

(No Model.)

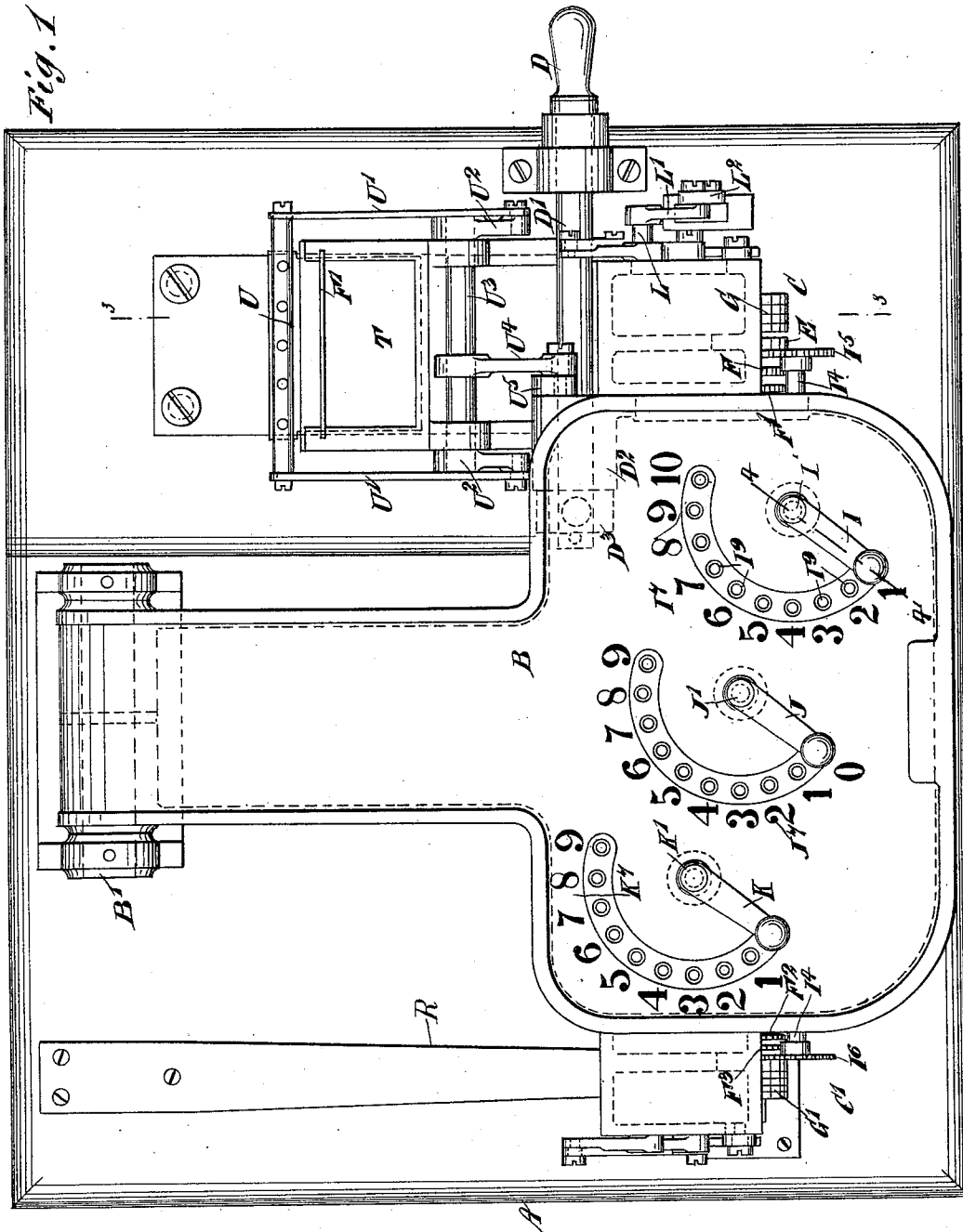
4 Sheets—Sheet 1.

J. G. HOCKE.
PRINTING APPARATUS.

No. 583,878.

Patented June 1, 1897.

Fig. 1



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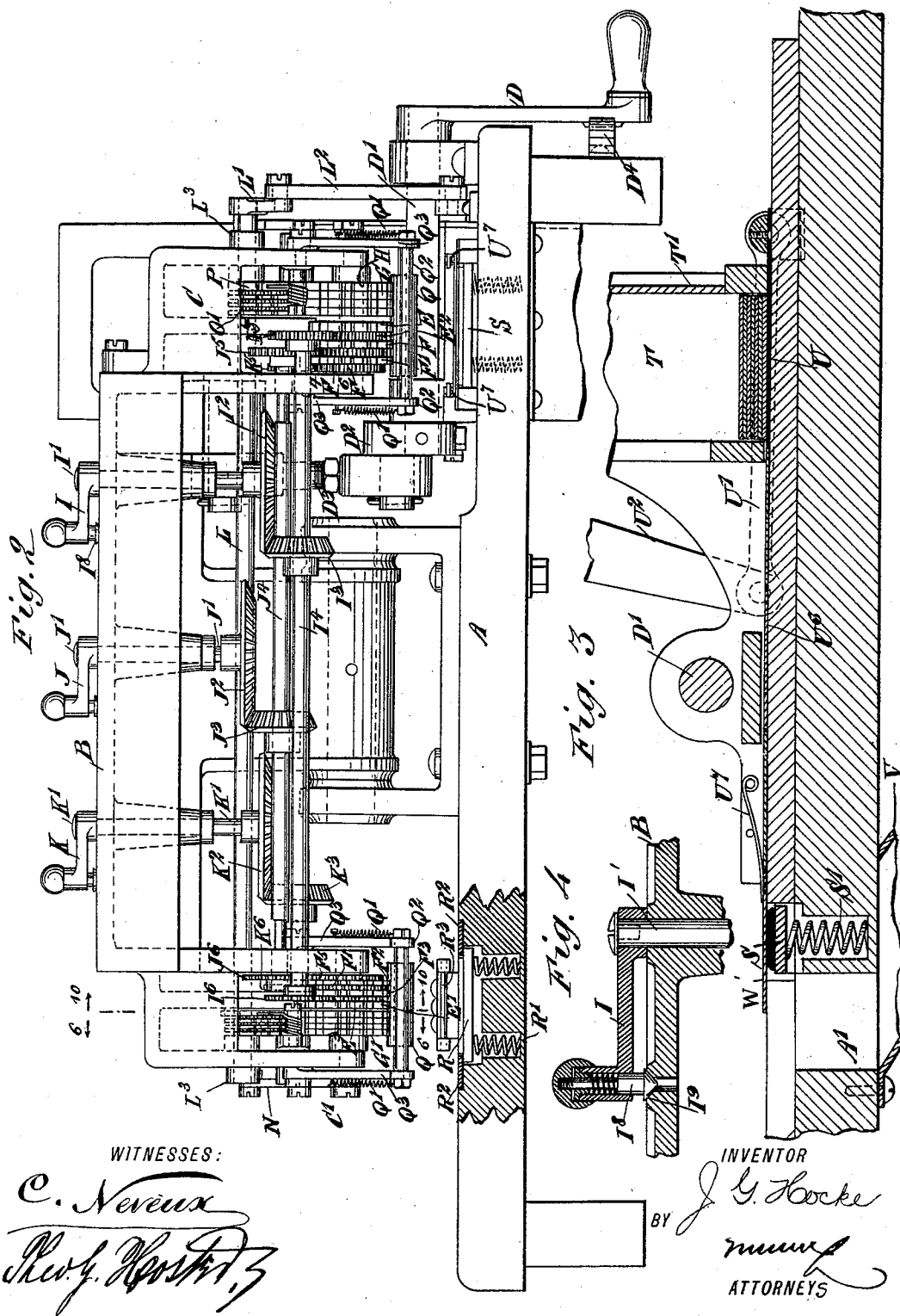
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4 Sheets—Sheet 2.

J. G. HOCHE.
PRINTING APPARATUS.

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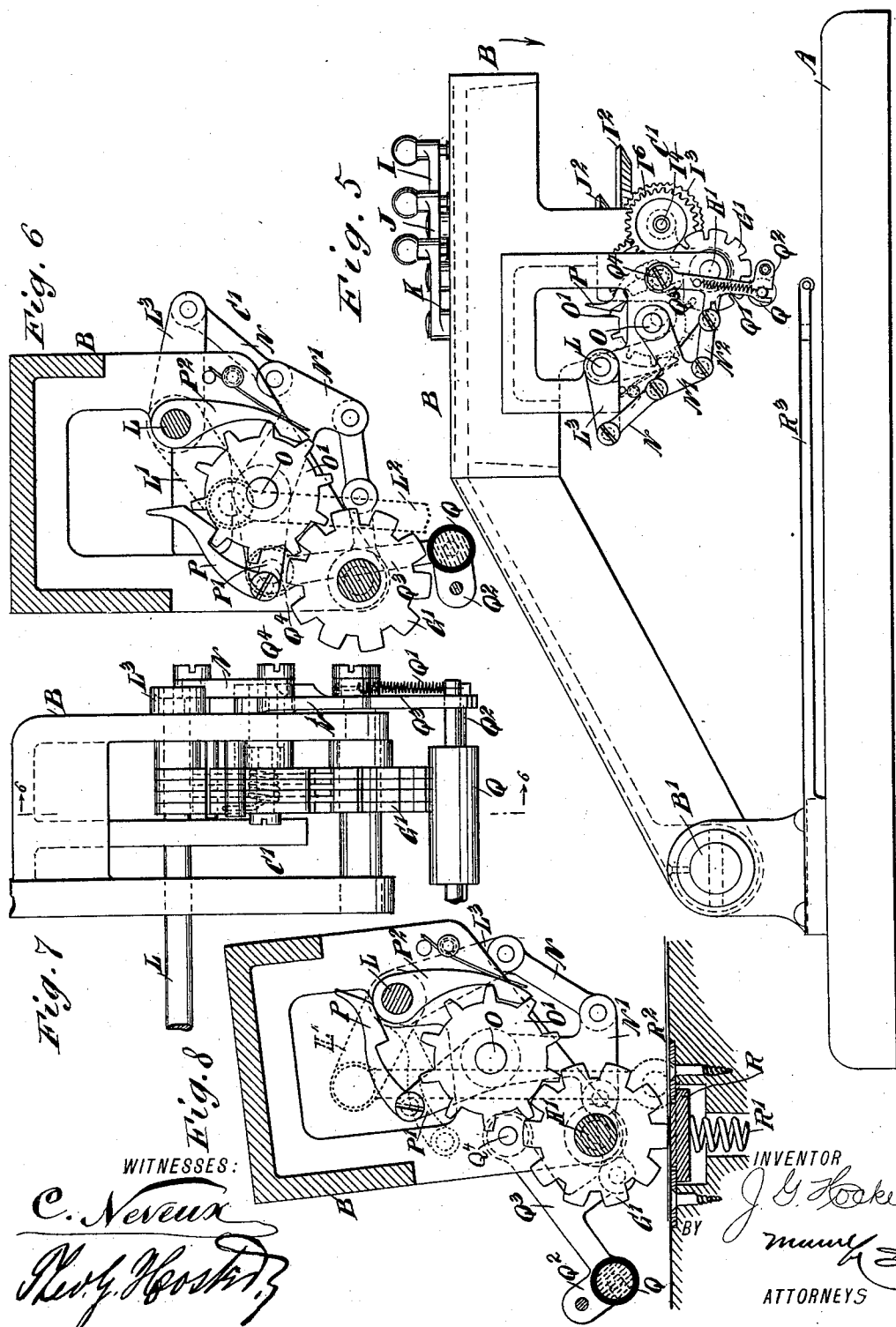
(No Model.)

4 Sheets—Sheet 3.

J. G. HOCKE.
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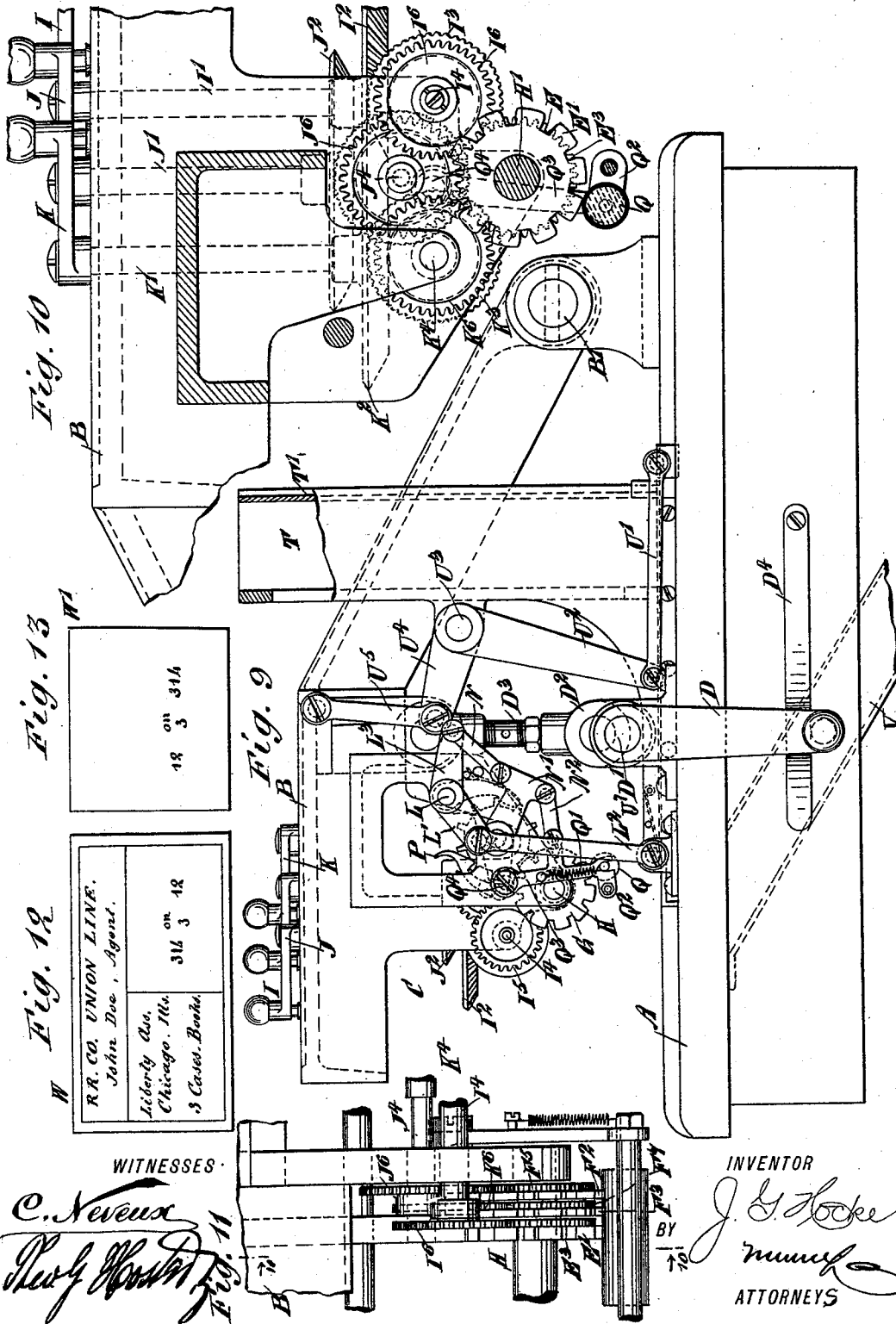
(No Model.)

4 Sheets—Sheet 4.

J. G. HOCKE.
PRINTING APPARATUS.

No. 583,878.

Patented June 1, 1897.



UNITED STATES PATENT OFFICE.

JULIUS G. HOCKE, OF BAYONNE, NEW JERSEY.

PRINTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 583,878, dated June 1, 1897.

Application filed August 1, 1896. Serial No. 601,294. (No model.)

To all whom it may concern:

Be it known that I, JULIUS G. HOCKE, of Bayonne, in the county of Hudson and State of New Jersey, have invented a new and Improved Printing Apparatus, of which the following is a full, clear, and exact description.

The invention relates to printing apparatus such as shown and described in the application for Letters Patent of the United States, Serial No. 577,707, filed February 1, 1896, by Joseph B. Mockridge and Julius G. Hocke, such apparatus being designed for use in "Means for securing railways and shippers against loss of freight," for which Letters Patent of the United States No. 493,595 were granted to Joseph B. Mockridge on March 14, 1893.

The object of the invention is to provide certain new and useful improvements in printing apparatus whereby a set of characters are printed on a shipping-receipt or like document and at the same time a separate check or ticket is printed with duplicate characters of those printed on the shipping-receipt.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement. Fig. 2 is a front elevation of the same with parts in section. Fig. 3 is an enlarged transverse section of the ticket-delivering device, the section being taken on the line 3 3 of Fig. 1. Fig. 4 is an enlarged cross-section of one of the crank-arms for setting the type-wheels previous to making the impression, the section being taken on the line 4 4 of Fig. 1. Fig. 5 is a side elevation of the improvement at the shipping-receipt-printing end of the apparatus. Fig. 6 is an enlarged sectional side elevation of the printing device for printing characters on the shipping-receipt, the section being taken on the line 6 6 of Fig. 2. Fig. 7 is a rear side elevation of the same. Fig. 8 is a sectional side elevation of the same with parts in a different position. Fig. 9 is a side elevation of the improvement at the ticket-

printing end of the apparatus. Fig. 10 is an enlarged cross-section of the improvement on the line 10 10 of Fig. 2. Fig. 11 is a front elevation of the same. Fig. 12 is a face view of the shipping-receipt after it is printed on by the apparatus, and Fig. 13 is a face view of the ticket printed by the apparatus.

The improved printing apparatus is provided with a table A, on the rear end of which is pivoted at B' an up and down swinging frame B, carrying at its right-hand side a ticket-printing device C and at its left-hand side a printing device C', both approximately similar in construction and arranged to print like characters on a ticket and on a shipping-receipt, as indicated in Figs. 13 and 12. An up and down swinging motion is given to the swinging frame B by the operator giving a full turn to a crank-arm D, arranged on one side of the table A and secured on a longitudinally-extending shaft D', journaled in suitable bearings on the top of the table A.

The inner end of the shaft D' carries a crank arm or disk D², pivotally connected by an adjustable link D³ with the free end of the frame B, so that a full turn of the shaft D' causes a downward or upward swinging motion of the frame B. Normally the crank-arm D stands in a downward position, as illustrated in Figs. 1, 2, and 9, said arm then being held in position by a spring D⁴, secured to the side of the table A, said spring permitting a turning of the crank-arm and at the same time holding it in place when a revolution is completed.

The ticket-printing device C is provided with a type-wheel E, formed on its periphery with type-characters indicating numerals from "1" to "10" in consecutive order, to permit of printing the number of pieces belonging to a single shipment on the ticket, each numeral having the word "on" above it, so that if the numeral "3," for instance, is printed it reads "on 3," which means that three pieces belong to the single shipment. A similar type-wheel E' is on the shipping-receipt-printing device C', and the two wheels are set in unison, so that corresponding numerals are printed at the same time, as hereinafter more fully explained.

Next to the type-wheel E is arranged a

units-type wheel F, and next to this wheel is arranged a tens-type wheel F', of which the type-wheel F is provided on its periphery with consecutive numerals from "0" to "9," and the wheel F' is provided with consecutive numerals from "1" to "9," and said wheels are used for printing the temporary number of a railroad-car or other place, as hereinafter more fully described. A similar set of type-wheels F² F³ is arranged alongside the type-wheel E' for the shipping-receipt-printing device, and these two wheels F² F³ are operated in unison with the wheels F F', so that the same type-characters are printed at one time on both the ticket and the shipping-receipt.

At the right-hand side of the type-wheel E is arranged a set of consecutive-numbering wheels G, which serve to print consecutive numerals on the ticket to indicate the number of tickets issued during, say, one day. A similar set of consecutive-numbering wheels G' is arranged at the left of the type-wheel E' for the shipping-receipt-printing device, so that the shipping-receipts are provided with consecutive numerals during a day's work, it being understood that by this arrangement ordinarily a ticket is printed for each shipping-receipt and bears the same characters; but it frequently occurs that a number of tickets are required for a large shipment for which only a single shipping-receipt is made out. Now in this case the single shipping-receipt is printed with as many sets of characters as tickets are issued to dispose of the whole shipment.

The type-wheels E, F, F', and G for the ticket-printing devices are mounted to turn loosely on a longitudinally-extending but short shaft H, held in the frame B, and the type-wheels E', F², F³, and G' are mounted to turn on a similar shaft H', likewise held in the frame B by the shipping-receipt-printing device C'.

Now in order to rotate or set the wheels E E' in unison I provide a crank-arm I, arranged on the top of the free end of the frame B and within convenient reach of the operator, said crank-arm I being secured on the upper end of a vertically-disposed shaft I', mounted to turn in suitable bearings in the frame B. On the lower end of this shaft I' is secured a beveled gear-wheel I² in mesh with a beveled gear-wheel I³, fastened on a longitudinally-extending shaft I⁴, journaled in suitable bearings on the free end of the frame B and carrying at both its outer ends the gear-wheels I⁵ I⁶ in mesh with gear-wheels E² E³, secured or formed on the faces of the type-wheels E E', respectively. Now it will be seen that when the crank-arm I is turned a rotary motion is given to the shaft I', and this motion is transmitted by the gear-wheels I² I³ to the shaft I⁴, which by the sets of gear-wheels I⁵ E² and I⁶ E³ causes a simultaneous turning of the two type-wheels E E' to set the same with the character to be printed lowermost.

In order to indicate which of the characters is at the time in a lowermost or printing position, I provide a graduation I⁷ on the top surface of the frame B, the graduation indicating the numerals "1" to "10," as plainly shown in Fig. 1, and said numerals correspond with the numerals on the wheels E E'. The graduation I⁷ is arranged in the segment of a circle close to the free end of the crank-arm I, which latter is provided in its free end with a spring-pressed pin I⁸, adapted to be seated in one of a series of recesses I⁹, formed in the top of the frame B and in radial alinement with the numerals of the graduation I⁷. When the operator desires to bring the numerals 8 on the wheels E E' into a lowermost position, he moves the crank-arm I to bring the pin I⁸ into the recess I⁹ in radial alinement with the numeral 8 on the graduation I⁷.

In order to simultaneously set the units-type wheels F F², I provide a crank-arm J, arranged on the top of the frame B at the free end thereof and at the left of the crank-arm I, said crank-arm J being secured on the upper end of a vertically-disposed shaft J', journaled in suitable bearings in the frame B.

On the lower end of the shaft J' is secured a beveled gear-wheel A² in mesh with a beveled gear-wheel J³, fastened on a longitudinally-extending shaft J⁴, journaled in suitable bearings in the free end of the frame B, as plainly indicated in the drawings. The outer ends of the shaft J⁴ carry the gear-wheels J⁵ and J⁶ in mesh with gear-wheels F⁴ F⁵, respectively, secured or fastened on the faces of the units-type wheels F and F², respectively.

The crank-arm J is similar in construction to the crank-arm I and is adapted to be set on a graduation J⁷, indicating consecutive numerals from "0" to "9," which numerals correspond to the consecutive numerals on the peripheries of the units-type wheels F F², as previously mentioned. Thus when the operator desires to set both units-wheels F F² with the numeral "6" in a lowermost position ready for printing, then the operator moves the crank-arm J to the numeral "6" on the graduation J⁷. In doing so the crank-arm J turns the shaft J', which by the gear-wheels J² and J³ causes a turning of the shaft J⁴, and the motion of the latter is transmitted by the gear-wheels J⁵ J⁶ to the gear-wheels F⁴ F⁵, respectively, so that the units-type wheels F F² are turned until the numeral "6" is in a lowermost position.

The tens-type wheels F' and F³ are operated simultaneously and similarly to the units-wheels, and for this purpose I provide a crank-arm K, arranged on the top of the frame B at the left of the crank-arm J. (See Figs. 1 and 2.) This crank-arm K is secured on the upper end of a vertical shaft K', journaled in the frame B and carrying at its lower end a beveled gear-wheel K² in mesh with a beveled gear-wheel K³, attached to a longitudinally-extending shaft K⁴, journaled in the

free end of the frame B, and carrying at its outer ends spur-wheels K^5 K^6 in mesh with spur-wheels F^6 F^7 , respectively secured on the faces of the tens-type wheels F' F^8 , respectively.

The crank-arm K indicates on a graduation K^7 representing numerals from "1" to "9," so that when it is desired to bring the numeral, say "5," on both tens-wheels F' F^8 simultaneously into a lowermost or printing position, then the operator turns the crank-arm K to the numeral "5" on the graduation K^7 . In moving said crank-arm to this position the shaft K' is turned and its motion is transmitted by the gear-wheels K^2 K^3 to the shaft K^4 , which by the gear-wheels K^5 , K^6 , and K^7 rotates the two tens-wheels F' and F^8 simultaneously to bring the numeral "5" into a lowermost or printing position.

The sets of consecutive-numbering wheels G G' are automatically actuated on swinging the frame B up and down, and as both sets of consecutive-numbering wheels are actuated in the same manner and by the same means it suffices to describe the actuating means for one device only—namely, for the set of consecutive-numbering wheels G', as indicated in Figs. 5, 6, 7, and 8.

In the frame B is journaled a longitudinally-extending rock-shaft L, carrying at its right-hand end a crank-arm L', pivotally connected with a link L^2 , fulcrumed on the top of the table A, so that when an up and down swinging motion is given to the frame B said link acts on the crank-arm L' to impart a rocking motion to the shaft L. On the latter are secured rearwardly-projecting crank-arms L^3 , one for each set of consecutive-numbering wheels G or G', each arm being pivotally connected by a link N with a T-shaped lever N', fulcrumed loosely on a shaft O, carrying loose gear-wheels O' in mesh with the several numbering-wheels of the set of numbering-wheels G or G'.

The gear-wheel O' for turning the units-numbering wheel of the set of numbering-wheels is adapted to be turned by a pawl P, fulcrumed on an arm P', forming part of the said lever N', so that when the latter receives a swinging motion a like motion is given to the arm P', and consequently the pawl P turns the gear-wheel O' for turning the units-numbering wheel to the next numeral on every full up and down motion of the frame B. Pawls P^2 respectively restrain the gear-wheels O' from retrograde movement.

It is understood that when the frame B swings downward the pawl P passes over the teeth of the gear-wheel O', (see Fig. 8,) but when the frame B swings upward then the gear-wheel O' is turned to change the units-numbering wheel to the next numeral, so that on a following stroke a consecutive number is printed by each set of numbering-wheels G G'. When the units-numbering wheel completes a revolution, then the tenth units-wheel is turned to the next numeral, in the manner

usually employed, by consecutive numbering-wheels contained in this class, so that further description of the same is not deemed necessary.

In order to ink all the type-wheels of the ticket-printing device C and those of the shipping-receipt-printing device C', I provide an inking-roller Q for each set of wheels, said inking-roller being made in the form of a pad saturated with the ink. The inking-roller Q is hung on springs Q' and is journaled loosely in a frame Q², which carries said springs, said frame being also provided with an arm Q³, pivoted at Q⁴ on one side of the free end of the frame B. The arm Q³ is pivotally connected by a link N² with the three-armed lever N', so that when the latter receives a swinging motion then a like motion is given to the frame Q², and consequently the inking-roller Q is moved over the type on the several type-wheels for both types C C', and consequently the lowermost types are inked previous to making the impression.

The platen R for the shipping-receipt-printing device is arranged in a recess in the table A directly below the type-wheels of said device. The platen R is mounted yieldingly to permit a proper impression to be made on the shipping-receipt, said platen being supported for this purpose on springs R', set in recesses in the table A, as plainly indicated in Figs. 2 and 8. The upward motion of the platen R is limited by fixed plates R², secured to the table A, and the shipping-receipt is prevented from adhering to the type-wheels on the upward or return movement of the frame B by means of a suitable guide R³, extending longitudinally and located a suitable distance above the table A and forked at its upper end for the passage of the type-wheels, as will be readily understood by reference to the drawings.

The platen S for the ticket-printing device C is likewise mounted yieldingly in the table A, as illustrated in Figs. 2 and 3, said platen being for this purpose mounted on springs S', set in a recess in said table. The blank tickets for delivery to the platen S are stacked in a stack T, set on the rear part of the table A and having one of its sides made in the form of a slide for conveniently filling the stack with the blank tickets. The bottom ticket in the stack is adapted to be pushed out from under the next following one and shifted forwardly by a pusher U, fitted to slide laterally in suitable guideways held on the table A. The pusher U is pivotally connected by links U' with arms U², secured on longitudinally-extending shaft U³, journaled in suitable bearings on the front of the stack T, as plainly shown in Figs. 1 and 9, said shaft U³ carrying an arm U⁴, pivotally connected by a link U⁵ with the swinging frame B near the free end thereof, so that the up and down swinging motion of said frame B causes a reciprocating movement of the pusher U, said pusher moving rearward on the downward

swinging of the frame B and forward on the return or upward swinging of said frame. Thus on every return movement of the frame the lowermost ticket in the stack is pushed
 5 out and forward in the guideways U⁶, held on the table A. The several tickets thus pushed out are shifted forward until a ticket passes onto the platen S to be in position to be printed on by the next downward movement of the
 10 frame B. The ticket is held in place during the printing operation by springs U⁷, secured to the guideways U⁶. The ticket after it is printed is pushed off the platen by the next following blank ticket, and the printed ticket
 15 falls through an opening A' into a chute V, which delivers the printed ticket to one side of the machine.

The operation is as follows: When the several parts of the machine are in the position
 20 illustrated in Figs. 1, 2, 5, and 9 and it is desired to print type-characters on a document such as a shipping-receipt or way-bill, at the same time printing a check or ticket having like type-characters on it, then the operator
 25 first turns the crank-arms I, J, and K to the numerals on the graduations I⁷, J⁷, and K⁷ corresponding to the type characters to be printed on said way-bill or shipping-receipt W and the blank ticket W' on the platen S.
 30 When the ticket-printing device C and the shipping-receipt-printing device C' are thus adjusted, the operator gives one turn to the crank-arm D to cause a downward swinging of the frame B, whereby an impression is
 35 made by the lowermost type of the type-wheels of said printing devices C C' on both the shipping-receipt W and the blank ticket W'. The same characters are printed on both shipping-receipt and ticket, as indicated in
 40 Figs. 12 and 13, it being understood that the number "314" is the consecutive number of the ticket printed and issued and the shipping-receipt printed that day, while the next character "^{on}3" indicates that the shipping-
 45 receipt calls for three packages addressed to the same party in the same place. The numeral 12 on the shipping-receipt and ticket indicates that the merchandise which the
 50 shipping-receipt calls for is to be delivered by the workman taking the ticket W' to the car, No. 12, destined, in this particular instance, for Chicago, Illinois, as will be seen by reference to the address on the shipping-receipt
 55 in Fig. 12.

Now it will be seen that by the arrangement described the printing and inking takes place during the first half-revolution of the crank-arm D, and then during the next half-
 60 revolution the frame B swings back to its normal uppermost position at the same time the printed ticket is pushed by the next succeeding blank over the platen F, and the printed ticket drops into the chute V, which
 65 delivers it to one side of the machine. The ticket is then taken by the workman having charge of the merchandise indicated by the

shipping-receipt, said workman delivering the goods and ticket to the stevedore at car No. 12. During the upward movement of
 70 the frame B the next blank ticket is pushed upon the platen S, the printed shipping-receipt is removed and filed away, and the consecutive-numbering wheels G G' are shifted to the next numeral to be ready for the next
 75 impression. The operator in charge of the machine on receiving the next shipping-receipt again shifts the crank-arms I, J, and K, if necessary, and the above-described operation is repeated.
 80

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

1. A printing device of the class described, provided with a main frame mounted to swing,
 85 two printing devices held on said frame and placed suitable distances apart, one of the said devices being for printing a blank ticket and the other being for simultaneously printing duplicate characters on a shipping-receipt
 90 or like document, each printing device comprising a set of type-wheels, means, for setting the corresponding type-wheels of the two printing devices simultaneously, to bring the same type-characters into printing position,
 95 and a set of consecutive-numbering wheels for each printing device, said wheels being automatically actuated by the swinging of said frame, substantially as shown and described.
 100

2. A printing apparatus of the class described, provided with a main frame mounted to swing, two printing devices held on said
 105 frame and placed suitable distances apart, one of the said devices being for printing a blank ticket and the other being for simultaneously printing duplicate characters on a shipping-receipt or like document, each printing
 110 device comprising a set of type-wheels, a crank-arm for the corresponding sets of type-wheels in the two printing devices, and intermediate mechanism between the crank-arm and the corresponding sets of type-
 115 wheels, to set the latter simultaneously, to bring the same type-characters into printing position, substantially as shown and described.

3. A printing apparatus of the class described, provided with a main frame mounted to swing, two printing devices held on said
 120 frame and placed suitable distances apart, one of the said devices being for printing a blank ticket and the other being for simultaneously printing duplicate characters on a shipping-receipt or like document, each printing
 125 device comprising a set of type-wheels, a crank-arm for the corresponding sets of type-wheels in the two printing devices, intermediate mechanism between the crank-arm and the corresponding sets of type-wheels, to set
 130 the latter simultaneously and bring the same type-characters into printing position, and an inking-roller for each printing device and mounted to roll over the faces of the type-

characters in printing position, said inking-roller being journaled in a frame mounted to swing and actuated from the swinging main frame, substantially as shown and described.

5 4. A printing apparatus of the class described, provided with a main frame mounted to swing, two printing devices held on said frame and placed suitable distances apart, one of the said devices being for printing a
10 blank ticket and the other being for simultaneously printing duplicate characters on a shipping-receipt or like document, each printing device comprising a set of type-wheels, a crank-arm for the corresponding sets of type-
15 wheels in the two printing devices, intermediate mechanism between the crank-arm and the corresponding sets of type-wheels, to set the latter simultaneously, and bring the same type-characters into printing position, and a
20 spring-pressed pin in the free end of each crank-arm and adapted to engage one of a series of numbered recesses in said main frame, substantially as shown and described.

5 5. A printing apparatus of the class described, provided with two printing devices held suitable distances apart, said printing devices being provided with corresponding type-wheels mounted to turn loosely, and each
30 provided with a gear-wheel, a shaft carrying gear-wheels in mesh with the gear-wheels of the two corresponding type-wheels in the two printing devices, a second shaft geared with the first-named shaft, and a crank-arm for turning said second shaft, substantially as
35 shown and described.

6. A printing apparatus of the class described, provided with two printing devices held suitable distances apart, said printing devices being provided with corresponding
40 type-wheels mounted to turn loosely, and each provided with a gear-wheel, a shaft carrying gear-wheels in mesh with the gear-wheels of the two corresponding type-wheels in the two printing devices, a second shaft geared with
45 the first-named shaft, and a crank-arm for turning said second shaft, the crank-arm being provided with a spring-pressed pin adapted to engage one of a series of numbered recesses in a fixed part to hold the crank-arm
50 temporarily in place, substantially as shown and described.

7. A printing apparatus of the class described, provided with a main frame mounted to swing, a rock-shaft journaled in the free
55 end of said frame, a connection between said shaft and a fixed part for imparting a rocking motion to the shaft on swinging the said frame, a set of consecutive-numbering wheels journaled in the said frame, gear-wheels for shifting
60 said consecutive-numbering wheels, a pawl for the gear-wheel in mesh with the units-wheel of the said consecutive-numbering wheels, and a connection intermediate said pawl and the said shaft, to actuate the latter

for turning said gear-wheel, substantially as 65 shown and described.

8. A printing apparatus having two sets of printing-wheels, a plurality of rotary shafts respectively geared with the printing-wheels, a gear fixed to each rotary shaft, an additional
70 shaft for each first-named rotary shaft, a gear fixed to each additional shaft and meshed with the gears on the first-named rotary shafts, and a crank-arm for each of said additional shafts, substantially as described. 75

9. A printing apparatus having a table, a frame pivoted to the table, means for moving the frame toward and from the table, two type-wheels carried by the frame, a rotary shaft carried by the frame and geared with the type-
80 wheels, a second rotary shaft carried by the frame and geared with the first rotary shaft, and a crank-arm fixed to said second rotary shaft, substantially as described.

10. A printing-machine having a table, a 85 frame pivoted to the table, a numbering apparatus carried by the frame, a rock-shaft on the frame, a crank on the rock-shaft, a link connected to the crank and to the table whereby to rock the shaft as the frame swings, a
90 lever in connection with the rock-shaft, a pawl pivoted to the lever, and a gear-wheel with which the pawl engages whereby the gear-wheel is turned, the gear-wheel transmitting movement to the numbering-machine, sub- 95 stantially as described.

11. A printing-machine having a table, a frame pivoted to the table, a numbering-machine carried by the frame, a rock-shaft on the frame, a connection between the rock- 100 shaft and the table whereby the rock-shaft is moved as the table swings, a lever in connection with the rock-shaft, a pawl carried by the lever, and a gear-wheel driven by the pawl and transmitting movement to the number- 105 ing-machine, substantially as described.

12. A printing-machine having a table, a frame pivoted to the table, a numbering-machine carried by the frame, a rock-shaft on the frame, the rock-shaft being moved by the 110 swinging of the frame, a lever in connection with the rock-shaft, a pawl carried by the lever, and a gear-wheel driven by the pawl and transmitting movement to the numbering-machine, substantially as described. 115

13. A printing-machine having a table, a frame pivoted to the table, two sets of printing devices each comprising a series of wheels, the wheels of one printing device being duplicated in the wheels of the second device, 120 and a number of independent means for adjusting simultaneously and in unison each pair of duplicated wheels, substantially as described.

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Witnesses:

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F. W. HANAFORD.