

F. HAGER.
PAPER CUTTING MACHINE.

(Application filed June 7, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

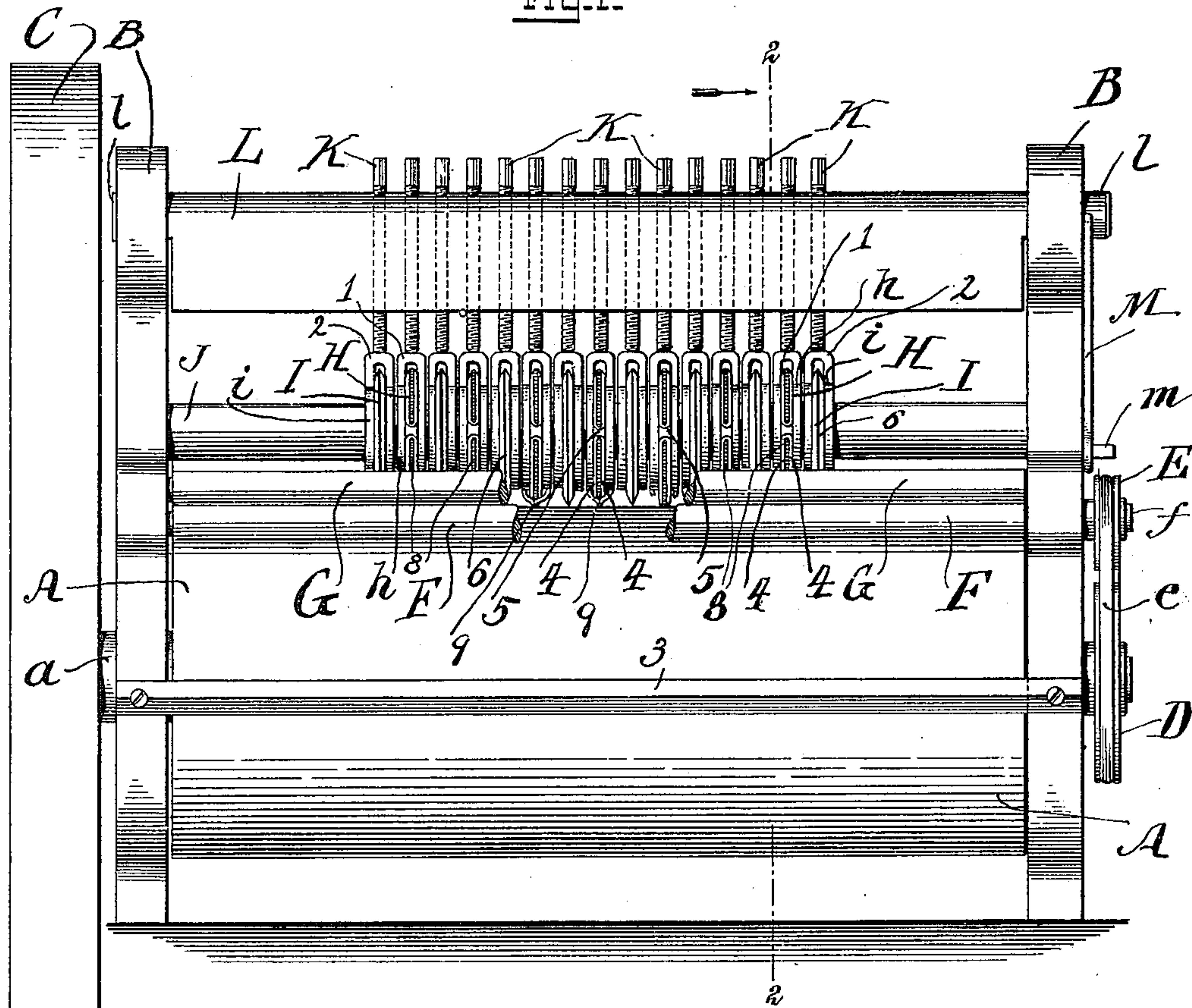


Fig. 6.

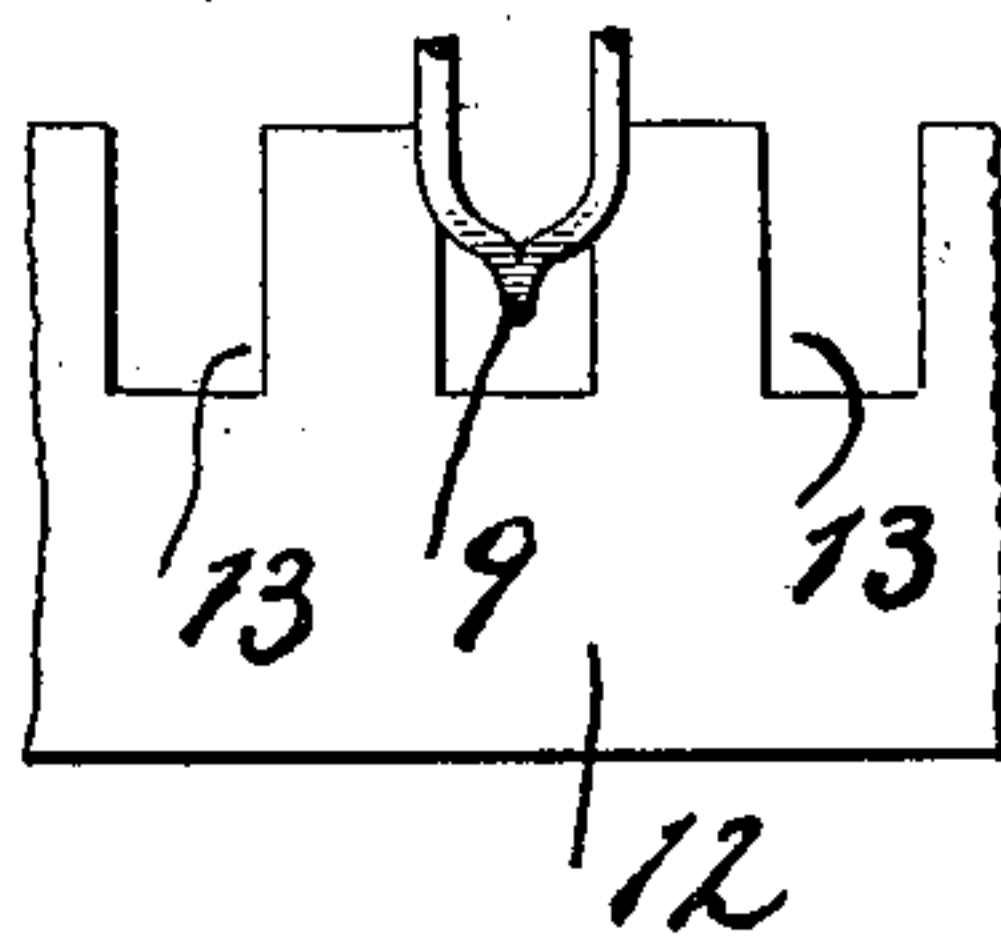
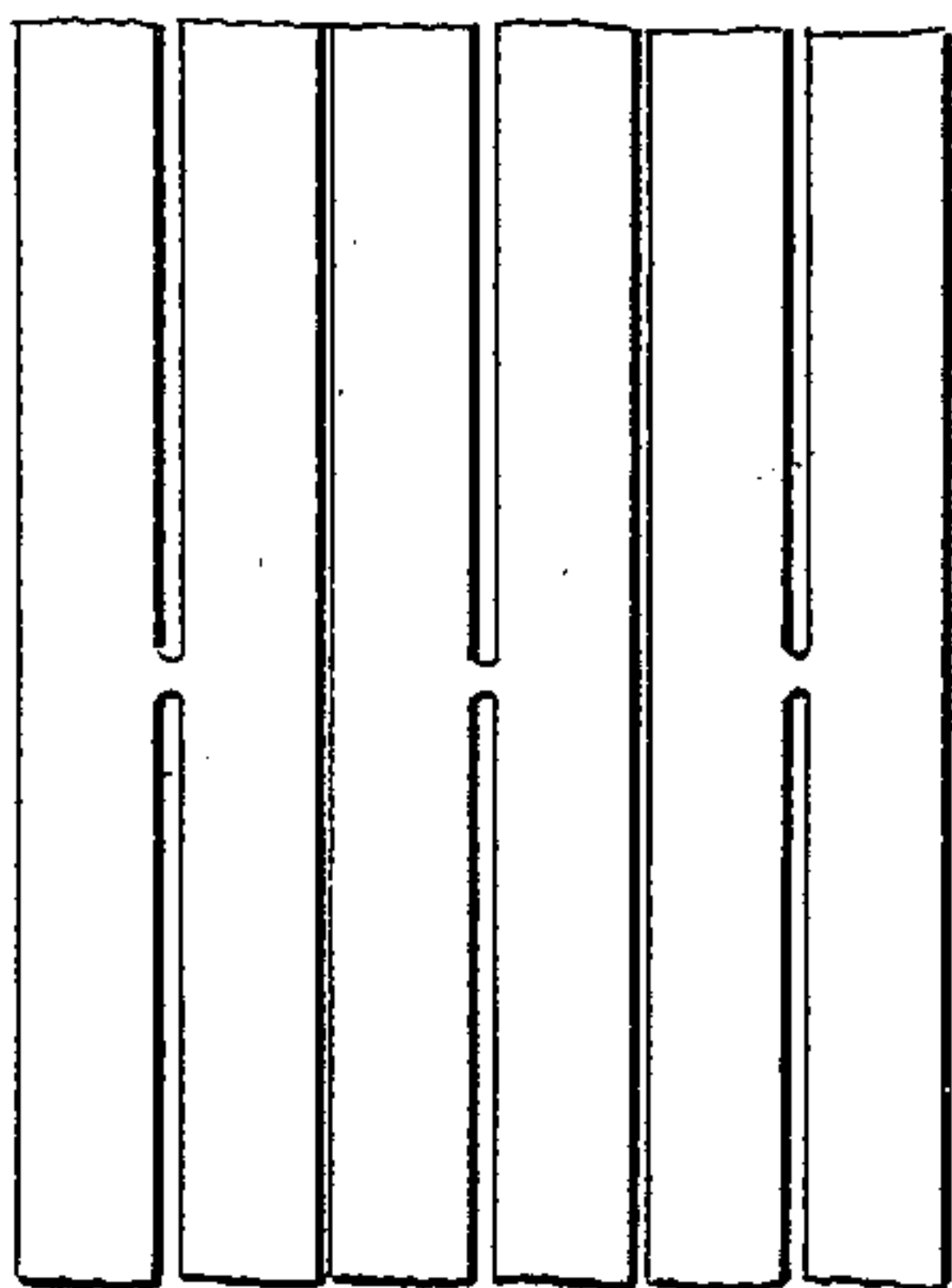


Fig. 5.



Witnesses:

Geo. W. Taylor
M. G. MacLean

By his Attorneys

Inventor
Frederick Hager,
Carr, Deemer & Co.

No. 654,248.

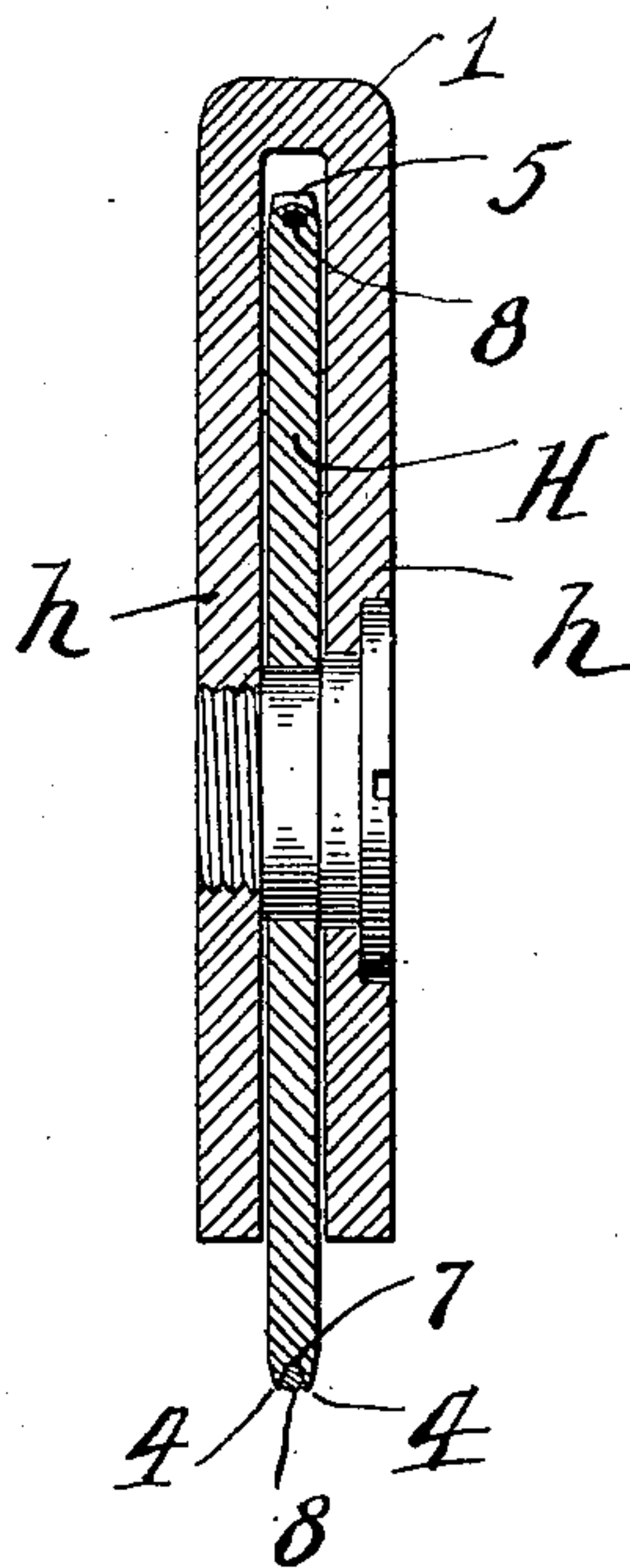
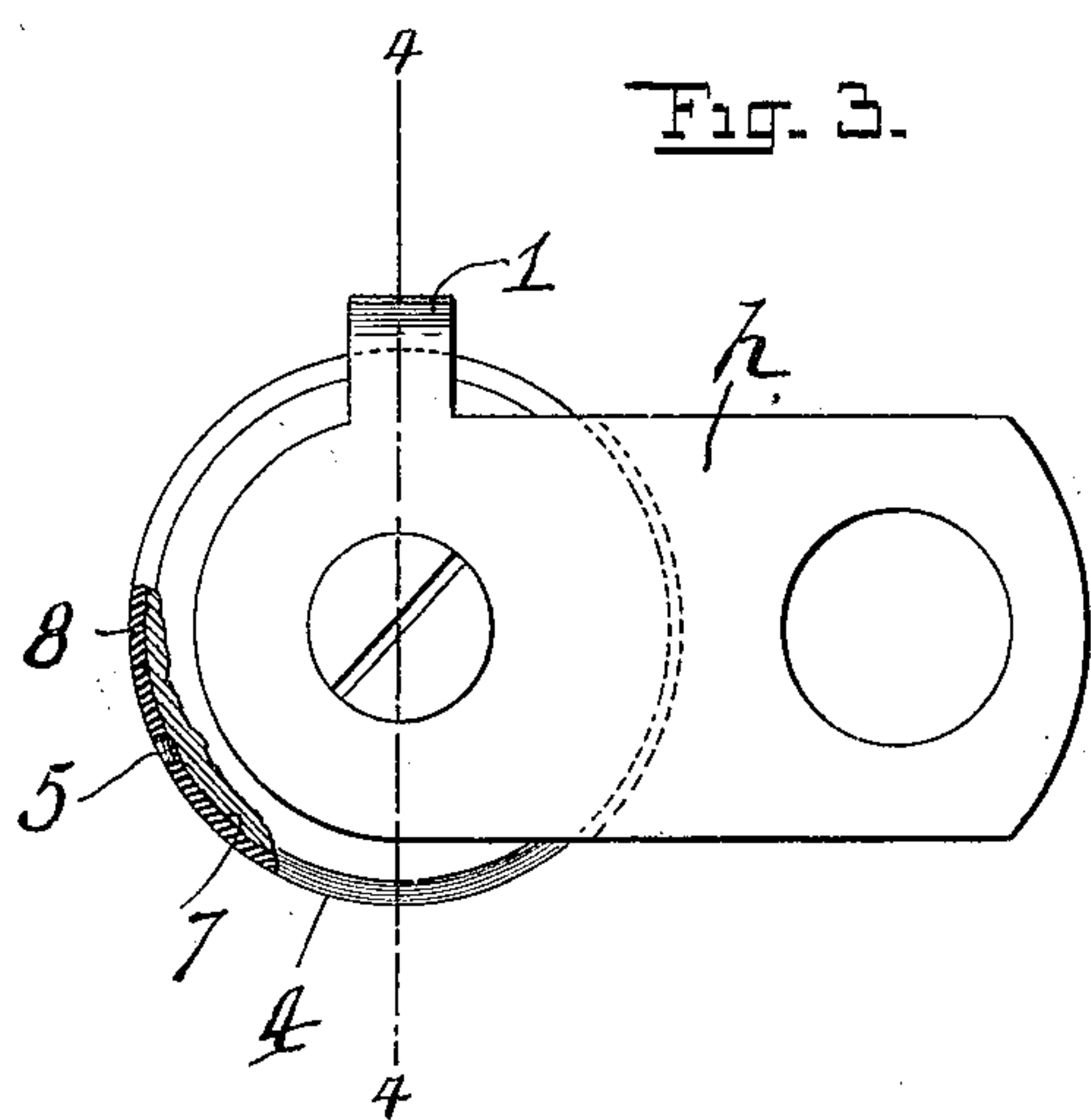
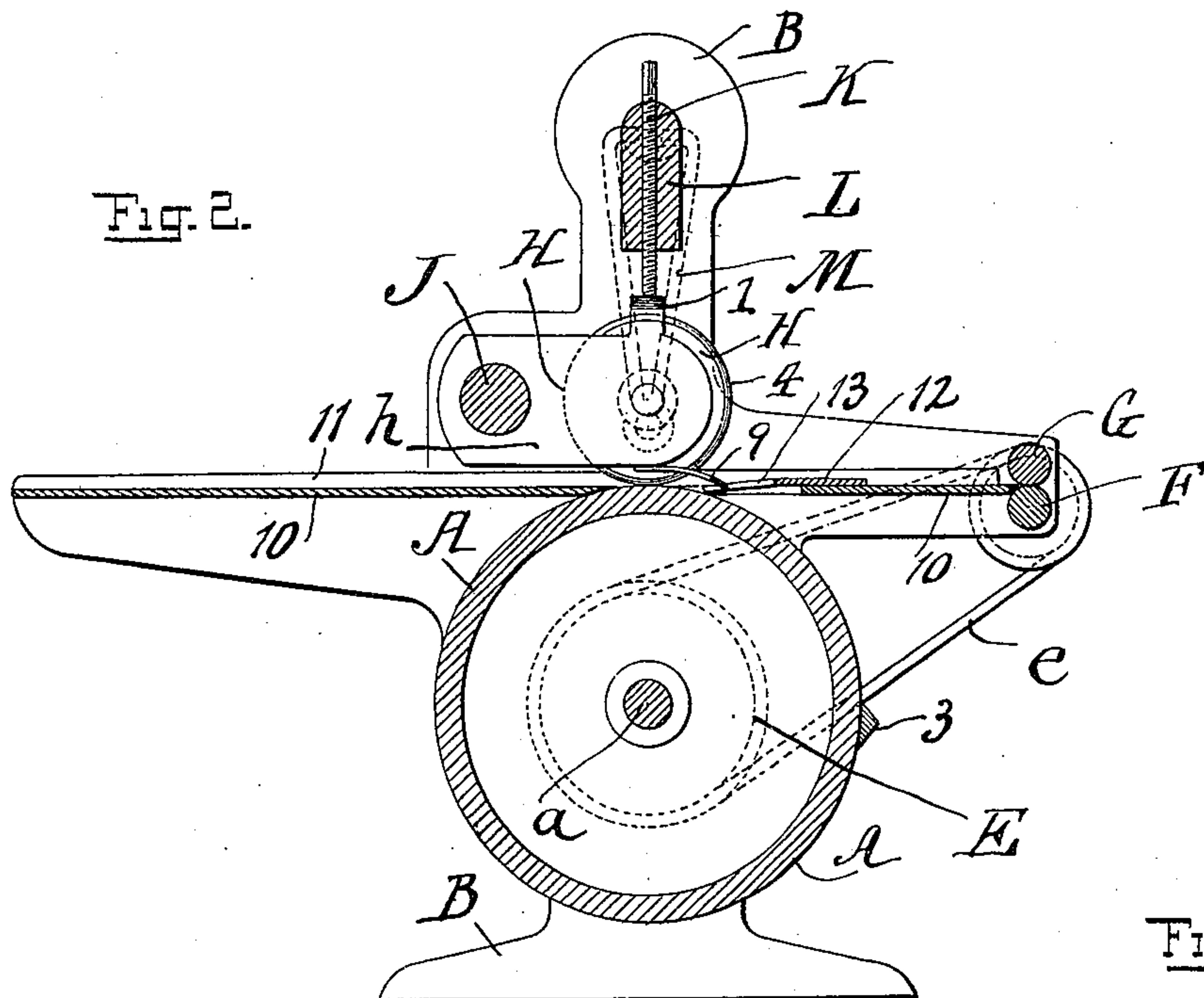
Patented July 24, 1900.

F. HAGER.
PAPER CUTTING MACHINE.

(Application filed June 7, 1899.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:
Geo. W. Naylor.
M. G. MacLean.

By his Attorneys *Frederick Hager,* Inventor
Garret Deamer & Co

UNITED STATES PATENT OFFICE.

FREDERICK HAGER, OF PORTLAND, OREGON.

PAPER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 654,248, dated July 24, 1900.

Application filed June 7, 1899. Serial No. 719,645. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK HAGER, a citizen of the United States, and a resident of Portland, county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Machines and Dies for Cutting Strips for Bookbinders' Use, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar characters of reference indicate corresponding parts.

This invention relates to improvements in machines and dies for cutting cardboard strips for bookbinders' use in the construction and manufacture of folding backs for blank or other books; and the object thereof is to provide an efficient means for simultaneously producing from a single sheet of cardboard a plurality of strips in parallel relative arrangement with each other.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of my improved machine. Fig. 2 is a cross-sectional elevation taken on the line 2 2 of Fig. 1. Fig. 3 is a side elevation of one of my improved cutting-dies and the hanger supporting the same. Fig. 4 is a vertical sectional elevation taken on the line 4 4 of Fig. 3, and Fig. 5 is a plan view illustrating a portion of the product of the machine.

In the practice of my invention I employ, primarily, a revoluble roll A, which is mounted upon a horizontal shaft *a*, journaled through oppositely-located uprights or standards B. To one end of this shaft is secured a driving-wheel C, which is adapted for attachment to a belt to supply power for operating the machine. The other end of the shaft *a* carries a belt-pulley D, which is connected to a pulley E of smaller diameter by means of a belt *e*. This latter pulley is connected to a shaft *f*, forming part of a roller F, which extends across the front of the machine. In frictional contact with this said roller and journaled above the same is a similar roller G. These rollers are used in conjunction for carrying the cut product from the machine, as will be hereinafter described.

As a means for cutting the strips of card-

board I employ a plurality of cutters H and I, which revolve independently of each other upon horizontal spindles of hangers *h* and *i*. These hangers are journaled loosely upon a stationary shaft J, and they are respectively provided with arched bearing-surfaces 1 and 2, which contact with feeding-screws K, and these screws are threaded through a swinging cross-beam L, which has a cylindrical projection *l* at each end thereof, these projections being journaled through the uprights B. This cross-beam is maintained normally in rigid upright position by means of a swinging link M, which engages a projecting pin *m*, extended from one of the uprights B, and by disengaging the said link from the pin *m* the said cross-beam is susceptible of being swung around to admit of adjusting the cutters and cutter-hangers when desired. The machine is provided across the front thereof with a scraper 3, which contacts with the roll A to maintain the same in a clean condition.

The cutting disks or wheels H are respectively provided with double cutting edges 4, extended around the major part of the periphery; but a depression 5 is provided for each wheel, so that they respectively cut a longitudinal slot of a length equaling the circumference of the cutting edges of the wheel and leave the stock intact at the point where the depressed portion 5 comes in contact therewith, thus admitting of the production of parallel strips arranged in connection with each other, as illustrated in Fig. 5 of the drawings. The alternate cutters I are each provided with a circumferential continuous cutting edge 6, whereby they entirely sever the stock as it is passed beneath them. To produce a clean cut and prevent portions of the severed stock from clogging the double cutting-wheels H, the peripheral groove 7 thereof is filled in with an annular strip 8, of flexible material, such as leather, rubber, &c. Secured to the under surface of each hanger *h* is a spring-actuated finger 9, which presses the severed fragments of stock downwardly after the cutting-wheels H cut the same, whereby the completed strips leave the machine in an entirely-finished condition ready for use.

In the operation of the device a sheet of cardboard or other stock is fed beneath the

cutting-disks between said disks and the roll A through the medium of the cross-plate 10 and the side guiding-strips 11. Rotary motion is then imparted to the machine and the
 5 cut strips are automatically fed to and between the discharge-rollers F and G over the cross guide-plate 12, the fingers 9 forcing the severed fragments downwardly through the recesses 13 in the said guide-plate 12 against
 10 the roll A, and said fragments are removed from the roll A by means of the scraper 3.

In the drawings the cutters are only shown extended part way across the machine; but it is obvious that a greater or less number of
 15 them may be employed, as desired. I may also use a continuous series of double cutters, if desirable, or I may arrange double and single cutters in any suitable combination.

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

1. A cutting-wheel having a double edge upon the major part of its periphery, and a depression upon the balance of said periph-
 25 ery, and an annular filling of flexible material between the two said cutting edges, substantially as shown and described.

2. In a machine for cutting parallel strips of cardboard a suitable framework, a rod J
 30 extending across the frame, a series of separate frames pivoted upon the rod, a plurality of single cutting-disks, a plurality of double cutting-disks journaled in said pivoted frames, and adjusting-screws by means of
 35 which the cutters are adjusted, combined

with a pivoted bar L through which the screws are made to pass, and a swinging link M for preventing the bar L from rotating until the cutters are to be adjusted, substantially as specified.

3. In a machine for cutting parallel cardboard strips, a series of double-edged cutters which have a groove extending partly around its circumference, a strip of suitable material placed in said groove, and extending out-
 45 wardly about flush with the cutting edges; each of the double-edged cutters being provided with a depression 5, substantially as set forth.

4. In a machine for cutting parallel strips
 50 of cardboard, a series of double-edged cutters, provided with depressions 5, a peripheral groove 7, and a strip 8 of flexible material placed in said groove, combined with a series of cutters having circumferential con-
 55 tinuous cutting edges 6, a slotted cross-plate 10 provided with a series of openings 13, corresponding to the cutters, spring-actuated fingers 9 which press the severed fragments of stock downwardly, and a roll A which acts
 60 in connection with the cutters, substantially as specified.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 29th day of May, 1899.

FREDERICK HAGER.

Witnesses:

H. W. WESCO,
 H. B. ADAMS.