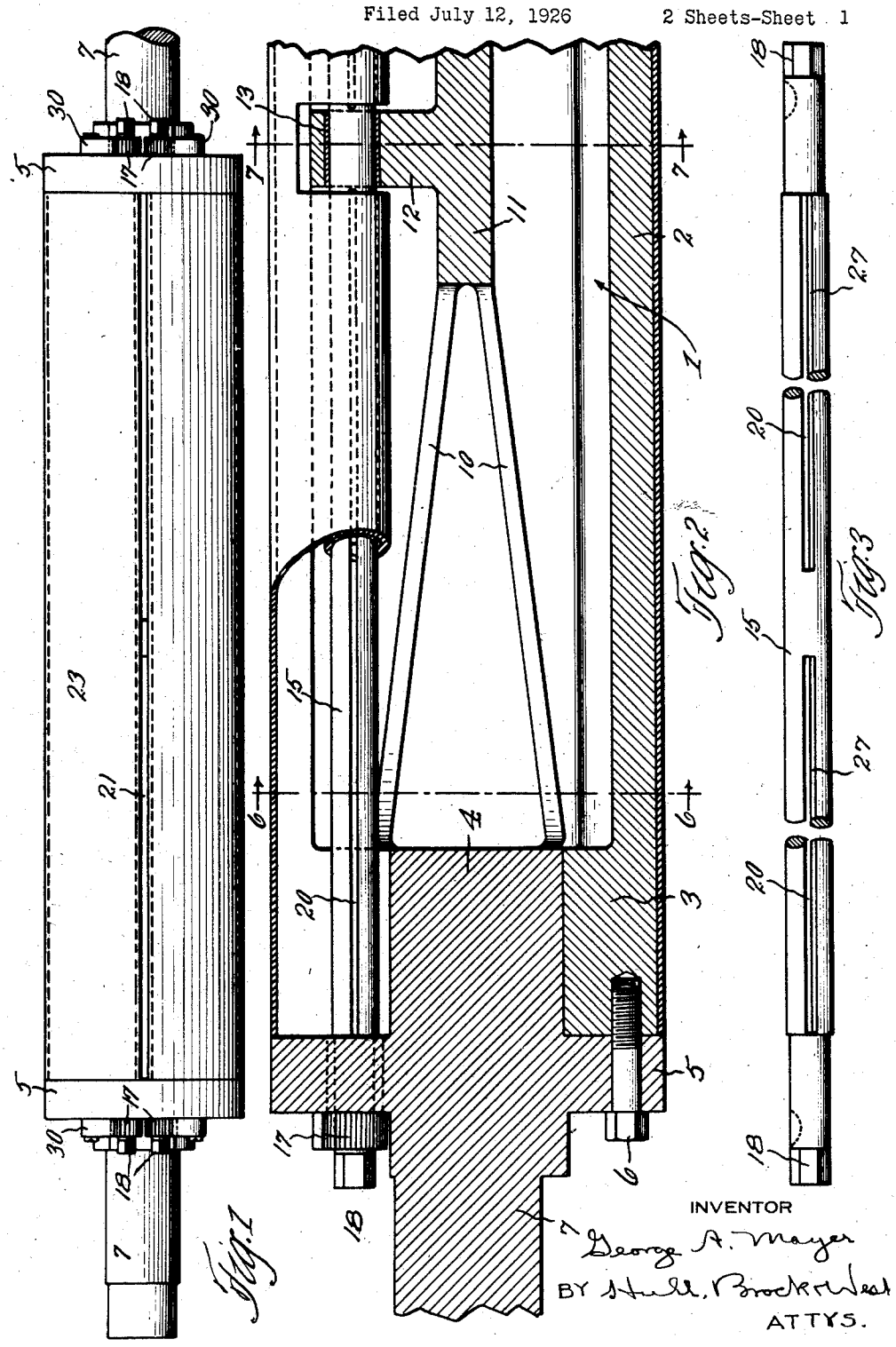
May 22, 1928. 1,670,418

G. A. MAYER

TRANSFER CYLINDER FOR OFFSET PRINTING

Filed July 12, 1926 2 Sheets-Sheet 1



INVENTOR

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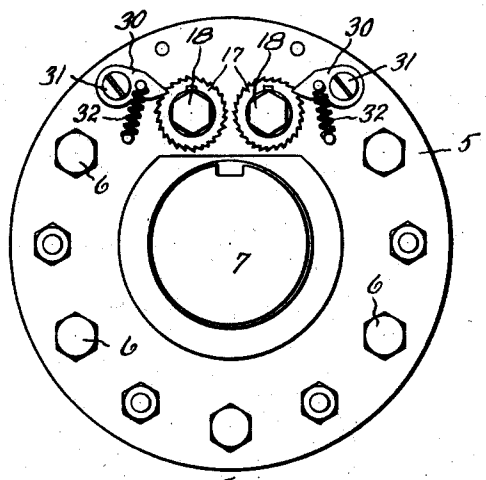


Fig. 4

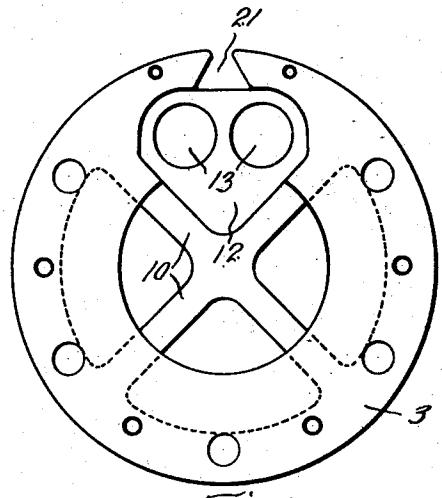


Fig. 5

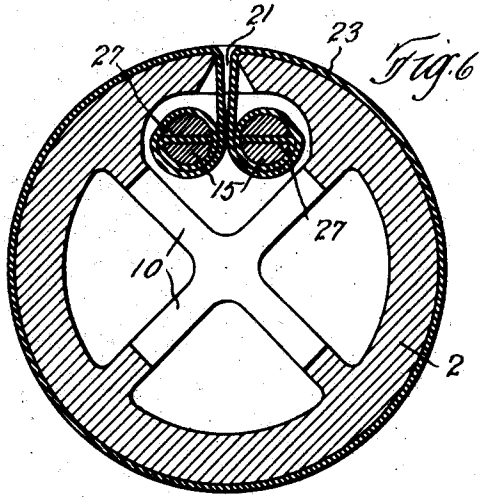


Fig. 6

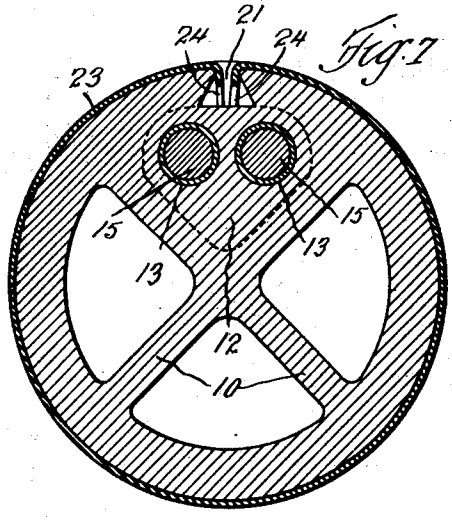


Fig. 7

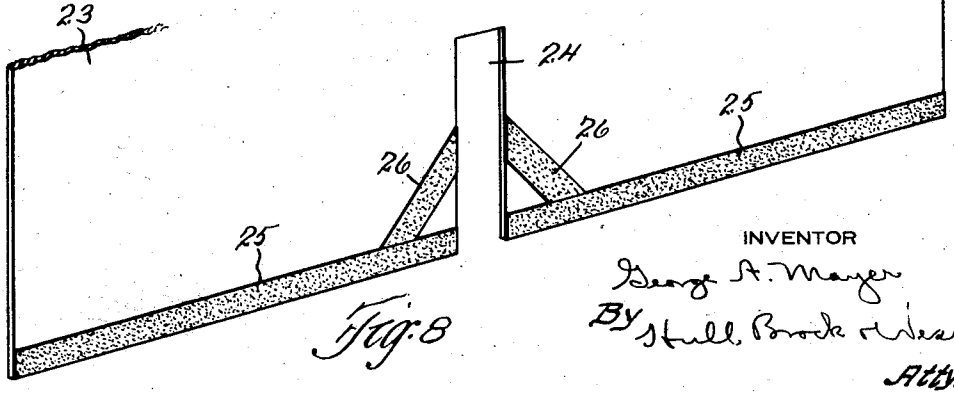


Fig. 8

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Patented May 22, 1928. 1,670,418

UNITED STATES PATENT OFFICE.

GEORGE A. MAYER, OF LAKEWOOD, OHIO, ASSIGNOR TO UNITED AUTOGRAPHIC REGISTER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TRANSFER CYLINDER FOR OFFSET PRINTING.

Application filed July 12, 1926. Serial No. 121,756.

This invention relates to improvements in printing apparatus, and more particularly to an improved "blanket" or transfer cylinder for use in offset printing processes. There are different classes of offset processes, notably the so-called "wet" and "dry" methods. In such processes the ink is transferred, from a surface bearing the subject matter or design that is to be printed, through one or more "blanket" rolls or cylinders to the paper or other receiving material.

It is highly essential that the surface of the "blanket" or transfer cylinder be very smooth, absolutely true and concentric with respect to the axis of the cylinder, and that the ink carrying surface of the cylinder be as nearly coextensive with the circumference of the cylinder as possible.

The primary purpose of my invention is the production of a transfer cylinder affording these desiderata, while other and more specific objects are to provide a device of this character that is very substantial and rigid and is so constructed as to facilitate the application and adjustment of the blanket of rubber or like material commonly used on cylinders of this class.

In the accompanying drawing, Fig. 1 is an elevational view of my improved transfer cylinder; Fig. 2 is a partial longitudinal section through the same on a scale considerably enlarged over that of Fig. 1; Fig. 3 shows one of the winding shafts or windlasses in elevation; Fig. 4 is an end view of the cylinder; Fig. 5 is a similar view of the body of the cylinder with the head removed; Figs. 6 and 7 are sections on the respective lines 6—6 and 7—7 of Fig. 2; and Fig. 8 is a detail in perspective of one end of the blanket.

The body of the cylinder is designated generally by the reference numeral 1 and it is comprised of a cylindrical wall 2 and relatively heavy end walls 3 which have openings that receive tenons 4 of heads 5 which are secured to the body by cap screws 6. The heads 5 have trunnions 7 that are adapted to be journaled in suitable bearings in the opposed housings of a printing press. Strength and rigidity is imparted to the body 1 by radially disposed internal ribs 10 that extend the length of the cylindrical wall 2 and converge toward the longitudinal center of the body where they merge in a nave 11.

Arranged transversely of the space between adjacent ribs, midway between the ends of the cylinder, is a substantial web 12 having openings that are preferably lined with suitable bushings 13 to provide bearings for the middle portions of two winding shafts or windlasses 15. The end portions of the windlasses are reduced in diameter and journaled in suitable bushed openings in the opposed heads 5, said reduced portions extending beyond said heads where they have keyed or otherwise secured to them ratchet wheels 17. The extremities of the windlasses are made hexagonal or of other suitable shape to provide portions 18 for the application of wrenches or other turning means. Slots 20 extend entirely through the windlasses between their reduced ends and their middle bearing portions.

A longitudinal slot 21 is formed in the cylindrical wall 2 midway between the planes of and parallel with the axes of the windlasses 15.

A blanket 23 of rubber or like material is adapted to be wrapped about the cylinder and to have its ends projected through the slot 21 and engaged within the slots 20 of the windlasses 15. The ends of the blanket are notched at their transverse centers, as indicated at 24, to avoid interference with the web 12. After the ends of the blanket are properly inserted through the slots 20 of the windlasses, the windlasses are rotated in opposite directions, as by the application of wrenches or cranks to their extremities 18, so as to draw the blanket tightly about the cylinder; and to insure against the ends of the blanket withdrawing from the slots 20, strips 25 of suitable friction or abrasive material, such as emery cloth, are applied to the blanket. Adjacent the notches 12 strips 26 of like material are arranged diagonally of the blanket and these strips tend to prevent wrinkling of the blanket as it is wound about the windlasses. One edge of each of the slots 20 is chamfered, as indicated at 27, to facilitate the entrance of the blanket. Pawls 30 are pivoted at 31 to the heads 5 in a position to cooperate with the ratchet wheels 17 and hold the windlasses against re-

traction and the blanket taut. Springs 32 urge said pawls into engagement with the ratchet wheels.

Having thus described my invention, what I claim is:—

1. A transfer cylinder comprising, in combination, a cylindrical body having an internal cavity extending substantially throughout the length of the body and a relatively narrow slot opening into the cavity and substantially co-extensive in length therewith, windlasses in the cavity arranged in substantially parallel relation to each other and to the slot, the ends of said windlasses being journaled in the ends of the cylinder, a support within the cavity wherein portions of the windlasses intermediate their ends are journaled, a blanket wrapped about the cylinder and having its ends projecting through the slot and fastened to the windlasses, the ends of the blankets being notched to accommodate the aforesaid support, and means for turning the windlasses and for holding them against retraction.

2. A transfer cylinder comprising, in combination, a cylindrical body having an internal cavity extending substantially throughout the length of the cylinder and a slot opening into the cavity and substantially co-extensive in length therewith, windlasses in the cavity arranged in substantially parallel relation to each other and to the slot, said windlasses having longitudinal slots extending substantially diametrically through them, a blanket wrapped about the cylinder and having its ends projected through the slot of the cylinder and engaged within the slots of the windlasses, the blanket passing at least once about each windlass so as to bind the end of the blanket in the slot of the windlass, and means for turning the windlasses and for holding them against retraction.

3. A transfer cylinder comprising, in combination, a cylindrical body having an internal cavity extending substantially throughout the length of the cylinder and a slot opening into the cavity and substantially co-extensive in length therewith, windlasses in the cavity arranged in substantially parallel relation to each other and to the slot, said windlasses having longitudinal slots extending substantially diametrically through them, a blanket wrapped about the cylinder and having its ends projected through the slot of the cylinder and engaged within the slots of the windlasses, the edges of the entrance sides of the latter slots being chamfered, the blanket passing at least once about each windlass so as to bind the end of the blanket in the slot of the windlass, and means for turning the windlasses and for holding them against retraction.

4. A transfer cylinder comprising, in combination, a cylindrical body having an internal cavity extending substantially throughout the length of the cylinder and a slot opening into the cavity and substantially co-extensive in length therewith, windlasses in the cavity arranged in substantially parallel relation to each other and to the slot, said windlasses having longitudinal slots, a blanket wrapped about the cylinder and having its ends projected through the slot of the cylinder and engaged within the slots of the windlasses, friction material applied to the ends of the blanket for co-action with the parts of the windlasses wherewith it contacts, and means for turning the windlasses and for holding them against retraction.

5. A transfer cylinder comprising, in combination, a cylindrical body having an internal cavity extending substantially throughout the length of the cylinder and a slot opening into the cavity and substantially co-extensive in length therewith, windlasses in the cavity arranged in substantially parallel relation to each other and to the slot, said windlasses having longitudinal slots, a blanket wrapped about the cylinder and having its ends projected through the slot of the cylinder and engaged within the slots of the windlasses, strips of friction material applied to the ends of the blanket for holding engagement with the windlasses, certain of said strips extending diagonally of the blanket, and means for turning the windlasses and for holding them against retraction.

6. A transfer cylinder comprising, in combination, a hollow cylinder having strengthening ribs extending from end to end of its interior, a relatively narrow longitudinal slot in the wall of the cylinder between adjacent ribs, a support extending between said adjacent ribs transversely of the cylinder and intermediate the ends thereof, windlasses in the space between said adjacent ribs and arranged in substantially parallel relation to each other and to the slot, the ends of the windlasses being journaled within the ends of the cylinder while intermediate portions thereof are journaled within said support, a blanket wrapped about the cylinder and having its ends projected through the slot and fastened to the windlasses, said ends being notched to accommodate the support, and means for turning the windlasses and for holding them against retraction.

7. A transfer cylinder comprising, in combination, a hollow cylindrical body having ribs on its interior which extend from end to end of said body adjacent its cylindrical wall and converging to about the middle of the body where said ribs merge to form a nave, a slot extending throughout the length of the cylindrical wall of the body between adjacent ones of said ribs, a support disposed transversely of the body between said adjacent ribs at about the longitudinal cen-

ter of the body, windlasses occupying the space between said adjacent ribs and having their middle portions journaled within said support, heads applied to the opposite ends of the body and wherein the ends of the windlasses are journaled, a blanket wrapped about the cylinder and having its ends projected through said slot and fastened to the windlasses, said ends being notched for the accommodation of the aforesaid support, and means disposed beyond the heads for turning the windlasses and for holding them against retraction.

8. A transfer cylinder comprising, in combination, a hollow cylindrical body having opposed end walls and provided with ribs on its interior which extend from one to the other of said end walls, the end walls having openings, a slot extending throughout the length of the cylindrical wall of the body between adjacent ones of said ribs, a support disposed transversely of the body between said adjacent ribs at about the longitudinal center of the body, windlasses occupying the space between said adjacent ribs and having their middle portions journaled within said support, heads applied to the opposite ends of the body and wherein the ends of the windlasses are journaled, the heads having tenons fitting within the openings of the end walls, a blanket wrapped about the cylinder and having its ends projected through said slot and fastened to the windlasses, said ends being notched for the accommodation of the aforesaid support, and means disposed beyond the heads for turning the windlasses and for holding them against retraction.

In testimony whereof, I hereunto affix my signature.

GEORGE A. MAYER.