March 21, 1961 H. E. HUTZELMAN 2,975,702

CHECK PROTECTOR

Filed April 1, 1957 3 Sheets-Sheet 1

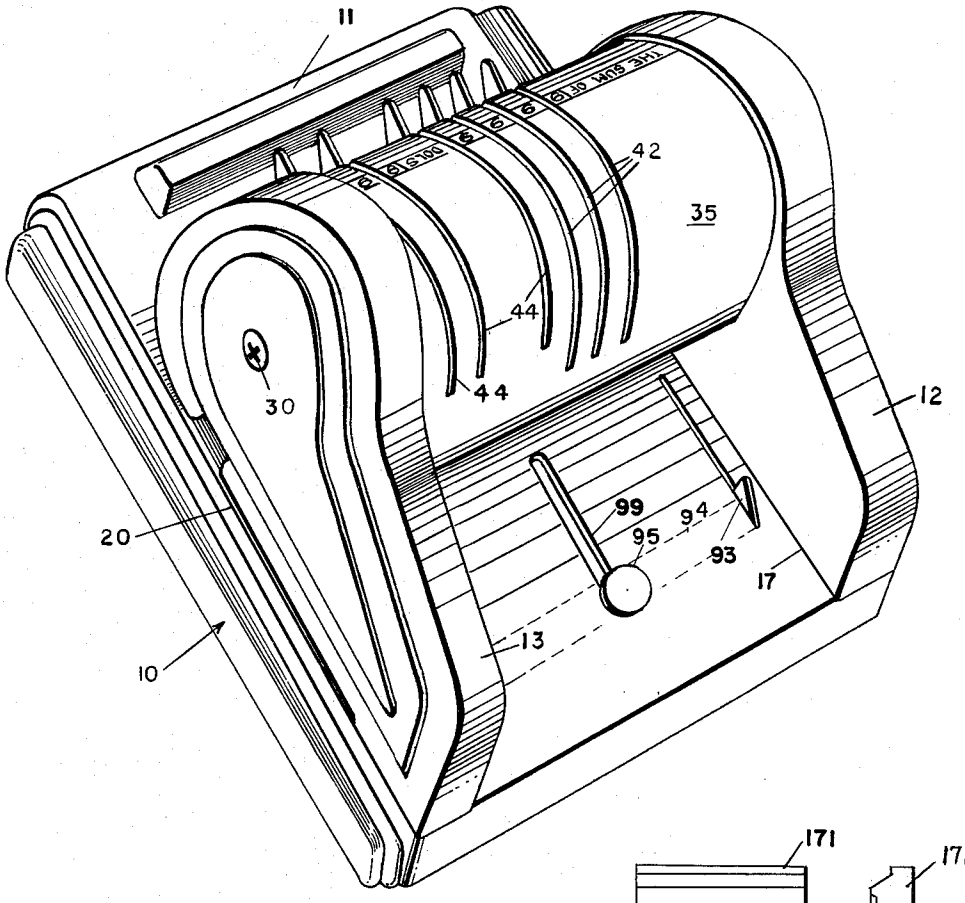


FIG. 1

FIG. 16

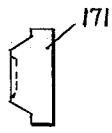


FIG. 17

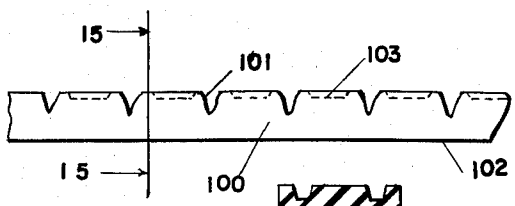


FIG. 14

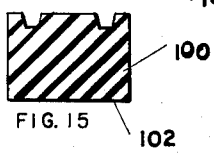


FIG. 15

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CHECK PROTECTOR

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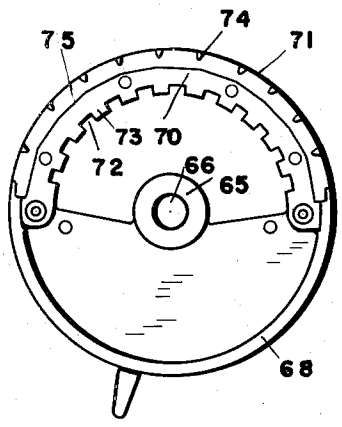


FIG. 3

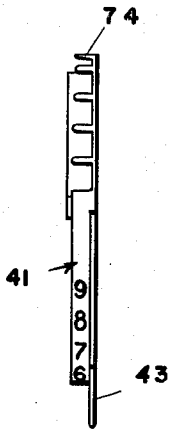


FIG. 4

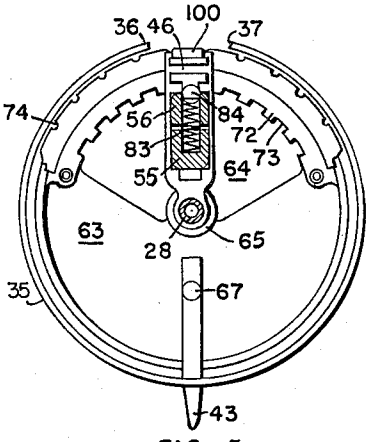


FIG. 5

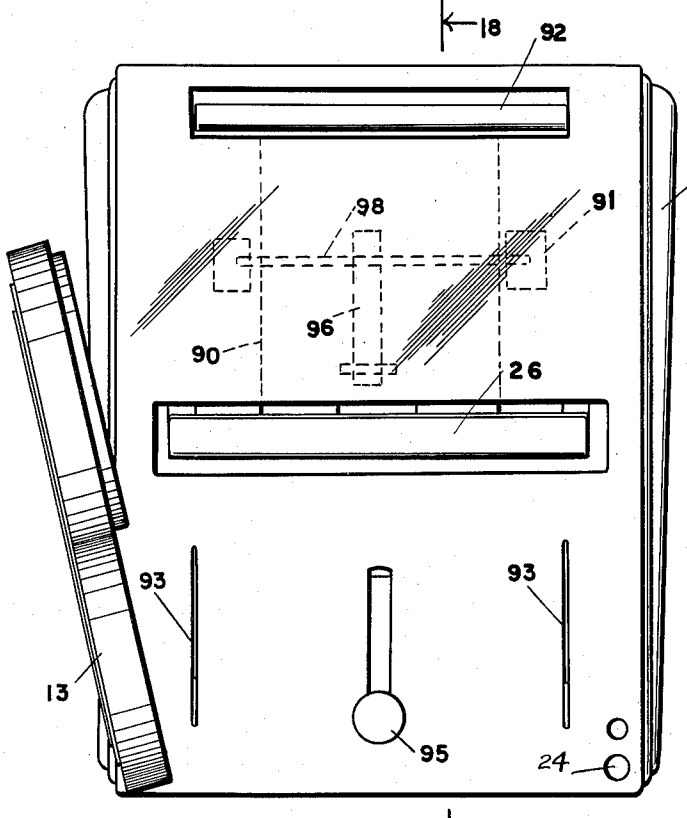


FIG. 2

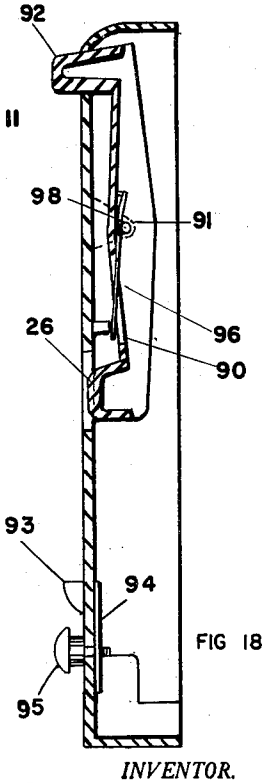


FIG 18

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CHECK PROTECTOR

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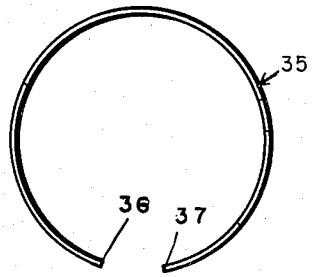


FIG. 6

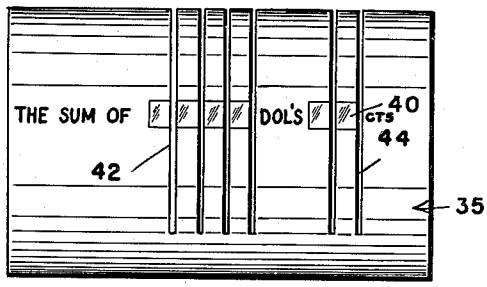


FIG. 7

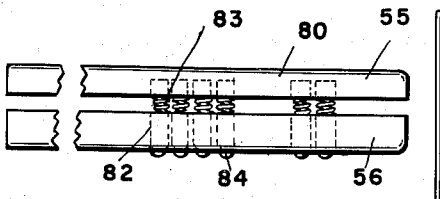


FIG. 8

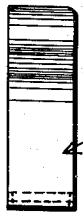


FIG. 11

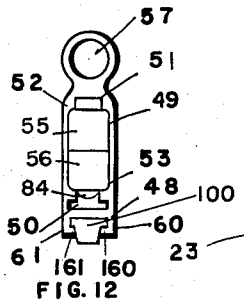


FIG. 12

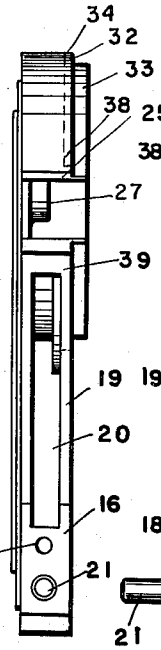


FIG. 9

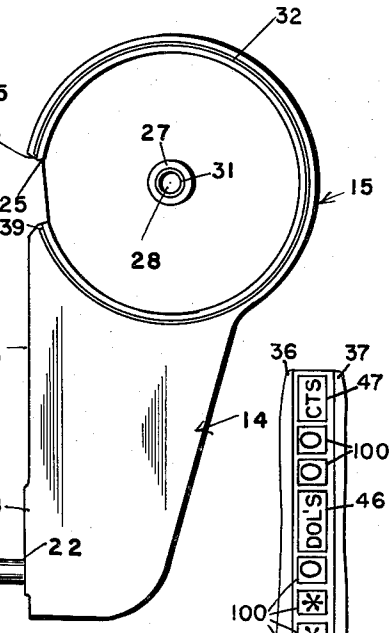


FIG. 10

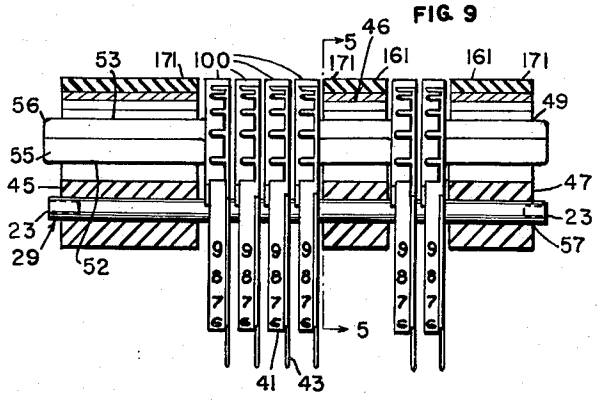


FIG. 13

FIG. 19

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United States Patent Office 2,975,702
Patented Mar. 21, 1961

2,975,702

CHECK PROTECTOR

Howard E. Hutzelman, Corry, Pa., assignor to Applied Research Corp., Erie, Pa., a corporation of Pennsylvania

Filed Apr. 1, 1957, Ser. No. 649,887

11 Claims. (Cl. 101—99)

This invention relates to printing devices and, more particularly, to devices for writing checks.

This application is a continuation in part of patent application, Serial No. 487,571, filed February 11, 1955, now Patent No. 2,851,946.

In the said parent application, a check writing device is disclosed which has a base and two spaced end caps thereon with indicating wheels supported therebetween having indicia thereon and a platen under the printing wheels for elevating a check into engagement with the printing wheels. The present invention constitutes an improvement over the said parent application and presents an improved structure for supporting the indicia wheels and, also, an improved structure of the wheels themselves for holding the ink impregnated rubber printing indicia in place to provide a uniform printing surface.

Molding of the stamp bands in the prior design permitted out of registry misalignment of printing characters because the mold used in manufacturing the rubber stamp bands incorporated an upper plate and a lower plate independent of the upper plate. Upper side printing characters were molded from one of these plates while the registering grooves in the under side of the band were molded from the other plate. It was not possible to prevent relative sidewise movement between these two plates during the molding operation.

In the present design, both the characters and the grooves are disposed on the upper side of the rubber stamp band. This is made possible by locating the registering grooves between the printing characters on the face of the band. Similarly, the registry of the printing blocks has been defined by redesigning the block holders to embody locating edges or fingers which contact the molded edge of the printing face of the rubber block. The former design located these blocks by variable cut edge of the block, thus allowing for minor error in alignment and consequent non-uniformity of printing on checks.

The present design is changed to improve registry control of the characters having, at the same time, eliminated the requirement for adhesive bonding of the stamp bands and blocks to the wheels and to the block holders. The rubber stamp bands are inserted from the side of the wheels so that the wheels and block holders incorporate a self-containing feature for these parts.

By the new design disclosed herein, it is possible to control the thickness of the stamp parts and, therefore, uniformity in manufacturing. A number of rubber stamp bands and blocks are produced in the form of a single rubber sheet to be subsequently cut apart into individual pieces. Control of the thickness of this sheet as molded by present methods cannot be maintained close enough for this requirement since thickness of the bands is determined by such consideration as amount of rubber stock charged into the press, molding pressure, temperature, composition, and other factors, each of which will vary from time to time. A close control of thickness of the sheet can be obtained by molding the sheet intentionally thicker than is desired for the final band and subsequently grinding away one side of the sheet to bring the entire sheet to the desired thickness. The former design embodied registering grooves on the underside of this sheet opposite the printing face side and grinding off of material from this side decreased the depth of the registering grooves and was, therefore, limited. The present design which incorporates the registering grooves on the same side of the sheet as the printing face permits unlimited grinding of the underside to produce the exact thickness required. At the same time, the present design permits compensating for rubber band thickness variations at the time the check protecting machine is assembled. Since adhesive bonding of the rubber bands to the wheels is not required in the present design, it is possible to add shims between the wheels and the rubber bands to bring the bands to the desired overall thickness.

It is, accordingly, an object of this invention to provide a check protecting device which is simple in construction, economical to manufacture, and simple and efficient to use.

Another object of this invention is to provide an improved printing wheel and an improved support for the printing wheel in combination with a check writing machine.

A further object of the invention is to provide an improved indicia structure and an indicia support on a printing wheel and a check writing wheel.

A still further object of this invention is to provide an improved check protecting device including an improved printing wheel structure and support therefor.

With the above and other objects in view, the present invention consists of the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportions, and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Fig. 1 is an isometric view of a check writing machine according to the invention;

Fig. 2 shows the base structure having a printing platen thereon and one of the end caps supported on the bracket with the check spacing device thereon according to the invention;

Figs. 3 and 4 show a right side view and a front view, respectively, of the indicator wheels of the machine according to the invention;

Fig. 5 shows a cross sectional view taken on line 5—5 of Fig. 13;

Fig. 6 is a side view of the cover for the indicator wheels of the machine;

Fig. 7 is a front view of the cover for the indicator wheels;

Fig. 8 is a front view of the indicia spacer bars with the detent springs and balls therein;

Figs. 9 and 10 show a bottom view and a side view, respectively, of one of the end caps of the machine;

Figs. 11 and 12 show a front view and an end view, respectively, of the spacer blocks for spacing the indicia wheels on the support axle;

Fig. 13 is a view of the indicia wheels assembled on the axle with the spacer blocks therebetween;

Fig. 14 is a side view of the porous rubber indicia printing band of the machine;

Fig. 15 is a cross sectional view taken on line 15—15 of Fig. 14;

Figs. 16 and 17 show front and end views, respectively, of the porous rubber band for the fixed printing block;

Fig. 18 is a cross sectional view taken on line 18—18 of Fig. 2; and

Fig. 19 is a broken view of the printing indicia exposed between the cover slot when the wheel are set to print the sum of 0 Dol's 00 Cts.

Now with more specific reference to the drawings, a check writing machine **10** is shown having a base **11** with end caps **12** and **13** supported thereon. The end caps **12** and **13** have a round portion **14** with an elongated portion **15** integral therewith. Pins **21** are molded into the elongated portion **15** at **22** and fit into bores **24** in the base **11** to hold the end caps **12** and **13** in place with a flat surface **19** resting on the top of the base **11**. A screw engages a threaded hole **23** when the machine **10** is assembled to hold the end caps **12** and **13** in assembled position. A laterally disposed slot **32** in each of the end caps **12** and **13** has an inner edge **33** thereof which extends inwardly further than an outer edge **34**, the inner edge **33** serving as a guide flange to guide the ends of a cover **35** into the slot **32**.

Cover

The cover **35** is made of a thin sheet of material bent in the form of a hollow cylinder with an opening formed by terminal ends **36** and **37**. The corners of the ends **36** and **37** engage ends **38** and **39**, respectively, of the slots **32** adjacent a lateral slot **25** in the end caps **12** and **13**. The slot **25** forms an opening for a platen **26** to move the check through during the printing operation.

The cover **35** is made of opaque material; however, it may be made of transparent material and the entire surface painted with the exception of windows **40** which will be masked during the painting operation to render them transparent so that the indicia constituting the numerals on an indicia portion **41** of the indicating wheels will successively become visible through the windows **40** as the wheels are rotated. Parallel slots **42** are formed in the periphery of the cover **35** and through the slots **42** extend handles or levers **43** of the indicating wheels. Slots **44** also extend through the cover **35** parallel to the slots **42**.

It will be noted that the three slots **44** are shorter than the slots **42**; that is, they terminate at a greater distance from the bottom of the cover **35** as shown in Fig. 1 than the slots **42**. The slots **44** are made shorter so that the ends thereof form a stop to prevent the last three indicating wheels from being rotated to the asterisk position since it is necessary that either a positive numeral or a zero be always printed to show the proper amount of the check. Since the levers **43** in the slots **44** will engage the ends of the slots **44** at the time that "0" comes into printing position and the wheels have the levers **43** extending through the slots **42**, the asterisk on the periphery after the zero can be rotated to the end of the slots **42**. This will bring the asterisk into position at the slot **25** for all the wheels other than those having levers extending through the slots **42** to print an asterisk in the center portion. Therefore, when the amount of a check is to be written for less than one dollar, for example, seventy-five cents, the check will read ***0 DOL'S 75 CTS. and for checks amounting to more than one dollar, for instance, $25.65, the check will read **25 DOL'S 65 CTS.

Spacer blocks

The spacers are shown in Figs. 11 and 12. The spacer blocks are made up of elongated spacer members **45**, **46**, and **47**. All of the spacer blocks **45**, **46**, and **47** are identical in cross section but may vary in length to suit the desired spacing of wheels. Each block has a rectangular portion **48** which has a rectangular bore **49** therethrough which may be relieved at each end at **50** and **51**, leaving shoulders **52** and **53** for engaging the outer edges of spacer bars **55** and **56**. The upper ends of the spacer blocks **45**, **46**, and **47** have a round axial bore **57** therethrough which receives an axle **29**.

Outer edges **60** and **61** of the blocks **45** and **47** adjacent the outer ends of the axle **29** are received between the outer edges of the slot **25** in the end caps **12** and **13**. This holds the two outer supports **45** and **47** in alignment, preventing pivotal movement about the axle **29** which has its ends fixed in bores **28**. Since the spacer bars **55** and **56** snugly fit between the shoulders **52** and **53**, they will be held in firm alignment with the blocks **45** and **47**. The lower ends of the spacer blocks **45**, **46**, and **47** each have a longitudinally extending recess defined at the lower end thereof by inturned ends **160** and **161**. The T-shaped space therein receives porous rubber strips **171** shown in Figs. 16 and 17. The strips **171** may be made of porous rubber such as that disclosed in Patent No. 2,598,806. The rubber strips **171** have the words "THE SUM OF," "DOLS," and "CTS.," respectively, molded thereon. These words are held in fixed position and are imprinted on each check which is printed by the machine **10**. The specific amount of the check is printed by the digits on the other rubber strips on the indicating wheels.

Indicating wheels

The indicating wheels **41** are shown in Figs. 3, 4, 5, and 13. The wheels **41** are made up of a disk portion or side flange **63** having a portion thereof cut away to form an opening **64** therein. A central boss **65** is attached to the flange **63**. The central boss **65** has a bore **66** therethrough which receives the axle **29** and the wheels **41** rotate thereon. Screws **30** engage threaded holes in the ends of the axle **29** and are disposed in counterbores **31** of the bores **28** which are disposed in bosses **27** in the end caps **12** and **13**. The lever **43** is attached to side flange **63** by means of a rivet **67** or it could be molded into the plastic material from which the wheel **41** is made or attached by any other equivalent means. A peripheral rim **68** is attached to one-half of the outer periphery of the side flange **63**. On the outer surface of the rim **68** are formed the indicia numerals shown in Fig. 4.

In operation, the numerals successively appear at the windows **40** when the wheel **41** is rotated. The numeral on the rim **68** appearing at any time at a window **40** will correspond to the numeral on the rubber strip overlying the platen **26** at the particular time. A thick insert rim portion **70** defines the outer periphery of the other half of the wheels **41** and it is set in slightly from an outer edge **71** of the flange **63**. The rim **70** has wheel indexing notches **72** defined by spaced lugs **73** on the inner edge thereof. Spaced outwardly from the rim **70** are registering fingers **74** which extend axially from the outwardly extending portion of the side flange **63** and are spaced outwardly from an outer surface **75** of the rim **70**.

When the device is assembled with the indicating wheels **41** supported on the axle **29**, the spacer blocks **45**, **46**, and **47** are disposed between the indicating wheels **41** as shown in Fig. 13. The spacer bar halves **55** and **56** are disposed through the rectangular bore **49** in the spacer blocks **45**, **46**, and **47** with the spacer bar extending through the opening **64** in each of the indicating wheels **41**. The wheels **41** may rotate around the axle **29** limited in rotation by the edges of the opening **64**.

Spacer bar

The spacer bar is made up of the two halves **55** and **56** which may be generally rectangular in cross section contoured on an outer peripheral surface **80**. The spacer bar halves **55** and **56** have bores **82** therein which receive helical compression springs **83**. The springs **83** urge the halves **55** and **56** of the spacer bar outwardly away from each other. Balls **84** are disposed in the reduced size ends of the bores **82** and the balls **84** engage the

notches 72 in the indicating wheels 41. When the machine is in the assembled position, the indicating wheels 41 are held by the balls 84 at any predetermined position at which they are stopped. When in such predetermined position, one of the numerals on the indicating rim 68 will appear at the window 40 and a like numeral on a rubber strip 100 will be disposed between the ends 37 and 38.

Platen

The platen 26 is made up of an intermediate portion 90 pivotally connected to the base 11 by means of a rod 98 passing through bores in lugs 91. The platen 26 has a hand engaging portion 92 at one end thereof. A leaf spring 96 is disposed to hold the platen 26 in position below the surface of the base 11 except when the portion 92 is depressed by the hand of an operator to print a check. The check stop member is made up of upwardly extending lugs 93 connected by an intermediate portion 94. A screw having a screw head 95 extends through a slot 99 in the base 11 with its threaded portion engaging the intermediate portion 94 and adapted to be tightened down into engagement with the top surface of the base 11, locking the stop into position in the base 11.

When the machine is assembled as shown in Fig. 1, a check to be printed may be inserted into a slot 20 and it will slide back until one edge thereof engages the lugs or stops 93. The stops 93 may then be adjusted so that the line on the check on which the amount is to be printed will be directly under the slot 25 between the ends 36 and 37 in the cover 35. Then when the operator presses on the hand engaging portion 92, the check will be pushed up into the slot between the ends 36 and 37 into engagement with the indicia printing member and the amount will then be printed on the check.

Fig. 14 shows the indicia carrying strip 100. The indicia carrying strip 100 is made up of a rubber band or stamp strip having grooves 101 formed therein. The grooves 101 receive the fingers 74 of the wheels 41. The main portion of the rubber stamp band lies in the space on the surface 75 and the fingers 74 hold it in place. The stamp bands each preferably carry eleven characters which are an asterisk and the numerals 0 to 9 which are formed at 103. The entire indicia member 100 is made up of a porous rubber like material which receives ink and which will hold an amount of ink sufficient for printing over extended periods of time without necessitating replenishing thereof. The indicia member 100 is made of rubber such as that disclosed in Patent 2,598,806.

The fingers 74 engaging the notches 72 provide positive registering of the characters on the rubber band on each wheel 41 with the characters on the bands on the other wheels. Since underside 102 is flat, it can be ground to make certain that each band in the check protector is of uniform thickness. Therefore, the same pressure will be created by the platen 26 on each character when the hand engaging portion 92 is depressed. Therefore, the ink printed will be of equal density and a uniform, symmetrical, and good appearing printing job will result.

The foregoing specification sets forth the invention in its preferred practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel as is commensurate with the appended claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A check writing machine comprising a base, indicating wheels rotatably mounted on said base, said indicating wheels having a rim portion disposed around a portion of the periphery thereof, said rim portion having an outer peripheral surface, a strip of resilient material supported on said outer peripheral surface and having characters on the side of said resilient material remote from said peripheral surface, and means to support a paper against said resilient material, said strip of resilient material having spaced notches on the side thereof remote from said peripheral surface, said wheels having axially extending fingers spaced outwardly from the outer periphery of said rim portion, said fingers being disposed in said notches in said resilient material whereby said resilient material is held in place on said indicating wheels.

2. The machine recited in claim 1 wherein said resilient material comprises ink containing rubber like material.

3. The machine recited in claim 2 wherein said wheels each have a disk like portion extending from said rim portion radially outwardly and said fingers are attached to the side of said disk portion and extend axially therefrom overlying said rim portion and being received in said notches.

4. A check writing machine comprising a base, end cap members supported on said base, an axle supported between said end cap members, a plurality of indicating wheels supported on said axle and rotatable thereabout, spacer blocks on said axle and extending between said wheels and, at the end of said wheels, holding said wheels in spaced alignment, said spacer blocks having a hollow therethrough parallel to said axle and spaced therefrom, a spacer bar comprising two parallel members disposed in said hollow and engaging said cap members at the ends thereof, spaced bores in said spacer bars perpendicular to the axis of said axle, helical springs disposed in said bores urging said spacer bars away from each other, ball members disposed in said bores and urged outwardly by said springs, and means on said wheels engaging said ball members holding said wheels in predetermined positions.

5. The machine recited in claim 4 wherein said means on said wheels engaging said ball members comprises a rim on said wheels spaced from the axis thereof, inwardly facing notches formed on the inwardly facing surface of said rim, said ball members engaging said notches and thereby selectively holding said wheels in a plurality of predetermined positions.

6. The machine recited in claim 4 wherein said spacer blocks have a resilient ink containing member having indicia and attached to the ends thereof remote from said axle, said ends adapted to engage a check when urged into engagement therewith, said resilient member printing indicia corresponding to the indicia on said resilient member.

7. The machine recited in claim 4 wherein said wheels have an outer flat peripheral surface, said spacer blocks have a flat surface, said surface of said spacer blocks engaging the outer surface of said wheels, said flat surface of said spacer blocks having circumferentially spaced notches thereon and fingers supported on said wheels spaced outwardly from said outer surface engaging said notches, holding a resilient member to be printed in position on said wheels.

8. A check writing machine comprising a platen on said machine, a plurality of wheels supported on a common axis on said machine, said wheels each having a flat surface on the periphery thereof, a plurality of spaced fingers on each said wheel, said fingers being spaced radially outwardly a predetermined distance from said flat surface on each said wheel, a rubber stamp band having spaced characters on one side thereof, spaced, laterally disposed notches between said characters, said stamp band being flat on the side opposite said characters, said flat surface of said band being disposed on said flat surfaces of said wheels with said fingers disposed in said notches whereby said stamp band is held in place on said wheels, and means to move said platen and said

wheels relative to each other with a check blank to be printed therebetween.

9. The machine recited in claim 8 wherein each said band is ground on the flat side thereof to render all of them of exactly the same thickness.

10. The machine recited in claim 9 wherein support members are supported on an axle between some of said wheels, and one side of spacers extend outwardly from said axle and terminate in a surface having a rubber block supported thereon and indicia supported on said block.

11. A check writing machine comprising a base, end cap members supported on said base, an axle supported between said end cap members, a plurality of indicating wheels supported on said axle and rotatable thereabout, spacer blocks on said axle and extending between said wheels and, at the end of said wheels, holding said wheels in spaced alignment, said spacer blocks each having a hollow therethrough parallel to said axle and spaced therefrom, said wheels each having an internal portion thereof cut away forming an opening therethrough, a

spacer bar extending through said cut away portions in said wheels and through said hollows in said spacer blocks and supported on said cap members at the ends thereof, and detent means on said spacer bar engaging said wheels, holding said wheels in predetermined position.

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