

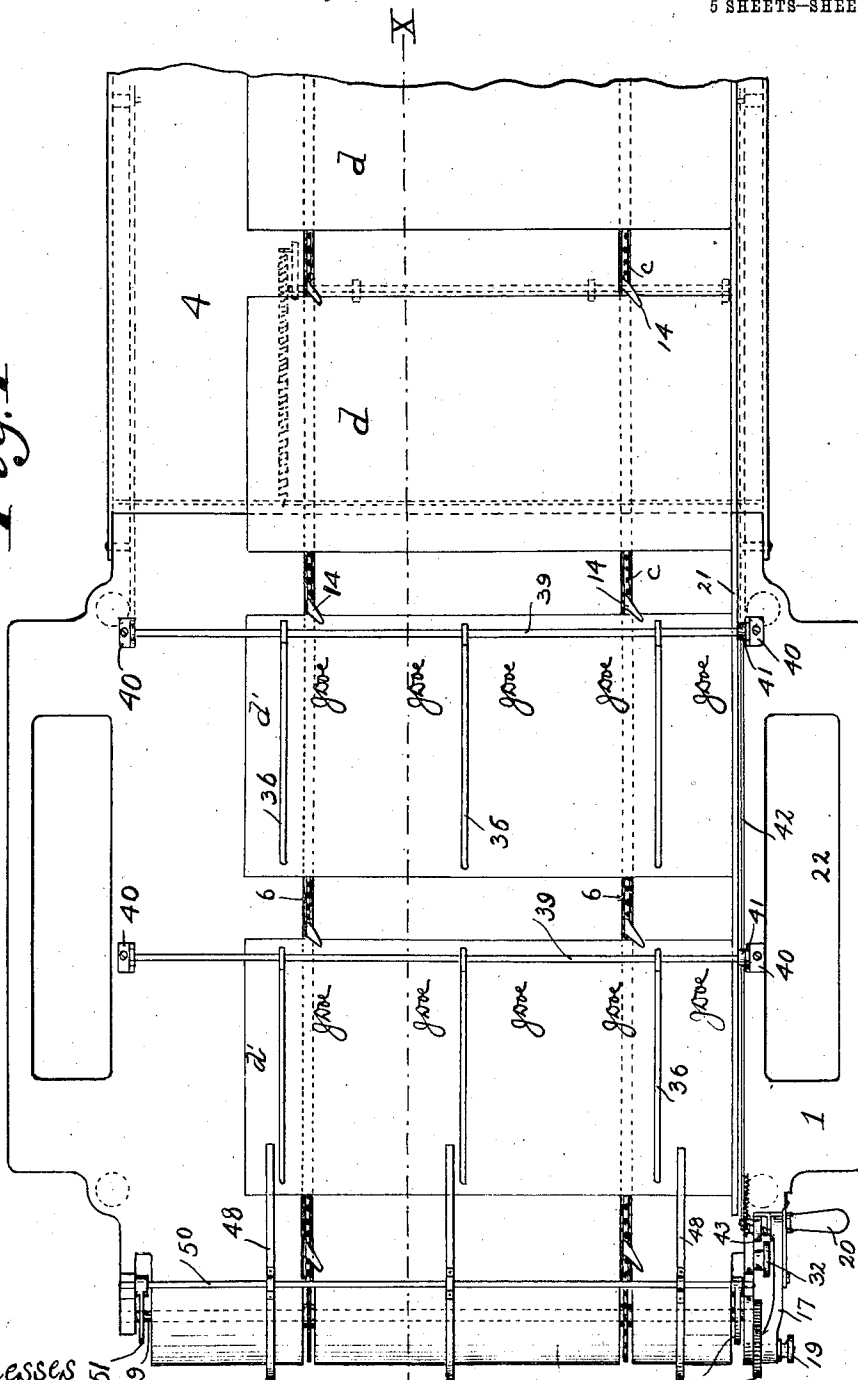
F. A. JOHNSON.  
SIGNAGRAPH.  
APPLICATION FILED JULY 7, 1911.

1,066,115.

Patented July 1, 1913.

5 SHEETS—SHEET 1.

*Fig. 1*



*Witnesses*  
*M. C. Carrawe*  
*T. B. Mackinnon*

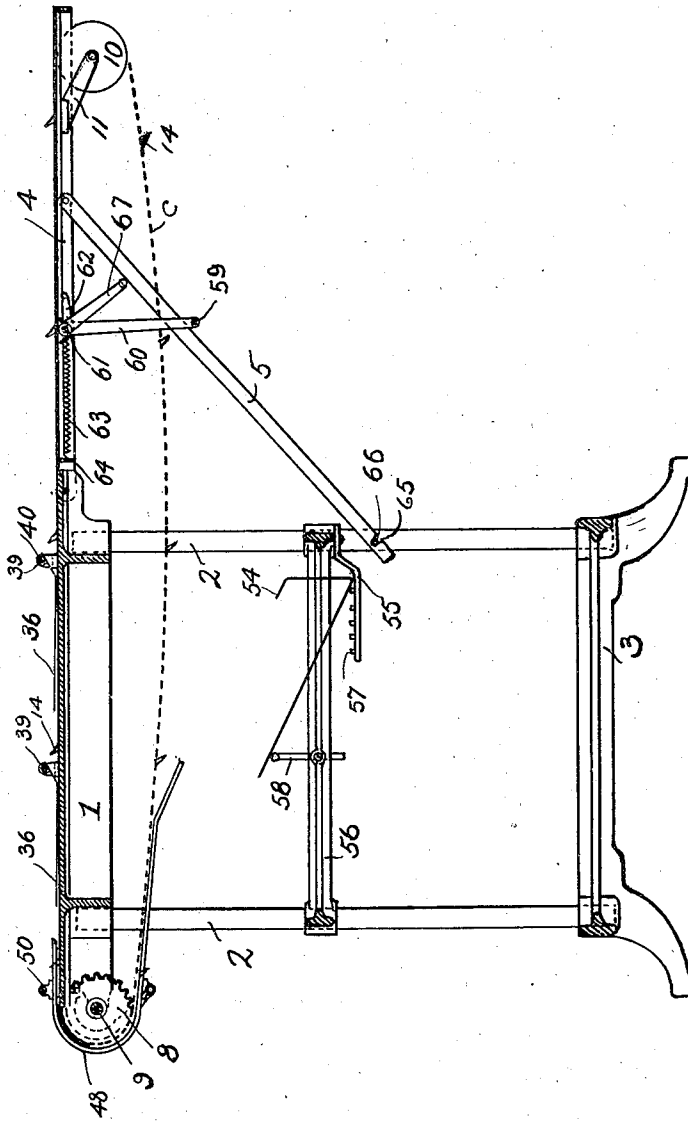
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5 SHEETS—SHEET 2.

*Fig. 2*



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5 SHEETS—SHEET 3.

Fig. 3

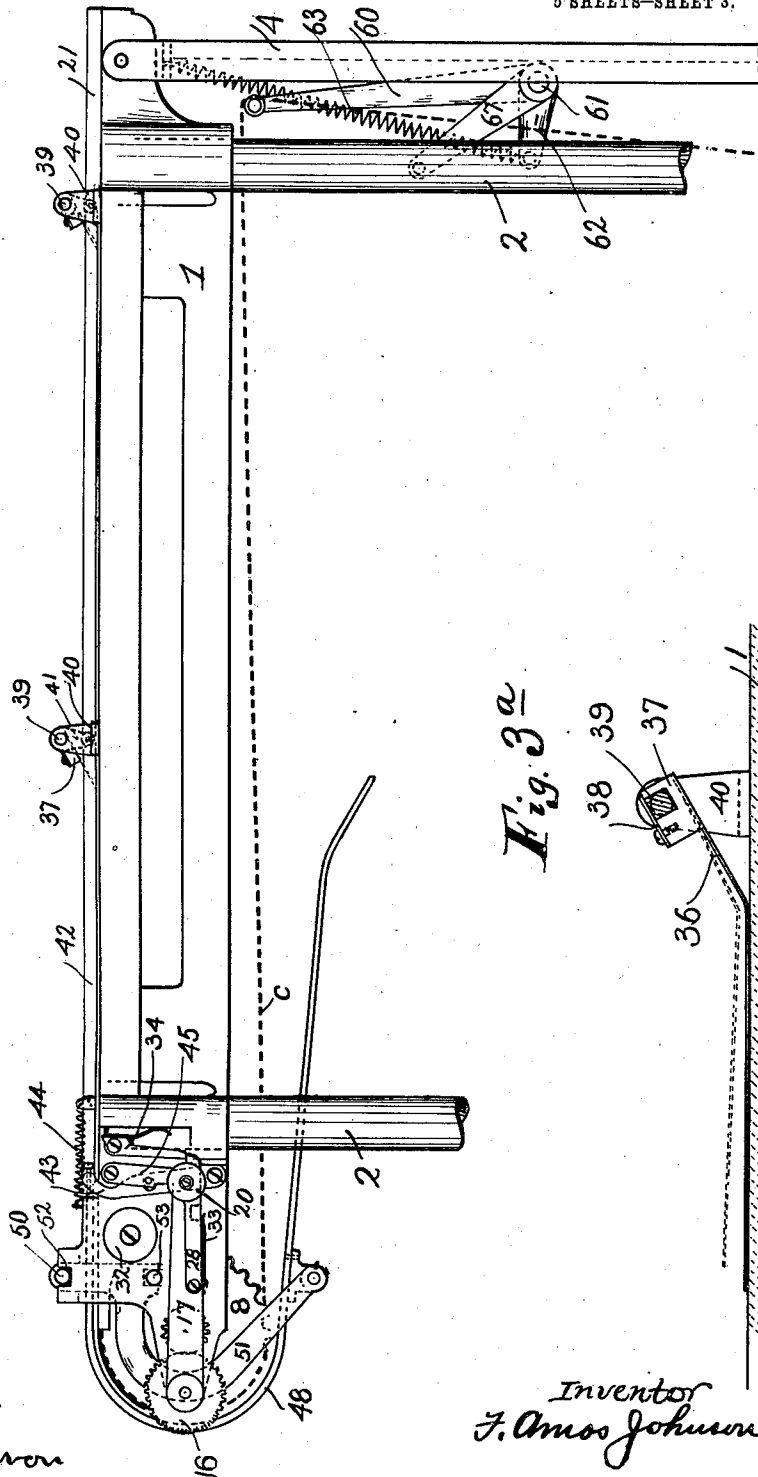
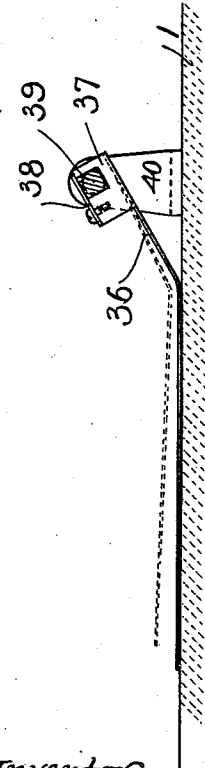


Fig. 3<sup>a</sup>



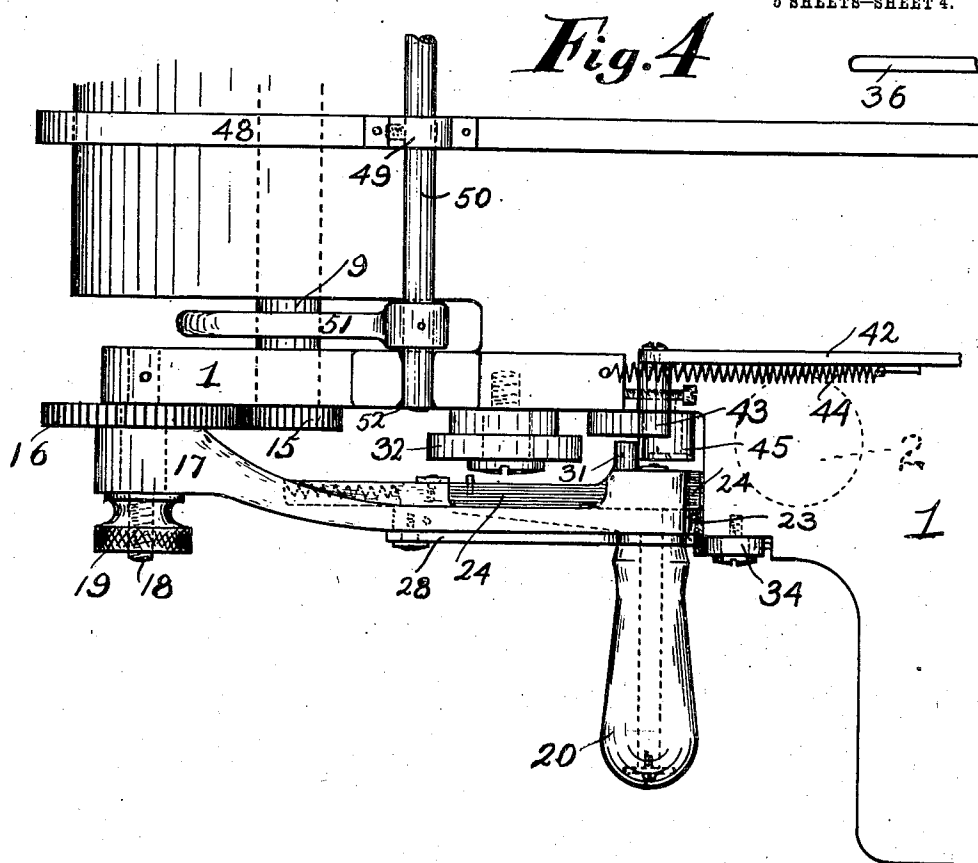
Witnesses  
No. 6 Crane  
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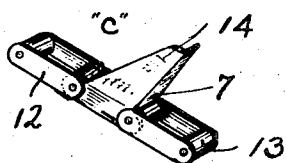
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5 SHEETS—SHEET 4.



*Fig. 5*



Witnesses  
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5 SHEETS—SHEET 5.

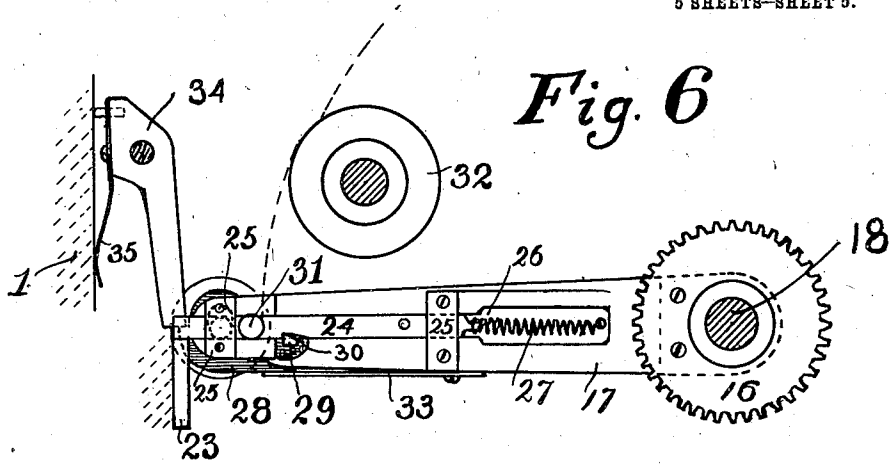


Fig. 6

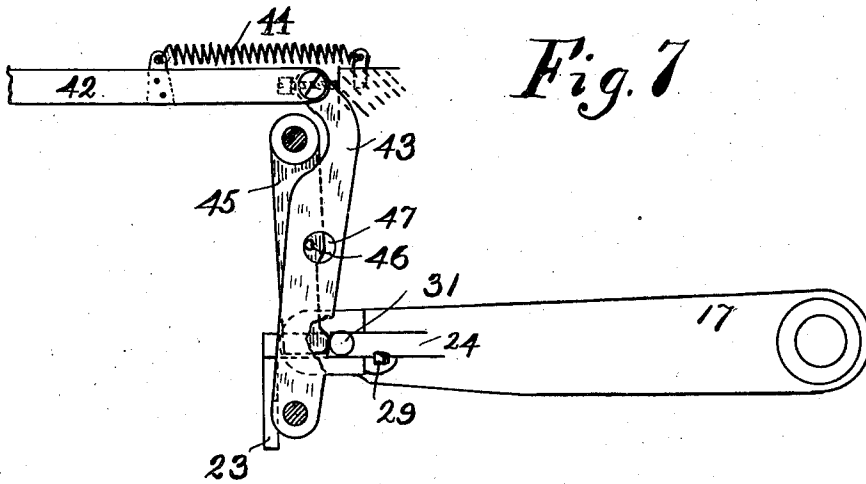


Fig. 7

Witnesses  
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F. Amos Johnson

# UNITED STATES PATENT OFFICE.

FRANK AMOS JOHNSON, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO SIGNATURE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## SIGNAGRAPH.

1,066,115.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed July 7, 1911. Serial No. 637,351.

*To all whom it may concern:*

Be it known that I, FRANK AMOS JOHNSON, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Signagraphs, of which the following is a specification.

My invention relates to machines for simultaneously making a plurality of signatures, which have come to be known in the arts as "signagraphs."

My improvements are especially applicable to that particular type of machine in which the documents to be signed are placed singly on a table or platen and carried by a suitable conveyer to the writing position and from thence to a receiving tray.

More specifically my improvements relate to that particular type of machine invented by W. R. Woodward, in which the sheets are carried through the machine by being pushed ahead of the paper-carrying fingers. In the Woodward machine the paper sheets are pushed under fixed presser springs. While this device is reasonably satisfactory there is a tendency for the springs to buckle the sheets. I have provided a means for raising the grippers or presser springs while the conveyer is in motion and for automatically applying them immediately the conveyer comes to rest. I have also provided a stop device for the conveyer, so that the sheets will not be carried past the writing position for which the machine is set. Means is also provided so that with a constant stopping point for the handle which operates the conveyer, the writing position may be changed.

Other improvements will be pointed out in the following description and claims.

Reference is made to the accompanying drawings in which—

Figure 1 is a plan; Fig. 2 is a front sectional elevation on line X—X of Fig. 1; Fig. 3 is a partial front elevation; Fig. 3<sup>a</sup> shows the detail construction of one of the grippers; Fig. 4 is an enlarged view of a portion of Fig. 1; Fig. 5 is a perspective view of a small portion of the paper-carrying chain or conveyer; and Figs. 6 and 7 are rear elevations of some of the parts shown in Fig. 4.

I have shown only so much of a complete machine as is necessary to illustrate my in-

vention. As my improvements have nothing to do with the writing and pen-carrying devices I have shown none of this mechanism. My improvements are intended to be used in connection with the pantographs and pen-mechanism of any of the Woodward machines—for instance such devices as are shown in U. S. Patent No. 880,950.

The accompanying drawings show the main outlines or framework of one of the commercial machines manufactured by the Signature Company, of New York. It is composed of a main bed or writing platen 1, which is mounted on tubular corner posts 2, which extend upward from a rectangular base 3. The tubes fit tightly in both the bed and base, so as to give great rigidity to the structure. At the right is a pivoted extension or leaf 4 which, when the machine is in use, is supported by braces 5. Extending across the bed and leaf are two chain channels 6 which contain a pair of conveyer chains *c*. These chains are carried by a pair of sprocket wheels 8 which are on a shaft 9—said shaft being journaled in the main bed—the chains passing around idlers or sheaves 10 which are supported by brackets 11 attached to the under side of the leaf.

The conveyer chains *c* are composed of side links 12 and pins 13. Paper-carrying fingers 14 are formed at convenient intervals by extended side links which are made as shown in Fig. 5. It will be noticed that the portion 7 is bent at right angles or so as to stand across the chain; that it fits tightly against one of the pins 13; that it is substantially as wide as the chain—thereby giving sufficient bunting surface to push the sheets of paper and a surface that will not catch or hold the paper. The position of the chains is indicated by heavy dotted lines.

The conveyer chains are moved by a pinion 15 on the front end of the sprocket shaft 9. This pinion is in mesh with a drive gear 16 and said drive gear is carried by a crank 17 which turns on a stud 18 which is mounted in the bed. A knurled nut 19 holds the crank and gear in position. By turning the crank handle 20 in a clock-wise direction the conveyer chains will move through their channels from right to left.

The documents *d* or papers to be signed are placed on the leaf portion against a front paper guide 21 and in front of the carrying fingers 14. I have shown the drive

gear larger than the pinion 15 and the ratio is such that one turn of the handle 20 will carry the documents from the position *d* to the position *d'* which is the signing or writing position. In Fig. 1 I have shown two sheets each with five signatures "J. Doe" which can be simultaneously made. As previously stated the pens, writing frame, etc., are not shown. They are, however, mounted above the bed or platen and are connected through openings 22 in the bed to a pantograph—the whole being similar to or identical with the devices shown in the U. S. patent referred to.

In order to bring the documents to a fixed and uniform position on the bed with every revolution of the crank, so that the signatures will always come at a uniform place on the documents, I provide a stop 23 which is secured to the bed. The crank 17 has a plunger 24 (see Fig. 6) which is held by clips 25 in a groove 26. This plunger is adapted to be projected beyond the end of the crank 17 so as to come against the stop 23, to limit the movement of the crank. It is held in this position against the tension of a spring 27 by a latch pawl 28 which has a latch pin 29 which enters a notch 30 in the plunger 24. This plunger has a horn or pin 31 which strikes against a roll 32 as the crank is turned around, thereby forcing the plunger 24 outward. A spring 33 keeps the latch pawl 28 in engagement with the plunger so that it will strike against the stop 23 when it reaches that point.

An unlatching pawl 34 is mounted on the front side of the bed. This pawl has a spring 35 which holds its lower end to the left so as to come in contact with the outer end of the latch pawl 28. The latch pawl forces it aside just before the plunger 24 reaches the stop 23. By giving the crank handle a reverse or backward turn the latch pawl 28 will be caught by the pawl 34 and will be forced downward and the plunger 24 will be released (its spring 27 withdrawing it from the stop 23) and the crank will be free to be turned another revolution. The roll 32 will set the plunger so that it can make only one revolution before it is again stopped. It is evident from this construction that the crank and the drive gear always come to a fixed position with every revolution of the crank and that the documents will always be stopped at the same place on the writing platen. By loosening the knurled nut 19 the crank may be pulled out slightly on its stud so that the gear and pinion will be out of mesh. The sprocket shaft may then be turned so that the carrying fingers with the documents may be left in any desired position on the platen when the crank is against the stop.

In order to hold the papers firmly when in writing position and to allow them to be

moved freely while being brought into such position and while being carried away, I provide movable grippers or presser fingers 36. These springs are attached to lugs 37 (see Fig. 3<sup>a</sup>) which are clamped by clips 38 on a pair of rock shafts 39. These rock shafts are mounted to turn in brackets or boxes 40 which are secured to the top of the bed. The shafts are square between the bearings. I have shown only three grippers on each shaft. By loosening the clips 38 the grippers may be readily adjusted to any position on the shafts.

Each of the rock shafts has an arm 41 on its front end. (See Fig. 1 and dotted position in Fig. 3.) The lower or free ends of these arms are joined by a connecting link 42 to the upper end of a lever 43. A spring 44 tends to hold the link 43 to the left and to raise the grippers to position shown by dotted line in Fig. 3<sup>a</sup>, entirely free from the bed. By forcing the upper end of the lever 43 to the right the grippers will be forced downward and the sheets of paper or documents firmly clamped. This is done by a cam lever 45 which is mounted on the bed in front of the lever 43 and which has a pin 46 entering an opening 47 in the lever 43. Just before the crank reaches its stopped position the pin 31 of the crank plunger strikes against the lower or free end of the lever 45 and forces it to the right where it holds it as long as the plunger is against its stop. This locks the grippers in their downward position. As soon as the crank plunger is unlocked, which is accomplished by a slight reverse motion of the crank, as already explained, the spring 44 will be free to act and the grippers will be raised from the platen leaving the sheets of documents entirely free to be carried by the conveyer chains on to the left.

The left end of the bed is turned down, forming a roll 1'. The papers are carried around this roll by guide or turning fingers 48. These fingers are secured by lugs 49 to upper and lower rods 50. These rods are secured by front and rear brackets 51 which are readily detachable from the bed where they are normally held by means of the upper rod 50 entering notches 52 in the bed and by pins 53 in the bed which enter notches in the brackets 51, (shown by dotted lines in Fig. 3.) This is a very desirable construction as it permits a torn sheet being readily removed without further tearing and also permits the bed or platen being readily cleaned or wiped off.

The documents are held by the guide or turning fingers until delivered and stacked in a receiving tray 54. This tray is formed of a flat sheet of metal bent in the form shown in Fig. 2. The tray is supported by brackets 55 which are attached to a rectangular frame 56 which is secured to the cor-

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ner posts 2. The brackets 55 have fixed stops or pins 57 and the left edge of the tray is supported by adjustable slides 58. The tray is thus easily adjustable to any angle which may be necessary for different size sheets and for different grades of paper.

When not in use the leaf 4 may be folded or let down as shown in Fig. 3. To keep the conveyer chains in place while this is being done I provide a yielding chain take-up device which consists of a rod 59, secured by arms 60 to a rock shaft 61 which is mounted on the under side of the leaf. On the rear end of the rock shaft 60 there is a short arm 62. A spring 63 connects this arm to a cross bar 64 of the leaf and tends normally to hold the parts in the position shown in Fig. 2. On moving the rod 59 slightly to the left the spring will pass beyond the center of the rock shaft and the rod will pick up the chains *c* and as the leaf is let down the slack in the chains will be taken up.

In order to insure the chain take-up being thrown into operative position before the leaf is lowered I provide a locking device for the leaf supporting braces 5. These braces have notches 65 which engage pins 66 in the right hand posts 2. The braces 5 have to be raised so the notches will clear the pins 66 before the leaf can be let down. On the front end of the rock shaft there is an arm 67 the lower or free end of which engages one of the leaf braces 5 when the chain take-up is in an inactive position. In this position one of the leaf braces is locked onto its pin 66 and the leaf cannot be released. As soon as the chain take-up device is thrown into operative position the brace 5 is released, and it is evident that this must be done before the leaf can be lowered.

What I claim is:

1. In a machine of the class described the combination of a writing platen with a conveying mechanism adapted to move documents into and out of writing position on said platen; a crank for operating said conveying mechanism; a movable plunger mounted in said crank; a stop located in the path of said plunger when said plunger is extended; means for extending or projecting said plunger so as to strike said stop and thereby stop the movement of the conveying mechanism and means for releasing said crank plunger to permit said conveying mechanism to be moved.

2. In a machine of the class described having a document-conveying mechanism and a document-gripping mechanism; means for operating the conveying and gripping mechanisms; a stop mechanism for said operating means—said gripping mechanism being called into action on the stopping of said conveying mechanism; means for re-

leasing said stop mechanism and said gripping mechanism by a slight backward movement of said conveying mechanism.

3. In a machine of the class described having a document carrying mechanism and a document-gripping mechanism; a hand-operated crank adapted to move said document carrying mechanism and to call said gripping mechanism into action; a stop device adapted to stop said crank in a fixed position—said stop device being releasable on a slight reverse or backward movement of said crank.

4. In a machine of the class described, a main bed or writing platen; a folding extension or leaf; means for supporting said leaf in an extended position; a flexible document carrier encircling said bed and said leaf; a take-up device for preventing slack in the carrier when said leaf is folded—said take-up device having an operative and an inoperative position and means adapted to lock said leaf supporting means when said take-up device is in its inoperative position.

5. In a machine of the class described, a main bed or writing platen, in combination with a folding extension or leaf; a conveyer chain encircling said bed and said leaf; a sprocket wheel mounting for said chain on said bed and an idler sheave mounting for said chain on said leaf; a chain take-up device comprising a rod or bar mounted so as to be flexibly or yieldingly thrown against said chain.

6. In a machine of the class described, the combination of a writing platen with a conveying mechanism for moving documents into and out of writing position on said platen; clamping means for holding said documents when in writing position on said platen; a hand-operated crank for said conveying mechanism; means for stopping said crank in a fixed position—said stopping means and said clamping means being simultaneously releasable.

7. In a machine of the class described a main bed or writing platen, a stand therefor comprising a base or foot portion; tubular corner posts joining said bed and said base and held in sockets in both the bed and base; an intermediate frame mounted on said corner posts; tray supporting arms mounted on one side of said frame—said arms being provided with a plurality of fixed lugs or stops—and a plurality of adjustable tray supports mounted in adjacent sides of said frame.

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

FRANK AMOS JOHNSON.

Witnesses:

T. O. MACKINNON,  
FRANK H. VICK, Jr.