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(54) **A silk screen printer.**

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Description

FIELD OF INVENTION

The present invention relates to a silkscreen printer, as stated in the preamble of claim 1.

BACKGROUND PRIOR ART

The British Patent Specification No. 1 467 910 teaches a silkscreen printer of the kind which comprises a reciprocatingly movable cylindrical printing table or drum and (although not shown) a frame or frame-carriage, in which a stencil is held stretched and which is reciprocatingly movable in the horizontal plane, this horizontal, reciprocal movement of the stencil frame being controlled by the movement of the drum or printing table.

This known printer also includes a gripper arrangement for holding firmly the sheet of material to receive print, here referred to as the print receiving material. The gripper is mounted on the printing drum and is moved by the drum in a circular path, which is coincidental with the upper printing surface of the drum.

In the case of such a silkscreen printer means are provided for registering the position of thin print material precisely in relation to the gripper(s) on the drum.

The present invention can be said to constitute a further development of the silkscreen printer described and illustrated in the aforementioned British Patent Specification.

SUMMARY OF THE INVENTION

TECHNICAL PROBLEMS

It is known that in the case of silkscreen printers in general and in particular in the case of silkscreen printers which incorporate a cylindrical or part-cylindrical reciprocatingly movable printing table, or drum, (stop-cylinder-machines), difficulties are experienced in returning the printing drum, gripper and frame to, and stopping the same in, one and the same precisely located position, a registered position, in which the gripper on the printing drum is able to grip a print material, that has been brought to a precise, registered position at a slightly earlier stage of the printing sequence.

It will be understood that the same difficulties are experienced when the reverse applies and the gripper is first brought to a precise registered position and the print material is intended to be displaced subsequently to its registered, precise position, in which the gripper can grip said registered material.

Since the oscillating energy for the printing drum becomes high, when the drum is rotated backwards and forwards at high speed, and since the mass of the frame must also be included as a positive contribution to the prevailing kinetic energy, a highly qualified technical problem resides in the provision of means whereby the printing drum, with gripper, and the frame can be brought to stop at a pre-determined exact position. Naturally, the kenetic energy, which must be overcome, becomes progressively greater with the higher permitted printing speeds, which increases the difficulties of stopping the printing drum and the frame in one and the same registered position at a selected constant printing speed.

Since, in order to apply print with greater accuracy in silkscreen printers, it is necessary that the gripper and the print material gripped thereby, and the stencil, all adopt one and the same relative position during each printing sequence, a technical problem resides in the provision of conditions which will enable the gripper to be arranged for a movement within the printing drum, or table, (thus not always stationarily in relation to the prevailing rotary position of the printing drum) in spite of the large oscillatory masses and kinetic energies involved with respect to the drum and frame, and then to realize that solely the gripper, mounted on the printing drum, can, in such case, be caused to take a pre-determined exact position, inter alia, in relation to the printer chassis, without taking the stop position of the printing drum and the frame (the stencil) relative to the printer chassis into account.

When the gripper, the print receiving material gripped thereby, and the stencil can be allowed to take any non-registered position, a technical problem resides in the provision of simple means whereby the print material and the stencil can be brought to exact registry with one another during the subsequent printing sequence.

When taking the aforesaid problems into consideration, it will be seen that a further technical problem resides in the provision of conditions, with the aid of simple means, whereby adjustments can be made to the registered position of the gripper in relation to the printer chassis, and to maintain this position over a multiple of printing sequences.

When considering the present state of this art and the technical problems encountered with silkscreen printers of this kind, it is seen that a qualified technical problem resides in the realization that the requisite exactitude of the position of the gripper, in relation to the printer chassis, can be actually achieved by causing solely the gripper to stop in a precise, registered position and to grip print material which has in turn been positioned precisely in relation to the printer chassis, while the

stencil, stencil frame, and printing drum, or table, can be allowed to stop in any, non-registered position relative to the printer chassis, and therewith afford a longer retardation time and retardation path, and that when returning the stencil and printing drum to a printing position, the stencil shall first be displaced to a position which is in register with the stationary gripper prior to beginning the actual printing sequence, through controlled mutual movement between stencil, printing drum, and print material.

Another predominant technical problem resides in the provision of conditions, with the aid of simple means, whereby registration of the gripper can be effected, in spite of the large oscillating masses and high kinetic energies involved, solely by stopping the lightweight gripper and its attachment means, which engender only small kinetic energy, in a registered position relative to the printer chassis or to some other reference point, such as the registration of the material to receive print.

It will also be seen that a further technical problem resides in the provision of conditions, with the aid of simple means, which will enable the gripper to be tilted "loosely" in relation to the printing drum and thereby enable solely the upper part of the gripper to be brought to a registered position; i.e. conditions can be provided which will enable the upper part of the gripper to be urged, by means of a spring, to a precise registration position irrespective of the position of the stencil at that time, and which, when the gripper grips print material, has been brought to a registered position with the aid of other means intended herefore, will afford the necessary registered co-action between gripper, print material and stencil throughout the whole of the following printing sequence.

It will also be seen that in silkscreen printers of this kind a further qualified technical problem resides in the realization that one or more of the aforesaid technical problems can be solved readily, by providing conditions in which solely the upper part of the gripper is brought to a precise registered position relative to the printer chassis or some other reference point and into gripping engagement with precisely registered print material in said registered gripper position, and in which, with the gripper and print material registered in relation to the printer chassis, the stencil frame and stencil pattern are subsequently displaced to a registered position relative to the gripper, and in which, subsequent to further displacement of the gripper and print material, the stencil and print material are held in a mutually registered position during the whole of the printing sequence.

SOLUTION

The present invention relates to a silkscreen printer, as stated in the preamble of claim 1.

For the purpose of solving one or more of the aforesaid technical problems it is proposed, in accordance with the present invention, the features stated in the characterizing part of claim 1.

Advantageous embodiments are stated in the subclaims.

ADVANTAGES

The advantages primarily afforded by a silkscreen printer constructed in accordance with the present invention reside in the provisions of conditions which enable the gripper and the print receiving material to be registered in relation to the printer chassis or some other reference point while taking up the limited kinetic energy engendered by the gripper, therewith dispensing with the necessity of also bringing the stencil frame and printing table to registered positions. The stencil and the print material, however, are in mutually registered positions during a printing operation, as a result of first bringing the stencil into a position of registry with the gripper and the print receiving material held thereby and thereafter taking measures to transfer the stencil pattern onto the print receiving material.

These advantages are obtained by mounting the gripper on simple attachment means which can be moved in a horizontal direction along the printing table, and by enabling solely the gripper to take a pre-determined registered position for the gripping operation itself relative to the printer chassis, so that the gripper, in said registered position, is able to grip a print receiving material, which has also been registered precisely, irrespective of the position of the stencil and without needing to pay too much attention to the inexactitude of the stop position of the stencil and the printing table, this inexactitude resulting from the large masses of and the large kinetic energies engendered by the stencil and printing table.

BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment, which exhibits features significant of the present invention, will now be described in more detail with reference to the accompanying drawings, in which:

Figure 1 is a simplified, perspective view of a prior art silkscreen printer, which has gripping devices mounted on a cylindrical, reciprocatingly movable, printing table;

Figure 2 is a simplified side view, which illustrates the attachment of an inventive gripping device to the printing table, the gripping device

being shown in a non-registered position; and
Figure 3 is a simplified side view of the inventive gripping device attachment of Figure 2, with the gripping device in its registered position.

DESCRIPTION OF EMBODIMENTS AT PRESENT PREFERRED

With reference to the accompanying drawings, Figure 1 is a schematic perspective view of part of a silkscreen printing machine 1 comprising a curved printing table 2, which exhibits a cylindrically curved printing surface 2a, the printer being intended to apply print to a print receiving material 3. The illustrated printer also comprises a stencil 4, which is streteched in a stencil frame 5 in a conventional manner, only part of the stencil being shown in the Figure.

Figure 1 illustrates the print material 3 with its forwardly located end of edge 3a located adjacent standard registering devices, positioned on respective sides of the cylinder printing surfaces 2a. Immediately adjacent the registering devices are holding-down devices, which are intended to hold and press the forwardly located end 3a of a thin print receiving material against the printing surface 2a.

The reader is referred to the contents of the aforementioned British Patent Specification 1 467 910 for a better understanding of the design of the individual printer components and the general method of operation of the printer.

It should be mentioned briefly that the reciprocating movement of the frame 5 and the stencil 4 is controlled directly by the rotational movement of the printing cylinder, via a rack arrangement (not shown) extending along the side 5a of the stencil frame 5, and a toothed ring (not shown) extending around the cylindrical surface of the cylinder 2.

During the printing sequence, the printing table moves to the right, as shown by an arrow in Figure 1, therewith causing the frame 5 and stencil 4 also to move to the right.

At this stage, a squeegee device 7, which is stationary in relation to the printer chassis, is located in a position in which it co-acts with the stencil 4 and presses ink paste (not shown), which has been deposited on the stencil 4, through perforations present in the stencil and down onto the underlying print receiving material 3.

Although not shown in Figure 1, the leading edge 3a of the print material 3 is gripped by means of two gripping devices, hereinafter referred to as grippers, each comprising respective gripping fingers and being firmly arranged in the printing surface 2a of the cylinder.

The illustrated printer also comprises a squeegee device 7 or squeegee arrangement, which is illustrated schematically, and which is intended to press the stencil 4 against the print material 3 and the printing table 2 in a conventional manner, such as to transfer print onto the print material 3, located between the printing table and the stencil. The printing table 2 and its surface 2a co-acts with the aforesaid two grippers, which are intended to hold the print material 3 firmly at its leading edge 3a, as seen in the direction of movement, during preferably the whole of a printing sequence, and in all events during at least part of said printing sequence.

Since the various devices and arrangements intended for effecting movement of the squeegee device 7, the reciprocating movement of the stencil frame 5, the movement of the printing table 2a and all other drive functions are of conventional design they will not be described in detail in the present application, for the sake of simplicity.

Nothwithstanding this, however, it should be mentioned for the sake of clarity that the squeegee device 7 is arranged to be lowered during a printing sequence, so as to press the stencil 4 against the print receiving material and the printing table surface 2a at the uppermost or highest point of the printing table 2, and is held in this position as the print material 3 is displaced to the right in Figure 1 by the grippers.

Reference is now made to Figures 2 and 3 which show that one of the two grippers 8 is mounted for some degree of horizontal movement, in a circular path, along the printing surface 2a of the printing table 2.

It will be understood that various devices and means can be used to move the gripper 8 horizontally along the printing surface 2a of the printing table 2.

For example, the gripper 8 may be arranged to move along said printing surface 2a in a direction which extends in the direction of the longitudinal extension of the stencil frame or in its direction of movement during the printing operation.

Figure 2 illustrates how a print receiving material 3, and particularly the leading edge 3a of said material, takes a precisely registered position in relation to the printer chassis 10.

As indicated by the arrow, Figure 2 illustrates the printing table 2 and the gripper 8 during movement towards a gripper registering position (a registration position for the gripping operation itself), namely in which a surface 11 on the gripper 8 is in co-action with a surface 12 on a first stop means 13, which is stationary in relation to the chassis 10.

During the mutual movement of the gripper 8 and the printing table a surface 14 on the gripper 8 rests against a surface 15 on the printing table 2a, therewith registering the gripper in relation to the printing table 2, the stencil 4 and the stencil frame

5. (a registration position during printing operation) Figure 3 shows that when the printing table is moved further to the left, the gripper 8 will abut the first stop means 13, therewith stopping further movement of the gripper, the gripper 8 in this position can grip the leading edge 3a of the print receiving material with its gripping fingers 8a and 8b.

In this position the gripper 8 is registered relative to the chassis 10, but is not registered relative to the printing table 2a and the stencil 4, since these are displaced further to the left. This has been illustrated in the Figure by showing the printing table related surface 15 located at a distance from the gripper related surface 14. In practice this distance can be greater than that shown.

Figure 3 shows the gripper 8 in co-action with first stop means 13, provided on the printer chassis, although it will be understood that some other reference point may be chosen.

The differences between Figures 2 and 3 are intended to show that further displacement of the frame and the printing table 2 to the left, beyond the registered position of the gripper 8, can now take place without changing the position of the gripper 8 in relation to the stop means 13. During this movement of the gripper however, a spring 16 is allowed to expand or extend, such as to hold the gripper in the registered position.

It is now possible to allow the stencil frame 5 and printing table 2 to stop without paying direct attention to the desired precise registration of the gripper 8, provided that the printing table 2 and the stencil frame can pass freely beyond the registered position. Thus, registration of the gripper 8 in relation to the chassis, through the medium of the stop means 13, is quite independent of the position of which the stencil frame 5 and the printing table 2 stop.

If the stencil frame 5 and the printing table 2 are permitted to travel still further to the left than that illustrated in Figure 3, the frame 5 and the stencil 4 stretched therein will be in a still less registered position in relation to the gripper 8, the print material 3 and the chassis 10.

The gripper 8 comprises a multiple of reaction support surfaces or anvil surfaces 8b and a multiple of upwardly and downwardly movable fingers 8a which are intended to clamp the leading edge part 3a of a registered print receiving material 3 in the gripper registering position illustrated in Figure 3.

With a starting point from the respective Figure 3 positions of the gripper 8, the print material 3, the printing table 2, the stencil 4 and stencil frame 5, and upon return movement of the printing table 2 and stencil 4 in order to apply print to the print material 3, the stencil is first moved relative to the gripper 8 and the print material 3 until the gripper 8 engages a second stop means, which is formed when the surfaces 14 and 15 are brought into abutment with one another, wherewith the stencil is registered in relation to the gripper 8 and printing can be effected with both gripper 8 and material 3 and the stencil 4, or frame 5, being located in mutually registered positions.

The position of the first stop means 13, and therewith the registering position of the gripper 8, can be adjusted with the aid of an externally screw-threaded stud, which is arranged to cooperate with an internally screw-threaded sleeve, the stud and sleeve not being shown in detail in order not to complicate the drawing.

Thus, the printing table 2 and the stencil frame 5 of the illustrated embodiment are allowed to travel slightly beyond the registered position of the gripper 8. The gripper is thus located in a registered position in relation to the chassis, in which position the gripper is able to grasp and collect a sheet of print material 3 which has been registered precisely with the aid of other means intended for this purpose and which is intended for a subsequent printing sequence.

As previously mentioned, the registered position of the gripper 8 can be adjusted with the aid of the stop means 13, this adjusted position thus applying to a multiple of printing sequences.

In order to further clarify the concepts fundamental to the present invention it can be mentioned that in silkscreen printers of this kind the stencil frame is displaced backwards and forwards in response to the reciprocating movement of the printing cylinder, which therewith decides the speed at which printing is effected.

It will be obvious that large masses are in motion and that these masses engender large kinetic energies, and that is is extremely difficult to stop the stencil frame and printing cylinder in precisely one and the same terminal position irrespective of the printing speed.

Consequently, it is desirable to be able to register solely the material in relation to solely the gripper irrespective of the orientation of the stencil and printing table in said terminal position, and to therewith ignore the inexactitudes caused by large, oscillatory masses in the prevailing stop position of the printing table and stencil with stencil frame.

Accordingly, it is proposed in accordance with the invention that the gripper 8 is pivotable and "loosely" mounted on the printing cylinder and that in a printing position or a return position the gripper is pressed against a stop in the printing cylinder 2 which causes the gripper 8, upon gripper movement to the left in Figure 1, to stop against a first stop means 13 which is stationary in relation to the printer stand or printer chassis, and in such a

registered position is caused to engage a sheet of print material 3 which is registered in this position, while allowing the stencil frame 5 and the printing cylinder 2 to continue to move, preferably through a considerable distance, during extension of the spring 16, but with the gripper 8 loosely pivotally adapted so that it still remains in its registered position. When the stencil frame 5 and stencil 4, together with the printing cylinder 2, move from the illustrated Figure 3 position in the opposite direction during a printing sequence, there initially occurs a relative movement between the printing table 2 (and the stencil 4 in the frame 5) and the gripper 8, but when the gripper 8 adopts a correctly registered position relative to the frame 5 and stencil 4 as a result of this relative movement, the gripper 8 accompanies movement of the stencil 4 and the printing table 2 as a result of co-action with the second stop means (14, 15).

This means that upon movement in the opposite direction, illustrated in Figures 2 and 3, the gripper 8 will be brought to a registered position relative to the printer chassis 10 by the stop means 13 with small energy absorbtion, irrespective of the relative stop positions of the stencil positions of the stencil frame 5 and the printing cylinder 2 when collecting or gripping material 3 to be printed.

Thus, prior to commencing the actual printing operation, the gripper 8 is first brought to a registered position in relation to the frame 5 and the stencil 4, via movement of the printing table 2, whereafter the actual printing operation takes place with the gripper 8, the print material 3 and the frame 5 and stencil 4 correctly positioned in relation to one another.

For the sake of simplicity corresponding components in Figure 1 have been identified with the same reference marks in Figures 2 and 3, although certain parts have been omitted.

The movement damper, which functions as a first stop means 13, may be modified to provide a well defined terminal position (a first stop) for the gripper 8 when the gripper rests against said stop under the bias exerted by the spring 16.

It will be seen from Figure 3 that the forwardly located end of the gripper 8 intended for gripping the leading edge part 3a of the print material 3 is elevated slightly in the registered position of the gripper.

It will be seen from Figures 2 and 3 that the gripping devices 8a and 8b of the gripper 8 are mounted on the outer end of an elongated member 20, which is pivotally mounted at its other end.

The elongated member 20 is intended to extend in a direction related to the radius 21 of the curved printing table 2, such that said outer end and the gripping devices 8a and 8b are located on one side of the radius while the rotatable attachment 20a is located on the other side of the radius.

The angle herebetween is referenced "a" in Figure 2.

The rotatable attachment 20a is located at a distance b from the rotational centre 2' of the curved printing table, this distance preferably being 15 to 50 % of the length of the radius, preferably about 30 %.

The elongated member 20 is arranged such that when the printing table 2 returns towards and beyond the registered position of the gripper 8 subsequent to a printing sequence, the member is inclined at an angle "a" to the direction of movement of the printing table.

When the gripper 8 occupies its registered position against the stop means 13, and when movement of the printing table 2 is permitted to continue beyond this position, the elongated member 20 rotates about its lower rotatable attachment 20a such that the elongated member 20 extends more in the direction of the radius 21 and the angle "a" decreases. The gripper 8 will therewith rise above the printing surface 2a of the printing table, as particularly illustrated in Figure 3.

The gripper 8 returns to the position illustrated in Figure 2 upon commencement of a following printing sequence.

It will be understood that the invention is not restricted to the aforedescribed exemplifying embodiment, and that modifications can be made within the scope of the following claims.

Claims

1. A silkscreen printer (1) comprising a printing table, preferably a cylindrical printing table (2), adapted to apply a print to a print receiving material (3), and having a stencil (4), which is stretched in a stencil frame (5) and located above the printing table, and which further comprises a squeegee device (7), which is intended to press the stencil against the printing table and therewith transfer said print onto said print receiving material located between the printing table and the stencil, the printer further comprising a gripper, which is intended to grip the forward end portion (3a) of the print receiving material (3), as seen in the direction of movement, during at least a part of the printing sequence, characterized in, that the gripper (8) is movably arranged in the printing table (2) in the direction of an extension of the printing table and the direction of movement of the print receiving material; and in that the gripper (8), in its registered position for the gripping operation itself, can be pressed against a first stop means (13) with the aid of a spring device.

2. A printer according to claim 1, characterized by means for adjusting the position of said first stop means. (13)

3. A printer according to claim 1, characterized in that the first stop means (13) is located against and is stationary in relation to the printer chassis or printer stand.

4. A printer according to claim 1, 2 or 3, characterized in that the printing table (2) and stencil frame (5) are arranged to pass beyond a position in which solely the gripper (8) is in a registered position.

5. A printer according to claim 1, characterized in that the first stop means (13) has the form of a movement damper having a clearly defined terminal position.

6. A printer according to claim 5, characterized in that the first stop means (13) has the form of a hydraulic damper or like device.

7. A printer according to claim 1 or 10, characterized in that the forwardly located part of the gripper (8) intended for gripping print material (3) is located in a slightly elevated position, a registering position.

8. A printer according to claim 1 or 7, characterized in that the gripper (8) is mounted on the outer end of an elongated member (20), which is pivotally (20a) mounted at the other end thereof.

9. A printer according to claim 8, characterized in that the elongated member (20) is arranged to extend in a direction related to a radius (21) of a curved printing table (2), such that the said outer end and said gripper (8a, 8b) are located on one side of the radius while the pivotal attachment (20a) is located on the other side thereof.

10. A printer according to claim 9, characterized in that the pivotal attachment is located at a distance (b) from the rotational centre (2') of the curved printing table.

11. A printer according to claim 8 or 9, characterized in that the elongated member (20) is arranged to slope from the pivotal attachment (20a) towards the direction of movement of the printing table, when the printing table returns towards and beyond a registered position of the gripper subsequent to a printing sequence.

12. A printer according to claim 11, characterized in that the elongated member (20) is arranged to extend in the direction of the radius when the gripper occupies a registered position and when the printing table moves beyond this position, such that the elongated member lifts the gripper above the printing surface of the printing table.

Patentansprüche

1. Siebdrucker (1) mit einem Drucktisch, vorzugsweise einem zylindrischen Drucktisch (2), geeignet zum Aufbringen eines Druckbildes auf einen Bedruckstoff (3) und eine Schablone (4) aufweisend, die in einem Schablonenrahmen (5) aufgespannt ist und sich über dem Drucktisch befindet, und mit einer Rackelvorrichtung (7), die die Schablone gegen den Drucktisch drücken soll, um so das Druckbild auf den sich zwischen dem Drucktisch und der Schablone befindenden Bedruckstoff zu übertragen, und weiterhin mit einem Greifer, der während zumindest einem Teil des Druckablaufs den vorderen Endteil (3a), mit Blickrichtung in Bewegungsrichtung, des Bedruckstoffes (3) greifen soll, dadurch gekennzeichnet, daß der Greifer (8) am Drucktisch (2) in dessen Längsrichtung und in Bewegungsrichtung des Bedruckstoffes bewegbar angebracht ist und in seiner für den Greifvorgang registergetreuen Position mit einer Federvorrichtung gegen ein erstes Anschlagmittel (13) gedrückt werden kann.

2. Drucker nach Anspruch 1, gekennzeichnet durch Mittel zum Einstellen der Position des ersten Anschlagmittels (13).

3. Drucker nach Anspruch 1, dadurch gekennzeichnet, daß sich das erste Anschlagmittel (13) am Druckergestell oder Druckerständer befindet und in bezug auf diesen ortsfest ist.

4. Drucker nach Anspruch 1, 2 oder 3, dadurch gekennzeichnet, daß der Drucktisch (2) und Schablonenrahmen (5) so angeordnet sind, daß sie über eine Position, in der sich nur der Greifer (8) in registergetreuer Position befindet, hinausgelangen können.

5. Drucker nach Anspruch 1, dadurch gekennzeichnet, daß das erste Anschlagmittel (13) in Form eines Bewegungsdämpfers vorliegt, der eine klar definierte Endposition hat.

6. Drucker nach Anspruch 5, dadurch gekennzeichnet, daß das erste Anschlagmittel (13) in Form eines hydraulischen Dämpfers oder einer

ähnlichen Vorrichtung vorliegt.

7. Drucker nach Anspruch 1 oder 10, dadurch gekennzeichnet, daß sich der vorne befindliche Teil des Greifers (8), der den Bedruckstoff (3) greifen soll, in etwas erhöhter Position, d.h. einer registergetreuen Position, befindet.

8. Drucker nach Anspruch 1 oder 7, dadurch gekennzeichnet, daß der Greifer (8) am äußeren Ende eines länglichen Gliedes (20) befestigt ist, das an seinem anderen Ende schwenkbar befestigt (20a) ist.

9. Drucker nach Anspruch 8, dadurch gekennzeichnet, daß das längliche Glied (20) so angeordnet ist, daß es sich in eine mit dem Radius (21) eines bogenförmigen Drucktisches (2) in Beziehung stehende Richtung erstreckt, so daß sich das äußere Ende und der Greifer (8a, 8b) auf einer Seite des Radius befinden, während sich die Schwenkbefestigung (20a) auf der anderen Seite davon befindet.

10. Drucker nach Anspruch 9, dadurch gekennzeichnet, daß sich die Schwenkbefestigung in einem Abstand (b) vom Drehzentrum (2') des bogenförmigen Drucktisches befindet.

11. Drucker nach Anspruch 8 oder 9, dadurch gekennzeichnet, daß das längliche Glied (20) so angeordnet ist, daß es sich von der Schwenkbefestigung (20a) aus in Bewegungsrichtung des Drucktisches neigt, wenn der Drucktisch nach einem Druckablauf zu einer registergetreuen Position des Greifers und darüber hinweg zurückkehrt.

12. Drucker nach Anspruch 11, dadurch gekennzeichnet, daß das längliche Glied (20) so angeordnet ist, daß es sich in Richtung des Radius erstreckt, wenn der Greifer eine registergetreue Position einnimmt und wenn der Drucktisch sich über diese Position hinaus bewegt, so daß das längliche Glied den Greifer über die Bedruckfläche des Drucktisches hebt.

Revendications

1. Une machine d'impression en sérigraphie (1), comprenant une table d'impression, de préférence une table d'impression cylindrique (2), adaptée pour appliquer une impression à un matériau (3) qui reçoit l'impression, et présentant un écran de tissu (4) qui est tendu dans un cadre (5) et situé au-dessus de la table d'impression, et qui en outre comprend un dispositif de raclette (7), qui a pour but de presser l'écran de tissu contre la table d'impression et ainsi de transférer ladite impression sur ledit matériau de réception de l'impression situé entre la table d'impression et l'écran de tissu, la machine d'impression comprenant en outre une pince qui a pour fonction de saisir la partie de l'extrémité avant (3a) du matériau qui reçoit l'impression (3), vu dans le sens du mouvement, pendant au moins une partie de la séquence d'impression, caractérisée en ce que la pince (8) est disposée de façon mobile dans la table d'impression (2) dans le sens d'une extension de la table d'impression et dans le sens du mouvement du matériau qui reçoit l'impression, et en ce que la pince (8), dans sa position de repérage pour l'opération de saisie elle-même peut être pressée contre un premier moyen d'arrêt (13) à l'aide d'un dispositif à ressort.

2. Une machine d'impression suivant la revendication 1, caractérisée par des moyens d'ajustage de la position dudit premier moyen d'arrêt (13).

3. Une machine d'impression suivant la revendication 1, caractérisée en ce que le premier moyen d'arrêt (13) est situé contre et est immobile par rapport au châssis de la machine d'impression ou au bâti de la machine d'impression.

4. Une machine d'impression suivant la revendication 1,2 ou 3, caractérisé en ce que la table d'impression (2) et le cadre de l'écran de tissu (5) sont disposés de manière à passer au-delà d'une position dans laquelle la pince seule (8) est dans une position de repérage.

5. Une machine d'impression suivant la revendication 1, caractérisée en ce que le premier moyen d'arrêt (13) a la forme d'un amortisseur de mouvement qui a une position terminale clairement définie.

6. Une machine d'impression suivant la revendication 5, caractérisée en ce que le premier moyen d'arrêt (13) a la forme d'un amortisseur hydraulique ou d'un dispositif similaire.

7. Une machine d'impression suivant la revendication 1 ou 10, caractérisée en ce que la partie de la pince (8) située à l'avant qui a pour but de saisir le matériau à imprimer (3) est située dans une position légèrement surélevée, une position de repérage.

8. Une machine d'impression suivant la revendication 1 ou 7, caractérisée en ce que la pince (8) est montée sur l'extrémité extérieure d'un élément allongé (20), qui est monté de façon rotative (20a) à l'autre extrémité de celle-ci.

9. Une machine d'impression suivant la revendication 8, caractérisée en ce que l'élément allongé (20) est disposé de façon à s'étendre dans un sens rapporté à un rayon (21) d'une table d'impression (2) courbe, de telle façon que ladite extrémité extérieure et ladite pince (8a, 8b) sont situées d'un côté du rayon tandis que l'attache rotative (20a) est située de l'autre côté de celui-ci.

10. Une machine d'impression suivant la revendication 9, caractérisée en ce que l'attache rotative est située à une distance (b) à partir du centre de rotation (2') de la table d'impression courbe.

11. Une machine d'impression suivant la revendication 8 ou 9, caractérisée en ce que l'élément allongé (20) est disposé de façon à pencher depuis l'attache rotative (20a) vers le sens du mouvement de la table d'impression, quand la table d'impression retourne vers et au-delà d'une position de repérage de la pince après une séquence d'impression.

12. Une machine d'impression suivant la revendication 11, caractérisée en ce que l'élément allongé (20) est disposé de façon à s'étendre dans le sens du rayon quand la pince occupe une position de repérage et quand la table d'impression se déplace au-delà de cette position, de sorte que l'élément allongé soulève la pince au-dessus de la surface d'impression de la table d'impression.

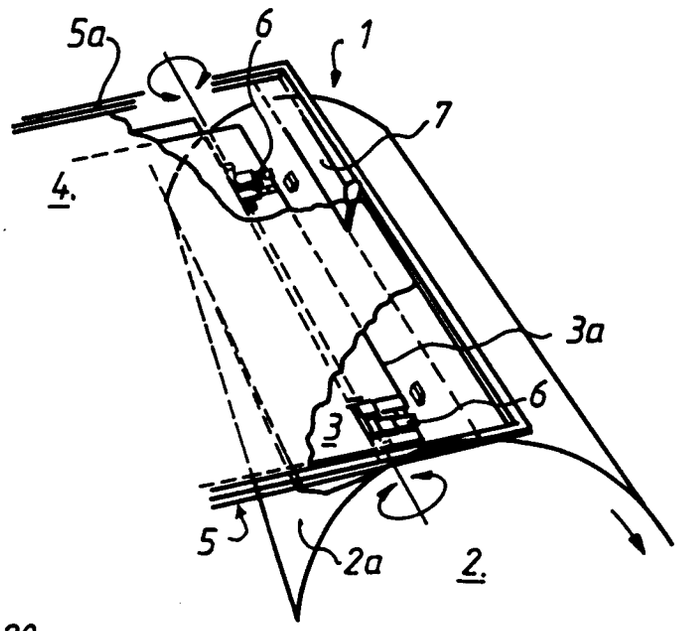

Fig. 1

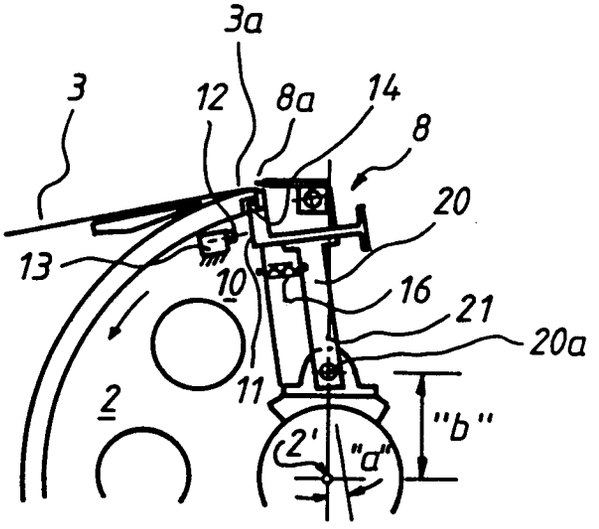

Fig. 2

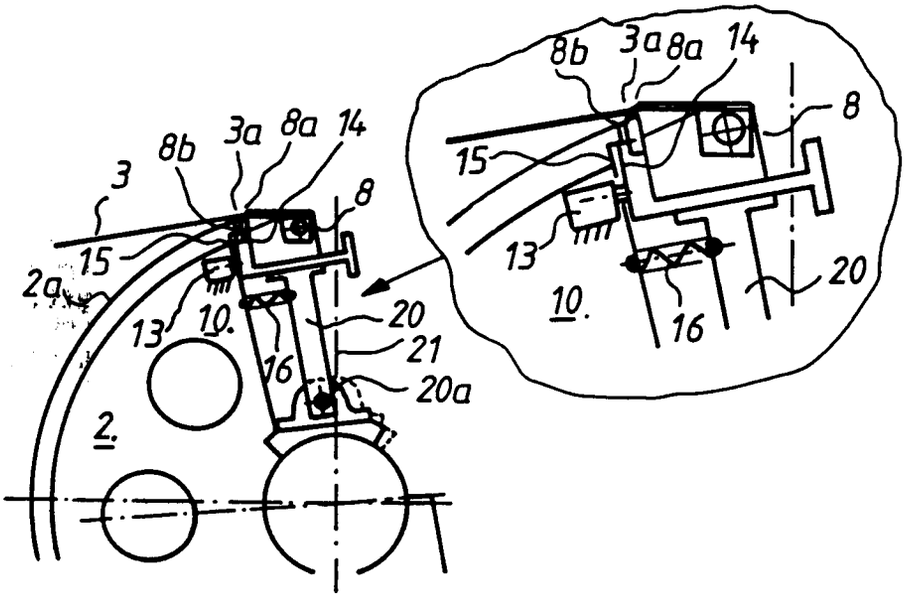

Fig. 3