

No. 614,460.

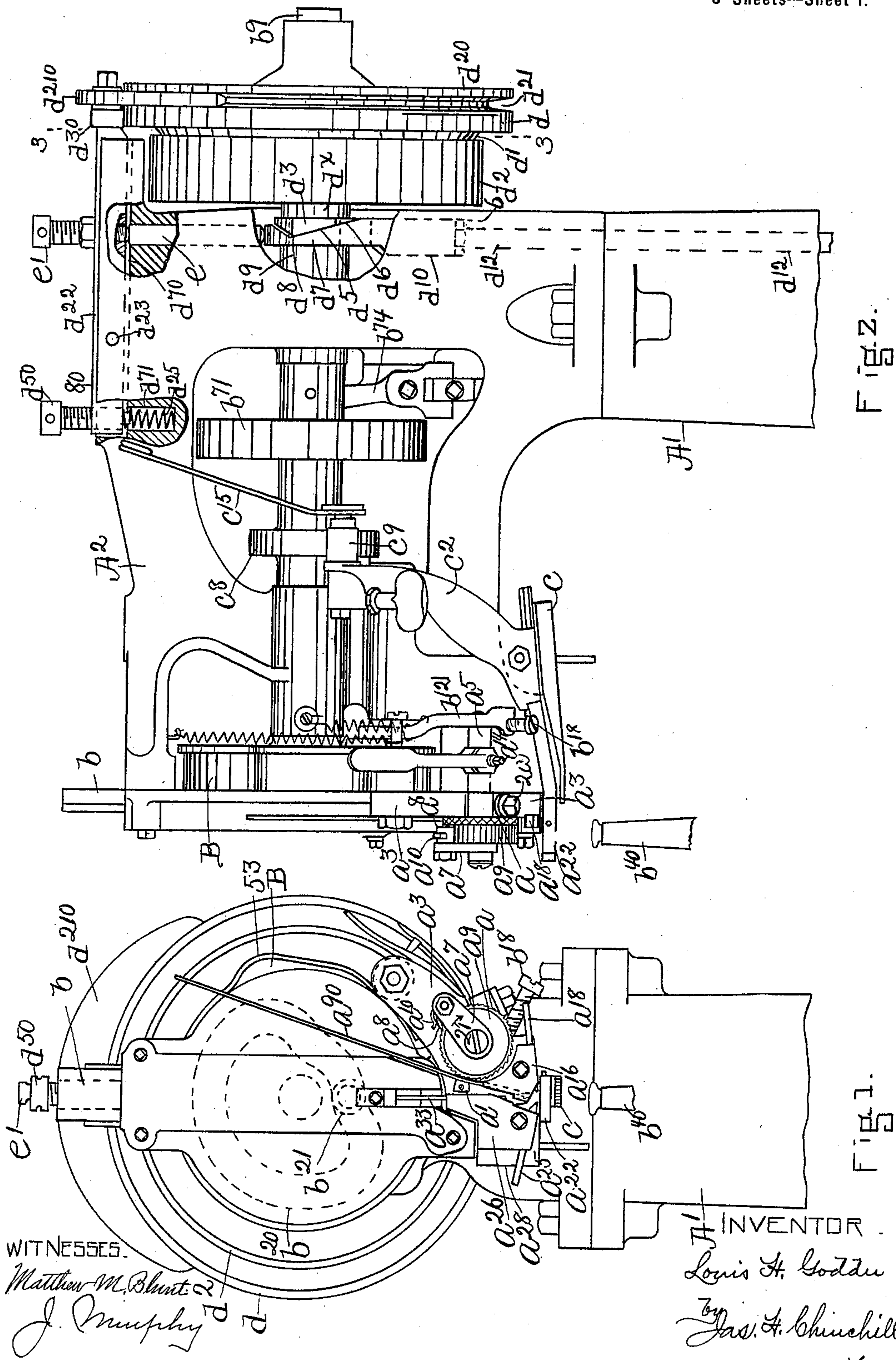
Patented Nov. 22, 1898.

L. H. GODDU.
BRAKE MECHANISM.

(Application filed Aug. 27, 1898.)

(No Model.)

3 Sheets—Sheet 1.



No. 614,460.

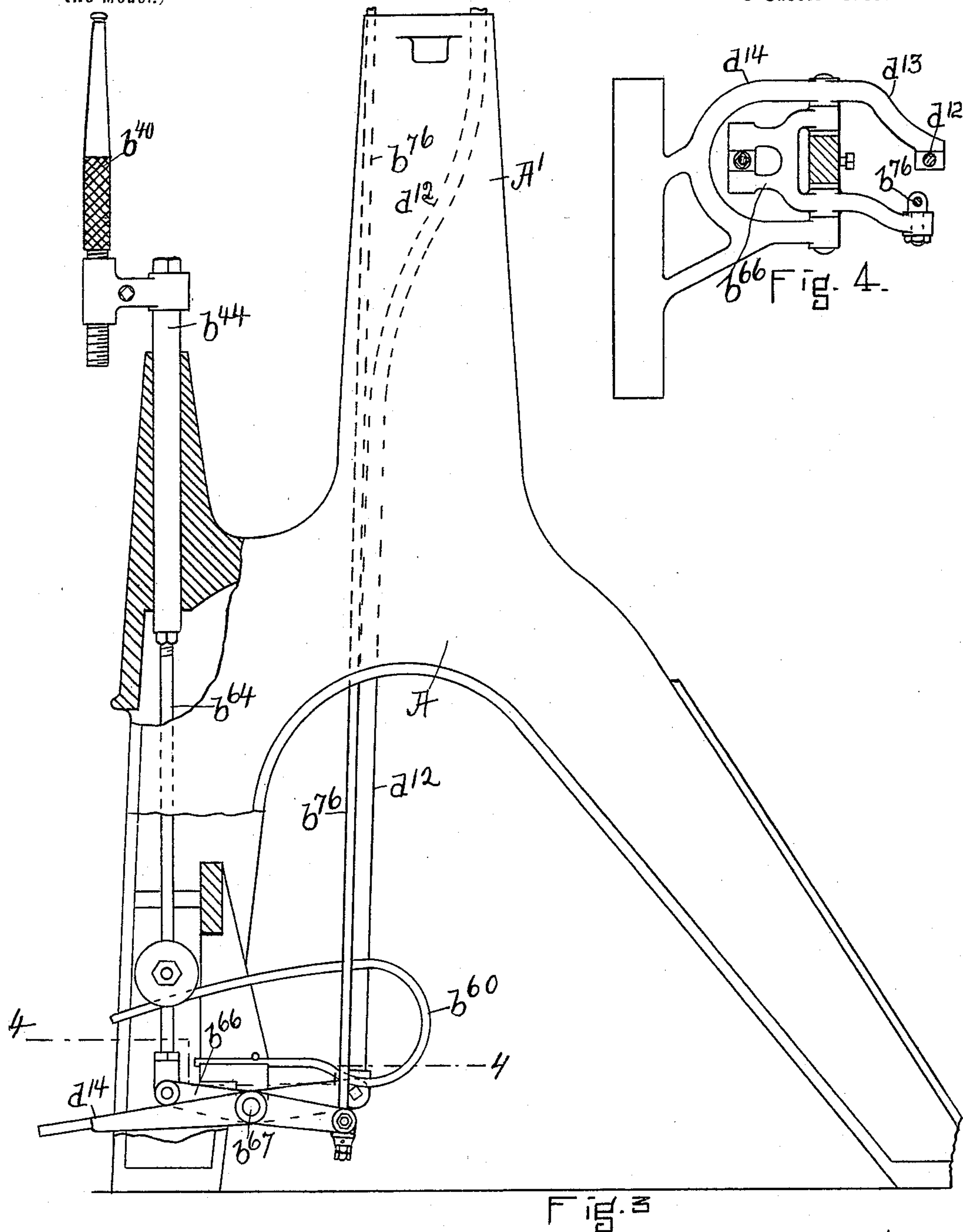
Patented Nov. 22, 1898.

L. H. GODDU.
BRAKE MECHANISM.

(Application filed Aug. 27, 1898.)

3 Sheets—Sheet 2.

(No Model.)



WITNESSES.

Matthew M. Blunt.
J. Murphy.

INVENTOR.
Louis H. Goddard
by
Jas. H. Churchill

ATTY

No. 614,460.

Patented Nov. 22, 1898.

L. H. GODDU.
BRAKE MECHANISM.

(Application filed Aug. 27, 1898.)

(No Model.)

3 Sheets—Sheet 3.

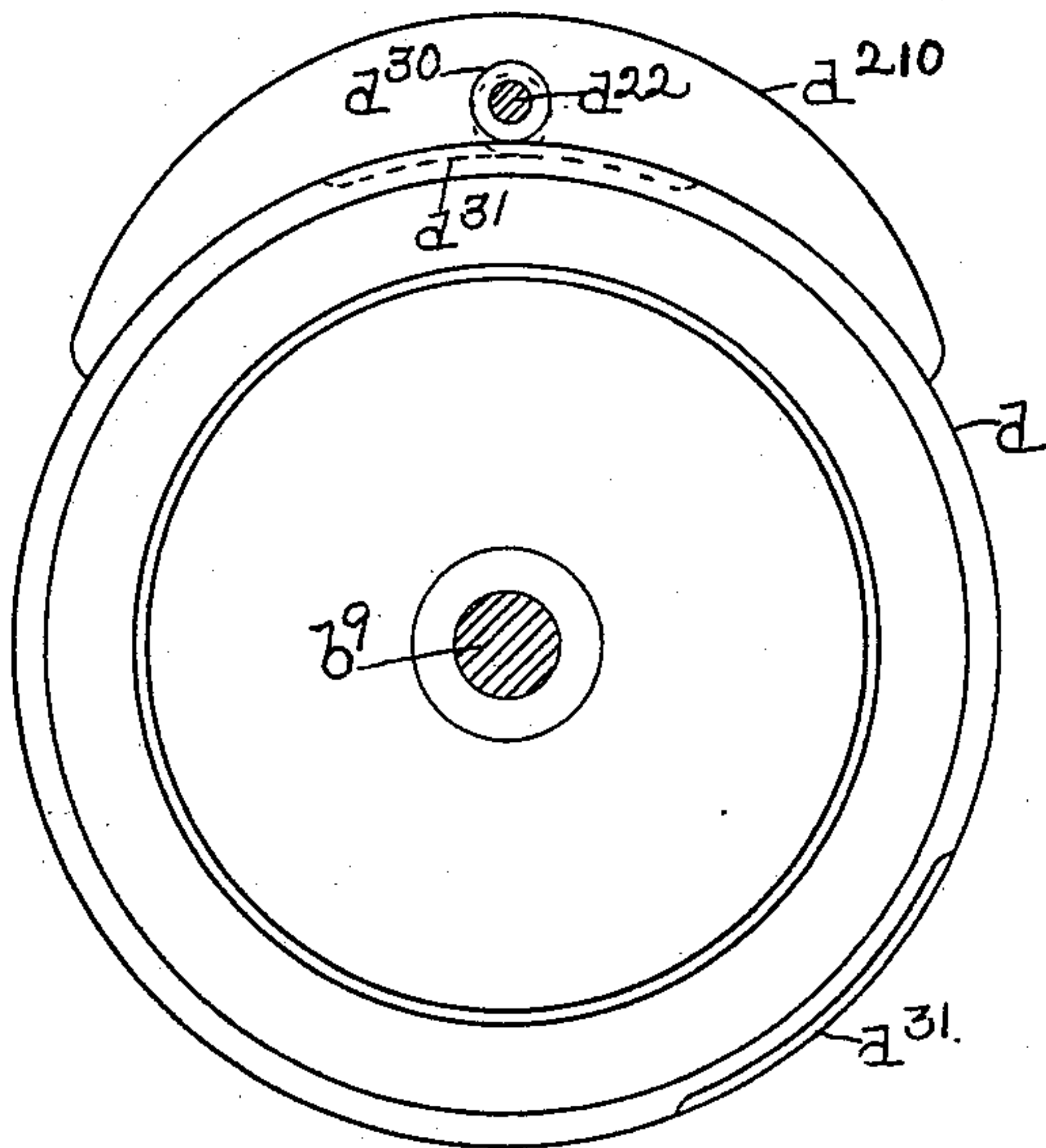


Fig. 5.

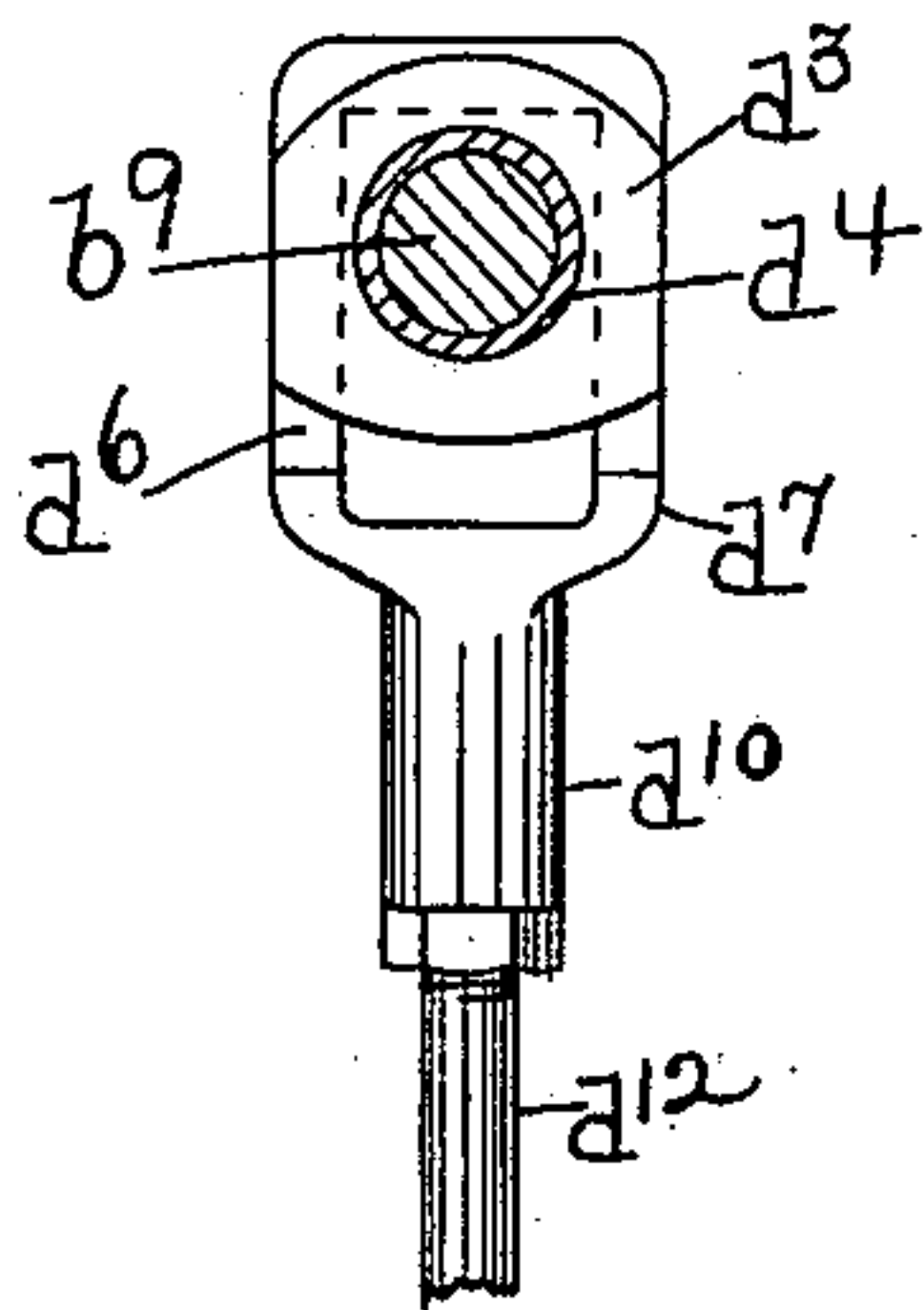


Fig. 6.

WITNESSES.

Matthew M. Blunt,
J. Murphy

INVENTOR.
Louis H. Goddu

by Jas. H. Churchill

ATT'Y.

UNITED STATES PATENT OFFICE.

LOUIS H. GODDU, OF WINCHESTER, MASSACHUSETTS.

BRAKE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 614,460, dated November 22, 1898.

Original application filed July 6, 1896, Serial No. 598,104. Divided and this application filed August 27, 1898. Serial No. 689,654. (No model.)

To all whom it may concern:

Be it known that I, LOUIS H. GODDU, a citizen of the United States, residing in Winchester, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Brake Mechanism, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention relates to a brake mechanism especially designed and adapted to be used on nailing-machines employed in the manufacture of boots and shoes and such as shown in United States Patent No. 583,046, granted to me May 25, 1897, wherein my improved brake mechanism is shown but not claimed, the present application being a division of the application upon which said patent was issued.

The invention has for its object to provide a simple and efficient brake mechanism whereby the shaft to which the brake is applied may be stopped substantially in an instant at a desired or predetermined point in its revolution, as will be described.

Figure 1 is a front elevation of a sufficient portion of a nailing-machine embodying this invention to enable it to be understood; Fig. 2, a side elevation of the machine shown in Fig. 1, with parts broken away; Fig. 3, a side elevation, with parts broken away, of the base of the machine; Fig. 4, a sectional detail on the line 4 4, Fig. 3; Fig. 5, a sectional detail on the line 5 5, Fig. 2, to be referred to; Fig. 6, a sectional detail on the line 6 6, Fig. 2, to be referred to.

The operating parts of the machine herein shown and the framework supporting them are the same as shown and described in the patent referred to, and as they form no part of my present invention I will but briefly refer to the same.

A is the base, A' the hollow post, and A² the head, of the machine.

b⁹ is the main shaft, B the cam-disk, provided with a cam projection on its rear face, which acts on the arm b¹²¹, secured to a shaft a⁵, eccentrically supported in a lever a³ and having an arm a⁷, provided with a pawl a⁸,

engaged by a spring a¹⁰ with the ratchet-wheel a⁹, fast to the feed-roll a, which co-operates with the block a' to feed the wire a⁹⁰ into a throat in the throat-plate a²².

The wire in the throat is severed by the cutters a¹⁸ a²⁵, secured in holders a¹⁶ a²⁶, the holder a²⁶ being stationary and secured to a block a²⁸ or stationary part of the machine and the holder a¹⁶ being secured to the lever a³, which is actuated by the cam projection 53 on the disk B to move cutter a¹⁸ toward the cutter a²⁵.

The cut portion of the wire in the throat is driven into the work supported on the horn b⁴⁰ by a driver a³³, attached to a driver-bar b, actuated by a cam-groove b²⁰ in the disk B, engaging the roller b²¹ on said driver-bar.

C is the work feed-bar carried by the lever c², operated in one direction to feed the work by the cam c⁸, acting on the roller c⁹, and returned to its normal position by the spring c¹⁵.

b⁴⁴ is the horn-shaft, connected by the rod b⁶⁴ to the lever b⁶⁶, joined by the rod b⁷⁶ to a lever b⁷⁴, operated by the cam b⁷¹ to positively lower the horn against the action of the spring b⁶⁰.

The parts of the machine herein shown and briefly described are, as above stated, the same as shown and fully described in the patent above referred to and to which reference may be had, so that a full detailed description of these parts and their operation is not deemed necessary in this present case.

The parts of the machine just referred to are operated from the main shaft b⁹ of the machine, and the rotation of the shaft may and preferably will be controlled by a clutch mechanism, as will now be described. As herein shown, the shaft b⁹ has fast on it a wheel or disk d, provided with a suitable friction-surface d', (see Fig. 2,) with which co-operates a pulley d², normally loose upon the shaft b⁹ and continuously revolved by a suitable belt (not herein shown) or in any other suitable manner. This construction of the clutch mechanism as thus far described may be of any usual or suitable make, such as now commonly employed; but in the present instance the loose pulley d² is positively engaged with the disk or wheel d by what I pre-

fer to designate as the "starting" device or mechanism for the machine, which starting device consists, as herein shown, of a collar or yoke d^3 (see Figs. 2 and 6) on the hub d^4 of the loose pulley d^2 , the said collar being provided with a beveled face d^5 , (see Fig. 2,) with which coöperates a beveled face d^6 of a yoke d^7 , encircling the hub d^4 of the loose pulley and having its rear face d^8 engaging, as herein shown, a bearing-hub d^9 , forming a stationary part of the machine. The yoke d^7 is provided, as herein shown, with a shank d^{10} , to which is connected in any suitable manner the upper end of a link d^{12} , extended down through the hollow upright A' and connected at its lower end to an arm d^{13} of a foot treadle or lever d^{14} , (see Figs. 3 and 4,) the lever d^{14} being mounted upon the shaft b^6 .

The operation of the starting mechanism may be briefly described as follows: The operator depresses the treadle d^{14} , which movement elevates the arm d^{13} , the link d^{12} , and the yoke d^7 , thereby moving the beveled face d^6 of the said yoke upward with relation to the beveled face d^5 of the collar d^3 and into substantially the position shown in Fig. 2, the movement of the yoke d^7 being in a vertical plane by reason of its abutting against the hub d^9 , and consequently as the yoke is moved upward its beveled face d^6 forces the beveled collar d^3 against a collar or enlargement d^x on the hub of the loose pulley d^2 and carries the said loose pulley into engagement with the friction-surface d' of the disk or wheel d , thereby rendering the constantly-driven pulley d^2 fast on the shaft d^9 , and thereby setting the said shaft in rotation when released, as will be described.

In order to stop or arrest the shaft b^9 in its rotation substantially in an instant when the loose pulley d^2 is disengaged from the wheel or disk d , I have provided a novel stopping or brake mechanism consisting, essentially, as herein shown, of a brake-wheel d^{20} , preferably provided with a substantially V-shaped annular groove d^{21} and herein shown as forming part of the disk or wheel d . The brake-wheel d^{20} has coöperating with it a brake-shoe d^{210} , fastened on the end of a lever d^{22} , extended into a slot d^{70} (see Fig. 2) in the upper portion of the head A^2 , as herein shown, and pivoted to the said head, as at d^{23} , the said lever having its shorter or rear arm 80 upwardly spring-pressed, so as to normally depress the long arm of the lever d^{22} and engage the brake-shoe d^{210} with the brake-wheel d^{20} when the front end of the lever d^{22} is lowered by the spring d^{25} , (shown in Fig. 2,) which spring is located within a suitable socket d^{71} in the head A^2 .

The movement of the front end of the lever just described may be automatically controlled, so as to enable the operating parts to perform their work, by means of the brake-wheel d , with which coöperates, as herein shown, a roller d^{30} , loosely mounted on the front end of the lever d^{22} , the disk or wheel

d being of a sufficiently large diameter to elevate the front end of the brake-lever d^{22} when the full portion of the periphery is in engagement with the roller d^{30} and keep the brake-shoe disengaged from the brake-wheel, and in order to permit of the movement of the brake-lever d^{22} by its spring d^{25} , so as to engage the brake-shoe d^{210} with the brake-wheel d , the said wheel d on its periphery is provided with a cam recess, notch, or depression d^{31} , (see Fig. 5,) into which the roller d^{30} is adapted to drop a sufficient distance to engage the brake-shoe d^{210} with the groove d^{21} in the brake-wheel d^{20} , and thereby automatically stop the rotation of the shaft d^9 and the operation of the machine at the proper time and substantially in an instant.

The brake-lever d^{22} may be positively operated to release the brake-shoe d^{210} from engagement with the brake-wheel, and this result may be effected by a releasing device under control of the operator and which is herein shown as a pin or rod e , extended through a suitable hole in the head A^2 (see Fig. 2) and resting upon the yoke d^7 , the said rod or pin being adapted to have its upper end brought in contact with the brake-lever d^{22} to turn said lever on its pivot and lift the roll d^{30} out of the recess or depression d^{31} in the brake-wheel, and thereby permit the brake-wheel and the shaft b^9 to revolve. The upward movement of the releasing pin or rod e is effected, as herein shown, by the yoke d^7 when the foot-treadle d^{14} is depressed by the operator. The pin or rod e may be lowered, as in the present instance, by gravity. To compensate for wear in the brake-shoe d^{210} and consequent change in the position of the lever d^{22} , an adjustable device or stop on the lever d^{22} is provided, which is herein shown as a screw e' , extended through the lever d^{22} in line with the release pin or rod e , for it will be seen that as the release-pin has a fixed limit to its upward movement, which range of movement remains the same, the screw e' is adjusted so as to engage the upper end of the pin or rod e irrespective of the change of position of the lever d^{22} due to wear upon the brake-shoe.

The recess or depression d^{31} in the periphery of the brake-wheel is made of such depth as will permit the roll d^{30} to drop into it without interfering with the engagement of the shoe with its wheel d^{20} . When the brake-shoe is in engagement with its wheel, as represented in Fig. 1, the loose pulley d^2 is withdrawn from engagement with the wheel d , which may be effected in any usual or suitable manner. The recess d^{31} in the wheel d may and preferably will be longer than the diameter of the friction-roll d^{30} , so as to allow for a certain amount of movement or rotation of the brake-wheel due to its momentum after the engagement of the brake-shoe with the said wheel.

The pressure or force with which the brake-shoe d^{21} is applied may be regulated as de-

sired, which regulation may be effected in the present instance by means of an adjusting-screw d^{50} , extended through the rear end of the lever and acting upon the spring d^{25} .

5 The machine may be automatically stopped at each revolution of the shaft b^9 by the operator removing his foot from the treadle d^{14} ; but if it is desired to continue the operation of the machine the operator will maintain his
10 foot on the treadle d^{14} , and thereby keep the releasing pin or device e in engagement with the brake-lever d^{22} , and consequently hold the brake-shoe d^{210} out of engagement with the
15 periphery of the disk or wheel d is passing by or under the roller d^{80} .

I claim—

1. The combination with a rotating shaft, of a clutch mechanism provided with a ver-
20 tically-movable member, a treadle, means connecting said movable clutch member and treadle, a brake-wheel fast on said shaft, a brake-lever pivoted above said shaft and extended substantially parallel therewith, a
25 brake-shoe fast on the brake-lever and coöperating with said brake-wheel, means interposed between said movable clutch member and said brake-lever and actuated by said clutch member to disengage the brake-shoe
30 from the said brake-wheel, and means to prevent the reengagement of said shoe with said brake-wheel during a portion of the revolution of said shaft and to permit said reengagement during another portion of the revolution of said shaft, substantially as de-
35 scribed.

2. The combination of the following instrumentalities, viz: a shaft, a brake-wheel fast thereon, the brake-lever d^{22} pivoted to the
40 frame of the machine, a brake-shoe attached

to said lever, a cam-disk movable with the brake-wheel and provided with a recess or depression into which a projection on the lever d^{22} is adapted to enter to permit the brake-shoe to engage the brake-wheel, substantially
45 as described.

3. The combination of the following instrumentalities, viz: a shaft, a brake-wheel fast thereon, the brake-lever d^{22} pivoted to the frame of the machine, a brake-shoe attached
50 to said lever, a cam-disk movable with the brake-wheel and provided with a recess or depression into which a projection on the lever d^{22} is adapted to enter to permit the brake-shoe to engage the brake-wheel, and a releas-
55 ing device acting on the lever d^{22} to lift its projection out of the said recess or depression, substantially as described.

4. The combination of the following instrumentalities, viz: a shaft, a brake-wheel fast
60 on said shaft and provided with a circumferential groove and with a recess or depression in its circumference, a pivoted brake-lever provided with a brake-shoe to enter said circumferential groove and with a projection to
65 engage the circumference of the brake-wheel and hold the brake-shoe out of engagement with the brake-wheel and adapted to enter said circumferential recess to permit said brake-shoe to engage said brake-wheel, and
70 means to move said brake-lever in opposite directions, substantially as described.

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

LOUIS H. GODDU.

Witnesses:

E. B. WARREN,
E. E. HASTINGS.