

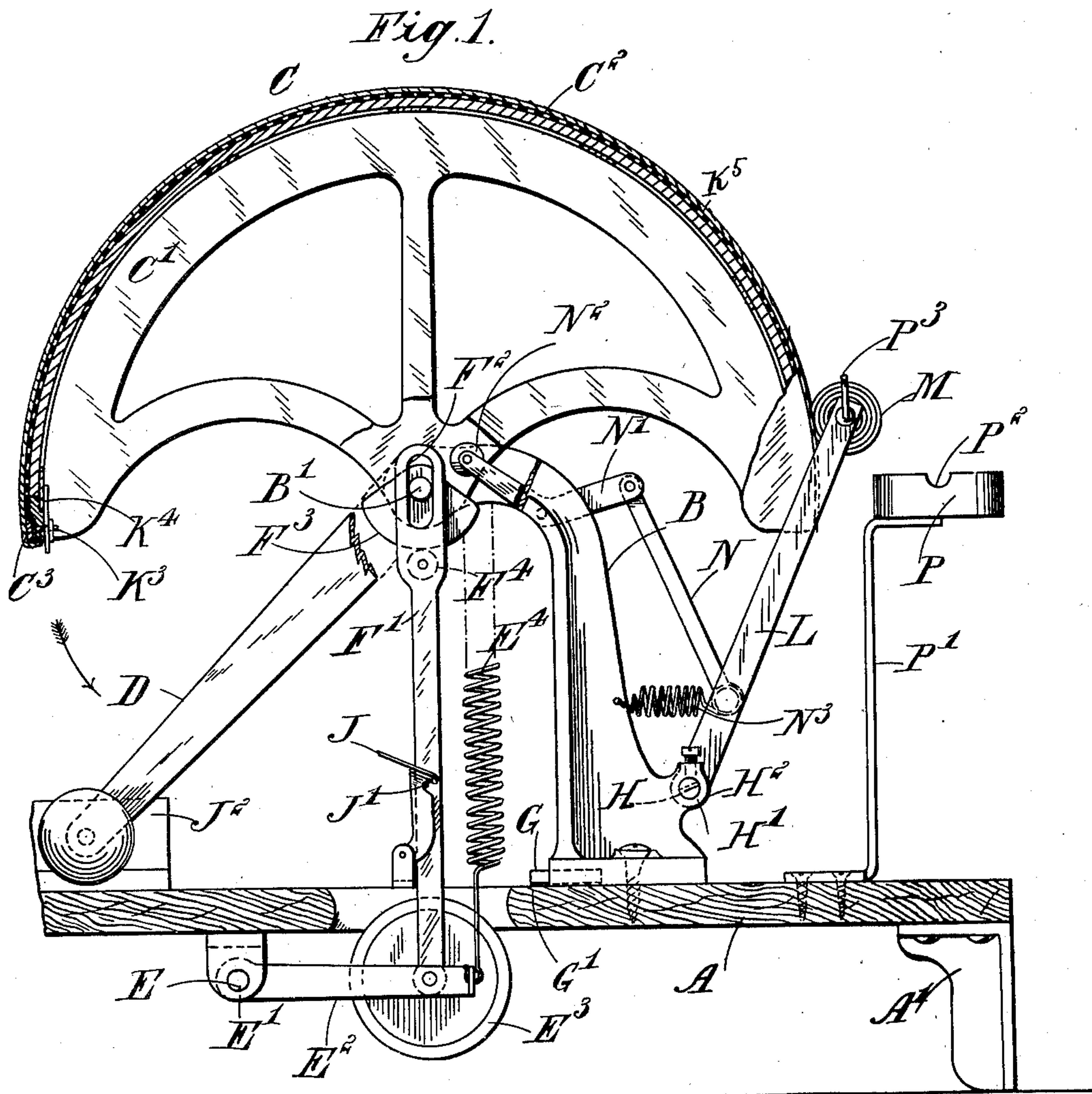
No. 732,002.

PATENTED JUNE 23, 1903.

A. D. KLABER.
 DUPLICATING MACHINE.
 APPLICATION FILED JUNE 3, 1901.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses:

N. K. Bouleir

C. Montagu

Inventor

Augustus D. Flaber
by Wm E. Fowler,
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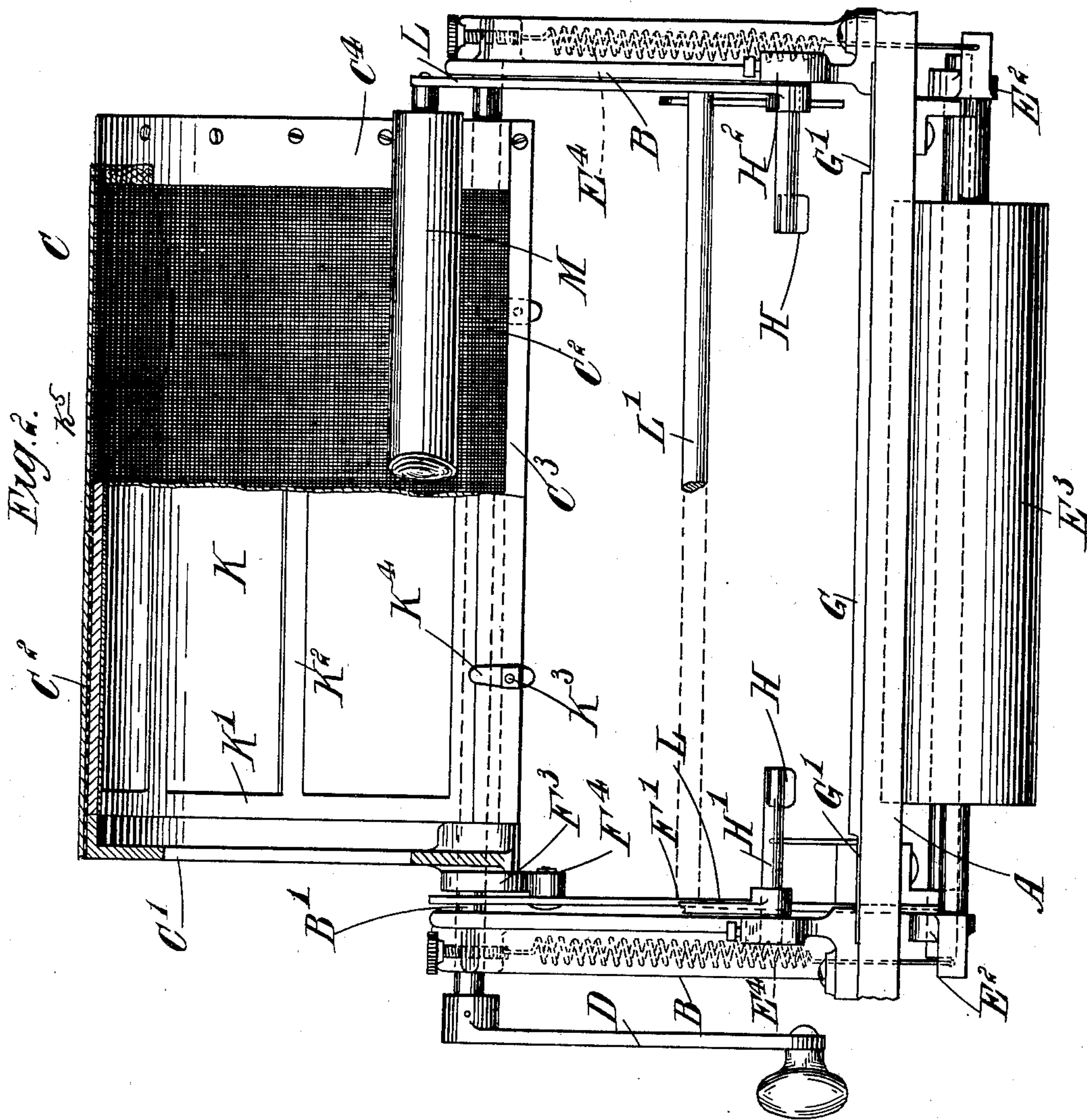
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4 SHEETS—SHEET 2.



Witnesses:

N. K. Boulter

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Inventor

Augustus D. Klaber

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Attorney

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4 SHEETS—SHEET 3.

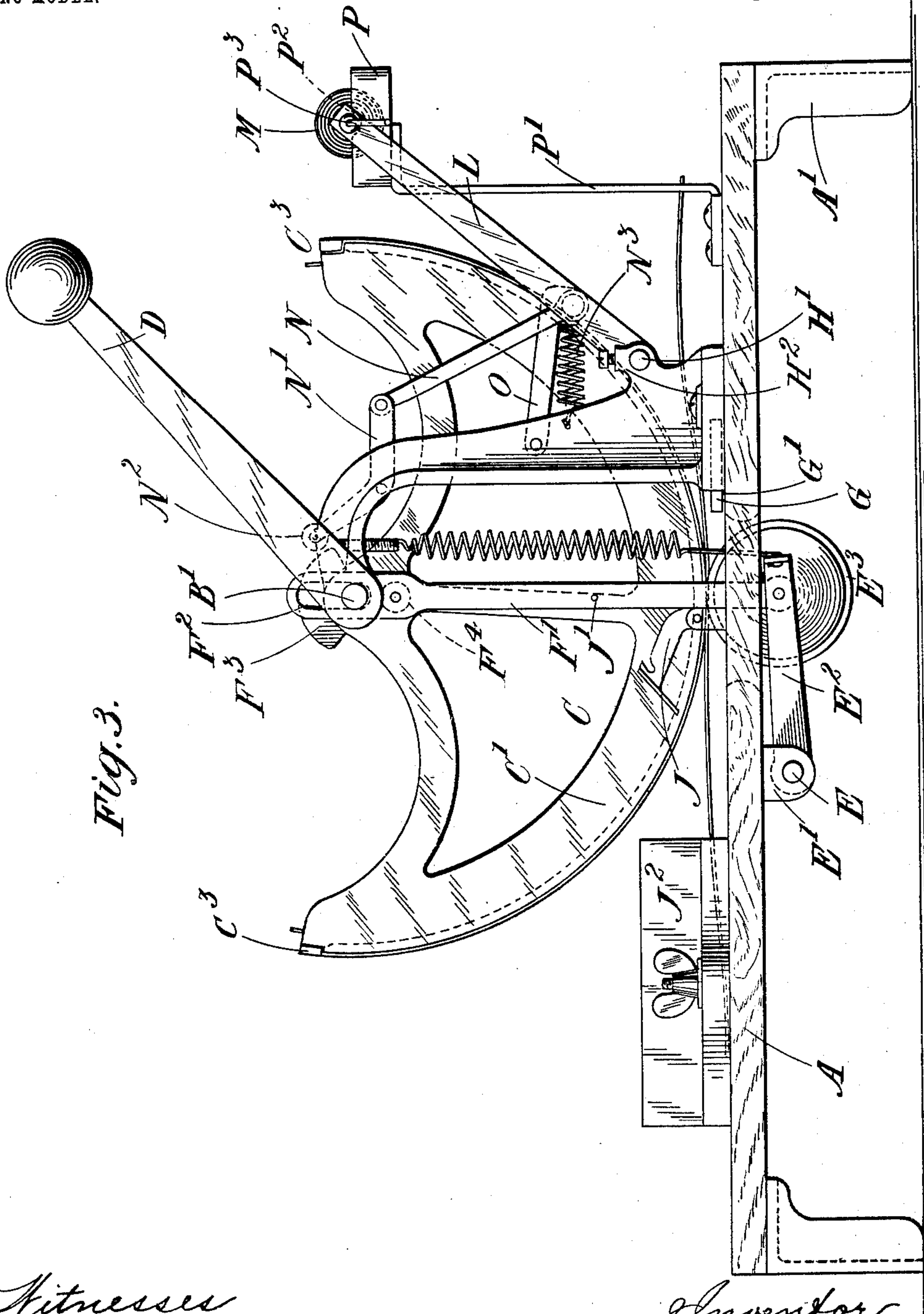


Fig. 3.

Witnesses
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No. 732,002.

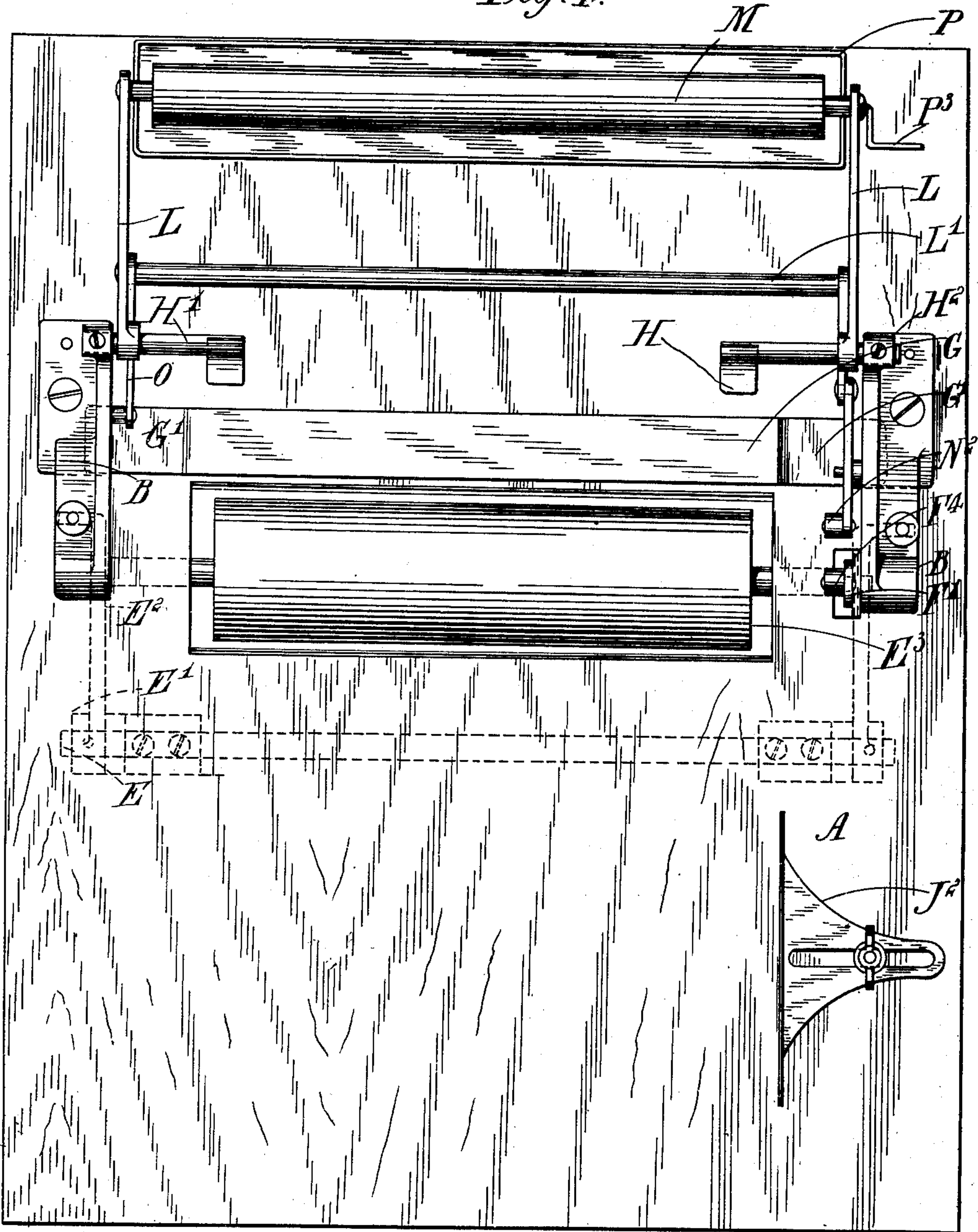
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4 SHEETS—SHEET 4.

Fig. 4.



Witnesses

W. K. Boulter

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Inventor

Augustus D. Klaber

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Attorney

UNITED STATES PATENT OFFICE.

AUGUSTUS DAVID KLABER, OF LONDON, ENGLAND, ASSIGNOR TO A. B. DICK COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DUPLICATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 732,002, dated June 23, 1903.

Application filed June 3, 1901. Serial No. 62,999. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS DAVID KLABER, a subject of the King of England, residing at London, England, have invented certain new and useful Improvements in or Relating to Duplicating-Machines, (for which application has been made in Great Britain under No. 8,544, dated April 25, 1901,) of which the following is a specification.

This invention relates to improvements in or relating to duplicating-machines, and has particular reference to that type of machine in which a segmental or cylindrical stencil-carrier is employed, and has for its object to provide a machine more simple in construction and which can be produced at a cheaper rate than those heretofore placed upon the market.

The machine comprises a semicircular stencil-carrier mounted in bearings upon standards and adapted to be revolved by means of a handle, the handle being secured direct to the carrier or shaft which carries the stencil-carrier. The standards supporting the stencil-carrier are secured upon a base beneath which is mounted a rock-shaft. The rock-shaft is provided with arms supporting the pressure-roll which coöperates with the stencil-carrier in the well-known manner. A fixed stop or guide is provided, against which the paper is placed preparatory to being passed through the machine, and the pressure-roll, as it rises, raises the end of the paper before bringing it into contact with the stencil-carrier, so that when the machine is operated the paper passes freely over the stop against which it was placed preparatory to the machine being put in action.

Various devices may be used for supplying the stencil with ink, the ink being applied, for instance, by a brush or by means of a pad placed on the interior side of the stencil-carrier or fed through the perforated carrier by means of a roller arranged within an ink-trough and adapted to come into contact with the exterior surface of the carrier.

In the accompanying drawings, which illustrate one method of carrying out this invention, Figure 1 is a side elevation of the duplicating-machine. Fig. 2 is a front elevation of the same, partly in section. Fig. 3 is

a side elevation showing the parts of the machine in action, and Fig. 4 is a plan with the stencil-carrier removed.

Like letters indicate like parts throughout the drawings.

Upon a base A, which is preferably of wood, are mounted two standards B, conveniently curved at their upper ends toward the rear end of the machine. In the upper ends of the standards is mounted a shaft B', upon which is rigidly secured a semicircular stencil-carrier C. The stencil-carrier comprises two side portions C', connected by a sheet of perforated material C² and strengthened at its ends by cross-pieces C³. At one end of the shaft B' is secured a handle D, by means of which the stencil-carrier C may be rotated in the ends of the standards B.

Beneath the base A, which may be supported from the surface upon which the machine is stood by corner-feet A', is mounted a rock-shaft E, carried in hangers E', secured to the under side of the base A. Upon the rock-shaft E are secured two arms E², which support a pressure-roll E³. The roll E³ may be adapted to revolve either upon a spindle supported upon the arms E² or made fast to a spindle free to rotate in the arms E². The ends of the arms E² are connected by springs E⁴ to the upper rearwardly-curved ends of the standards B, so that when the stencil-carrier C is in the position indicated in Fig. 3 the pressure-roll is forced, by means of the springs E⁴, against the surface of the carrier.

Pivoted to one of the arms E² is one end of a link F', free to reciprocate vertically. The upper end of the link F' is slotted at F², and the end of the shaft B', which supports the stencil-carrier, is passed through the slot, so that the shaft and the face of the standard and opposed face of the side C' of the carrier serve as guides to the link. On the side C' of the carrier C and integral with it is a cam F³, and upon the link F' is a pin F⁴, adapted to coöperate with the cam, so that when the cam is in the position shown in Fig. 1 the link F' is forced downward by the action of the cam upon the pin F⁴. This movement of the link F' is communicated to the rock-shaft E by the arm E², to which the link is secured, so that both arms E² are lowered against the

action of the springs E^4 and the roll E^3 , carried beneath the upper surface of the base A. With the parts in this position the paper or other material to receive the impression is placed upon the base A and the sheet immediately to be operated upon is pushed forward over the roll E^3 . To insure that the paper shall always be advanced a given distance when placing in position, a stop G is provided, against which the forward end of the paper is laid. The stop G is conveniently formed from sheet metal stamped up into the shape of a bar of rectangular cross-section and provided with flat side extensions G' . The side extensions G' are placed beneath the feet of the standards B, so that when these latter are secured in position the stop will be gripped between the feet of the standards and the base A. By loosening the screws by which the standards B are secured to the base A the stop G may be moved slightly backward or forward to allow a slight adjustment should it be desired to withdraw or advance the paper slightly, so that the impression may commence nearer to or farther from the top edge of the sheet.

It will be observed that the stop or guide G is in reality a fixture, although a slight amount of adjustment is allowed, as the stop when adjusted always remains in position during the operation of the machine and is not, as in common practice, removed from its position while the paper is being passed through the machine and replaced preparatory to the next sheet being placed in position.

The operation of this machine is as follows: The top edge of the sheet which is to receive the impression being placed against the guide G, the stencil-carrier C is rotated by means of the handle D. As the front edge of the stencil-carrier comes opposite the pressure-roll E^3 the cam F^3 will leave the pin F^4 of the link F' , so that the roll E^3 will rise under the action of the springs E^4 and press the paper F against the surface of the carrier, as shown in Fig. 3. The rotation of the carrier C being continued, the paper will pass through between the carrier and roll in the well-known manner, passing out of the machine over the stop G, above which it has been raised by the roll E^3 . To insure the removal of the paper from the stencil, strippers H are provided, which catch the front edge of the sheet, so that the whole sheet passes beneath the strippers as it is delivered from the machine. The strippers H are curved, as shown in Fig. 1, and rounded at their ends, as shown in Fig. 2, and are secured to spindles H' , carried in lugs H^2 on the standards B.

When it is desired to retain the roll E^3 in its lowered position, the link F' is locked in its depressed position by a catch J, secured to the base A, and adapted to engage a pin J' in the face of the link F' .

To insure the paper or other material to receive the impression being in line laterally

with the stencil on the carrier, the usual adjustable side guide J^2 is provided.

The stencil may be secured to the stencil-carrier in any well-known manner and may be supplied with ink by hand by means of a brush or automatically by a pad K, saturated with ink, placed against the inner side of the perforated part C^2 of the carrier. The ink-pad K may be retained in place by any suitable means, a light frame comprising two side members K' , connected by cross-pieces K^2 , forming a convenient device for retaining the pad against the interior segmental surface of the carrier. The ends of the frame $K'K^2$ may be secured to the ends of the carrier by screws K^3 , engaging spring clamps or tongues K^4 , which press upon the edge of the end cross members K^2 . It is not desirable that the inner side of the pad should be covered in by any rigid substance, as should any part of the stencil indicate that there was not sufficient ink supplied at that point this defect may be remedied by pressing the finger upon the rear of the pad, thus forcing more ink through the perforated carrier to the stencil. If the cross members K^2 of the frame are made of thin material, these will not interfere with this method of regulating the ink supply at different points. The back of the pad is preferably covered with some impervious material, such as American cloth.

The ink-pad K may be recharged with ink by removing it from the carrier and inking it with a brush or other convenient means, or it may be supplied with ink while in place upon the carrier in the following manner: Pivoted upon the spindles H' of the strippers H is one end of a frame comprising two side members L, connected by a transverse member L' . Mounted upon the end of the frame remote from the point at which it is pivoted on the spindles H' is an ink-roller M, free to rotate in the ends of the members L. Pivoted to one of the members L is a link N, the free end of which is pivoted to a bell-crank lever N' , pivotally mounted upon one of the standards B. The free end of the bell-crank lever N' is provided with a roller N^2 , which projects in the path of the cam F^3 , by which the pressure-roll is operated, and a spring N^3 , operating between one of the members L and the adjacent standard B, always tend to move the frame carrying the ink-roller N in a direction toward the standards B, causing the roller N^2 to bear against the cam F^3 . The parts are so arranged that so long as the cam F^3 is in engagement with the roller N^2 of the bell-crank lever N' the ink-roller M is maintained in the position shown in Fig. 3; but as the rotation of the carrier C is continued the cam F^3 leaves the roller N^2 of the bell-crank lever N' and allows the spring N^3 to bring the frame carrying the ink-roller M toward the carrier C, so that the roller M is made to press against the exterior surface of the carrier. The stencil having been previously removed from the carrier the ink-roller

M may be allowed to cooperate with the carrier in the manner described until sufficient ink has been supplied to the pad on the inside of the carrier, after which the ink-roller M may be locked back in its inoperative position by a catch O.

The ink-roller M may be supplied with ink in any convenient manner. It may, for instance, be composed of some absorbent material charged with ink, the ink being made to pass through the perforated material to the ink-pad when the roller is in operation by the pressure of the roller against the surface of the carrier, or the roller may be made of non-absorbent or only partially-absorbent material, so that when forced back by the cam F³ away from the stencil it may be made to enter an ink-well, such as the trough P, from which it receives its supply of ink. The trough P may conveniently be supported from the base A by a bracket P' and contains sufficient ink to permit the lower part of the roller to be submerged when the spindle of the roller rests in the recesses P² with which the sides of the trough are provided.

In order that the ink-roller M may be completely coated with ink before being brought into contact with the stencil-carrier, it is provided with a handle P³, by which it may be rotated by hand before being put in operation with the carrier.

Although the ink-roller M has been described as used to supply the pad on the interior side of the carrier C with ink, it is found that where only a few copies are required the roller may be employed to ink the exterior surface of the carrier with the pad removed, sufficient ink being retained by the carrier to supply the stencil when in place with a sufficient quantity of ink for a limited number of copies.

For convenience it is preferred to leave the edges of the perforated part C² of the stencil-carrier unperforated, as at C⁴, as it is found when the perforations are continued to the edge of the stencil that the ink often creeps around the edge of the stencil-sheet and damages the sheet upon which the impression is being made.

In using these machines it is common practice to cover the face of the carrier C with a cloth or thin pad K⁵, which absorbs the ink fed through from the inner side of the carrier or applied externally and feeds the same evenly through the stencil. This cloth, therefore, may be called an "ink-pad" and is employed in this machine. When only a small number of prints are required, it is found sufficient to ink this cloth by means of the roller M, the ink-pad within the carrier being dispensed with. The cloth thus becomes an "ink-pad" and is termed such in the following claims, the ink-pad within the carrier being designated as the "reservoir ink-pad" for the sake of distinction. Where it is desired to feed a fresh supply of ink into the reservoir ink-pad, the cloth or ink-pad on the face of

the carrier may be removed, if necessary, although in most cases the ink may be fed through this pad to the reservoir ink-pad. Even if the reservoir ink-pad is employed it is found necessary to provide the ink-pad with a fresh charge of ink if the machine has been out of use for any considerable time. One application of the roller M, however, is usually found sufficient for this purpose, or if the roller is not employed the surface of the ink-pad may be moistened by applying slight pressure behind the reservoir ink-pad, so that the external ink-pad is moistened by the ink thus forced through the perforated carrier.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, a reservoir ink-pad secured on the inner side of the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, and means for withdrawing the pressure-roll as set forth.

2. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, a reservoir ink-pad secured on the inner side of the carrier, an ink-roller, means for automatically bringing the ink-roller into contact with the outer face of the carrier, means for locking the ink-roller out of action, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, and means for withdrawing the pressure-roll as set forth.

3. In a duplicating-machine the combination of a perforated segmental carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, a reservoir ink-pad secured on the inner side of the carrier, an ink-roller, means for automatically bringing the ink-roller into contact with the outer face of the carrier, means for locking the ink-roller out of action, means for supplying this roller with ink, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously

lifting the material over the stop, and means for withdrawing the pressure-roll as set forth.

4. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, a reservoir ink-pad secured on the inner side of the carrier, means to prevent the ink from the pad from creeping around the edges of the stencil, an ink-roller, means for automatically bringing the ink-roller into contact with the outer face of the carrier, means for locking the ink-roller out of action, means for supplying this roller with ink, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, and means for withdrawing the pressure-roll as set forth.

5. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, a reservoir ink-pad secured to the inner side of the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, means for automatically bringing the ink-roller into contact with the face of the carrier when the latter is rotated, means for similarly withdrawing the roller from the face of the carrier, an ink-trough adapted to receive the roller when withdrawn from the carrier and means for locking the roller in its withdrawn position as set forth.

6. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, an ink-roller, means for automatically bringing the ink-roller into contact with the outer face of the carrier, means for locking the ink-roller out of action, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, and means for withdrawing the pressure-roll as set forth.

7. In a duplicating-machine the combination of a perforated segmental carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, an ink-roller, means for automat-

ically bringing the ink-roller into contact with the outer face of the carrier, means for locking the ink-roller out of action, means for supplying this roller with ink, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, and means for withdrawing the pressure-roll as set forth.

8. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, means to prevent the ink from the pad from creeping around the edges of the stencil, an ink-roller, means for automatically bringing the ink-roller into contact with the outer face of the carrier, means for locking the ink-roller out of action, means for supplying this roller with ink, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, and means for withdrawing the pressure-roll as set forth.

9. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, means for withdrawing the pressure-roll, an ink-roller, means for automatically bringing the ink-roller into contact with the face of the carrier when the latter is rotated, means for similarly withdrawing the roller from the face of the carrier, an ink-trough adapted to receive the roller when withdrawn from the carrier and means for locking the roller in its withdrawn position as set forth.

10. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, a reservoir ink-pad adapted to lie against the inner side of the stencil-carrier, an open frame to support the reservoir ink-pad, means for securing the frame to the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for

bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, and means for withdrawing the pressure-roll as set forth.

5 11. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, a reservoir ink-pad secured to the inner side of the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, means for withdrawing the pressure-roll, an ink-roller, pivoted arms for supporting the roller, a spring which always tends to bring the roller against the face of the carrier, a bell-crank lever pivoted to the frame of the machine, a cam secured to the carrier and adapted to engage one end of the bell-crank lever, a link connecting the other end of the bell-crank lever with the roller so that when the cam strikes the bell-crank lever the roller is forced back against the action of its spring, and means for locking the roller in its withdrawn position as set forth.

12. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, a reservoir ink-pad secured to the inner side of the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, means for withdrawing the pressure-roll, an ink-roller, means for automatically bringing the ink-roller against the face of the carrier when the latter is rotated, means for similarly withdrawing the roller from the face of the carrier, an ink-trough adapted to receive the roller when withdrawn from the face of the carrier, and means for locking the roller in its withdrawn position as set forth.

13. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, unperforated edges to the carrier, means for supporting the carrier, means for rotating the carrier, a reservoir ink-pad secured to the inner side of the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop,

and means for withdrawing the pressure-roll as set forth.

14. In a duplicating-machine the combination of a perforated segmental stencil-carrier, 70 an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating the carrier, a reservoir ink-pad secured to the inner side of the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, means for withdrawing the pressure-roll, an ink-roller, pivoted arms for supporting the roller, a spring which always tends to bring the roller against the face of the carrier, a 85 bell-crank lever pivoted to the frame of the machine, a cam secured to the carrier and adapted to engage one end of the bell-crank lever, a link connecting the other end of the bell-crank lever with the roller so that when the cam strikes the bell-crank lever the roller is forced back against the action of its spring, an ink-trough adapted to receive the roller when forced away from the face of the carrier, and means for locking the roller in its 95 withdrawn position as set forth.

15. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating 100 the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, means for withdrawing the pressure-roll, an ink-roller, pivoted arms for supporting the 110 roller, a spring which always tends to bring the roller against the face of the carrier, a bell-crank lever pivoted to the frame of the machine, a cam secured to the carrier and adapted to engage one end of the bell-crank lever, a link connecting the other end of the bell-crank lever with the roller so that when the cam strikes the bell-crank lever the roller is forced back against the action of its spring, and means for locking the roller in its withdrawn position as set forth. 120

16. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, means for rotating 125 the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously

lifting the material over the stop, means for withdrawing the pressure-roll, an ink-roller, means for automatically bringing the ink-roller against the face of the carrier when the latter is rotated, means for similarly withdrawing the roller from the face of the carrier, an ink-trough adapted to receive the roller when withdrawn from the face of the carrier, and means for locking the roller in its withdrawn position as set forth.

17. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means for supporting the carrier, a pressure-roll adapted to cooperate with the carrier, a support for the material to be printed intermediate of the stencil-carrier and pressure-roll, a stationary stop to position the material in a forward direction, means for bringing the pressure-roll against the face of the carrier and simultaneously lifting the material over the stop, means for withdrawing the pressure-roll, an ink-roller, pivoted arms for supporting the roller, a spring which always tends to bring the roller against the face of the carrier, a bell-crank lever pivoted to the frame of the machine, a cam secured to the carrier and adapted to engage one end of the bell-crank lever, a link connecting the other end of the bell-crank lever with the roller so that when the cam strikes the bell-crank lever the roller is forced back against the action of its spring, an ink-trough adapted to receive the roller when forced away from the face of the carrier, and means for locking the roller in its withdrawn position as set forth.

18. In a duplicating-machine the combination of a perforated segmental stencil-carrier, an ink-pad on the face of the carrier, means

for supporting the carrier, means for rotating the carrier, a reservoir ink-pad secured to the inner side of the carrier, a pressure-roll mounted beneath the carrier, a support for the material to be operated upon intermediate of the stencil-carrier and pressure-roll, a stationary stop on this support to position the material in a forward direction with a clearance between the top edge of the stop and the lowest point of the carrier, means whereby the pressure-roll is allowed to rise or fall, a spring which always tends to raise the roll and bring it against the face of the carrier simultaneously lifting the material over the stop, a link secured at one end to the roll, a bearing for the other end of the link, a pin on the link, a cam integral with the carrier and adapted to engage the pin on the link, an ink-roller, pivoted arms for supporting the roller, a spring which always tends to bring the roller against the face of the carrier, a bell-crank lever pivoted to one of the supports of the carrier one end of the lever being made to project into the path of the cam which operates the pressure-roll, a link connecting the free end of the bell-crank lever and the roller, an ink-trough adapted to receive the roller when forced away from the surface of the carrier, and means for locking the roller in its withdrawn position as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUSTUS DAVID KLABER.

Witnesses:

HAROLD WADE,

HARRY B. BRIDGE.