

1,254,592.

H. HANNERS.
MANIFOLDING DEVICE.
APPLICATION FILED SEPT. 4, 1917.

Patented Jan. 22, 1918.
2 SHEETS—SHEET 1.

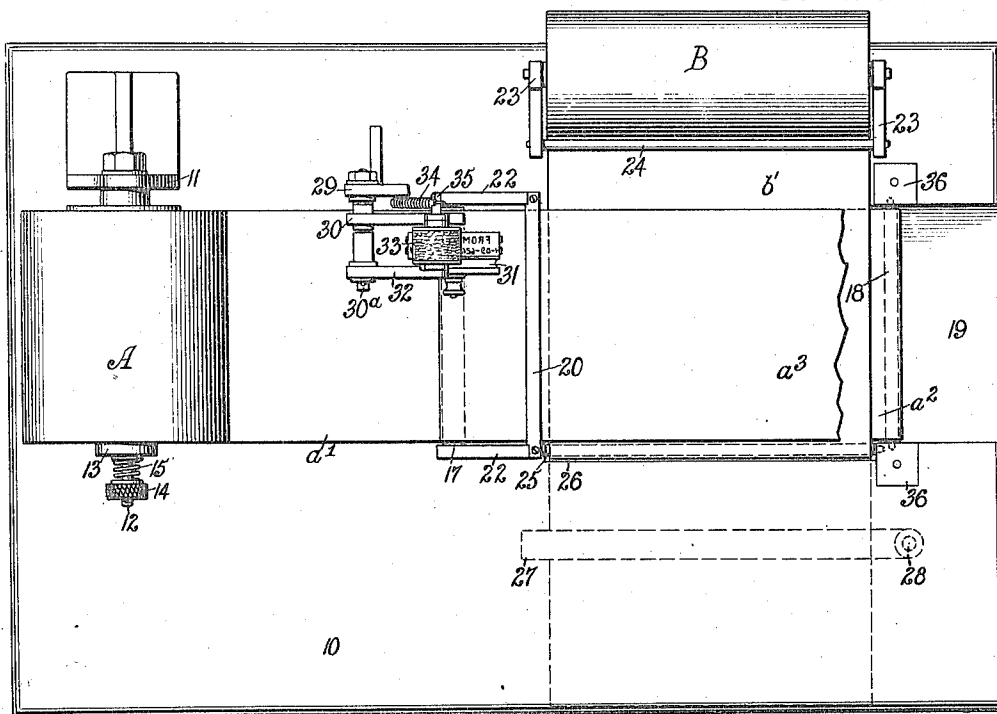


Fig. 1.

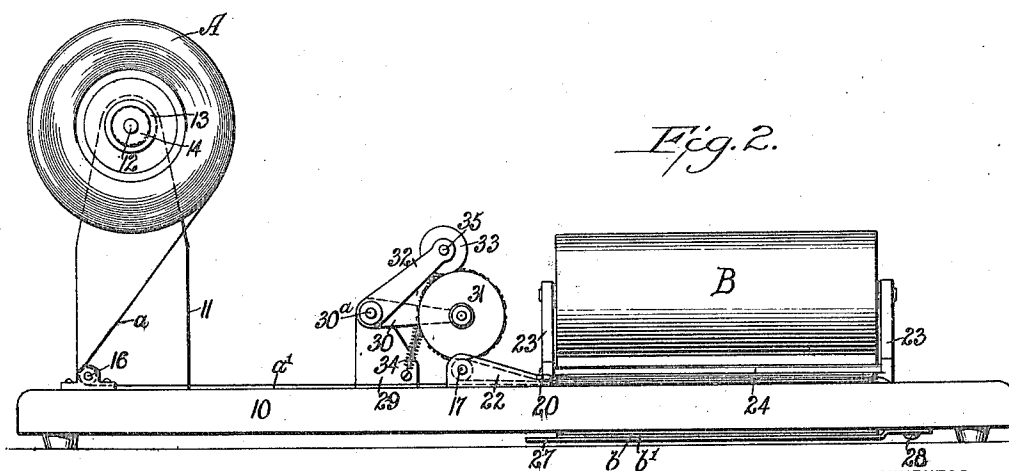


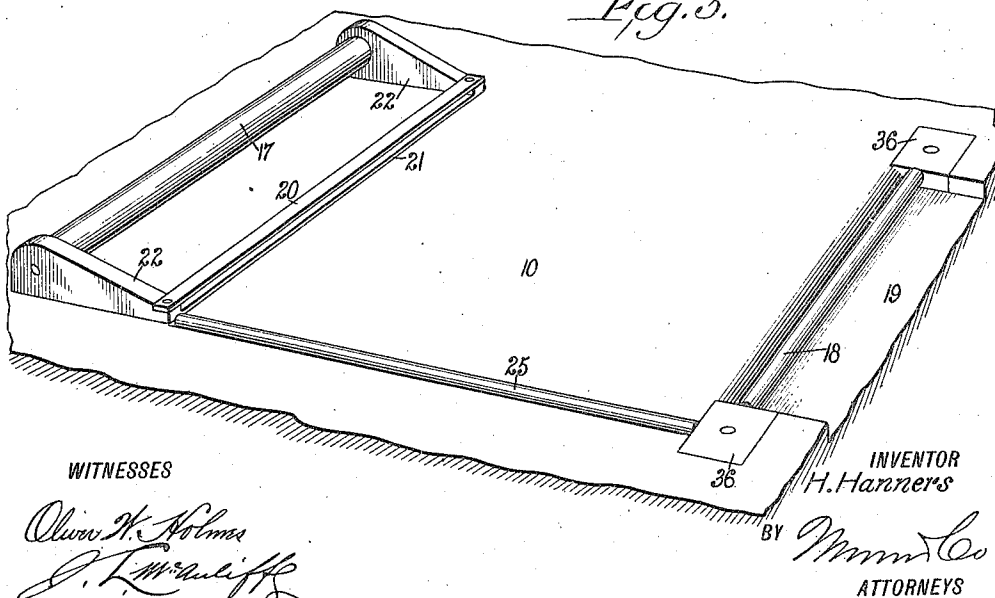
Fig. 2.

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Fig. 3.



UNITED STATES PATENT OFFICE.

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MANIFOLDING DEVICE.

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Specification of Letters Patent.

Patented Jan. 22, 1918.

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To all whom it may concern:

Be it known that I, HORACE HANNERS, a citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented a new and Improved Manifolded Device, of which the following is a full, clear, and exact description.

My invention although capable of other uses is more particularly intended for manifolded Express waybills which are required to be made out in triplicate. The sections of the waybill in use by Express Companies are of different size, one section, for example, being eight and one-half inches in length, the adjacent section six and three-sixteenth inches in length, and a third, five and five-sixteenth inches in length, and it is an object of my invention to provide a novel means superimposing the unequal sections for properly entering the written matter thereon.

An object of my invention also is to provide a manifolded device arranged to receive the waybill in the form of a continuous strip from a roll and properly superimpose the unequal sections without necessitating the use of a large number of guide rollers or equivalent elements.

A further object of the invention also is to provide a manifolded device in which the uppermost section of the waybill will present a free end in a position to be conveniently grasped for withdrawing the waybill from the manifolded device and whereby a mere pull on the waybill will withdraw the same and position another portion of the continuous strip in the folded form.

The invention has for its object also to properly retain the superimposed sections while permitting the waybill to be withdrawn by a slight pull, whereby a perforated strip may be employed to present weakened lines for readily tearing off the waybill but which will not be accidentally torn by the pull exerted thereon in withdrawing the waybill from the manifolded device.

The invention also has for its object to provide a manifolded device so constructed and arranged as to be effectively coordinated with carbon sheets and with a printing device whereby simplicity of construction

in the cooperating devices is promoted as well as efficiency in operation and convenience of adjustment and control.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar reference characters indicate corresponding parts in all the views, it being understood that the drawings are merely illustrative of one example of the invention.

Figure 1 is a plan view of a manifolded device embodying my invention;

Fig. 2 is a side elevation thereof;

Fig. 3 is a partial longitudinal vertical section;

Fig. 4 is a partial transverse vertical section;

Fig. 5 is a fragmentary perspective view of a portion of the device.

In carrying out my invention in accordance with the illustrated example a suitable base 10 is provided, which advantageously is in the form of a board or table, and at one end thereof is supported a paper roll A for which purpose a standard 11 is formed at one side of the table and supports a fixed shaft 12 to receive said roll. A tension device is provided on the shaft 12 consisting of a washer 13 at the end of the shaft opposite the standard 11, and a knurled nut 14 which is threaded on the end of said rod, there being a coil spring 15 on the rod between the washer and disk 13 and the nut 14 so that the turning of the nut 14 will cause the washer to exert more or less pressure against the paper roll.

Beneath the roll A is mounted a roller 16 about which the strip of paper *a* is run from the roll A as best seen in Fig. 2, it being understood that the waybills are printed on said continuous strip in three sections to each bill. From the roller 16 the strip of paper as indicated at *a'* is run over the surface of the table 10 to the manifolded device which comprises a transverse roller 17 sufficiently above the top surface of the table for the strip to run freely beneath said roller to a second roller 18 adjacent to that end of the table opposite the paper roll A. The roller 18 is depressed below the top of the table as best seen in Fig. 3 and disposed in a depression 19 formed in said table and extending to the adjacent end of the latter to afford con-

venience in fastening the strip of paper about the rollers. The strip as indicated at a^2 is folded on itself after being turned about the roller 18 and is carried in the reverse direction beneath and about the roller 17 and is again folded on itself as at a^3 . From the roller 17 the top fold of the strip is passed beneath a transverse retainer or paper holding element 20 adjacent to said roller and below the top surface of the roller so that the strip inclines downwardly from the said roller to the retainer 20, and causes the latter to exert sufficient friction on the top section of the folded paper strip to exert a holding action thereon to maintain said top section in flat form while being written upon. In the illustrated form the retainer 20 is a transverse bar which is part of a fixture secured to the table and including a bottom plate 21 and sides 22 in which the roller 17 is journaled, the said retainer 20 being elevated sufficiently above the plate 21 for the passage of the paper therebetween.

The paper strip as thus folded about the guide rolls 17, 18 and beneath the retainer 20 represents the three sections of the waybill and said rollers and retainer are relatively so positioned that the distance between the roller 17 and the retainer 20 will accord with the excess length of the longest section of the waybill while the position of the roller 18 relatively to the free end of the uppermost section of the strip and relatively to the side edges of the carbon sheets hereinafter referred to will accord with the excess represented by the length of the second longest section or waybill.

The letter B represents a roll of two strips of carbon paper or other transfer material, said roll being mounted in standards 23 supported on the table 10 so that the transfer sheets may be unwound from the roll and passed transversely to the direction of the paper strip. Adjacent to the roll B a guide roller 24 is provided above the table surface and preferably mounted in the base of the standards 23 beneath which guide roller the carbon sheets b , b' are passed, one sheet b' passing beneath the top section a^3 of the waybill, between the said top section and the intermediate section a^2 while the other carbon sheet or strip b is passed beneath the intermediate section a^2 between the same and the lowermost section a' as clearly seen in Figs. 3 and 4. At the opposite side of the folded waybill from the carbon roll B the carbon sheets b , b' are passed over a guide roller 25 and downwardly through a longitudinal slot 26 in the table 10 to the under side of said table as best seen in Fig. 4 and said carbon sheets are retained above a preferably metal plate or blade 27, swingably secured at one end as at 28 to the under side of the table 10, leaving the oppo-

site end free whereby the said plate 27 may be swung for convenience in placing the carbon sheets. Said plate serves also for the tearing off of the carbon sheets when required.

It will be apparent from the above description that only two guide rollers 17 are necessary for folding the waybill and these rollers with the retainer 20 properly retain the folded sections in position including the top section a^3 which is free except as it is held by the retainer 20. A minimum friction, however, is exerted by the rollers and retainer so that a pull on the section a^3 after grasping the free end thereof will serve to withdraw the waybill without danger of the same tearing so that the complete waybill may be readily torn off, it being understood that the strip a is perforated for being easily torn. The proper positioning of the carbon sheets b , b' , it will be seen also, is effected by the simple arrangement of the rollers 24, 25 and slot 26, the said rollers with the aid of the plate 27 holding the carbon sheets in proper flat form between the folded waybill.

The relative positions of the roller 17 and the retainer 20 moreover serve to dispose the waybill between the said roller and retainer in a way to be effectively printed upon without smudging or marring. The printing device illustrated includes a bracket 29 on the table 10 at a side thereof adjacent to the roller 17, on which bracket is a transverse fixed pin or shaft 30^a on which is swingably mounted an arm 30 carrying the printing roller 31 which in practice bears the name of a particular station, the date of the waybill and any other data required to be produced on the waybill pertaining to a particular station. On the shaft 30^a is a second swingable arm carrying an inking roller 33 and to one end of the shaft 35 of the inking roller is secured the upper end of a retractile spring 34, the lower end of which is suitably fixed as to the bracket 29. The tension of the spring pressed roller 33 against the printing roller 31 which in turn is pressed toward the roller 17 acting as a platen and thus against the waybill, the top section of which it will be observed is inclined downwardly from the roller 17 to the retainer 20. The numeral 36 indicates bearing blocks for the roller 18, said blocks being let into the table 10 at the sides of the depression 19.

By disposing the rollers 17, 18 and the retainer 20 as shown and described, the two rollers alone with the retainer serve to properly retain the folds while readily yielding to a pull on the free end of the upper section a^3 of the strip, the location of the retainer 20 adjacent to the roller 17 and below the surface thereof contributing materially to obtaining a sufficient holding action by the three simple elements and in addition, as explained, the downward inclination from

the roller 17 to the retainer 20 disposes the strip at such an angle to the printing roller that a clear print is obtained without danger of smudging. Also, the positions of the rollers 24, 25 relatively to each other and to the rollers 17, 18 and retainer 20 insure a proper relation between the carbon sheets and the waybill sections to maintain the same flat and parallel at all times without the one layer exerting undue holding action on the other. At the same time the carbon sheets may be drawn through the waybill folds without disturbing the latter.

I wish to state in conclusion that although the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the mechanical details herein illustrated, since manifestly the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent:

1. A manifolding device including a table and means to dispose a strip of paper folded on itself above the table surface, means to support a roll of carbon sheets at a side of the first means, a guide roller above the table surface beneath which a carbon sheet may be passed from the roll transversely through folds of the paper strip, and a second roller at the opposite side of the first means from the first roller and approximately level with the table surface, the said table having a vertical slot at the second roller through which the carbon sheet may pass from said second roller.

2. In a device of the class described, including a table and means to fold a strip of paper on said table; means to support a roll of carbon paper, a guide roller adjacent to the last mentioned means at a side of the paper folding means, a second roller at the opposite side of said paper folding means, said table having a vertical slot adjacent to the second roller for the passage of the carbon sheet to the under side of the table, and a guide on the table at the under side between which guide and the under surface of the

table the carbon sheet is adapted to be accommodated.

3. In a device of the class described, including a table and means to fold a strip of paper on said table; means to support a roll of carbon paper, a guide roller adjacent to the last mentioned means at a side of the paper folding means, a second roller at the opposite side of said paper folding means, said table having a vertical slot adjacent to the second roller for the passage of the carbon sheet to the under side of the table, and a guide on the table at the under side which guide is spaced from the under surface of the table to permit of the carbon sheet being freely movable through said space without being immovably clamped by said guide, the said guide consisting of a flat plate pivotally secured at one end to turn in its own plane parallel with the under face of the table.

4. In a manifolding device including a table and means to support a roll of paper so that a strip of paper may be passed over the table surface; the herein described manifolding means including a fixture secured to the table and presenting a bottom plate and sides, a roller mounted adjacent to the roll supporting means, a second roller mounted at its ends in said sides and disposed transversely of the table, a paper retaining bar secured to said sides of the fixture above the bottom thereof, and a third roller revolvably supported in the table at the opposite side of the retaining bar from the second roller, and depressed with respect to the table surface sufficient for the paper to pass from the first roller, beneath the second roller, be bent around said third roller and returned to the second roller, said second roller being at an elevation from the bottom plate of the fixture to permit the strip of paper to pass from the roll supporting means about the first roller and extend in flat form from the first roller to the third roller and beneath the second roller without contact therewith, the said retainer bar being below the top surface of the second roller and at approximately the level of the bottom of said second roller.

HORACE HANNERS.