S. T. SMITH, Jr.

STENCILING MACHINE.

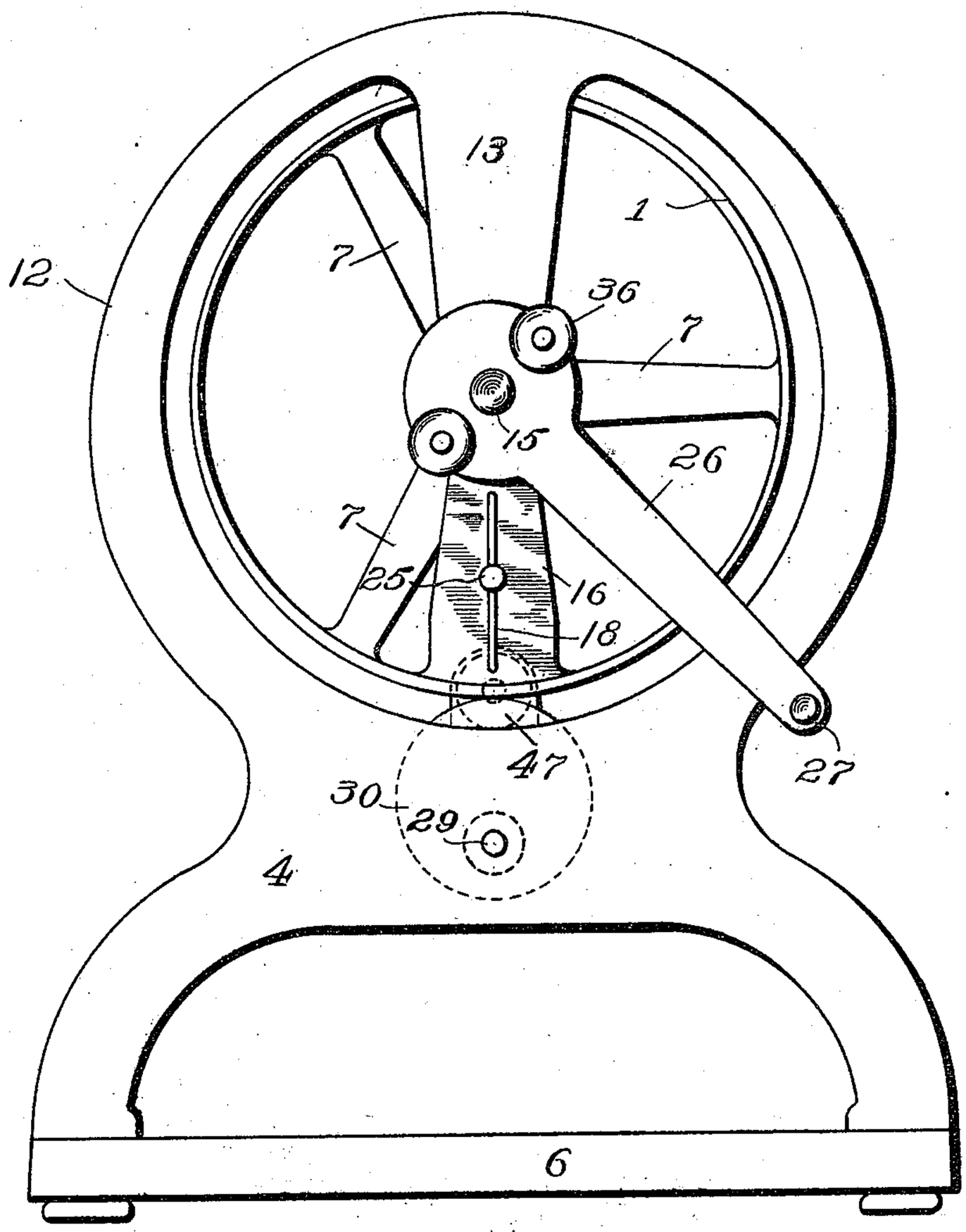
APPLICATION FILED NOV. 11, 1907.

975,299.

Patented Nov. 8, 1910.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

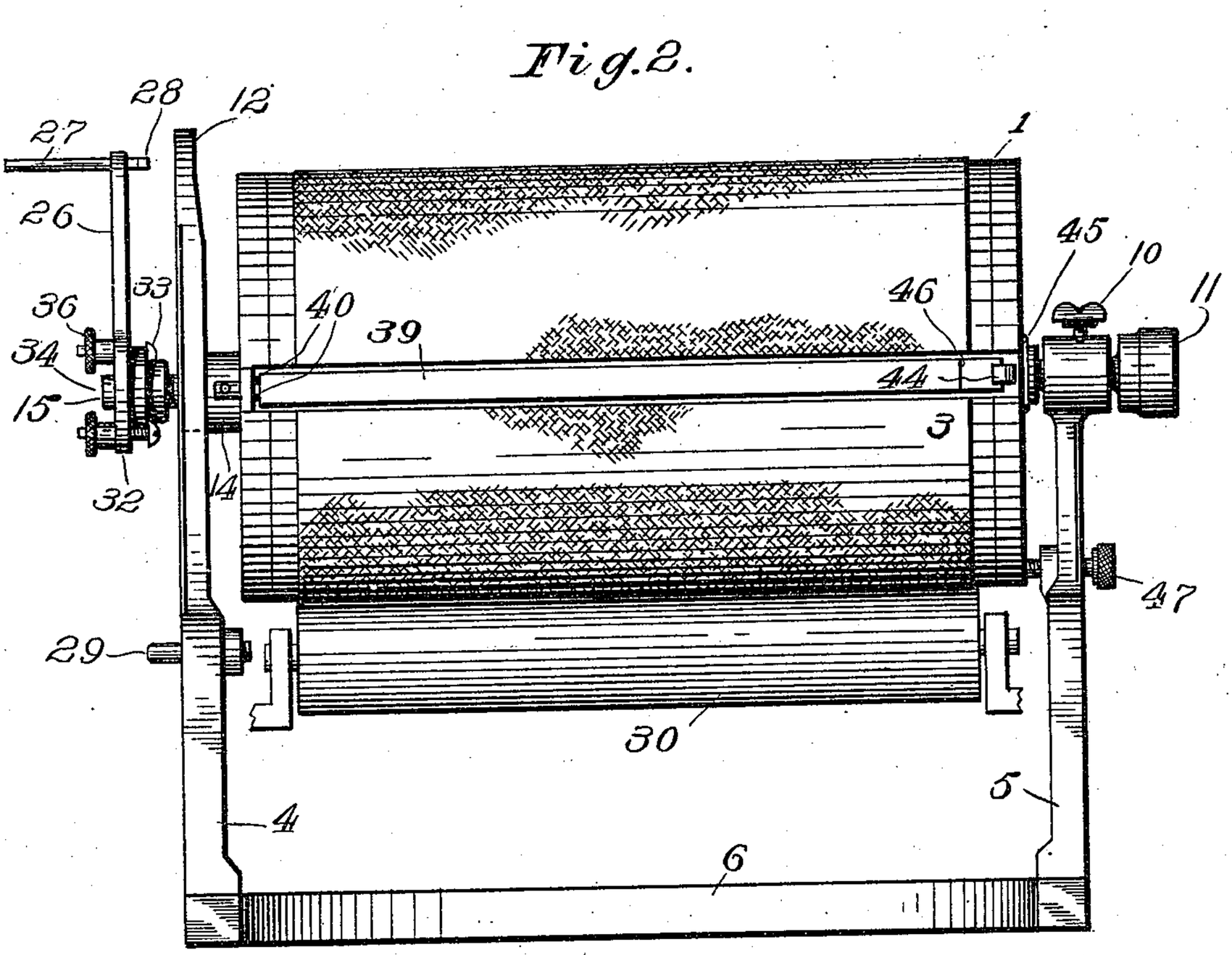


Fig. 3.

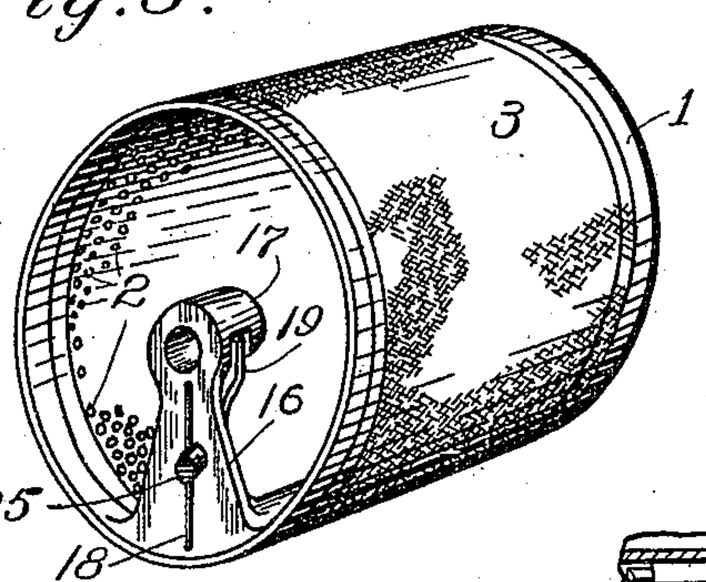


Fig. 4.

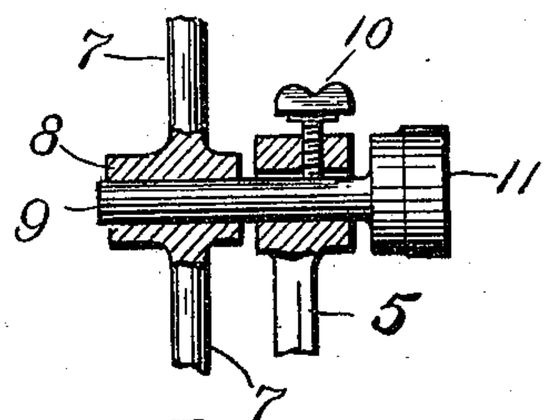
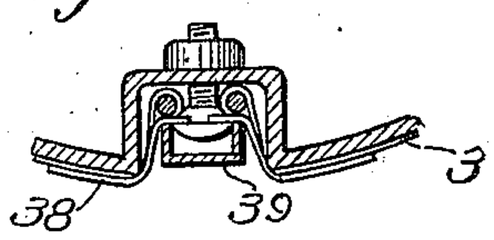


Fig. 5.

Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 7.

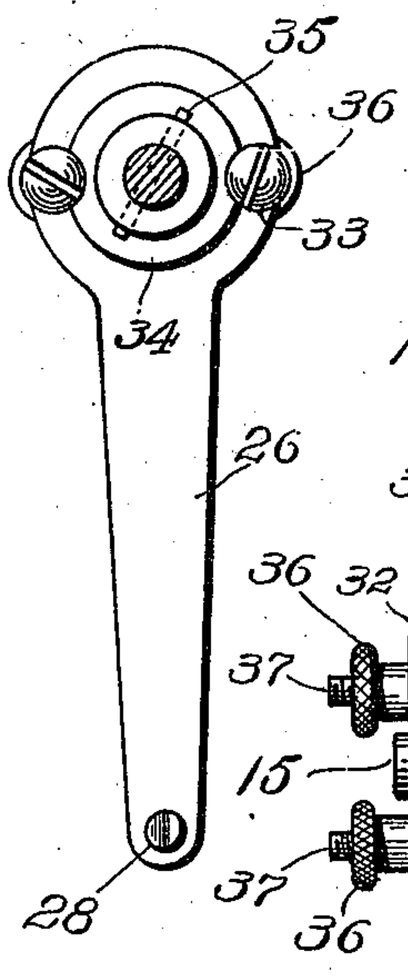

Fig. 8.

Fig. 9.

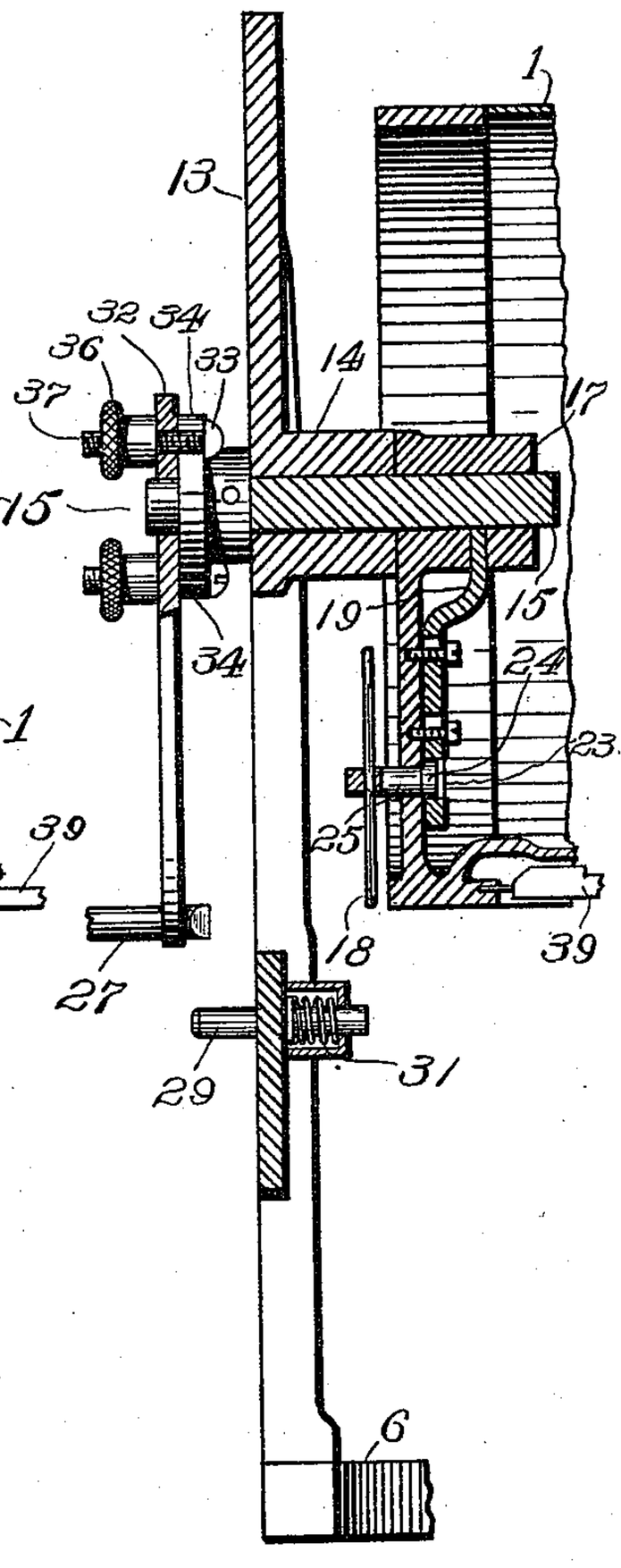

Fig. 10.

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UNITED STATES PATENT OFFICE.

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STENCILING-MACHINE.

975,299. Specification of Letters Patent. Patented Nov. 8, 1910.

Application filed November 11, 1907. Serial No. 401,548.

To all whom it may concern:

Be it known that I, STEPHEN T. SMITH, Jr., a citizen of the United States, residing in Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Stenciling-Machines, of which the following is a specification.

This invention relates to machines for stenciling typewritten and other matter, in which it is usual to wrap a waxed stencil sheet around a blanketed inking cylinder, and to feed sheets between said cylinder and a pressure roll, for the purpose of stenciling the sheets.

One of the objects of my invention is to provide such a construction of stencil cylinder and supporting frame therefor, as shall afford freedom of access of an inking implement into the cylinder from one end thereof, while permitting ready removal of the cylinder from the machine for cleansing, and also permitting convenient adjustment of the crank-arm whereby the cylinder is rotated, for the purpose of determining mechanically the initial rotative position of the cylinder.

In the preferred manner of carrying out my aforesaid invention, one end of the cylinder is left open except for a single radial arm, which extends inwardly from the cylinder and carries at its inner end a hub. The framework of the machine includes an open frame at this end of the cylinder; and since both cylinder and frame are open, a great convenience is effected for the manipulation of the inking implement. Said frame has an arm pendent from its upper portion to receive a short shaft or journal which projects out from said cylinder-hub. A crank-arm is adjustably secured upon the outer end of said shaft. The shaft may be readily released from its hub, to detach the cylinder from the framework; and the other end of the cylinder is mounted upon a releasable stud, so that the cylinder may be readily unshipped.

Owing to the necessity of handling the delicate stencil sheet with great care, in order to avoid breaking or even creasing of the same, it is found in practice awkward and difficult to adjust the ends of the same upon the cylinder, since the latter is freely rotatable, and rocks back and forth at the touch of the hand of the user. In order to avoid liability of injury to the sheet, I provide means for temporarily locking the cylinder against rotation in either direction, so that when a certain stage is reached in the adjustment of the stencil sheet upon the cylinder, the latter may be temporarily secured against rocking, and the sheet quickly and safely attached to the cylinder.

Another object of the invention is to improve the construction and operation of the bar which clamps the stencil sheet upon the cylinder, with a view to rendering the bar more easily secured in and released from its operative position. One end of the bar has a projection to insert in a socket provided in the cylinder, and the other end is caught by a snap spring, so that it is only necessary, in inserting the sheet, to press the bar down, the latter moving the spring one side and being in turn caught by the spring. This end of the bar is also provided with a nick or finger-hold, whereby it may be easily lifted to release the stencil sheet.

Other objects and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is an elevation of one end of a stencil cylinder embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is a perspective view of the stencil cylinder. Fig. 4 illustrates the manner of mounting the end of the stencil cylinder, which is shown at the right hand of Fig. 2. Fig. 5 is a sectional detail of the cylinder illustrating the bar that clamps the stencil sheet on the machine. Fig. 6 is a cross-section of parts seen at Fig. 5. Fig. 7 is a reverse view of the crank or stop 26 which is adjustable about the cylinder axis. Fig. 8 is a side elevation of one end of the machine, and Fig. 9 is a sectional elevation of the same parts illustrating the manner of mounting the cylinder and crank. Fig. 10 is a reverse view partly in section of the single radial arm which supports one end of the cylinder, and illustrates the manner in which the cylinder is secured to its end shaft.

The usual stencil cylinder 1, perforated at 2 for the passage of ink and provided with an ink blanket 3, is mounted between standards 4, 5, rising from a base 6. The cylinder, which is in the form of a hollow drum, has at its right end spokes 7 radiating from a hub 8, which is journaled upon a stud 9 fixed by a thumb screw 10 in the upper end

of the standard 5. The thumb screw may be unscrewed, and the stud 9 drawn out by means of its head 11 to release this end of the cylinder for detachment from the framework.

The standard 4 comprises an open or skeleton frame 12, which may be of annular form, Fig. 1, although other forms may be adopted within the scope of the invention. A single arm 13 depends from the upper part of the open frame 12, and carries at its lower end a boss 14, in which is journaled a revolving short shaft 15, co-axial with the stud 9 and coöperating therewith to support the cylinder. The cylinder at this end is entirely open, except for a single radial arm 16 which extends inwardly from the periphery of the drum, and carries at its inner end a hub 17 to receive the inner end of the shaft 15. By turning a handle 18, a jaw 19 is thrust up to bite the shaft 15, to lock the cylinder to the shaft. Said jaw is slotted to slide up and down on screws 20, and has a perforation 23 to receive an eccentric head 24 formed on the shank 25 which carries the handle 18. By turning the handle in one direction, the jaw is drawn down to release the shaft 15, so that the same may be withdrawn from the hub 17, thus permitting the stencil cylinder to be taken out of the machine.

When it is desired to apply ink within the cylinder, the latter is turned until the radial arm 16 stands just back of the pendent arm 13 of the frame, so that the entire lower portion of the cylinder is left open, and the inking implement may be freely run around within the cylinder to spread the ink. It is not essential that the arm 13 shall occupy the precise position shown, or that a complete annular frame 12 be employed, so long as the cylinder end is left open and accessible throughout its lower portion for the purpose set forth.

The crank arm 26, carrying a handle 27, is mounted upon the shaft 15 outside of the standard 4. The handle 27 extends through the crank arm to form a beveled stop 28 adapted to engage a yielding stop 29 provided upon the framework, thereby to determine the initial rotative position of the cylinder, so that a sheet inserted between the cylinder and the usual pressure roll 30 will receive the stenciled matter at the desired location on the sheet. The stop 29 yields to the right at Figs. 8 and 9 when engaged by the beveled portion of the stop 28, and, after said stop has passed, a spring 31 returns the stop 29 to normal position.

In order to vary the initial position of the cylinder, the stop arm 26 is made adjustable around the cylinder shaft 15. It is perforated to fit said shaft, and also has a disk or hub portion 32 through which pass hooks 33 which catch over the edges of a disk 34, secured upon the shaft 15 by means of a pin 35. The hooks are tightened by means of thumb nuts 36 threaded upon shank portions 37 of the hooks. By loosening the thumb nuts, the stop arm 26 may be rotatively adjusted relatively to the stencil cylinder 1, and then by tightening the thumb nuts, the hub 32 is brought firmly against the disk 34, and owing to the large area of contact between the hub and the disk, and the device of employing two hooks and thumb screws, the arm 26 is rigidly secured to the shaft 15, and hence to the cylinder 1, so that liability of the arm getting out of adjustment is avoided.

The stencil cylinder is taken out of the machine for the purpose of washing, and it is an objection to have the handle on the cylinder during the washing. By the present invention, a single operation both detaches the handle shaft and releases the cylinder from the machine. Heretofore, when the handle had been taken off, it became necessary when replacing it to readjust it rotatively, relatively to the cylinder; whereas according to the present improvements, the handle may be immediately and certainly restored to its proper rotative adjustment relatively to the cylinder, this adjustment being determined mechanically by the device 19, which fits a flattened portion of the handle shaft, as seen clearly at Fig. 10.

The ends of the waxed stencil sheet 38 are secured by means of a clamping bar 39, one end of which has one or two projections 40 to fit in one or more sockets 41 formed in the head 42 of the cylinder 1. The other end of the bar 39 is beveled at 43 to press aside a snap spring 44 secured upon the end of the cylinder and protected by a guard 45. The spring may be easily pressed to one side to release the bar, the latter being readily lifted up by means of a nick or finger hold 46 formed in its upper surface at this end.

The cylinder is temporarily held stationary during the manipulation of the stencil sheet by means of a thumb screw 47 threaded through the framework 5 and bearing upon the end of the cylinder.

Having thus described my invention, I claim:

1. A stenciling machine comprising a framework and a stencil cylinder, the stencil cylinder open at one end for the reception of an inking implement, and having at said open end a single radial arm, said framework including standards at the ends of the cylinder upon which the latter is journaled, the standard at the open end of the cylinder being in the form of a frame which extends to the top of the cylinder and is open to give access to the open end of the cylinder; an arm depending from the top of said open frame and provided with a journal for said radial arm.

2. A stenciling machine comprising a framework and a stencil cylinder, the stencil cylinder open at one end for the reception of an inking implement, and having at said open end a single radial arm, said framework including standards at the ends of the cylinder upon which the latter is journaled, the standard at the open end of the cylinder extending up to the upper part thereof and being constructed to leave said end uncovered, and provided with a single arm depending from the top of the standard and extending to the axis of the cylinder to support said radial arm, and disposed or constructed to leave the entire lower part of said cylinder end unobstructed for the insertion of said implement.

3. In a stenciling machine, the combination with a framework having standards and a stencil cylinder extending between said standards, of a shaft journaled in one standard, means for releasably securing one end of the cylinder to said shaft, and for mechanically determining the relative rotative positions of the cylinder and shaft, a handle or crank secured upon said shaft outside of the standard, and a stud mounted upon the other standard to support the other end of the cylinder said stud and said shaft being both mounted for withdrawal to permit the cylinder to be taken out of the machine.

4. In a stenciling machine, the combination with a framework having standards and a stencil cylinder extending between said standards, of a shaft journaled in one standard, means for releasably securing one end of the cylinder to said shaft, and for mechanically determining the relative rotative positions of the cylinder and shaft, a handle or crank secured upon said shaft outside of the standard, and a stud mounted upon the other standard to support the other end of the cylinder; said stud and said shaft being both mounted for withdrawal to permit the cylinder to be taken out of the machine; and said handle being mounted upon said shaft for independent rotative adjustment relatively to said cylinder to enable the handle to coöperate with a suitable stop upon the framework to determine the initial rotative position of the cylinder.

5. A stenciling machine comprising a framework and a stencil cylinder, the stencil cylinder open at one end for the reception of an inking implement, and having at said open end a single radial arm, said framework including standards at the ends of the cylinder upon which the latter is journaled, the standard at the open end of the cylinder rising to the upper part of the cylinder but being constructed to leave said end wholly uncovered, and provided with a single arm extending to the axis of the cylinder to support said radial arm, and disposed or constructed to leave the entire lower part of said cylinder end unobstructed for the insertion of said implement; said radial arm being secured upon a shaft which extends through said framework arm and is journaled therein, and a crank or handle being mounted upon the projecting end of said shaft.

6. A stenciling machine comprising a framework and a stencil cylinder, the stencil cylinder open at one end for the reception of an inking implement, and having at said open end a single radial arm, said framework including standards at the ends of the cylinder upon which the latter is journaled, the standard at the open end of the cylinder rising to the upper part thereof and being constructed to leave said end wholly uncovered, and provided with a single arm extending to the axis of the cylinder to support said radial arm, and disposed or constructed to leave the entire lower part of said cylinder end unobstructed for the insertion of said implement; said radial arm being secured upon a shaft which extends through said framework arm and is journaled therein, and a crank or handle being mounted upon the projecting end of said shaft; said shaft being mounted for withdrawal to effect disconnection of the same from said cylinder, and the other end of the cylinder being detachably mounted upon the other standard.

7. A stenciling machine comprising a framework and a stencil cylinder, the stencil cylinder open at one end for the reception of an inking implement, and having at said open end a single radial arm, said framework including standards at the ends of the cylinder upon which the latter is journaled, the standard at the open end of the cylinder rising to the upper part thereof and being constructed to leave said end wholly uncovered, and provided with a single arm extending to the axis of the cylinder to support said radial arm, and disposed or constructed to leave the entire lower part of said cylinder end unobstructed for the insertion of said implement; said radial arm being secured upon a shaft which extends through said framework arm and is journaled therein, and a crank or handle being mounted upon the projecting end of said shaft; said shaft being mounted for withdrawal to effect disconnection of the same from said cylinder, and the other end of the cylinder being detachably mounted upon the other standard by means of a stud which is releasably secured in the last mentioned standard.

8. A stenciling machine comprising in combination, a framework and a stencil cylinder, the stencil cylinder open at one end for the reception of an inking implement, and having at said open end a single radial arm, said framework including standards at

the ends of the cylinder upon which the latter is journaled, the standard at the open end of the cylinder rising to the upper part thereof and being provided with a single arm extending to the axis of the cylinder and carrying a shaft to support said radial arm, and disposed or constructed to leave the lower part of said cylinder end unobstructed for the insertion of said implement; means releasably securing said radial arm to said shaft, a handle or crank secured upon said shaft outside of the standard, and a stud mounted upon the other standard to support the other end of the cylinder; said stud and said shaft being both mounted for withdrawal to permit the cylinder to be taken out of the machine.

9. A stenciling machine comprising in combination, a framework and a stencil cylinder, the stencil cylinder open at one end for the reception of an inking implement, and having at said open end a single radial arm, said framework including standards at the ends of the cylinder upon which the latter is journaled, the standard at the open end of the cylinder rising to the upper part thereof and being provided with a single arm extending to the axis of the cylinder and carrying a shaft to support said radial arm, and disposed or constructed to leave the lower part of said cylinder end unobstructed for the insertion of said implement; means releasably securing said radial arm to said shaft, a handle or crank secured upon said shaft outside of the standard, and a stud mounted upon the other standard to support the other end of the cylinder; said stud and said shaft being both mounted for withdrawal to permit the cylinder to be taken out of the machine; and said handle being mounted upon said shaft for independent rotative adjustment relatively to said cylinder, to enable the handle to coöperate with a suitable stop upon the framework to determine the initial rotative position of the cylinder.

10. In a stenciling machine, the combination with a framework having standards and a stencil cylinder extending between said standards, of a shaft journaled in one standard, an arm extending inwardly from the cylinder and having a hub fitted upon said shaft, a jaw carried upon said arm, means for forcing said jaw to bite said shaft, a handle or crank secured upon said shaft outside of the standard, and means releasably supporting the other end of the cylinder upon the other standard.

11. In a stenciling machine, the combination with a framework having standards and a stencil cylinder extending between said standards, of a shaft journaled in one standard, an arm extending inwardly from the cylinder and having a hub fitted upon said shaft, a jaw carried upon said arm, means for forcing said jaw to bite said shaft, a handle or crank secured upon said shaft outside of the standard, means being provided for securing said crank at different rotative adjustments relatively to said shaft, and a stop being provided upon the framework to coöperate with said crank to determine the initial rotative position of the cylinder, and means releasably supporting the other end of the cylinder upon the other standard.

12. In a stenciling machine, the combination with a framework having standards and a stencil cylinder extending between said standards, of a shaft journaled in one standard, an arm extending inwardly from the cylinder and having a hub fitted upon said shaft, a jaw sliding upon said arm, means for forcing said jaw to bite said shaft, said forcing means including an eccentric mounted upon said arm and engaging said jaw and having a handle, a handle or crank secured upon said shaft outside of the standard, and means releasably supporting the other end of the cylinder upon the other standard.

13. In a stenciling machine, the combination with a framework, of a stencil cylinder supported thereon, the support of said cylinder comprising a shaft journaled in a standard of said framework, and extending through said standard and releasably secured in a hub provided upon said cylinder by means which mechanically determine the relative rotative positions of the shaft and cylinder, a handle or crank revolubly adjustable upon said shaft outside of said standard, and a stop upon the framework to cooperate with said handle to determine the initial rotative position of the cylinder.

14. In a stenciling machine, the combination with a framework, of a stencil cylinder supported thereon, the support of said cylinder comprising a shaft journaled in a standard of said framework and extending through said standard and fitted in a hub provided upon said cylinder, a jaw carried upon the cylinder, releasable means to cause said jaw to grip the shaft, the latter provided with a flattened portion to fit said jaw, whereby the rotative position of the shaft is mechanically determined, a handle or crank revolubly adjustable upon said shaft outside of said standard, and a stop upon the framework to coöperate with said handle to determine the initial rotative position of the cylinder.

15. A stenciling machine comprising a framework having standards, and a cylinder extending between said standards and journaled thereon by means of two shafts, mounted to be drawn outwardly independently of each other to permit removal of the cylinder, releasable means being provided for securing one of said shafts, and the other

of said shafts being provided with a handle at the outer side of its standard; said handle being adjustable relatively to its shaft, and releasable means for securing the handle-shaft to the cylinder and for mechanically determining the relative rotative position of the cylinder and shaft.

16. In a stenciling machine, the combination with a stencil cylinder, of a support therefor, including a shaft connected to the cylinder and provided with a flange, a handle having a hub and revoluble relatively to said flange and having in said hub a pair of hooks to catch over said flange, and nuts threaded upon said hooks to bind the hub to the flange; a stop being provided upon the framework to coöperate with said handle to determine the initial position of said cylinder.

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