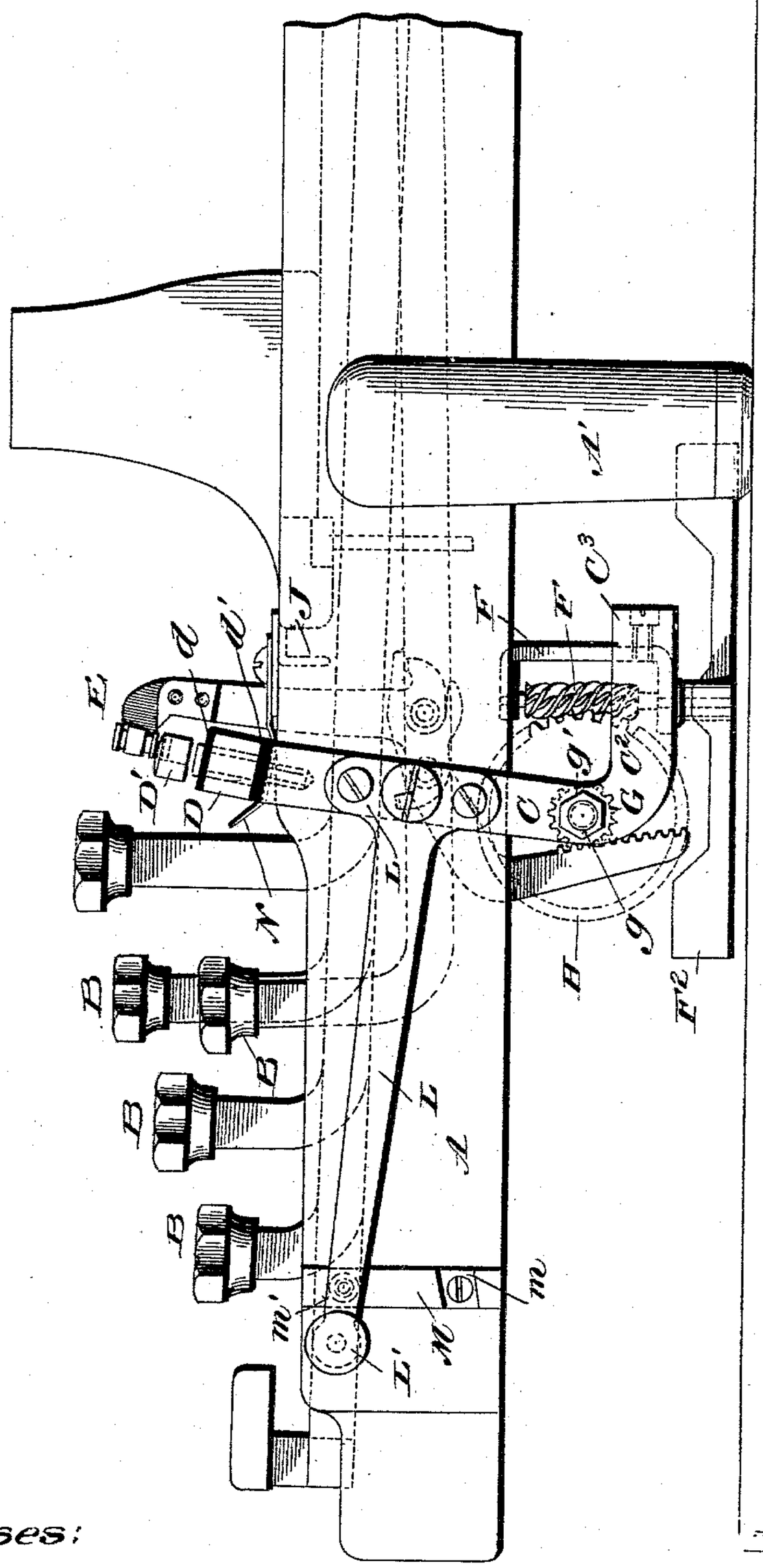

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UNITED STATES PATENT OFFICE.

CHARLES SPIRO, OF NEW YORK, N. Y.

TELETYPER.

SPECIFICATION forming part of Letters Patent No. 551,515, dated December 17, 1895.

Application filed August 14, 1895. Serial No. 559,232. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SPIRO, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Teletypers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in teletypers, and is designed more especially as an improvement upon the constructions heretofore patented by me for this class of devices, having for its objects more particularly to simplify and cheapen the construction, decrease the number of parts, and arrange those which are employed so as to economize space, placing the major portion thereof within the boundary of the frame and principally beneath the key-levers, where they are out of sight and in position where they will be less liable to breakage or injury from any cause. I provide a pivoted bail carrying the signal-producing blocks, and mount upon a key-lever the contact-arm with provision for throwing the same out of operative contact or position when it is desired to use the device as an ordinary type-writer. The improvement is in the form of an attachment, which may be readily applied to any type-writers already in use.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a vertical section from front to rear showing in elevation the parts constituting my present invention. Fig. 2 is a side elevation looking from the reverse direction, with a portion of the frame broken away.

Like letters of reference indicate like parts in both of the views.

Referring now to the details of the drawings by letter, A designates the frame of usual or any approved form of construction, mounted upon the posts or legs A′ of a sufficient length to elevate the frame the required distance to provide for the working of the various parts.

B are the key-levers pivotally mounted at *b* in the usual manner.

The machine is shown as stripped of all the elements except those which constitute or are closely allied to my present invention; but it will of course be understood that it is to be equipped with the ordinary type-bars, ligaments connecting the same with the key-levers, the platen, and other elements which go to make up a type-writer of ordinary construction.

C is a bail extending across the machine and pivoted on the outside of the frame or base A in any suitable manner, as shown at C′. I preferably employ simply screw-pivots for this purpose, but of course do not restrict myself to the same, as any well-known means may be provided. The bail extends beneath the base A and is offset or extended rearwardly, as seen at C^2, while its upper ends, or rather its side bars, are connected by the cross-bar D, which is secured thereto in any suitable manner, as by screws D, at the ends; but the cross-bar is insulated therefrom by the strips of rubber or other insulating material *d d′*. This cross-bar carries the signal-blocks E, which have screw-threaded shanks, by which they are adjustably and detachably mounted in said bar, and the portion extending beyond the bar is serrated to agree with the signal which it is intended to transmit or represent. The projecting portions of these blocks are preferably square in cross-section; but such form is not essential. The lower offset portion C^2 of the bail is connected by the transverse piece C^3, and to the inner face of this and preferably substantially midway between the sides of the base is secured the substantially U-shaped piece F, in which is mounted a shaft *f*, carrying a worm F′, and to one end of this shaft is secured a hub *f′*, carrying a fan F^2, as shown in both of the views.

G is a pinion carried by a shaft G′ supported in the side bars of the bail near the junction thereof with the lateral offset portions C^3, and this pinion is by preference formed in two parts, one screwing into the other, and on a shoulder between the two is fastened a large gear-wheel H adapted to

mesh with the worm F', as shown. The pinion G is preferably supported at the outer ends so as to rest upon end screws g, provided with lock-nuts g' of known construction, to avoid their backing out.

Mounted directly upon each key-lever upon a suitable pivot h, so as to rock freely thereon, is the contact-arm I, preferably of blanked sheet metal, and having to one side of its pivot an extension I' offset as at i, so as to strike the top of its key-lever to limit its movement forward, and the extension I^2 upon the other side of its pivot is offset as at i' to prevent the arm K, soon to be described, from jumping away from the pinion G, as will soon be set forth. The upper and free end of this contact-arm I is provided with a nose i^2, which is designed to come in contact with its signal-block E and adapted to slide along the face thereof upwardly on the return stroke of the key-lever and type-bar. On the side of this nose is secured in any suitable manner a piece I^3 of suitable insulating material, as hard rubber, to prevent the nose from entering the serrations or depressions or cuts in the signal-block. The arm K is preferably of sheet metal stamped to give it the required form and is pivotally mounted between the ends of its substantially horizontal portions, as at k, on the horizontal portion or extension I' of the contact-arm I. This arm K is provided with a depending portion the rear face of which is provided with teeth K' adapted to mesh with the gear G when the key-lever returns to its normal position after having been depressed to make an impression upon the paper on the platen. The portion of this arm to the rear of its pivot is bifurcated, as seen at k', opposite the pivot h of the contact-arm I, and the upper arm of this bifurcation is prolonged to form an extension K^2, as seen best in Fig. 1, which extension is designed to be engaged by the offset i' of the contact-arm to prevent the arm K from jumping away from the pinion G.

J is a right-angled bar suitably secured to the top of the base and extending across the machine. It is seen clearly in both views. When the extension K^2 of the arm K strikes against the under face of this angle-bar J the tooth portion K' of said arm is thrown out of mesh with the pinion G and the contact-arm I is rocked away from the signal-block E. The lower arm of the bifurcation of the arm K is designed to contact with the head of the pivot h of the contact-arm I and thus prevents the said arm from following up the pinion when it is rocked away to adapt the machine for use as an ordinary type-writer, as will soon be explained.

To one side of the bail C is secured one end of a spring lever or arm L, which at its free end carries a knob or handle L'. On the outer face of the base of the machine is secured a vertical arm or plate M, provided with depressions m m', into either of which the spring-arm L is designed to engage, the arm being simply moved outward by its handle so as to bring it free of one of said notches or depressions and the arm then moved up or down, as the case may be, until opposite the other depression, when the resiliency of the arm will force it into the said depression, it being understood of course that the arm is fast upon the bail, so that when the said arm is thus moved to one or the other of said depressions or locks the bail with all its accessories is moved upon its pivot to throw the parts into or out of operative relation with reference to the contact-arm I.

As it is desirable to make contact through the machine when the said handle is so switched as to adapt the machine for use as an ordinary typewriter, in order to allow the ordinary key and sounder being used, a spring metal plate or strip N is secured in any suitable manner on the top of the base A at one side of the machine only, so that when the bail C is rocked down the cross-bar D, which is normally out of contact with the machine by reason of its insulation, will be pressed hard against the metallic strip or plate N and so make the desired electrical contact.

In connecting up the machine one pole of the battery is connected to the cross-bar D, the signal-block E which is carried by said bar being insulated from the machine, and the other pole of the battery is connected to the base A, so that the contact-arm I being on the key-lever and that in turn being pivoted on the machine the circuit will be completed on the contact of the nose i^2 of the contact-arm with the signal-block, as will be readily understood.

With the parts constructed and arranged substantially as above set forth the operation is as follows: When the spring-lever L is engaged in the lowermost notch or depression of the plate M the bail is rocked upon its pivot so that the signal-blocks are thrown forward out of the path of the signal-arm I. When a key-lever is depressed and when the parts are in this position the machine is adapted for use as an ordinary type-writer. When it is desired to transmit electrically a signal the handle of the spring-arm is grasped and moved to the right until it is disengaged from the notch or depression in the plate M and moved upward until it comes opposite the upper depression in said plate, when the arm will spring thereinto and be locked. When the spring-arm is in this position, as shown in both figures of the drawings, the bail is thrown rearwardly so that the signal-blocks thereon are brought into the path of and in position to be contacted by the nose of the contact-arm I, it being understood of course that there is a contact-arm mounted upon each key-lever and that each contact-arm has its own co-operating signal-block, the acting portion or serrations of which are made to conform to the signal to be transmitted and which corresponds with the letter on the key-lever to which its contact-arm is attached.

With the parts in this position and a key-lever depressed the arm K is lowered and in so doing the extension K^2 of the arm K is moved from the angle-plate J, when the teeth portion of the arm K will by gravity fall and come into mesh with the pinion G, merely tripping or slipping by the said pinion on its way down, but meshing hard therewith on the return movement of the key-lever, in which movement the said arm is retarded by the fan and the worm and worm-gear, as will be readily understood. When the toothed portion of the arm K descends and trips along the teeth of the gear G it keeps the contact-arm I away from the signal-block E for the reason that it tends to rock it away by the act of the tripping of the same as if the parts I and K were integral or in one piece, rocking on the center *h*, but when the said tooth-arm begins its upward movement it pulls at the point *k* where it is pivoted to the lateral extension of the contact-arm I and rocks the latter forward into contact with the signal-block E, thus making and breaking the circuit in the well-known manner. When the spring-arm L is turned and engaged in the lower depression of the plate M the bail C with the contact-blocks is rocked away from the contact-arms I, and at the same time the pinion G with its connections are moved away from operative connection with the arms K and the latter cannot follow, as above explained.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. A pivotally mounted bail, a pinion carried thereby, a key lever and an arm carried thereby normally out of engagement with said pinion, and signal transmitting devices operatively connected with the key lever, substantially as specified.

2. A pivotally mounted bail, a pinion thereon, a key lever, an arm pivotally mounted on the key lever and carrying a toothed portion normally out of engagement with the pinion, and signal transmitting devices operatively connected with the key lever, substantially as specified.

3. A pivotally mounted bail, a pinion thereon, a key lever, an arm pivotally mounted on the key lever and carrying a toothed portion normally out of engagement with the pinion, means for limiting the movement of said arm, and signal transmitting devices operatively connected with the key lever, substantially as specified.

4. The combination of a key lever, a signal block, a contact arm mounted thereon, an arm pivotally mounted on the contact arm, and a bail carrying a gear for co-operation with the last mentioned arm, substantially as specified.

5. The combination of a key lever, a signal block, a contact arm pivotally mounted thereon, a pivotally mounted bail carrying a pinion, and an arm pivotally mounted on the contact arm and having a toothed portion to engage said gear, substantially as specified.

6. The combination of a key lever, a signal block, a contact arm pivotally mounted thereon and having a lateral extension with oppositely disposed off-sets, and an arm pivotally mounted on the contact arm, as set forth.

7. The combination of a key lever, a signal block, a contact arm pivotally mounted thereon, and an arm pivotally mounted on the contact arm and having a bifurcated extension embracing the pivot of the contact arm, substantially as specified.

8. The combination of a key lever, a contact arm pivotally mounted thereon, a pivoted bail carrying a pinion, and an arm pivotally mounted on the contact arm having a toothed portion to engage the pinion and a bifurcated extension embracing the pivot of the contact arm, substantially as specified.

9. The combination of a key lever, a contact arm pivotally mounted thereon, a pivoted bail carrying a pinion, an arm pivotally mounted on the contact arm having a toothed portion to engage the pinion and a bifurcated extension embracing the pivot of the contact arm, and a stop for limiting the upward movement of said bifurcation, substantially as specified.

10. The combination of a key lever, a contact arm pivotally mounted thereon, a pivoted bail, a pinion carried thereby, and an arm pivotally mounted on the contact arm and having a depending toothed portion normally out of engagement with the pinion and a bifurcated portion embracing the pivot of the contact arm, substantially as specified.

11. The combination of a key lever, a contact arm pivotally mounted thereon, a pivoted bail carrying signal blocks, and a metallic strip mounted in the path of the upper cross bar of said bail to be engaged thereby, substantially as specified.

12. The combination of a key lever, a contact arm pivotally mounted thereon, a pivoted bail, a pinion and a gear wheel carried thereby, an arm pivotally mounted on the contact arm and having a toothed portion to engage the pinion, and a worm carried by the bail and engaged by the gear, substantially as specified.

13. The combination of a key lever, a contact arm pivotally mounted thereon, a pivoted bail, a pinion and a gear wheel carried thereby, an arm pivotally mounted on the contact arm and having a toothed portion to engage the pinion, a worm carried by the bail and engaged by the gear, and a fan carried by the shaft of said worm, substantially as specified.

14. The combination of a pivoted bail, a signal block carried thereby, a key lever, a contact arm carried thereby, a spring arm secured to the bail, and a lock therefor on the base of the machine, substantially as specified.

15. The combination of a pivoted bail, a signal block carried thereby, a key lever, a

contact arm carried thereby, a spring arm secured to the bail, and a lock therefor on the base of the machine having depressions into which said arm is adapted to spring, substantially as specified.

16. The combination of a pivoted bail having a rearward extension beneath its pivot, a U-shaped bar carried by the connecting portion of said extension, a worm shaft and worm mounted in said bar, a fan carried by said shaft, a gear wheel carried by the bail and meshing with the worm, a pinion carried by said bail, and a key lever and an arm carried thereby having a toothed portion to engage said pinion and means whereby said bail may be rocked to throw the pinion out of operative position with relation to said toothed arm, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES SPIRO.

Witnesses:

HARRY B. FINN,

MICHAEL T. CORRIGAN.