

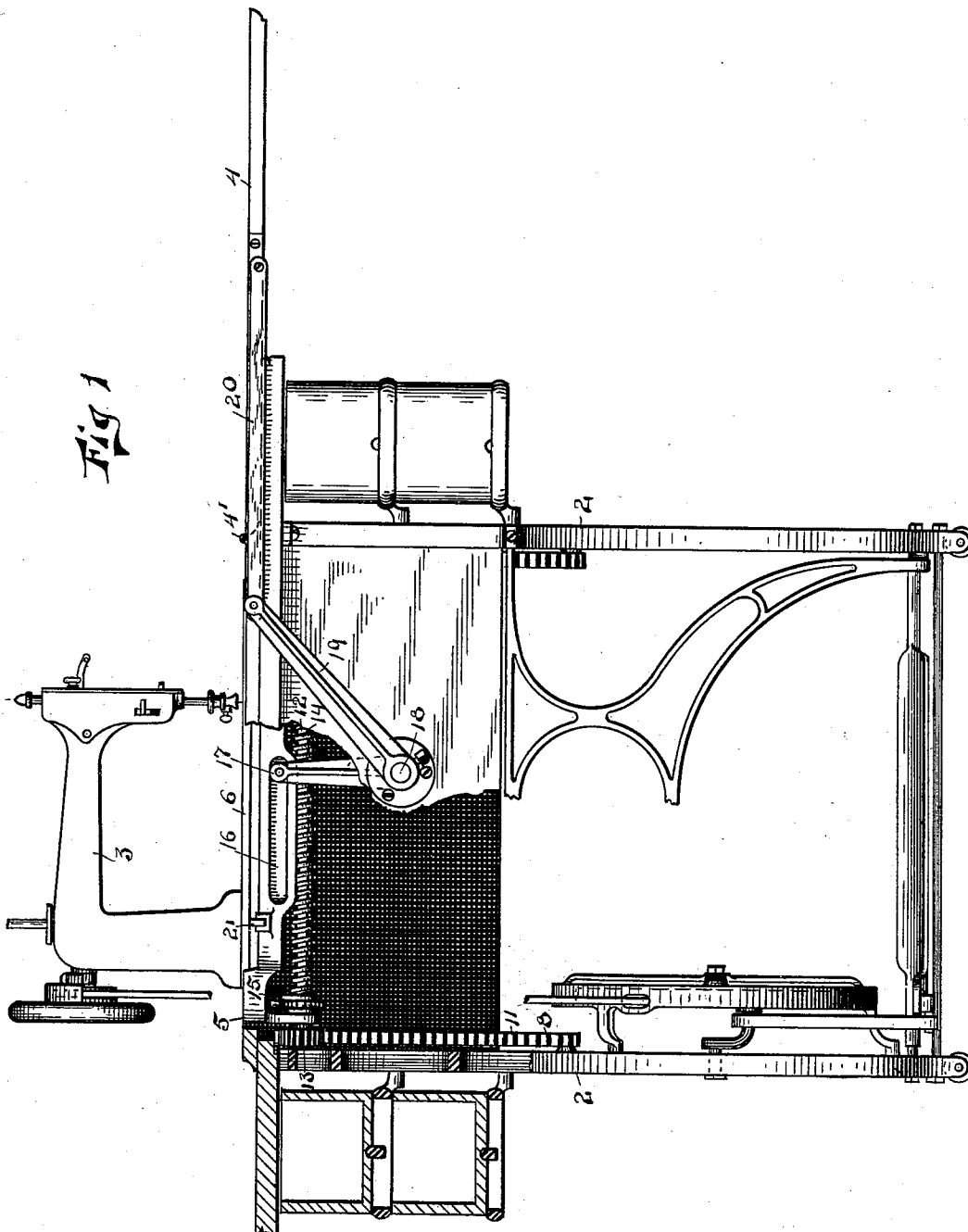
(No Model.)

4 Sheets—Sheet 1.

W. A. MACK.
SEWING MACHINE TABLE.

No. 508,031.

Patented Nov. 7, 1893.



Witnesses

R.B. Moser.

Georgia Schaeffer

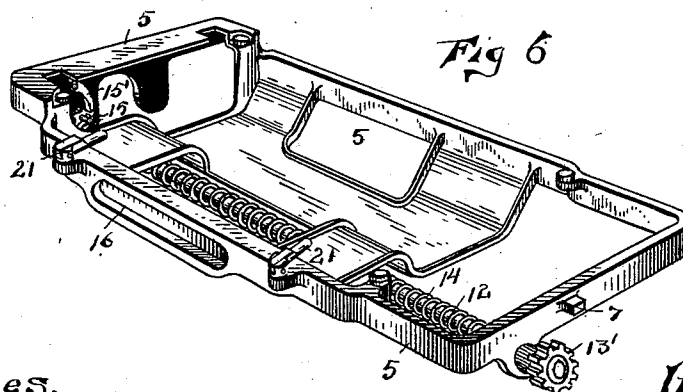
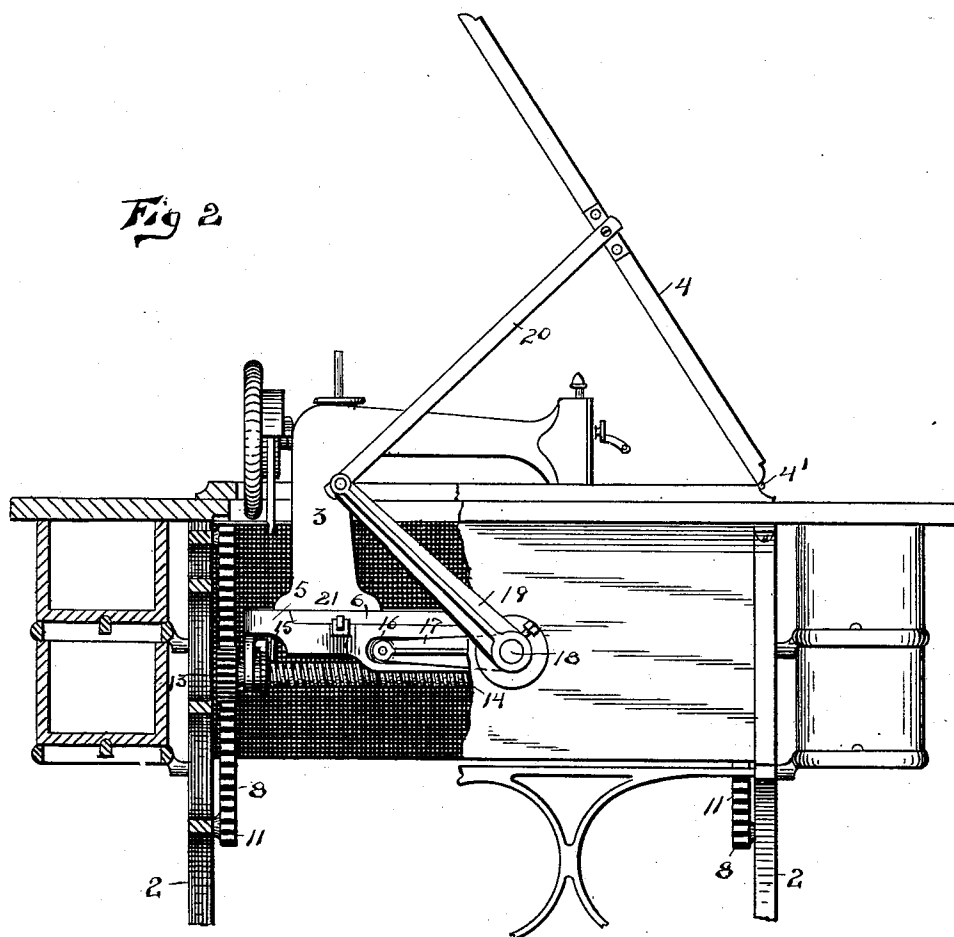
By H. F. Fisher
Attorney

Inventor
William A. Mack

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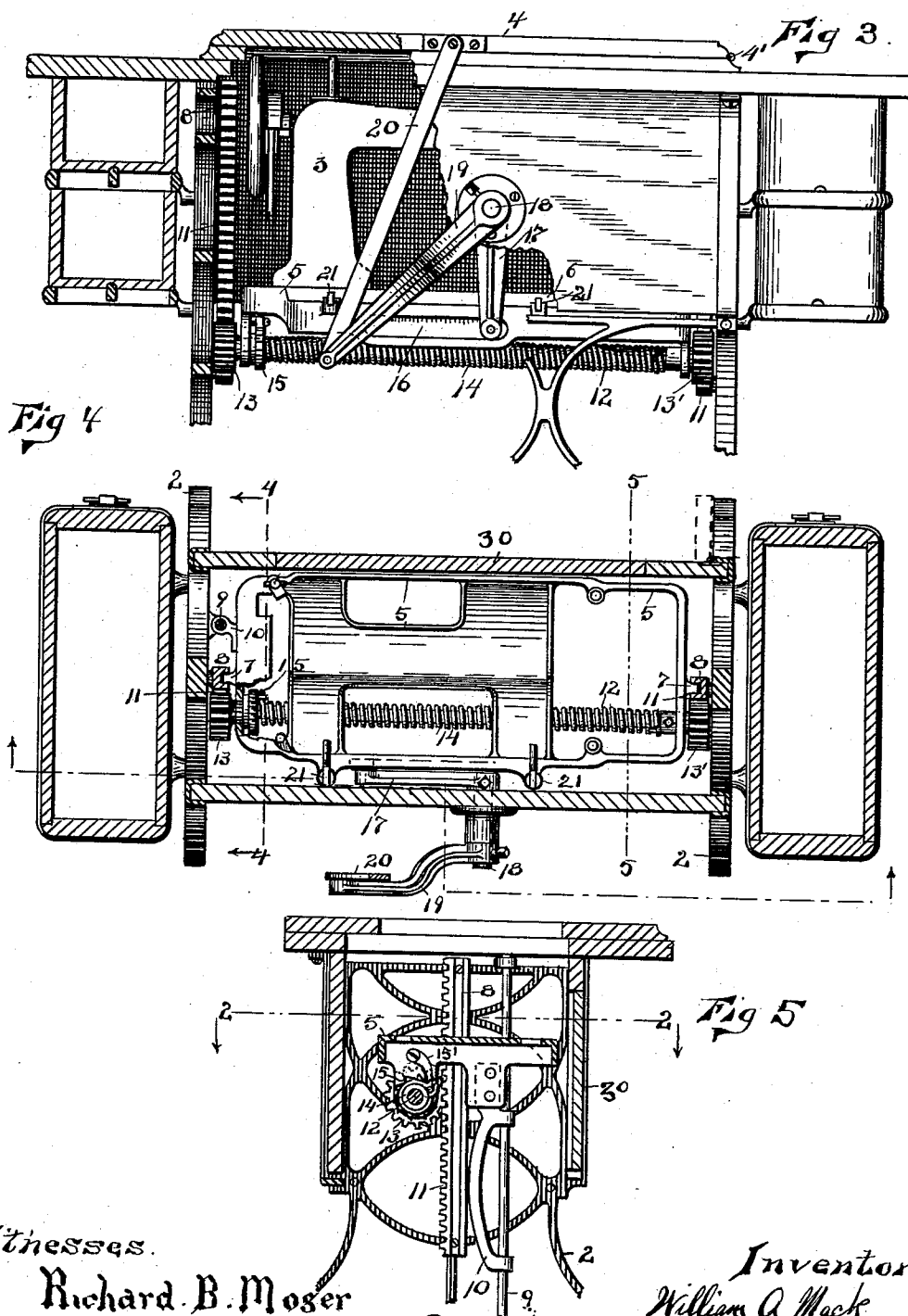
(No Model.)

4 Sheets—Sheet 3.

W. A. MACK.
SEWING MACHINE TABLE.

No. 508,031.

Patented Nov. 7, 1893.



Witnesses.

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WASHINGTON, D. C.

(No Model.)

4 Sheets—Sheet 4.

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SEWING MACHINE TABLE.

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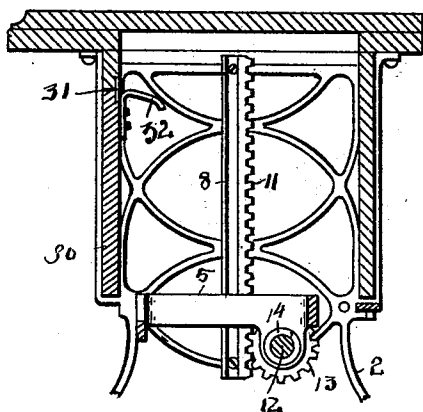


Fig 7.

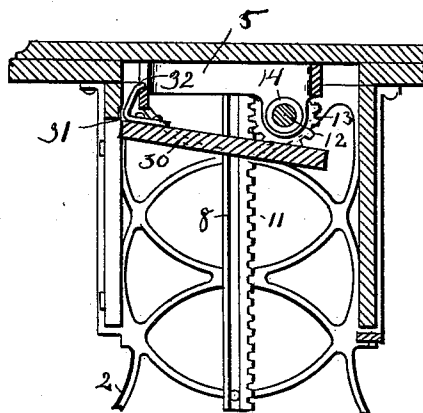
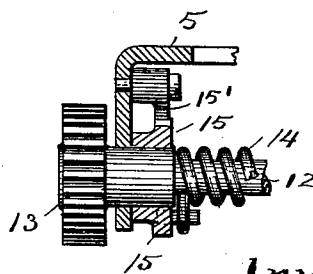
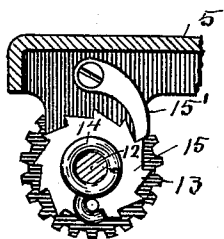


Fig 8.

Fig 9.

Fig 10.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM A. MACK, OF CLEVELAND, OHIO.

SEWING-MACHINE TABLE.

SPECIFICATION forming part of Letters Patent No. 508,031, dated November 7, 1893.

Application filed January 28, 1893. Serial No. 459,990. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. MACK, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Sewing-Machine Tables; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in stands for sewing or other machines, and the object of the invention, in a sewing machine, is to provide means whereby the machine may be raised into working position, and lowered out of sight and covered when not in use, by simply turning the top lid or cover to open or closed position, and the parts are so constructed and arranged that when the machine is in working position it is firmly supported in its usual relation to the other parts, and when it is lowered it is removed bodily out of the way within the cabinet and is wholly concealed and covered.

To these ends the invention consists in the construction and combination of parts substantially as shown and described and particularly pointed out the claims.

In the accompanying drawings, Figure 1 is a rear elevation of my improved stand, with a portion of the cabinet or case broken away at the left to disclose the construction and arrangement of internal parts. In the view the parts are in working position. Fig. 2 is a corresponding view to Fig. 1, but showing the main arm as in a half way raised or lowered position. Fig. 3 is a rear elevation corresponding substantially to Figs. 1 and 2, with the main arm carried down to its position of rest within the cabinet and the lid down on the top of the machine. Fig. 4 is a horizontal sectional view on a line corresponding to line 2, 2, Fig. 5, but with the machine removed and showing the frame or base upon which the machine is supported. Fig. 5 is a cross section on a line corresponding to 4, 4, Fig. 4. Fig. 6 is a perspective view of the movable horizontal frame or base which supports the machine. Figs. 7 and 8 are cross sections on line 5, 5, Fig. 4, and are designed to show the positions of the door when raised

and lowered, respectively, as hereinafter more fully described. Figs. 9 and 10 are views of the pawl and ratchet mechanism for tightening the tension of the lift spring.

In the drawings, 2 represents the supporting frame. It will be observed that the said frame is so constructed that it provides a chamber or space within the same into which the machine, including the main arm 3, can be lowered out of the way when the machine is not at work, and from which it can be raised into working position by merely turning back the top lid or cover 4. Thus, in Fig. 3 we see the machine down within the cabinet and the cabinet closed over the top by the lid or cover 4. In Fig. 2 the parts are in position as when the lid is half way open, and in Fig. 1 the lid is fully open and the machine is up in working position.

In Fig. 6 I show a frame or base 5, which occupies a horizontal position within the main frame and is adapted to be raised and lowered by sliding upon suitable guides rigid with or forming a part of said frame, and serves as a rest and support for the machine. In the stand as here shown, the frame 5 is provided at its ends with tongues 7, which slide in grooved guide bars or pieces 8, fixed rigidly to the main frame 2, and serves to steady frame 5 in its up and down movements. Then in order to further steady the said movable frame 5 horizontally and to overcome any possible tendency to dip or turn laterally, I employ at one end an additional support in the form of a rod 9, fixed to the main frame 2 at its ends, and a yoke 10 rigidly fixed to the frame 5 and adapted to slide on said rod 9 the same as the tongues 7 slide in the grooves or channels of the upright guide pieces 8. There might be a corresponding arrangement to parts 9 and 10 at the opposite end of the frame 5 if it were deemed necessary. Now, in order that the raising and lowering of the parts may be effected as desired, I provide a vertical rack 11 on one side of the grooved or channeled bars 8, and a shaft 12 in suitable bearings upon the movable frame 5. This shaft has a pinion 13 fixed on each end to engage said racks and travel therein, and a closely wound wire spring 14 encircles the shaft and is fixed at one end to the hub of the ratchet wheel 15,

sleeved on said shaft, and at the other end is made rigid with the shaft. A pawl 15', pivoted on the supporting frame 5, engages and locks this ratchet. This construction enables me to adjust the tension of the spring 14 so as to give it greater or less strength, as may be needed, without removing the parts. The said spring 14 is so wound about the shaft 12 that it will assist in turning said shaft to raise the machine and offer resistance to prevent abrupt lowering of the machine, and it may be so adjusted in tension as to practically do all the lifting, and in like manner also counter-balance the said parts when they are lowered.

The frame 5 has a longitudinal channel, groove or slot 16 at one side, Fig. 6, in which the extremity of the inner crank arm 17 is adapted to work. This arm is rigid with a spindle 18, supported centrally in the rear of the cabinet, Fig. 4, and an operating crank 19 is rigid upon this spindle on the outside of the cabinet. These inner and outer cranks or arms 17 and 19, respectively, thus made rigid with one another through the spindle 18, occupy different relations to said spindle, so that the operating crank 19 will always be in the best position to exert its leverage when the machine is being raised or lowered. A link 20 connects arm 19 with the lid or cover 4, about midway of its length as clearly shown in Fig. 2, and the movements of the said lid from an open to a closed position, or the reverse, serve to reverse the positions of the machine. It will also be noticed that in the movements of the machine from its position of rest to its position of work, the arm 17 describes exactly a half circle, and that when it is down said arm hangs in vertical lines and the parts resting thereon can go no lower. In like manner when the said arm 17 is in its raised position, it is again in vertical lines and the machine is held firmly in a working position. It will be noticed furthermore that the main arm 3 and its base are not only thus raised to working position and held firmly and rigidly therein, but that said parts are locked immovably and firmly in this position. This is effected through the arm 19, the link 20, and the lid 4, to which said link is attached. The effectiveness of this locking is clearly seen in Fig. 1, where the lid is shown as open and the arm 17 cannot possibly move in any direction. Said arm 17 preferably has an anti-friction roller in the slot or channel 16 to relieve the arm of friction. When the main arm is up or down, the crank arm is at the inner extremity of slot 16 in the movable frame 5, and when it is in a half way position, as in Fig. 2, the said crank is at the outer extremity of said slot. All this adjusting mechanism is at the rear of the stand and wholly out of the way of the operator.

With this construction the movements of the machine from one position to the other are so easy that a little child can do the work, and all this without noise or friction or incon-

venience of any kind. When the lid 4 is raised and opened, which may be done with as much ease, at least, as if there were no weight attached to it, the machine is in position and readiness for use, and after use, when the said lid is turned down or closed, the machine is carried into the space beneath the lid and everything is out of the way.

The cabinet or casing of the stand incloses the machine upon its ends and at rear, and at the front is a hanging or swinging door 30, with horizontal hinges 31 and serving to close the front when the parts are down out of working position, as seen in Fig. 7. On the back of this door at or near its top is a hook or projection 32, long enough to engage the frame 5 when said frame is being raised. It follows that when said frame is carried up to position as seen in Figs. 1 and 8, the said door will be automatically swung back out of the way of the operator and into a substantially horizontal position. When said frame 5 is lowered, the door will resume its closed position, as in Fig. 7. In all this the operator does not touch the door and the entire operation of opening or closing is automatic.

The pinion 13 at the right of the movable frame, Figs. 3 and 4, is free to be turned upon the shaft 12 and the other pinion 13' is fixed rigidly upon the shaft. By having one pinion rotatable I am enabled to set both pinions to mesh exactly alike in corresponding teeth in the two racks, and thereby cause the frame 5 to be held perfectly horizontal in all its up and down movements, and both ends thereof to travel with the same speed at the same elevation. When pinion 13' is adjusted it is held by set screw or other suitable means on shaft 12.

It will be observed that the cover 4 is pivoted at 4', and that the table or top of the stand 4 extends outward some distance beyond the said pivot point, say about one-fourth the length of said cover, and thus forms a support for the said cover when the same is opened, as in Fig. 1.

Obviously, the mechanism here shown and described in connection with a sewing machine is not necessarily limited in its use to such a machine, and may be used in connection with typewriters or other machines where similar operations are desirable.

It will be noticed that the crank arm—17—describes an exact half circle in its movement from one limit of its operation to the other, and that when it is up in vertical position, as shown in Fig. 1, it alone serves to hold the movable frame in its raised position; and when it is turned down, as in Fig. 3, it is in exact line with its former position and is again vertical and serves here to hold the said frame and head down for shipment. It is therefore a supporting and locking arm in both of its working positions.

Having thus described my invention, what I claim is—

1. The stand having vertical guides and

racks, in combination with the movable frame, a shaft thereon with a spring wound about the same and pinions on said shaft engaging said racks, a crank arm engaging said movable frame at one side and a rigid lever with said arm, a cover for the stand and a link connecting said cover with said lever, whereby when the cover is opened the machine is raised into position for use, substantially as set forth.

2. The cabinet having vertical parallel guide-ways and racks, a supporting frame movable up and down in said guide-ways and carrying pinions which work in said racks, a cover hinged to fold over the top of the cabinet and link and lever mechanism having a fixed pivot on the edge of said cover between its ends and working on the side of the said supporting frame, whereby the said frame is raised or lowered when the said cover is opened or closed, substantially as set forth.

3. The stand having the racks at its ends and the movable frame carrying pinions meshing in said racks, in combination with a crank arm pivoted in the back of said stand and engaging the rear of said movable frame, a lever to actuate said arm, a pivoted cover for the stand, and a link connecting said cover with said lever, whereby the said movable frame is raised and lowered by opening or closing the said cover, substantially as set forth.

4. The cabinet having parallel vertical guide ways and racks at its ends, in combination with the movable frame, the shaft on said frame having pinions on its ends outside the frame meshing in said racks, and a spring about said shaft rigid therewith at one end and connected to a ratchet wheel on said shaft at the other end, said ratchet wheel being free to turn on said shaft, and a pawl on the said frame to engage said wheel, substantially as set forth.

5. A stand for machines having a door at its front supported on horizontal hinges hung to swing the door inward, in combination with a vertically movable frame in said stand wholly disconnected from said door and a

rigid projection on said door above said frame and projecting into the path of the frame, whereby when the frame is raised the said projection is engaged and the door raised, substantially as set forth.

6. The stand having vertical guides and racks at its ends, the movable frame within said stand constructed to travel in said guides, and a shaft on said frame having pinions at its ends to mesh in said racks, in combination with the mechanism to raise and lower said frame consisting of a lever—17—having movable engagement with the edge and provided with a spindle—18—supported centrally in the rear of the stand, the arm—19—fixed on said spindle outside the stand, the pivoted cover for the stand, and the link—20—connecting the said arm and cover, substantially as set forth.

7. In a sewing machine stand the frame thereof, a door across the front of the machine suspended on horizontal hinges constructed to swing inward, and a rigid hook-shaped projection on the back of the door near its upper edge, in combination with a movable frame in the machine behind said door and connections to lift the said frame and engage the said projection, whereby when the frame is raised the door is automatically opened, substantially as set forth.

8. The cabinet having parallel vertical guide-ways, a movable frame confined in said guide-ways and a crank arm pivoted in the cabinet and the said frame, and supporting and locking the said frame in raised or lowered position, said arm constructed and arranged to stand vertically when the said frame is supported and locked in raised position, and to hang vertically when said frame is supported in its lowered position, substantially as set forth.

Witness my hand to the foregoing specification this 2d day of December, 1892.

WILLIAM A. MACK.

Witnesses:

H. T. FISHER,
GEORGIA SCHAEFFER.