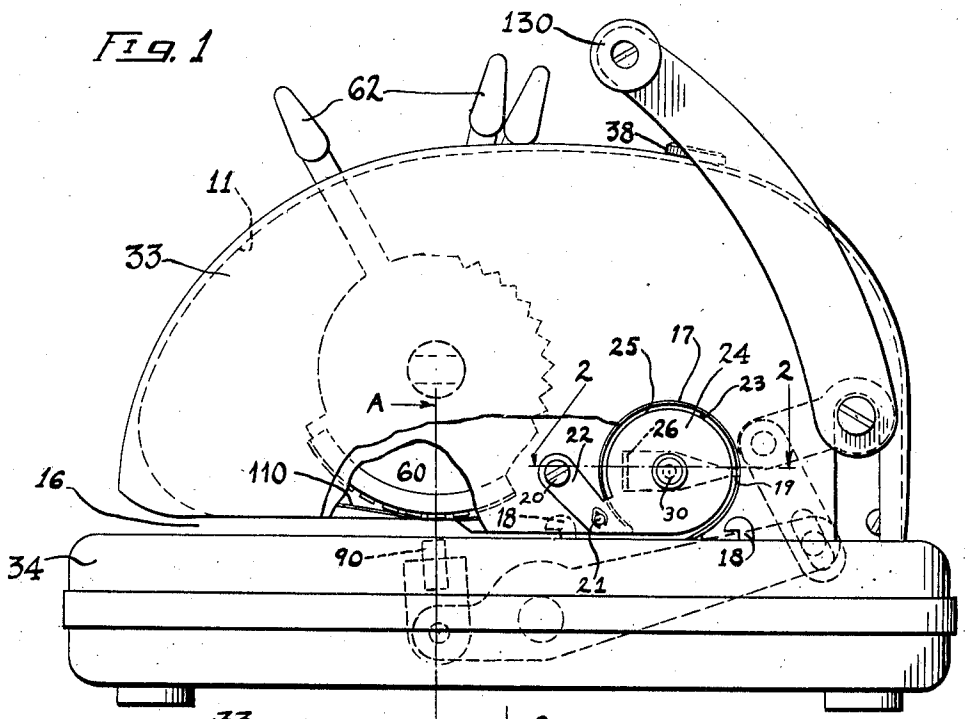
Jan. 11, 1944. W. B. PAYNE 2,339,188

WORK POSITIONING MEANS FOR IMPRINTING MACHINES AND THE LIKE

Original Filed July 30, 1940

Fig. 1



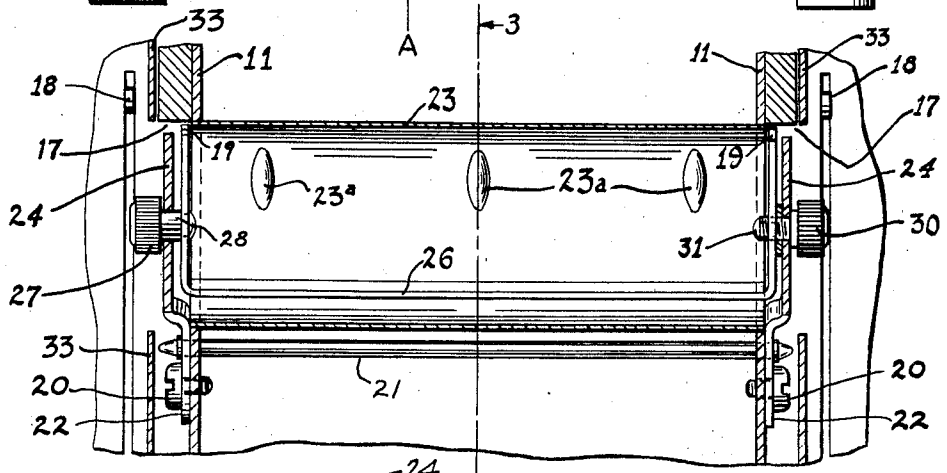




Fig. 2

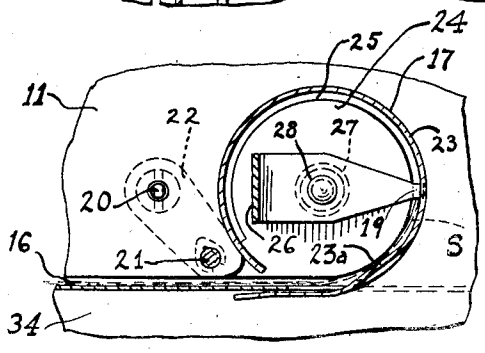



Fig. 3

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Patented Jan. 11, 1944

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# UNITED STATES PATENT OFFICE

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## WORK POSITIONING MEANS FOR IMPRINTING MACHINES AND THE LIKE

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Original application July 30, 1940, Serial No. 348,420. Divided and this application March 16, 1942, Serial No. 434,838

5 Claims. (Cl. 101—297)

This invention relates to improvements in sheet handling machines and the like, and is more particularly directed to a sheet imprinting machine provided with adjustable sheet positioning means adapted to permit of accurately locating oversize checks or other documents with relation to the printing line of the machine.

This application is a division of my co-pending application Serial No. 348,420, for Check protecting machine or the like, filed July 30, 1940. While the invention is capable of application to a wide range of sheet handling devices of various kinds, it is peculiarly applicable to a machine known as a check imprinting device and of the character shown in the aforesaid application. Machines of this kind are used to imprint the amount or other indicia on a predetermined part or area of an instrument.

Many business concerns or individuals find it expedient to use different types of check forms in connection with different phases of their disbursement procedure. While the conventional single check may be used for certain purposes, larger blanks known as voucher or top stud checks have come into use for accounts payable and for payroll purposes. This invention is particularly adapted to facilitate the handling of voucher checks or other oversize sheets; for example, check forms with the detachable voucher portion arranged at the top.

The object of this invention is to provide readily adjustable means for positioning different length sheets accurately with relation to a predetermined operating point of a machine, such as the printing line of a check imprinting machine.

Another object of the invention is to provide means whereby a small, compact machine of the character mentioned may be so constructed as to permit of its use to print on relatively large checks or other sheets.

With these and other incidental objects in view, the invention includes certain novel features of construction and combination of parts, the essential elements of which are set forth in the appended claims and a preferred embodiment of which is hereinafter described with reference to the drawing accompanying and forming a part of this specification.

In the drawing:

Fig. 1 is a side elevation of a check imprinting machine embodying the preferred form of the invention.

Fig. 2 is a fragmentary sectional plan view taken substantially on the line 2—2 of Fig. 1, showing certain of the parts in section.

Fig. 3 is a fragmentary vertical section taken substantially on the line 3—3 of Fig. 2, showing the parts forming the sheet positioning means in one position.

Like parts are indicated by similar reference characters throughout the several views.

The present invention provides positioning or stop means whereby a relatively large sheet of paper to be printed upon may be accurately positioned in a machine. The device to which the invention is shown applied in the drawing is a relatively simple one and is intended only to illustrate how the invention may be applied generally to machines, such as check imprinting or other office machines. As will be more clearly apparent later on, the exact form of the printing couple and mechanism for operating it is not essential to the invention.

Referring now to the drawing, the illustrated machine is provided with a removable upper case portion 33 and a base section 34 suitably supported by main frames 11. The frames 11 are arranged in spaced relation to support the operating mechanism of the machine, and are formed with a sheet receiving slot or throat 16 intermediate the upper and lower portions thereof. The work receiving opening or throat 16 is arranged to direct a check or other sheet placed on the bed surface of the base 34 between the members of a printing couple.

The selective type members 60 and platen member 90 of the printing couple are adapted to be moved into cooperative engagement to mark that portion of a sheet positioned at the printing line of the machine generally indicated in Fig. 1 of the drawing by the line A—A. The movable type members 60 are supported within the casing 33 by the main frames 11, and selectively shifted to position a predetermined character at the printing line by the finger pieces 62. The platen 90 is suitably supported in the base of the machine and operatively connected in a well known manner to the operating handle 130. Upon actuation of the handle 130 in a counter-clockwise direction, Fig. 1, the platen 90 is moved into cooperative engagement with the type 60 positioned at the printing line to impress a check or other instrument positioned between the members of the printing couple. Suitable inking means such as a ribbon 110 may be associated with the printing couple.

In order to accommodate sheets substantially larger than conventional short check forms and the like, the casing and frames of the machine are provided with the circular opening 17 pro-

viding a clearance across the machine. The work receiving slot 16 enters the clearance 17 in an approximately tangential direction. A guide or shield plate 23 is shaped to substantially conform to the outline of the opening 17 and arranged to extend between and has its ends supported by the side frames 11. The edges of the plate or shell 23 do not overlap but are spaced apart to form an opening positioned in alignment with the receiving slot 16. The spring of the shell 23 serves to retain it in position within the circular opening 17. Spaced deflections 23*a* are formed inward of the shell 23 and are adapted to be engaged by the leading edge of a sheet. As the leading edge of a sheet enters the opening 17 it engages portions 23*a* rather than the flat wall of the guide 23 thereby eliminating friction that may otherwise retard the advance of the form.

To facilitate accurately positioning a voucher check or other large sheet, the present improvement contemplates the provision of sheet stop means arranged in association with the cylindrical opening 17. This means includes stop fingers 19 mounted for angular adjustment about the axis of the cylindrical clearance opening. The stop members or fingers 19 are mounted on plates 22 detachably secured to each of the side frames 11 by the screws 20 and the cross rod 21. Each guide plate 22 is provided with offset circular portion 24 arranged concentrically of the cylindrical clearance opening 17. However, the circular portions 24 are of a somewhat smaller diameter than the opening 17 or the shell 23. Therefore, a space or slot-like opening 25 is formed between the periphery of the plate 24 and the inside wall of shell 23 positioned within the opening 17. This slot-like opening 25 forms a curved extension of the receiving slot 16 so that the end of a relatively long sheet readily enters same.

It is clear, as so far described, that if a sheet is advanced into the machine through the receiving slot 16, the tangential relation of the slot 16 and the clearance opening 17 will cause the edge of the paper to curl and follow the path of the slot-like opening 25. The leading edge of the sheet so inserted in the machine will advance until it strikes the stop fingers 19. As hereinafter described, the stops are adapted to be set with relation to the printing line of the machine to vary the imprinting point in one direction. A wide sheet might be inserted in this way and adjusted laterally of the machine so as to imprint at a desired point.

The stop fingers 19 are formed of projecting side arms of a U-shape yoke member 26 supported for angular adjustment about an axis passing through the center of the cylindrical clearance 17. The circular portions 24 of the plates 22 arranged concentrically of the clearance 17 are provided with central openings for the reception of the supports for the yoke 26. An adjusting knob 27 fixed to the one arm of the yoke 26 is provided with a reduced shank 28 mounted in the central opening of the portion 24 of the plate 22 on the left side of the machine as viewed in Fig. 2. A knob 30 has a reduced threaded portion 31 which passes through the central opening of the plate 22 on the right side of the machine and is threaded into the other arm of the yoke 26. The knob 27 serves to adjust the yoke 26 to vary the position of the stop members 19 with relation to the printing line of the machine. The yoke 26 formed with the sheet positioning stops 19 may be securely held or released for adjustment by the manipulation of the knob 30 having a reduced portion threaded into the side arm of the yoke.

As in prior machines of the nature shown in the drawing, the conventional guides 18 are provided for positioning regular length single check forms not having detachable stubs. While the stops 18 are shown by full lines, Figs. 1 and 2, as adjusted to ineffective position, it is to be understood that they may be shifted forward to a position such as shown by the dotted lines to register a regular check with the printing line of the machine. My improved arrangement further provides for the sheet positioning or stop means including the guide plates 22 and stops 19 to be readily displaced in the event it is desired to imprint long continuous forms or strips. The upper case 33 may be removed from the machine after having been released by the actuation of suitable latch mechanism including the knob 38. After the cover 33 has been lifted from the machine frame, the screw 20 and the split washers on the ends of the cross rods 21 are accessible. The removal of the screws 20 and the rod 21 releases the guide plates 22, and permits the sheet positioning means to be readily detached from the machine. The arrangement of the detachable positioning means allows long continuous strips or forms to be inserted without interference of the stop member 19.

It will be clear from the foregoing description that when voucher checks or other relatively large sheets are to be imprinted by the machine, the conventional stop members 18 are shifted to the ineffective position shown by full lines in Fig. 1 of the drawing. In this position, the stops 18 are located to the rear of the cylindrical clearance 17 and entirely out of the path of a sheet. Therefore, the stop fingers 19 of the yoke 26 are adapted to serve to position sheets of sufficient length to enter the curved portion of the receiving slot of the machine. The stop members 19 disposed in the path of the sheet are angularly adjusted about the center of the axis of the opening 17 and with relation to the curved extension 25 of the slot 16 to properly position a sheet. The stop members 19 are adjusted by the knob 27 with relation to the curved extension 25 of the slot 16 so as to permit of accurately positioning a sheet relative to an operating or printing point of the machine. After the stop elements 19 are adjusted to register a desired portion of a voucher check or the like with the printing line of the machine, the knob 30 is tightened to hold the stops in a predetermined position. The arrangement including the removable plates 22 supporting the angularly adjustable stops 19 materially widens the range of sheet sizes adapted to be accurately positioned in a device of the character mentioned.

The present arrangement providing the slot-like formation 25 and the curved extension of the slot 16 causes the forward end of a sheet to follow a circular path when inserted. This is due to the guide portions 24 of the plates 22 and the shell 23 which form the side walls of the slot-like formation 25. These side walls of the curved slot or guideway direct the sheet in its path of advance so as to avoid any buckle or bulge thereof likely to throw the portion of the sheet to be printed upon out of register with the printing line of the machine. Obviously, any buckle or bulge of the sheet would throw the sheet out of alignment even though the stops 19 may be properly set for a sheet having a pre-

determined length from the top to the bottom edges.

On account of the repeated handlings to which checks and other instruments are subjected in the normal course of business, they are made of relatively firm paper stock. Therefore, if such a form is inserted and flexed under tension about a curved surface or other formation there is a natural tendency for it to straighten out when released. Because of this characteristic of paper used for most checks it has heretofore been difficult to properly position and retain a form in a machine having circular sheet receiving openings. However, in the use of my improved arrangement, the top or leading edge of a sheet passing about the curved portion of the slot-like formation **25** engages the wall of the shell **23**. At the same time another portion of the sheet adjacent the top edge engages the periphery of the curved portions **24** of the guide plates **22**. It has been found that the friction created by the engagement of a portion of the sheet adjacent its end with the surface **24** of the plates **22** is sufficient to hold the sheet in position. Therefore, after the sheet has been advanced through the curved formation **25** to engage the stop **19**, as shown by the dotted lines in Fig. 3 and indicated by the letter S, it may be released without fear of any substantial shifting. However, if the friction surface **24** were not provided, the sheet engaging the stop **19** under tension and then being released would have a tendency to straighten out with the resultant shift or displacement thereof with relation to the stop **19** and the printing line of the machine.

While one embodiment of the invention has been disclosed, it is to be understood that the inventive idea may be carried out in a number of ways. This application is therefore not to be limited to the precise details described but is intended to cover all variations and modifications thereof falling within the spirit of the invention or scope of the appended claims.

I claim as my invention.

1. In a machine of the class described, the combination with members of a printing couple, of a housing having a circular work receiving clearance opening and an externally opening work receiving slot tangentially entering said circular clearance opening, guide plates mounted on opposite sides of said housing, each of said guide plates having a circular portion arranged concentrically of said circular opening but being of a smaller diameter so as to form one wall of a circular extension of the work receiving slot, and spaced work stop members mounted on said plates for angular adjustment about an axis passing through the center of the circular portion of said guide plates.

2. In a machine of the class described, the combination with a printing couple, of a housing having a cylindrical work receiving opening on one side of the printing couple and a work receiving slot to direct the work between the members of the printing couple tangentially entering said cylindrical opening, guide plates mounted on each side of said housing, each of said guide plates having a circular portion arranged concentrically of said cylindrical opening but being of a smaller diameter so as to form one wall of a curved extension of said receiving slot, spaced normally stationary stop members adjustably mounted on said plates and being adapted to be engaged by the leading edge of the work to position the line thereof to be printed upon with relation to said printing couple, said stop members mounted for rotation and movement axially about the axis of the circular portion of said guide plates, means for adjusting said stop members, and means for locking said members against movement from a predetermined adjusted position.

3. In a machine of the class described, the combination with a printing couple, of a housing having a cylindrical work receiving opening and a work receiving slot tangentially entering said opening, guide plates detachably mounted on opposite sides of said housing, each of said guide plates having a circular portion arranged concentrically of said cylindrical opening but being of a smaller diameter so that the arrangement forms a curved extension of said receiving slot, an adjustable yoke member mounted on said guide plates for angular movement about the central axis of the circular portion of said guide plates, said yoke member provided with extending portions projecting beyond the periphery of said circular portions of said guide plates, said extending portions being adapted to serve as limiting stops for the work as it advances through the curved portion of said receiving slot, and releasable means for normally holding said yoke member against movement.

4. A sheet guide and positioning means for a printing machine or the like having a casing provided with a sheet receiving slot terminating with an enlarged cylindrical closed end portion comprising guide plates detachably mounted on each side of the machine casing in association with the cylindrical portion of the sheet receiving slot, said guide plates having a circular portion arranged concentrically of said cylindrical portion of the receiving slot but being of a smaller diameter, a sheet positioning member having its opposite sides mounted on said guide plates for angular adjustment about an axis passing through the center of the circular portion of the plates, and releasable means for retaining said sheet positioning member in an adjusted position for engagement by the leading end of the sheet, the arrangement being such that upon insertion of a sheet into the machine the leading end is advanced between the wall of the cylindrical portion of said receiving slot and the peripheral edge of the circular portion of said guide plates for guidance in a predetermined path for cooperation with said sheet positioning member so that the part of the sheet to be printed upon is accurately positioned with relation to the printing couple of the machine.

5. In a machine of the class described, the combination of a housing, of a printing couple mounted in said housing, said housing provided with an externally opening sheet receiving slot having an enlarged cylindrical closed end portion at one side of said printing couple, of a sheet guide and stop assembly detachably supported on said housing in association with the cylindrical portion of said receiving slot, means for detachably securing said assembly to said housing, said assembly including guide plates supported on each side of said housing and an adjustable sheet positioning member supported by said guide plates, said guide plates formed with a circular portion arranged concentrically of the cylindrical portion of said receiving slot but being of a slightly smaller diameter than the cylindrical portion of said slot so as to provide a relatively narrow circular passageway adapted to guide the leading end of the sheet through a predetermined path, said

positioning member mounted on said guide plates for angular movement about an axis passing through the center of the circular portion of the plates, spaced stop fingers on said positioning member arranged to project into the circular passageway formed between said plates and the cylindrical portion of said receiving slot and adapted to be engaged by the leading end of a sheet, means for adjusting said positioning member to set said stop fingers so as to permit of positioning a sheet with relation to said printing couple, and releasable means for normally holding said positioning member against displacement, the arrangement providing a construtcion wherein the narrow circular passageway not only serves to guide the end of any sheet inserted into the machine through a predetermined path for cooperation with the stop fingers of said positioning member without buckling or otherwise becoming displaced, but the side walls of the passageway tend to offer frictional resistance to the sheet to hold same from moving away from said stop fingers so that a sheet is accurately positioned and maintained in position for reception of an impression from the printing couple.

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