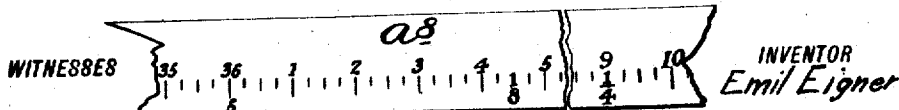
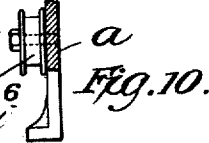
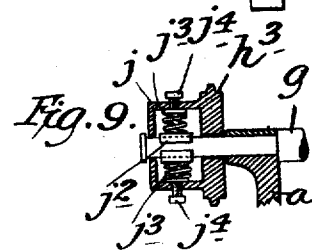
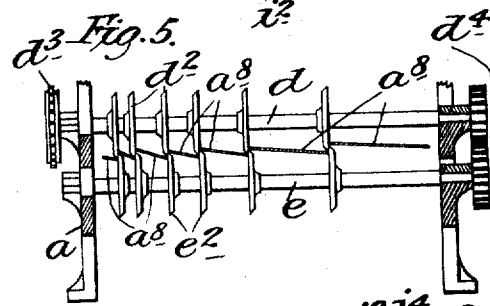
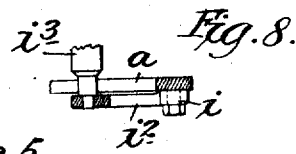
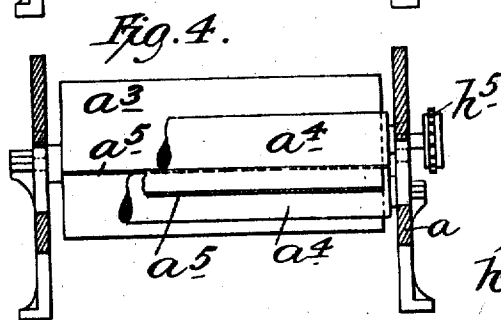
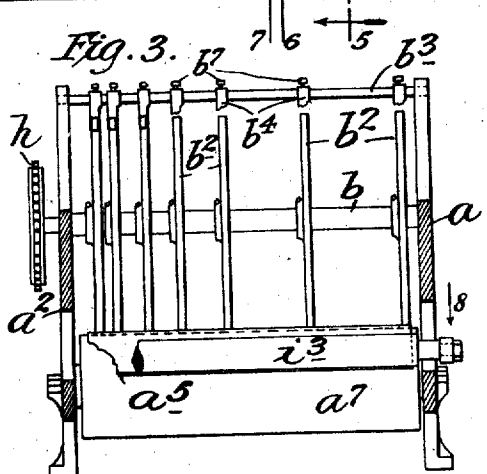
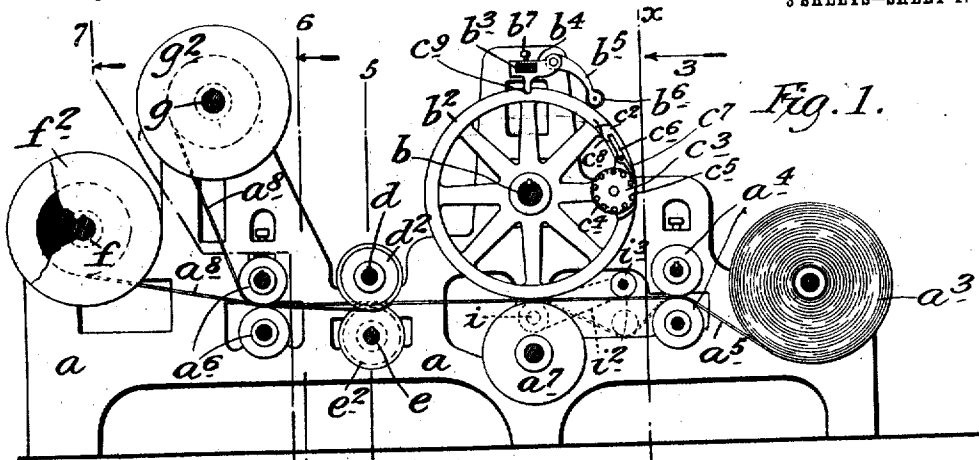


E. EIGNER.
 APPARATUS FOR CUTTING PAPER INTO STRIPS AND PRINTING SCALES THEREON.
 APPLICATION FILED FEB. 8, 1909.

953,742.

Patented Apr. 5, 1910.

3 SHEETS—SHEET 1.



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Fig. 16. BY

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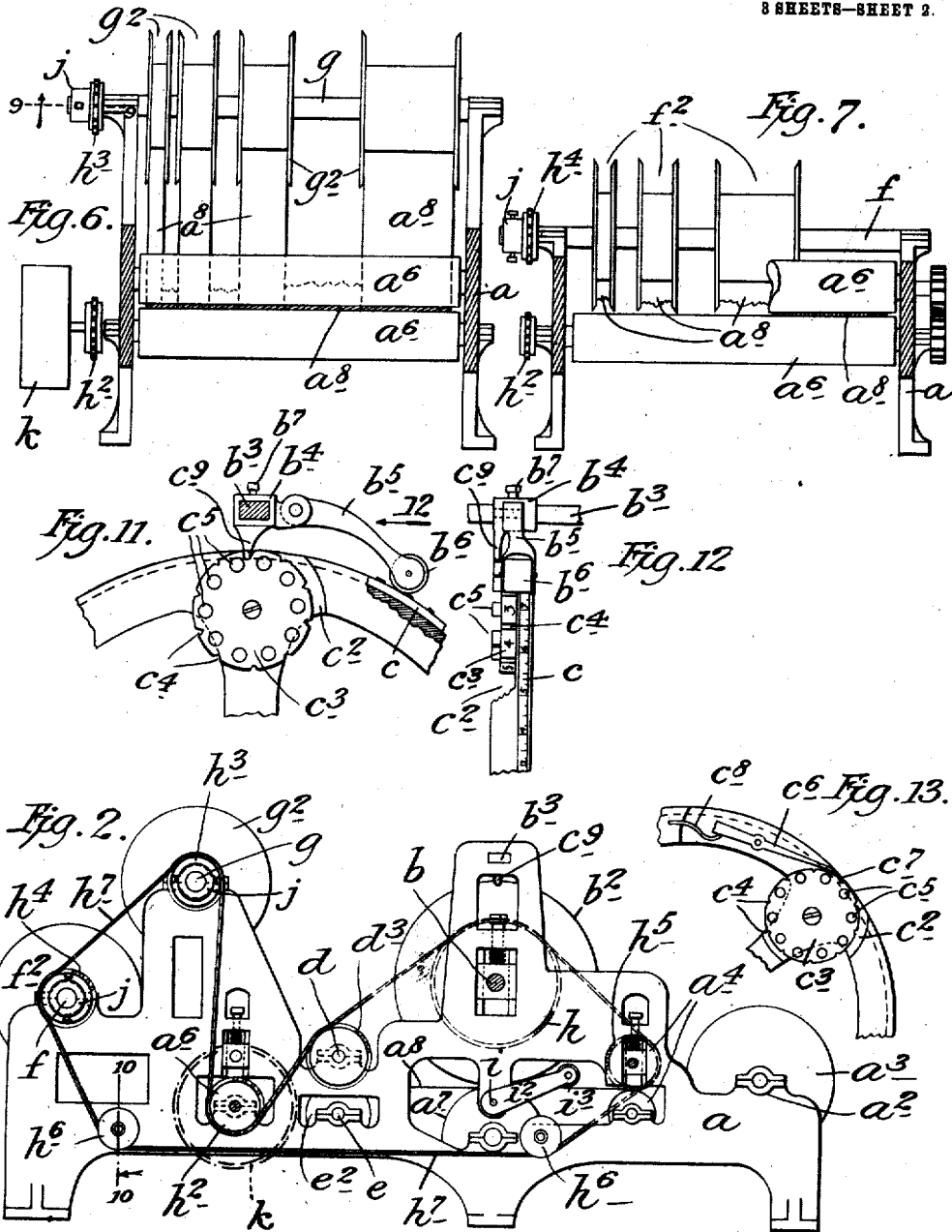
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8 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3

Fig. 14

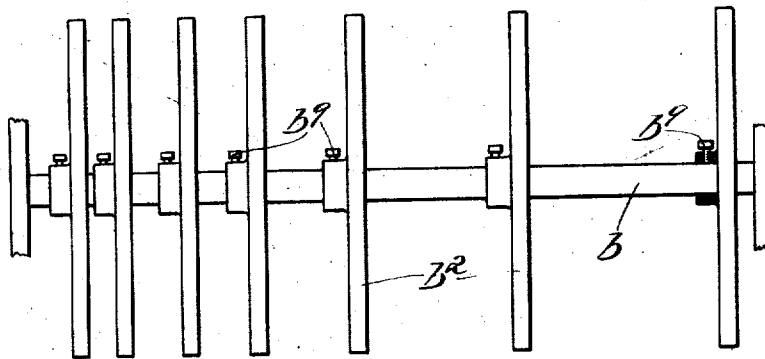
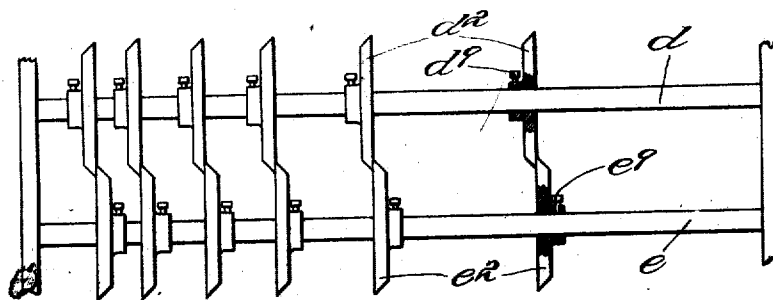


Fig. 15



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UNITED STATES PATENT OFFICE.

EMIL EIGNER, OF NEW YORK, N. Y.

APPARATUS FOR CUTTING PAPER INTO STRIPS AND PRINTING SCALES THEREON.

953,742.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed February 8, 1909. Serial No. 478,848.

To all whom it may concern:

Be it known that I, EMIL EIGNER, a citizen of the United States, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Apparatus for Cutting Paper into Strips and Printing Scales Thereon, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to machines or apparatus for cutting rolls of paper or similar material into strips or tapes and printing measuring scales thereon, said strips or tapes being designed to be rolled into rolls of cloth, ribbons or similar material in order that the exact amount of ribbon, cloth or other material in the roll may be determined at any time, whereby a retail dealer in goods of this class may determine at a glance the amount of goods remaining in the rolls after a part thereof has been sold, and also determine when purchasing goods of this class from wholesale dealers the amount of goods contained in a roll.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Figure 1 is a partial sectional side elevation of a machine involving my invention, Fig. 2 a side view thereof with parts of the details represented in dotted lines, Fig. 3 a section on the line *x—x* of Fig. 1 and looking in the direction of the arrow 3, Fig. 4 a section on the line *x—x* of Fig. 1 and looking in the direction of the arrow 4, Fig. 5 a section on the line 5—5 of Fig. 1, Fig. 6 a section on the line 6—6 of Fig. 1, Fig. 7 a section on the line 7—7 of Fig. 1, Fig. 8 a sectional view of a detail of the construction shown in Fig. 3 and looking in the direction of the arrow 8 of said figure, Fig. 9 a sectional view of a detail of the construction shown in Fig. 6, the view being a partial section on the line 9—9 of Fig. 6, Fig. 10 a section on the line 10—10 of Fig. 2, Fig. 11 a side view of a printing wheel which I employ and showing parts operating in connection therewith, part of the construction being in section, Fig. 12 a view looking in the direction of the arrow 12 of Fig. 11, Fig.

13 a side view of another part of the printing wheel shown in Figs. 11 and 12, Fig. 14 a side view on an enlarged scale of a printing shaft which I employ provided with printing wheels, part of the construction being in section, said shaft and wheels being also shown in Figs. 1, 2 and 3, Fig. 15 a side view on an enlarged scale of two cutter shafts which I employ and provided with circular cutter wheels or disks, part of the construction being in section, said shafts and wheels or disks being also shown in Figs. 1, 2 and 3, and;—Fig. 16 a view of a part of a measuring strip or tape cut and printed by means of my improved machine.

In the practice of my invention I provide a suitable frame *a* composed of side members connected in the usual or any desired manner and the front end portion of which is provided with supports or bearings *a'* in which, in practice, is mounted a roll *a''* of paper or any suitable fibrous material, and rearwardly of which is placed a pair of feed and guide rolls *a'* between which, in practice, the paper from the roll *a''* is fed as indicated at *a'* in Fig. 1.

In the rear portion of the frame *a* is placed another pair of feed and guide rolls *a'*, and the feed and guide rolls *a'* are placed one above another as are also the feed and guide rolls *a'*, and at the rear of the feed and guide rolls *a'* is placed a platen roll *a'* the top surface of which is in a horizontal plane which passes between the rollers of the separate pairs *a'* and *a'*.

Supported above the platen roll *a'* is a shaft *b* provided with a plurality of printing wheels *b'* which, in the form of construction shown, are seven in number as indicated in Fig. 3 and above the printing wheels *b'*, the frame *a* is provided with a transverse bar or support *b'* on which are mounted adjustable slides *b'* to which are pivoted arms *b'* which correspond in number with the printing wheels *b'*, and which are provided with inking rollers *b'* adapted to bear on the wheels *b'*, and the slides *b'* are provided with set screws *b'* by which they may be adjusted on the bar or support *b'* and held in any desired position.

The printing wheels *b'* are clearly shown in Figs. 1, 3, 11, 12 and 13, and said wheels are the same in construction and operation as that described in U. S. Letters Patent

No. 893,079, granted to me Aug. 4, 1908, and those wheels are provided with a scale c designed to print, on a strip or tape, a scale representing yards and fractions thereof, and inches and fractions thereof, and one side of the rim of the wheels b^2 is cut out as shown at c^2 in Figs. 11 and 12 to form recesses in which are mounted supplemental printing wheels c^3 the face or perim-
 10 eter of which is provided at intervals with notches or recesses c^4 , and the outer side of which is provided at corresponding intervals with projecting pins c^5 , said pins being placed between the notches or recesses
 15 c^4 and being arranged in a circle on the side of the wheels b^2 .

Pivoted in the recesses c^4 are pawls c^6 provided at one end with a nose c^7 adapted to enter the recesses c^4 in the wheels c^3 and at the opposite ends of which are springs c^8 which normally hold said pawls in engage-
 20 ment with the wheels c^3 . The wheels c^3 are also provided on the face thereof and between the recesses c^4 with the numerals 1, 2, 3, etc. which are intended to print on strips or tapes, and while the scale c prints on said strips or tapes the yards, fractions of yards and inches and fractions of inches
 25 the wheels c^3 print thereon the number of yards, and said wheels are, in the form of construction shown, designed to print a measuring tape or strip ten yards long, and the wheels c^3 will therefore bear the num-
 30 erals from one to ten.

The slides b^4 above the wheels b^2 are provided with projecting pins or fingers c^9 which, at each complete revolution of the wheels b^2 , engage one of the pins and the
 40 corresponding wheels c^3 and move said wheels against the retarding influence of the pawls c^6 one step and a new yard is printed on the strips or tapes cut from the paper sheet a^2 as hereinafter described, and at the beginning of each yard printed by
 45 the wheels c^3 on the strips or tapes the feet and fractions of the new yard are also printed as will be readily understood and as shown and described in the patent here-
 inbefore referred to.

Rearwardly of the printing wheels b^2 and platen roll a^1 and between said parts and the rear feed and guide rolls a^5 are two
 50 shafts d and e placed one above the other, and these shafts are provided respectively with circular cutters d^2 and e^2 , and these shafts and cutters are clearly shown in Figs. 1 and 5 and in Fig. 15, and in the form of
 55 construction shown, the top cutter shaft d is provided at its left hand end with a sprocket wheel d^3 , and the shafts d and e are geared together at the ends opposite the sprocket wheel d^3 as shown at d^4 .

The cutters d^2 and e^2 on the shafts d and
 60 e are spaced to correspond with the printing wheels b^2 on the shaft b , but the printing

wheels b^2 are one more in number, in the form of construction shown, than the cutter wheels d^2 and e^2 on their respective shafts.

Arranged rearwardly of the feed and guide rolls a^6 is a shaft f shown in Figs. 1
 70 and 6, and said shaft is provided with spools or reels f^2 three of which are shown, and arranged above the shaft f and forwardly of the same, in the form of construction shown, is a similar shaft g provided with
 75 spools or reels g^2 four of which are shown.

With the arrangement of cutters d^2 and e^2 on the shafts d and e as shown in Fig. 5 there will be seven strips or tapes a^3 cut from the sheet a^2 as it comes from the roll a^1 ,
 80 and it will be observed that the combined number of the spools or reels g^2 and f^2 is the same as the number of said strips or tapes, and in Figs. 6 and 7 the said strips or tapes are partly shown in full lines and
 85 partly broken away in dotted lines.

In the accompanying drawings the cutters d^2 and e^2 on the shafts d and e and the printing wheels b^2 are shown so arranged
 90 as to form strips or tapes a^3 of different widths, but it will be apparent that these parts of the machine may be arranged in any desired manner and the strips or tapes may all be of one width if desired, or the
 95 positions of the cutters d^2 and e^2 and the printing wheels b^2 on their respective shaft may be adjusted or regulated to any desired extent so as to form printed tapes or strips of any desired width.

As shown in Figs. 14 and 15, the printing
 100 wheels b^2 on the printing shaft b are provided with hubs through which are passed set screws b^5 , and the circular cutters d^2 and e^2 on the shafts d and e are provided with
 105 hubs through which are passed set screws d^5 and e^5 , and by means of this construction the adjustment of the printing wheels b^2 and cutters d^2 and e^2 may be easily accomplished.

The printer wheel shaft b is provided at its left end with a sprocket wheel b^3 , the bot-
 110 tom guide and feed roll a^6 with a similar sprocket wheel b^3 , the shaft g with a similar sprocket wheel b^3 , the shaft f with a similar sprocket wheel b^3 , and the top feed and
 115 guide roll a^6 is provided with a similar sprocket wheel b^3 , and in the bottom rear portion of the frame and bottom front portion of the frame are placed idlers b^6 clearly
 120 shown in Figs. 2 and 10, and mounted on said gears and the gear d^3 on the shaft d and passing beneath the idlers b^6 is an endless belt or drive chain b^7 as clearly indicated in Fig. 2.

Pivoted to the opposite sides of the frame directly under the shaft b as shown at i
 125 in Figs. 2 and 3, and as indicated in dotted lines in Fig. 1, are arms i^2 which carry an anti-slack roller i^3 which rests on the sheet of paper between the feed and guide rollers a^6 and the cutters b^2 and platen roll a^1 .
 130

It will be understood, of course, that as the paper is fed from the roll a^3 , printed and cut into strips or tapes and rolled onto the spools or reels f^2 and g^2 the movement of said spools or reels will not correspond with the movement of the paper roll a^3 as said roll decreases in size. In other words the rate of feed remaining always the same, and the strips or tapes increasing on the spools or reels g^2 renders it necessary to provide for this condition, and in order to do this I provide means whereby the sprocket wheels h^3 and h^4 may slip or turn on the shafts g and f to which the spools or reels g^2 and f^2 are secured. This construction is clearly shown, in Fig. 9 in which the shaft g is shown. The sprocket wheels h^3 and h^4 on the shafts are provided with a hollow hub j through which said shafts pass and within which the said shaft is provided with two segmental bearing blocks j^2 placed on the opposite sides thereof and between which and the sides of the casing j are placed spiral springs j^3 the tension of which may be regulated by set screws j^4 . With this construction the movement of the shafts f and g and the spools or reels f^2 and g^2 may be regulated as will be readily understood.

With the construction herein described, it will be seen, that parallel rows of scales will be printed on the sheet a^5 of paper as it leaves the roll a^3 and that said sheet will afterward be cut into narrow strips by the cutters d^2 and e^2 , and that said strips will be wound on the spools or reels f^2 and g^2 , but my invention is not limited to the rewinding of the strips or tapes on the reels f^2 and g^2 , and any suitable disposal of said strips or tapes may be made after the printing of the scales thereon and the cutting thereof. It will also be observed that with the construction shown and described the cutting of the paper sheet into strips or tapes is done after the printing of the scales, but my invention is not limited to this arrangement of the various parts as shown and described,

and the sheet of paper as it leaves the roll a^3 may first be cut into strips or tapes which may afterward be printed with the desired scales; and various other changes in and modifications of the construction herein described may be made, within the scope of the appended claim, without departing from the spirit of my invention or sacrificing its advantages.

In the construction shown, the bearings of the printing wheel shaft b are adjustable bearings, as are also the bearings of the top feed and guide rolls a^4 and a^5 .

The machine may be driven by a belt wheel k on the shaft of the bottom feed or guide roll a^6 , or it may be driven in any desired manner.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

In a machine for cutting paper into strips and printing scales thereon, a frame, a paper roll support mounted therein, a platen roll mounted transversely of said frame, a printing shaft mounted over said platen roll, spaced printing wheels connected with said shaft, feed rollers mounted between the paper roll support and the platen roll and printing shaft, cutter shafts arranged transversely of the frame rearwardly of the platen roll and printing shaft and provided with spaced cutters, guide and feed rollers arranged rearwardly of the cutter shafts, and spools on which the strips of paper are wound as they pass between said guide rollers, said printing wheels and cutters being adjustable on their respective shafts.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this sixth day of February 1909.

EMIL EIGNER.

Witnesses:

MILTON N. BLUMENTHAL,
ISAAC REISS.