

Oct. 27, 1931.

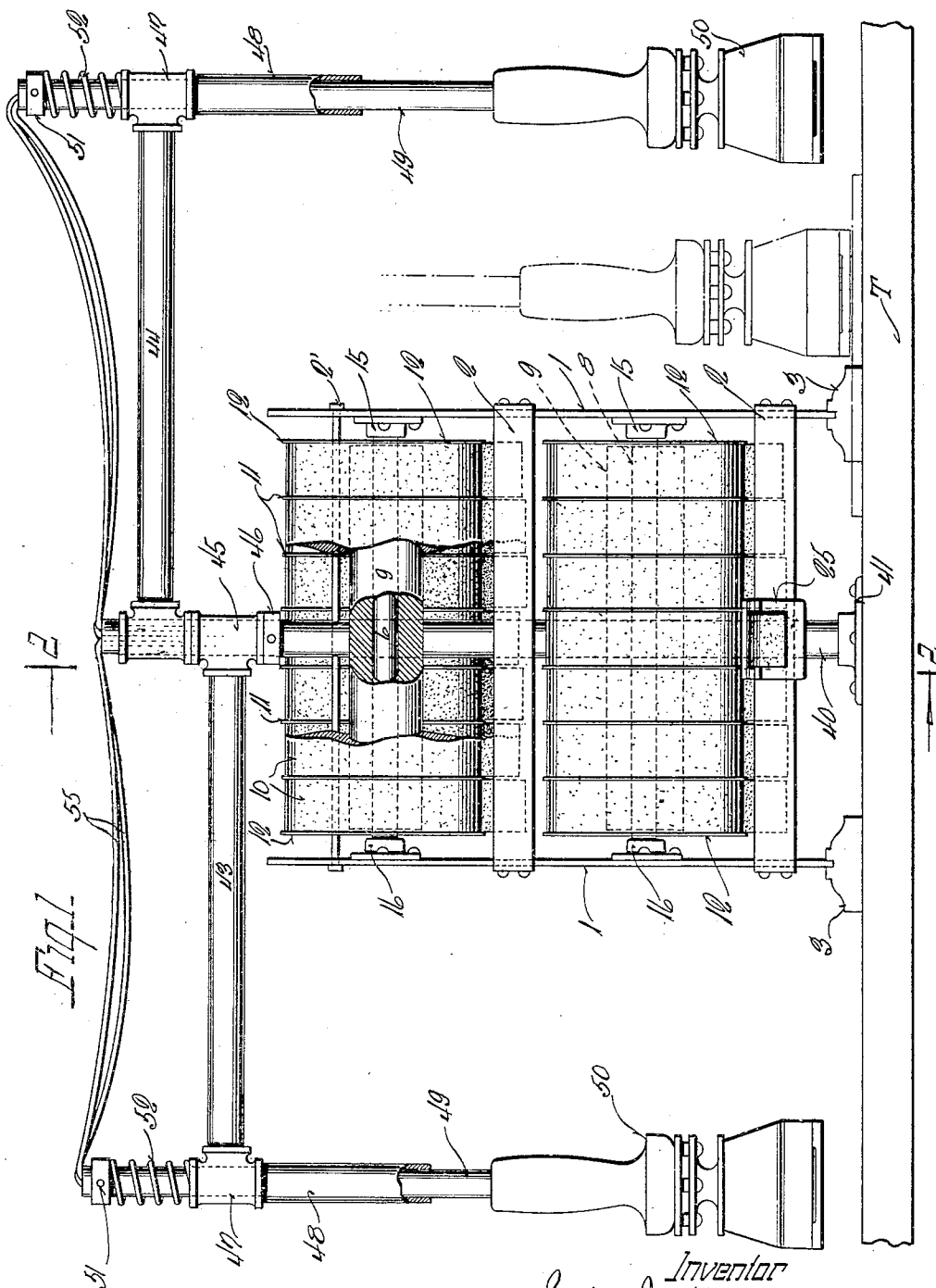
I. J. KOHLWEY

1,829,562

TRANSFER PRINTING MACHINE

Filed Aug. 9, 1930

3 Sheets-Sheet 1



Inventor
Irvin J. Kohlwey

By
Bottum, Hirsch, Leach, McKeown and Kuehn
Attorneys

Oct. 27, 1931.

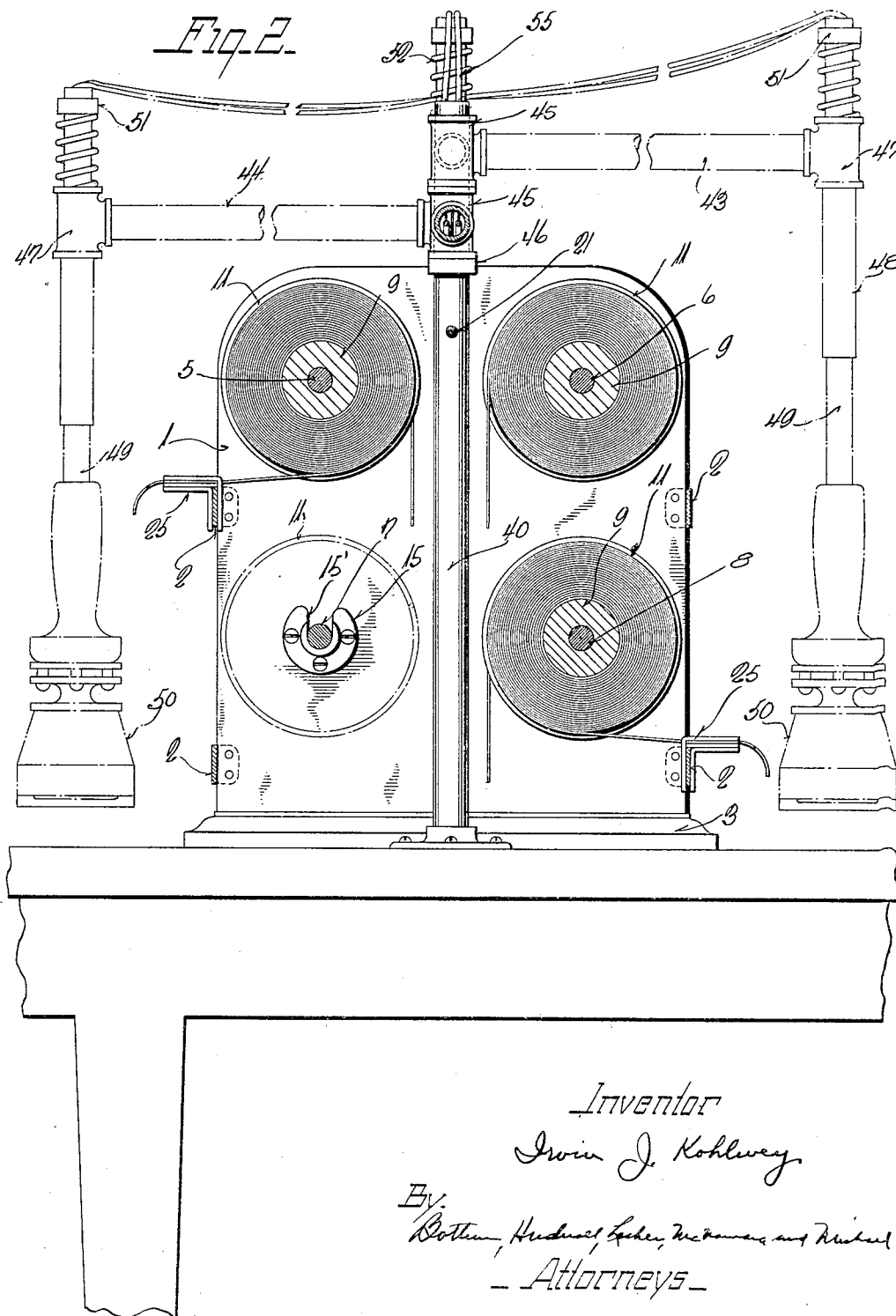
I. J. KOHLWEY

1,829,562

TRANSFER PRINTING MACHINE

Filed Aug. 9, 1930

3 Sheets-Sheet 2



Oct. 27, 1931.

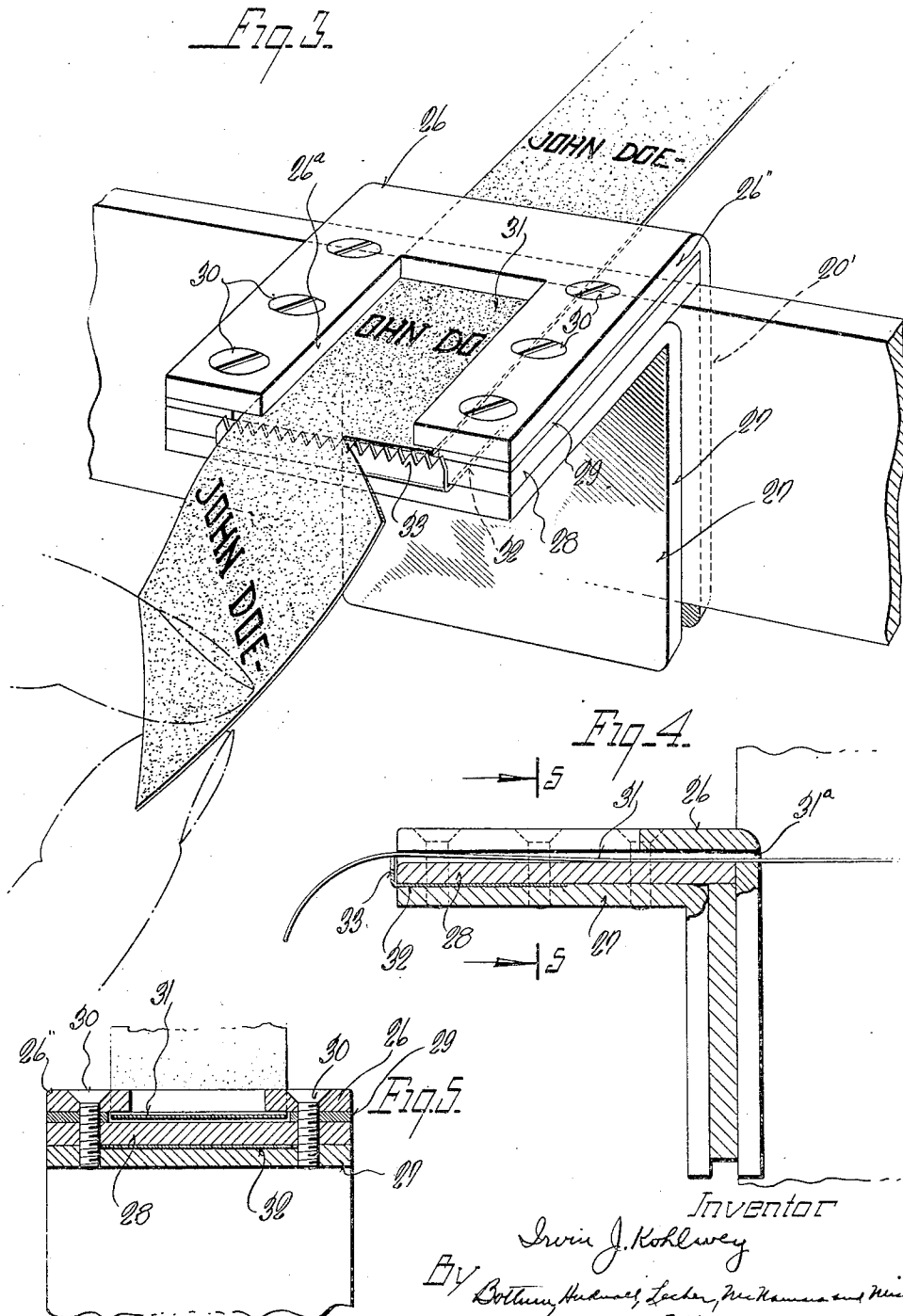
I. J. KOHLWEY

1,829,562

TRANSFER PRINTING MACHINE

Filed Aug. 9, 1930

3 Sheets-Sheet 3



UNITED STATES PATENT OFFICE

IRVIN J. KOHLWEY, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO PHOENIX HOSIERY COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN

TRANSFER PRINTING MACHINE

Application filed August 9, 1930. Serial No. 474,109.

This invention relates to a transfer printing machine for use in applying trademarks, size numbers, and similar indicia to hosiery, stockings, or other articles of like nature.

5 In the manufacture of hosiery, for example, it is the usual practice to apply to each pair of hosiery a trademark, the size number and other descriptive or informatory matter, just prior to packaging or boxing the hosiery. This marking of the hosiery is carried out by transferring the indicia from a transfer tape to the stockings. The transfer tape employed is usually in the form of a strip or web wound into a reel or roll-like formation and having at spaced intervals throughout its extent the indicia to be applied to the hosiery. The indicia on the transfer tape is in the form of raised letters and figures of wax-like substance or other similar material susceptible of being transferred from the tape to the hosiery under the action of heat and pressure. Heretofore, the transferring was effected by means of a transfer iron which usually has the form of a hand stamp with an enclosed electric heating element.

For the various styles and sizes of hosiery different transfer tapes are employed and the necessity of changing from one roll or reel of tape to another and the handling involved in effecting each individual transferring operation has rendered this operation so slow that it lags behind related activities of the finishing department.

35 The object of the present invention is to provide a machine or device which facilitates the selection of any particular tape and which, with any selected tape, greatly speeds up the transferring operation.

40 A further object of the present invention is to provide a machine or device of this character which has the capacity to hold a relatively large number of transfer tapes and which embodies a combined guide and cutter adapted to be selectively employed with any one of the plurality of transfer tapes. In conjunction with these novel features, a stamping iron or transferring iron is provided and is so organized with the machine

as to be employed with any selected transfer tape.

Other objects and advantages reside in certain novel features of the construction, arrangement and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawings forming a part of this specification, and in which:—

Figure 1 is a view in end elevation showing a transfer printing machine embodying the present invention, the stamping irons being shown at right angles to their normal positions for the sake of illustration;

Figure 2 is a view in section taken on line 2—2 of Figure 1;

Figure 3 is a fragmentary perspective view showing the combined cutter and guide employed at each side of the machine;

Figure 4 is a detail sectional view taken on line 4—4 of Figure 5 and further illustrating the combined cutter and guide structure; and

Figure 5 is a view in section taken on line 5—5 of Figure 4.

Referring to the drawings, it will be seen that the present invention proposes a suitable frame or housing resting on a table T or other support and consisting of side plates 1 provided with suitable base pieces 3 and connected by cross bars 2 and a cross rod 2'.

In the embodiment of the invention illustrated, the housing is provided with four roll supporting shafts designated at 5, 6, 7 and 8, the shafts 5 and 7 being arranged one above the other at one end of the housing and the shafts 6 and 8 being similarly arranged at the opposite end of the housing. On these shafts sleeves 9 are fitted and provide support for the rolls of transfer tape designated at 10. Disc-like separators 11 are interposed between adjacent rolls of transfer tape. At the end of each gang of rolls on each sleeve shaft 9, an end disc 12 is provided and may be releasably secured to the end of the sleeve.

With this arrangement the rolls are independently rotatable with respect to each other and provision is made for the support of a

relatively large number of rolls to take care of the various types of markings.

The shafts 5, 6, 7 and 8 are detachably mounted on the casing. This mounting is preferably effected by providing bearing brackets 15 and 16 on the side plates. At least one of each pair of brackets has its upper portion provided with a slot shown at 15' in Figure 2 so that any shaft may be readily taken from the housing and be replaced by similar shafts with transfer tapes thereon having different types of markings.

With this construction, the machine is designed to serve two operators, each operator selectively employing a transfer tape of one of the rolls of the upper or lower gangs of rolls at the adjacent end of the machine adjacent the operator.

In order to facilitate handling and cutting of the transfer tape, a combined cutter and guide designated generally at 25 is provided at each end of the machine and is selectively mounted on either the upper or lower bar 2.

As shown in Figures 3, 4 and 5, the combined cutter and guide comprises a pair of angular plates designated at 26 and 27, the plates being held in spaced relation by means of a spacing plate 28 and a spacing strip 29 interposed between the horizontal sections of the plates and secured in position by the screws 30 which also serve the purpose of maintaining the plates assembled. The spacing plate 28 and spacing strip 29 hold the plates a sufficient distance apart to permit the vertical sections 26' and 27' of the plates to embrace and releasably grip one of the bars 2 with a sliding fit while the spacing strip 29 so spaces the horizontal portions 26'' of the plates 26 from the plate 28 so as to provide a passage 31 for the transfer tape T. The passage 31 communicates at its rear end with a slot 31^a provided in the vertical leg or section of the angular plate 26 to permit the free passage of the transfer.

Confined between the spacing plate 28 and the lower plate 27 is the attaching portion 32 of a serrated cutter 33, the cutting edge of the cutter being disposed at the outlet end of the guide passage 31. Alinement of the transfer tape with the cutter 33 is facilitated by providing an opening 26^a in the top part of plate 26.

The combined cutter and guide may be selectively used with either the upper or lower bar 2 and may be slid along the bar on which it is mounted into alinement with the selected transfer roll.

Centrally of the housing a post 40 is provided and has its lower end suitably secured in position as indicated at 41 of Figure 1 and its upper portion braced by cross rod 2'. On the upper end of the post supporting arms 43 and 44 are swivel mounted, the supporting arms having bearing members in the form of T-couplings 45 rotatably mounted

on the upper end of the post and supported against downward displacement by a stop collar 46. The outer ends of the arms 43 are provided with T-couplings 47 to which guide sleeves 48 are attached. Slidable through the T-couplings 47 and their guide sleeves 48 are the shanks 49 of transfer or stamping arms 50. The upper end of each shank 49 is provided with a collar 51 serving as an abutment for the upper end of a coil spring 52 encircling the shank 49 of the associated transfer iron and bearing at its lower end on the T-coupling 47. The spring 52 normally holds the transfer iron elevated but yields to permit it to be lowered into operative relation to the transfer tape and hosiery. The transfer iron 50 is of conventional construction and has the usual electric heating element embodied therein which is supplied with current through the supply conductors 55.

The invention claimed is:

1. A transfer printing machine comprising a frame open at its ends, a plurality of rows of reels of transfer tape at each end of the machine, means for supporting the rows of reels of transfer tape one above another and with the individual reels of each row freely rotatable, a cross bar embodied in the frame adjacent each row of reels of transfer tape, a combined guide and cutter selectively co-operable with the cross bar at each end of the machine and selectively co-operable with the transfer tape of any reel at its end of the machine, a pair of transfer irons, one for each end of the machine, and means for supporting each transfer iron for swinging movement in a horizontal plane and for movement in a vertical plane whereby the transfer irons may be advantageously employed with the tape of any transfer reel.

2. A transfer printing machine comprising a frame open at its ends, a plurality of rows of reels of transfer tape at each end of the machine, means for supporting the rows of reels of transfer tape one above another and with the individual reels of each row freely rotatable, a combined guide and cutter selectively co-operable with the transfer tape of any reel at one end of the machine, and a pair of transfer irons, each transfer iron being adjustably supported so as to be selectively co-operable with the transfer tape of any reel at one end of the machine.

3. A transfer printing machine comprising a support for a plurality of rows of transfer tape, a combined guide and cutter selectively co-operable with the tape of any of the reels, and a transfer iron adjustably supported and co-operable with portions of the transfer tape fed through the combined guide and cutter.

4. A transfer printing machine comprising a frame, a plurality of spaced shafts,

bearing means for releasably supporting each shaft on the frame, means on each shaft for supporting a plurality of reels of transfer tape, and a transfer iron selectively cooperable with the transfer tape of any reel.

5 5. A transfer printing machine comprising a frame, a shaft releasably mounted on the frame, means on the shaft for supporting a plurality of reels of transfer tape, and
10 a transfer iron selectively cooperable with the transfer tape of any reel.

6. A transfer printing machine comprising a frame, means for interchangeably supporting a plurality of rows of reels of transfer
15 tape on said frame and a transfer iron selectively cooperable with the transfer tape of the reels.

7. A transfer printing machine comprising means for interchangeably supporting a
20 plurality of row of reels of transfer tape, a combined guide and cutter selectively cooperable with any one of a plurality of transfer tapes, and a transfer iron cooperable with the transfer tape fed through the combined
25 guide and cutter.

8. A transfer printing machine comprising a frame, means for releasably supporting on the frame a row of reels of transfer tape, a cross bar carried with the frame, a combined guide and cutter adjustably supported
30 on the cross bar and selectively cooperable with the transfer tape of any reel, and an adjustably supported transfer iron cooperable with the transfer tape fed through the
35 combined guide and cutter.

9. A transfer printing machine of the type employing a transfer iron for transferring the impression from a transfer tape to an article to be marked and comprising a frame, a
40 releasable means for rotatably supporting a row of reels of transfer tape on the frame, a cross bar connected to the frame and disposed adjacent the row of reels of transfer tape, and a combined guide and cutter including spaced plates having means slidably
45 embracing the cross bar and having a feed passage extending horizontally therethrough, there being a cutter at one end of the feed passage.

10. A transfer printing machine comprising means for interchangeably supporting a
50 plurality of rows of reels of transfer tape, and a transfer iron selectively cooperable with the transfer tape of any reel.

11. A transfer printing machine of the type employing a transfer iron for transferring the impression from a transfer tape to an article to be marked and comprising a frame consisting of spaced side plates, upper
60 and lower cross bars connecting said side plates at their ends, transversely alined bearings on the confronting faces of the side plates, shafts removably fitted in said bearings, means on the shafts for rotatably supporting a plurality of rows of reels of trans-
65

fer tape, and combined guide and cutter for the transfer tape selectively cooperable with the upper or lower cross bars at the ends of the frame.

In witness whereof, I hereto affix my signature.

IRVIN J. KOHLWEY.

75

80

85

90

95

100

105

110

115

120

125

130