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TAPE EASEL FOR PAGE PRINTERS

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FIG. 5

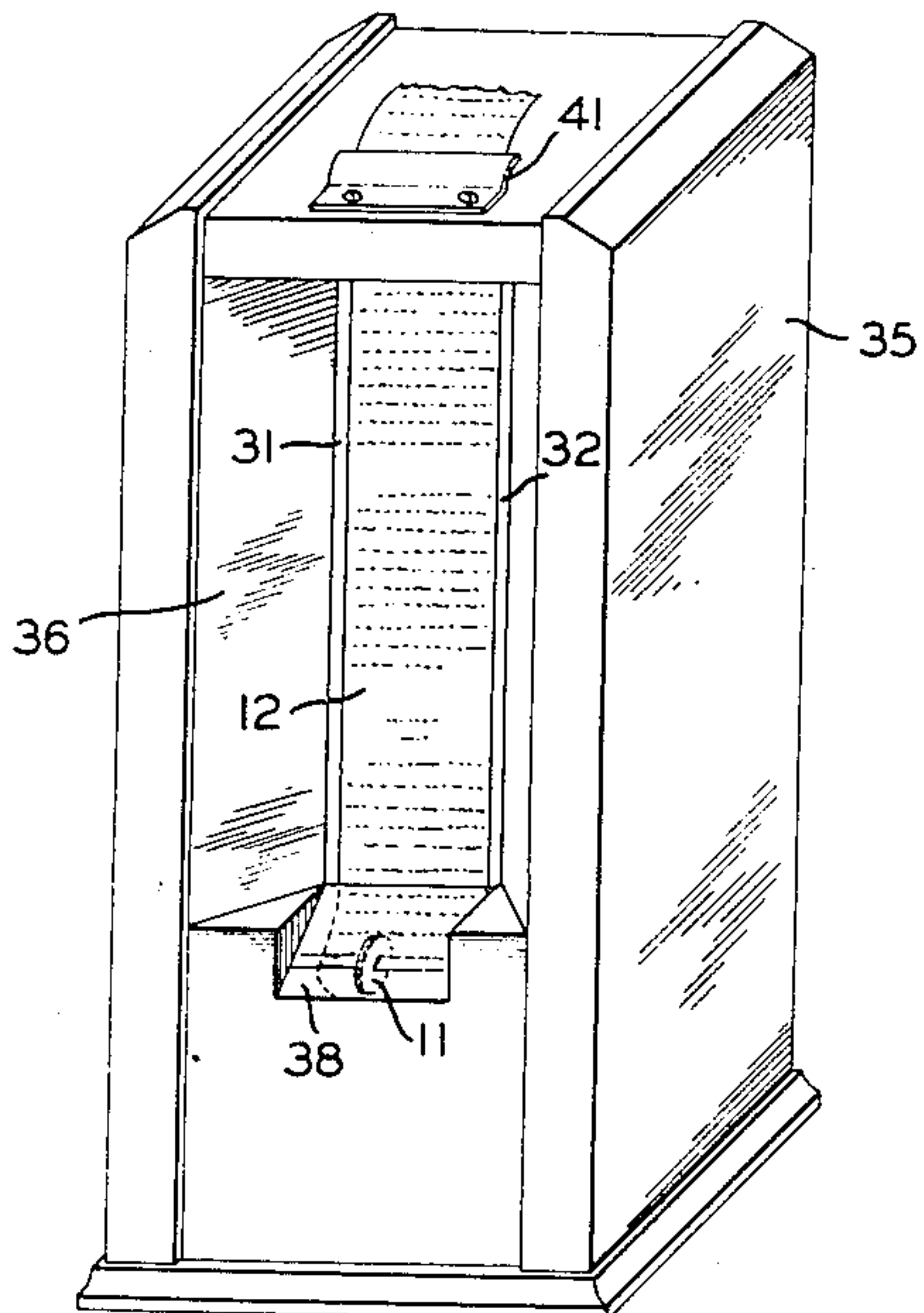


FIG. 1

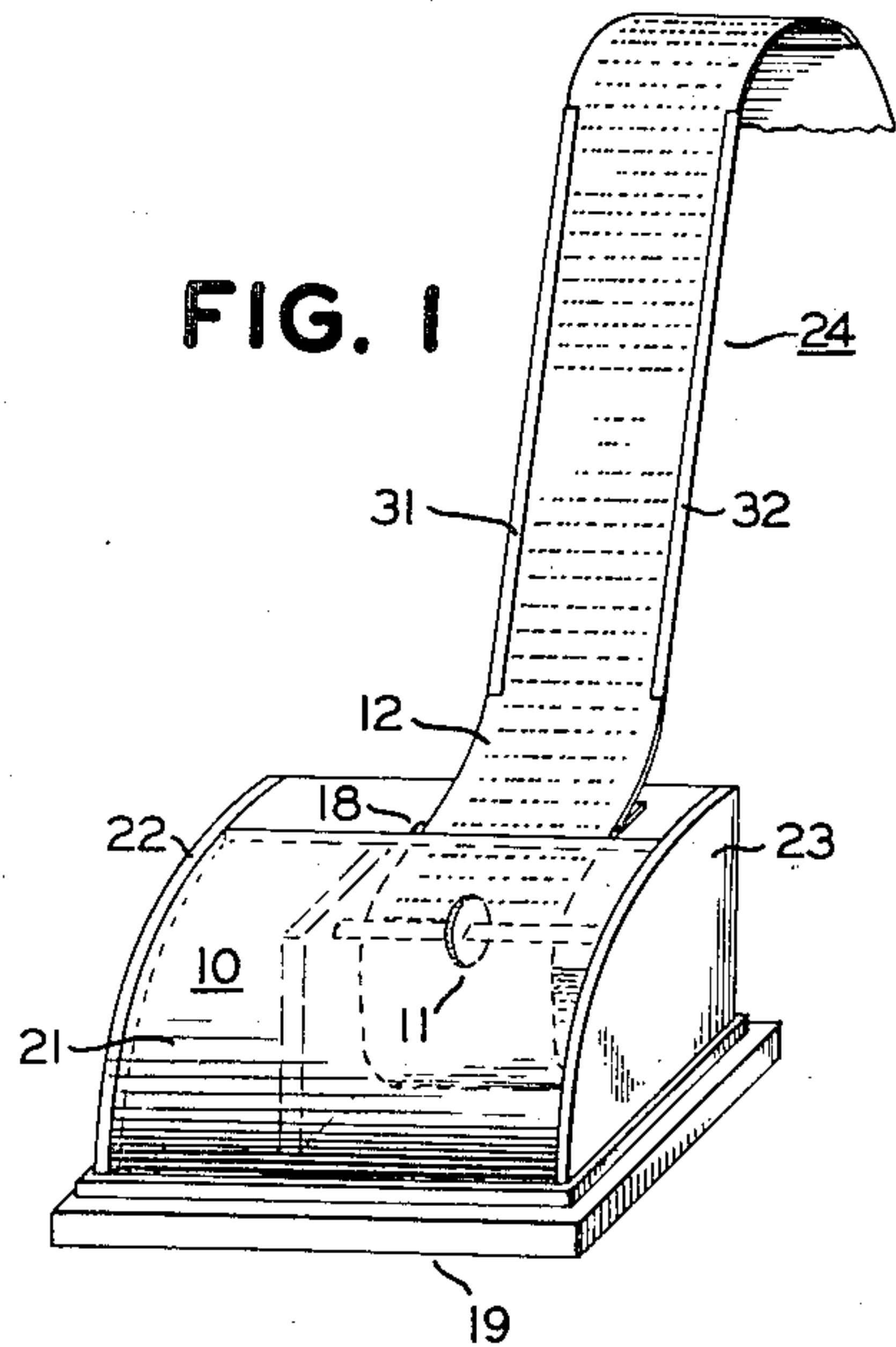


FIG. 6

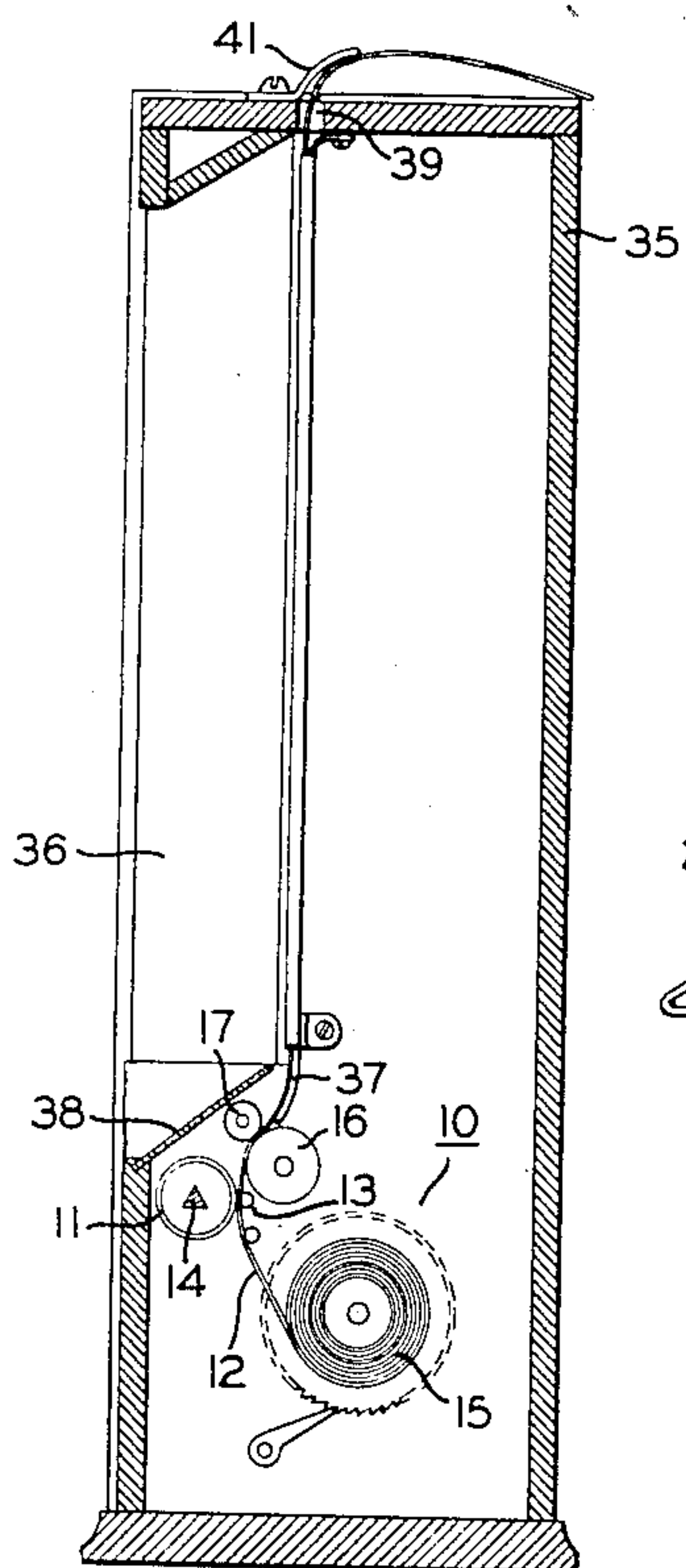


FIG. 4

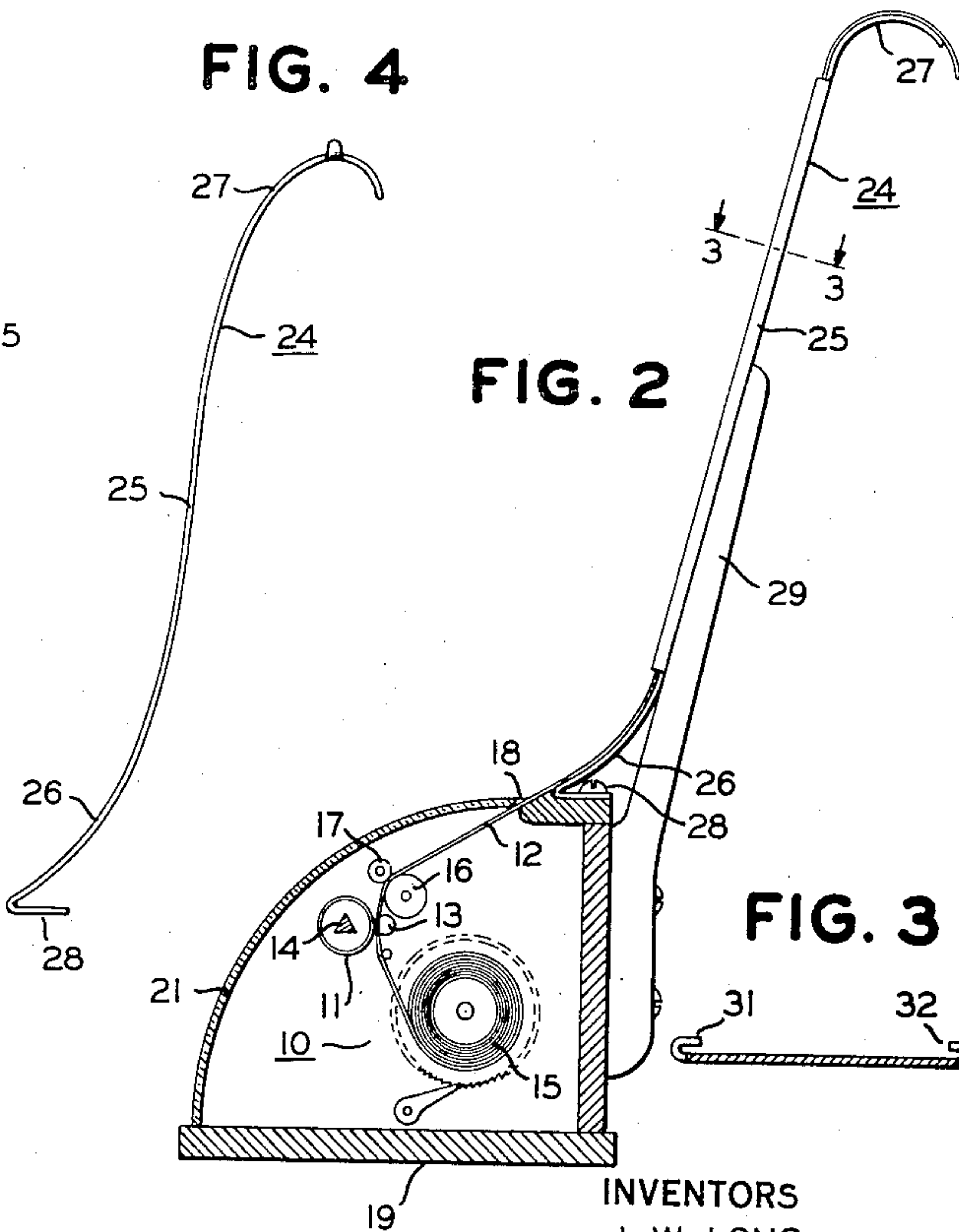


FIG. 2

FIG. 3

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TAPE EASEL FOR PAGE PRINTERS

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Application July 8, 1932. Serial No. 621,466

10 Claims. (Cl. 178—24)

This invention relates to means for displaying a printed tape or the like as it comes from a printer. More particularly it relates to means for displaying printed tape from bulletin printers and the like so that it may be viewed by a number of persons.

Bulletin printers are now in use in which the so-called page printer is employed to print transversely of a web or tape and means provided for drawing the tape upwardly across the face of a display panel or easel so that the printing of the tape may be displayed to the view of a number of persons within visible range thereof. Ordinarily such an arrangement is located in a public place or a place to which it is desired to draw the attention of the public by the printing of current news on the tape so that it may be visible immediately upon being received. The usual places for locating such printers are in the display windows of merchandising establishments, on telegraph office counters, hotel lobbies and the like. As heretofore constructed means have been located at or above the top of the easel or display panel for pulling the tape upward as it is fed through the printer by the printer line spacing means.

The principal object of this invention is to provide for the elimination of the tape pulling means at the top of the easel or display panel so that the apparatus may be simplified and manufactured more cheaply.

Another object of this invention is to guide the web or tape leaving the printer in such a manner as to provide the maximum visibility or legibility of the printed matter occurring on the tape as it travels upwardly across the easel or display panel. Other objects of this invention will appear as the description proceeds.

According to one embodiment of this invention an easel is mounted to extend upwardly from a point slightly in rear of the printer tape discharge and arranged to guide the tape upward as it is thrust out of the printer by the line space feeding mechanism. The function of the easel is merely that of guiding the tape and holding it in a position suitable for displaying the matter printed thereon. The tape is pushed upwardly from the bottom of the easel instead of being pulled from the top. This arrangement eliminates the necessity for a tape puller at the top of the easel or display panel.

With the tape puller eliminated an easel or display panel of the simplest form may be employed. It may comprise a simple panel of sheet material supported by a turned over portion at

its foot with perhaps the addition of a simple bracing element. The simplicity of this arrangement will be appreciated when contrasted with the type heretofore employed, having a tape puller disposed at the upper end of the easel or display panel which required a considerable supporting structure. Ordinarily, this was a cabinet structure which enclosed the printer at one end of the display panel and tape puller at the other end.

In cases where it is desired to employ the cabinet structure for supporting the easel or display panel the upper portion of the cabinet is substantially simplified due to the fact that no tape puller is mounted therein. On the other hand, the tape merely rises through the upper portion of the cabinet to a suitable slot from which the tape emerges from the cabinet and hangs down at the back thereof after having passed beyond the end of the display panel.

In both arrangements, according to this invention, the tape is pushed upward along the face of the easel until its forward end passes over the top of the easel and hangs down at the back where it may be torn or cut off periodically or allowed to accumulate on the floor or in a simple receptacle placed in position to receive the tape as it passes down.

For a further description reference will now be had to the accompanying drawing, in which:

Fig. 1 is a perspective view showing a simple easel mounted openly upon the standard cabinet or cover of the well known Burry page printer;

Fig. 2 is a side view, partly in section, of the arrangement illustrated in Fig. 1;

Fig. 3 is a sectional view of the easel taken along the line 3—3 of Fig. 2;

Fig. 4 is a side view of a modification of the easel illustrated in Figs. 1 to 3;

Fig. 5 is a perspective view showing a Burry printer enclosed in a special display cabinet embodying a recessed display panel along which the tape travels; and

Fig. 6 is a side view partly in section of the arrangement illustrated in Fig. 5.

Referring to Figs. 1, 2 and 3, a bulletin printer embodying this invention in one form is illustrated which may comprise any type of page printer or printer which prints lines transversely of a web or tape. The printer illustrated generally at 10 is the well known Burry type of printer, such as shown in U. S. Patent No. 680,693 granted August 20, 1901, employing a type wheel stepped around to bring the proper character in printing position by suitably telegraphically op-

erated means, and caused to print upon a tape 12 by the movement of the printer bar or bail 13 to carry the tape against the type wheel at the proper instant. The type wheel is moved along its triangular shaft 14 to provide letter spacing by means such as described in the above mentioned patent. Line spacing is provided by feeding the tape 12 past the printing position by means of the cooperative operation of a supply roll 15 arranged to release a suitable length of tape after each printing operation and a feeding roll 16 disposed above the type wheel and printing bail for pulling the tape from the supply roll as the tape is released. As described in the foregoing patent automatic means is provided for determining the amount of tape fed from the supply roll, in accordance with the decreasing size of the roll, as the tape is used therefrom. The tape pulling roll 16 is driven through coil spring means to maintain a suitable tension on the tape and is arranged to engage the lateral edge of the tape between it and a spring pressed pressure roll 17. As the paper is fed forward the portion extending beyond the roll 16 is pushed in a longitudinal direction outward through a slot 18 in an enclosing cabinet 19. Ordinarily the front portion of the enclosing cabinet comprises a suitably curved glass plate 21 set between side members 22 and 23.

In order to provide for raising the tape and carrying the same upwardly so that it may be brought into view a member 24, which will be termed an "easel", is disposed beyond the slot 18 for receiving the tape and guiding the same upward as it is pushed through the slot. The easel in its preferred form embodies a straight section 25 provided with a suitably curved entrance section 26 and exit section 27. It is supported on a foot 28 provided by curving an extended portion of the entrance section 26 backwardly to support the easel at the proper angle. A suitable bracing member 29 may be secured to the back of the easel. The easel itself may comprise sheet metal material suitably finished or any other suitable material.

The entrance portion 26 of the easel provides a smooth gradual curved surface over which the tape or web 12 moves as it leaves the printer and passes through the slot 18 of the cabinet in cases where a printer enclosing cabinet is employed. As the tape passes over this curved portion it changes its direction of travel from its approach to the slot 18 to the direction it takes along the straight section 25 of the easel. The provision of this curvature instead of a straight vertical section at the foot of the easel has, among other advantages, that of supporting this portion of the tape in a position of maximum legibility to persons viewing the same from a line of vision somewhat above the printer. It is obvious that for viewing a considerable length of the tape at one time, a line of vision well above the printer is essential. Nevertheless, the point of maximum interest is the foot of the tape where the latest news appears as it leaves the printer. By directing the tape rearwardly, as it leaves the feed roll 16 and over a curved entrance portion at the foot of the easel or panel, the latest news arrivals are held in a position approaching normal to a line of vision from a point above the printer.

Another and important advantage of the curved entrance portion for the easel results from the fact that the tape bears relatively hard against the surface of the curved portion as it is bent into its new direction of travel, providing a

means for absorbing the noise of the printer ordinarily transmitted to the tape during printing action. Considerable difficulty has been experienced heretofore in connection with Burry Page Printers, due to the fact that the noise of operation of the printer is transmitted to the tape, which acts somewhat as a sounding board for the noise, making it very prominent. This is particularly true when the paper tape is allowed to pass loosely over the back of the ordinary enclosing case, or where the tape is passed over a display panel and held taut, such as illustrated in a copending application, Serial No. 603,876, filed by us on April 7, 1932. The arrangement employed in this invention serves to largely eliminate the printer noise by absorbing it at the point where the tape bears against the entrance surface of the easel. The action of the tape forced into firm contact with the curved face of the easel is substantially equivalent to the tape being gripped by relatively non-microphonic means acting as a silencer to shocks or noises in the tape. In addition, due to the fact that the tape is under compression rather than tension, noise is not so readily transmitted by it. It has been found that the noise elimination in the tape is very effective with this type of arrangement.

At the upper end of the straight section of the easel it is preferred to provide a curved exit or terminal portion extending backward from the face of the easel to provide a smooth surface over which the tape may hang downwardly as it passes beyond the upper end of the easel. In its preferred form this exit section is substantially in the shape of a spiral whose radius decreases toward the end of the section. It has been found that with this particular shape the tape rises more easily to the summit of the curved portion and, after passing beyond the end of the easel, it is less likely to deter the movement of the tape as the overhanging portion thereof becomes quite long and heavy. In practice, however, the overhanging portion of the tape is usually cut or torn into sections which are attached to what is known in the art as "clip boards." These "clip boards" are hung in a convenient place so as to make previous news available to any person who wishes to examine the same. However, if desired the tape may be allowed to accumulate in a suitable receptacle placed to catch the tape as it drops down from the top of the easel.

As shown in Figs. 1, 2 and 3 the straight section of the easel is provided with guide strips or cleats 31 and 32 along the edges thereof to keep the tape in place as it passes over the easel surface. These strips may be formed by turning the edges of the easel over so as to give just sufficient clearance for the easy passage of the tape. While the guide strips are shown as extending only along the edges of the flat section 25 of the easel, they may extend the full length of the edges, including the curved entrance and exit sections.

It is desired to point out another advantage of an easel for displaying tape over other methods used for bulletin printers. When the tape is permitted to merely pass out at the back of the printer cover a person desiring to do so may pick up the tape, hold it in his hands while he reads or examines it. In doing so he practically monopolizes the tape. When an easel is employed, particularly when it is provided with retaining or guiding cleats along its edges, it is not necessary, nor is it feasible to pick up the tape for reading

it. Consequently it is not monopolized by one person, but is displayed in view of several persons at one time.

The easel may be arranged to extend substantially vertical above the printer cabinet or it may be inclined in a slightly backward direction. When the line of vision is well above the printer, the straight section of the easel is preferably inclined to the rear at a suitable angle to bring the line of vision substantially normal to the central portion of the straight section. When the easel is arranged with the line of vision substantially normal to the central point of the portion of the tape displayed, the maximum amount of tape will appear legible.

The inclination of the easel toward the rear has an additional advantage of adding slightly to the height to which the paper will climb under the pushing action of the printer feed roll. The height to which the papers will climb is dependent also upon several other features. It has been found that with a tape comprising a common type of paper having certain specifications of from .0025 inch to .003 inch, a tensile strength of about 26 lbs. per inch and sized to have a penetration of about 50 seconds when a standard test solution is used, which is substantially equivalent to a good weight bond paper, the height of climb has experimentally reached as much as 6 feet. The same type of paper has been put into commercial use with easels having a climb of two to three feet and have proved entirely reliable. The limits of the climb depend not only upon the inclination of the easel and the weight and type of the paper, but also upon the smoothness of the curvature of the entrance and exit sections of the easel. It appears to be extremely essential that the paper be well backed up at its lower end or foot section by the surface over which it travels. This backing up action is most readily accomplished by employing the curved entrance, having other advantages as already described. As the tape rides upward over the surface of the easel along this curved portion, it is able to withstand buckling without the use of guide strips along the edge of the easel. In addition, due to the backing up of the curved portion, there is less tendency for buckling of the paper at the point where it leaves the feed roll 16 of the printer.

From the foregoing description it will be seen that the problem of feeding a tape from the printer upward over a display easel is not the simple problem of pushing a tape over a simple guide surface or channel disposed in a horizontal or slightly inclined direction, but is a problem of causing the tape to climb the surface disposed at a substantial angle, which may have reached the vertical, and at the same time present the tape so that printed matter thereon may be readily read by persons in view of the same. It will be seen also that several factors enter cooperatively into the arrangement to produce a result which cannot be produced otherwise.

Referring to Fig. 4, an easel is illustrated in its most simple form and which has proven capable of supporting the paper tape. In this form the tape is pushed upwardly over the surface of the easel by the printer without employing guide strips along its edges, such as shown in Figs. 2 and 3. It has been found that the particular curves comprising the surfaces of sections 25, 26, and 27, as indicated in the illustration, are necessary to cause the tape to rise along the surface of the easel without buckling or folding

before they reach the top of the same. Essentially the curvature of the easel is of substantially S shape, starting with a gentle slope at the bottom, such as described in connection with the foregoing embodiment. This gentle slope runs into a relatively prolonged section in which the slope is gradually reversed toward the rear, the upper portion of the easel ending in substantially a spiral shape. It has been found that the paper tape of the specifications set forth above will rise on an easel of this type to about two and a half feet when the slope of the easel is properly adjusted. This position has been found to be such that the surface of the upper portion of the easel is tangent to or touches a line drawn through the foot at about twenty degrees to the vertical. While this arrangement may not be as effective in positions where there is likely to be draughts or puffs of wind blowing against the easel, it has been found to be entirely satisfactory in positions which are well enclosed, such as small store display windows and the like. Furthermore, it represents the invention in what is perhaps its simplest operable form.

According to another embodiment of this invention the easel takes the form of a display panel set in a recessed position in a cabinet and arranged substantially vertical. This embodiment is illustrated in Figs. 5 and 6. The arrangement comprises a cabinet 35, enclosing a printer 10, and provided with a recessed panel 36 disposed to extend vertically from the printer upward to the top of the cabinet. The printer 10 may be any type of bulletin printer, such as those already described. A tape 12 is discharged from the printer through the feed rolls 16 and 17 into a curved entrance portion 37 of the panel 36. The entrance portion 37 is preferably inclined to the rear at its lower end or foot and extends in a gentle curve into the entrance of the straight section of the panel. The lower end of the entrance section is preferably disposed relatively close to the point where the paper leaves the feed rolls 16 and 17. The front of the cabinet is provided with a glass plate 38 covering the printer mechanism and the lower curved portion of the display panel. The transparent or glass plate permits the news material on the tape to be read immediately after it has been printed. The curved direction of travel of the foot section of the tape has substantially the same advantages as already described in connection with the previous embodiment, namely, that of backing up the tape as it leaves the feed rolls, absorbing noise, and holding the tape so that the foot section is in a more readable or legible position. The straight section of the panel 36 is provided with guide cleats 31 and 32, arranged substantially the same as illustrated in Fig. 3 in connection with the foregoing embodiment. The display panel with the guide cleats extend upwardly the full length of the cabinet and terminate at an opening 39 in the top of the cabinet through which the tape is passed. As the tape passes through the opening 39, a baffle 41 directs it toward the rear of the cabinet where it passes down the back of the latter.

As the news is printed upon the tape, it is started upward along the display panel by the line spacing mechanism operating to discharge the tape from the printer. The feed rolls 16 and 17 push the tape up a line at a time until it has risen the full length of the display panel and passed out the top of the cabinet. This arrangement eliminates the necessity for tape pulling

means disposed in the top of the cabinet. The reliability of this method of operation is easily appreciated when it is remembered that the only requisite of displaying a tape from a bulletin printer is that it should be held substantially steady and be fed forward freely and promptly as it leaves the printing mechanism. In the arrangement described herein the printer itself accomplishes the feeding upward of the tape by a series of pushes or thrusts created by the action of a feeding mechanism. It may be employed not only with printers operating at slow speeds, but also with printers operating at high speeds.

Although this invention has been illustrated in connection with bulletin printers, it may be employed in any connection in which it is desired to feed a paper tape upwardly over a panel or easel for display purposes or the like.

While this invention has been described in but three forms, it will be apparent to those skilled in the art that it is not so limited but is subject to various other changes and modifications without departing from the spirit thereof and it is desired, therefore, that only such limitations shall be placed thereon as are imposed by the prior art, or as specifically set forth in the appended claims.

What we claim is:

1. In a page printing telegraph receiver, a continuous page, means to print lines across said page, means to feed the page upward past said printing means to form line spacing on said page, and means forming an easel of a length several times its width above said printing means for guiding said page upwardly and supporting a section of the same after it has passed said printing means, said line printing means acting to push the tape upwardly over said easel and being the sole means for motivating said tape.

2. In a bulletin printing apparatus, the combination of a tape, a telegraph printer arranged to print transversely of the tape, means to provide an easel extending upwardly from said printer for displaying in full view a length of said tape several times its width, line space feeding means in said printer arranged to feed the tape through the printer and push the same upwardly over the face of the easel.

3. In a bulletin printing apparatus, the combination of a tape, a telegraph printer arranged to print transversely of the tape, line space feeding means in said printer arranged to feed the tape outward from the printer at a substantial angle from the vertical, means to form a guide for the tape as it emerges from the printer, said guide means embodying a curved entrance and exit section and arranged to extend upwardly from said printer to form an easel of a substantial height for displaying the printed matter on the tape.

4. In a bulletin printing apparatus, the combination of a tape, a telegraph printer embodying means to print transversely of the tape, means to feed the tape through the printer and discharge the same at a substantial angle from the vertical, an easel for displaying the tape as it leaves the printer, said easel embodying a substantially straight midportion disposed at a slight angle to the vertical, a curved entrance portion provided at the foot of said easel and arranged with its lower edge in alinement with the tape as it emerges from the printer.

5. In a bulletin printing apparatus, the combination of a cabinet embodying a display panel

having an upwardly curving face portion at its foot, a tape to be passed over said panel for displaying bulletins, a telegraph printer embodying means to print transversely of said tape, and means to feed the tape through the printer, said feeding means being arranged to discharge the tape at the foot of the panel against its face portion with a force longitudinally thereof sufficient to cause the tape to be advanced up the face of the panel as it emerges from the printer.

6. In a bulletin printing apparatus, the combination of a tape, a telegraph printer embodying means to print transversely of the tape, line space means to feed the tape through the printer and discharge the same at a substantial angle to the vertical, an easel disposed to receive the tape as it emerges from the printer and support the same in position for displaying bulletins, said easel having lateral guides to hold the tape against the face of the easel as it moves forward.

7. In a bulletin printing apparatus, the combination of a tape, a telegraph printer embodying means to print transversely of the tape, means to feed the tape through the printer and discharge the same at a substantial angle to the vertical, an easel disposed to receive the tape as it emerges from the printer, said feeding means being arranged to push the tape upward across the face of said easel for displaying bulletins, said easel embodying a curved guiding surface at its foot, disposed with the face of its lower edge in alinement with the tape as it emerges from said printer, for changing the direction of the tape as it enters the easel, said easel also having lateral guides to maintain the tape against the face of the easel as it moves upwardly.

8. In a bulletin printing apparatus, the combination of a tape, a telegraph printer embodying means to print bulletins transversely of the tape, an easel having a surface for displaying the tape as it leaves the printer, the foot of said easel being disposed slightly to the rear of the point where the tape emerges from the printer, and feeding means arranged to discharge the tape against the surface of said foot, said foot being formed with an inclined curved surface disposed to hold the lower section of the tape in a legible position to persons whose line of vision is substantially normal to the midportion of the easel.

9. In a telegraph printing apparatus, the combination of a tape, a printer embodying means to print upon said tape and discharge the same therefrom as printing is effected, guide means for the tape disposed transversely of the discharge path of said tape, said guide means being arranged so that the tape in being discharged is pushed against the face thereof, said face acting to form a sound-absorbing backing which absorbs sound imparted to the tape by the printing means.

10. In a bulletin printing apparatus, the combination of a telegraph printer arranged to print transversely of a tape, a cabinet arranged to enclose said printer, a panel supported by said cabinet above said printer, a tape, said printer embodying means to feed said tape through said printer and push the same upwardly over said panel, said panel forming a guide for the tape, and means cooperating with the upper end of the panel for guiding the tape over the upper end in a rearward direction.

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