No. 7,296. PATENTED APR. 16, 1850.

D. M. SMITH.
SEWING MACHINE.

2 SHEETS—SHEET 1.

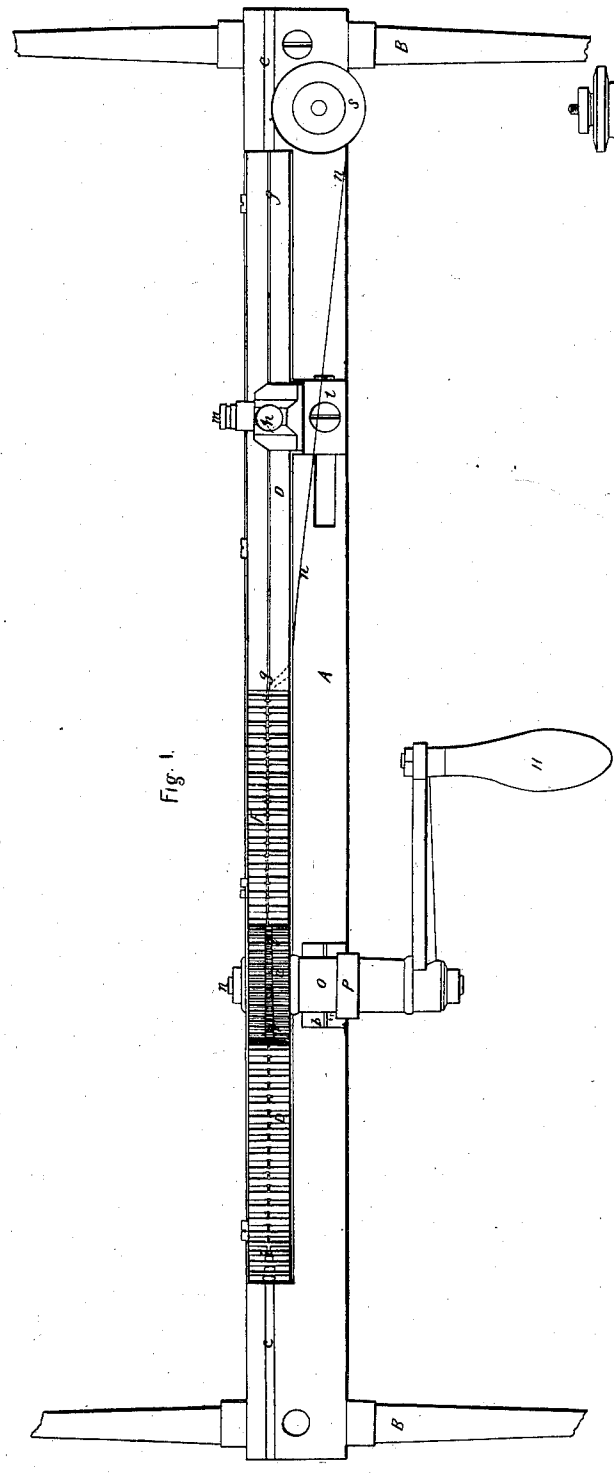

Fig. 1.

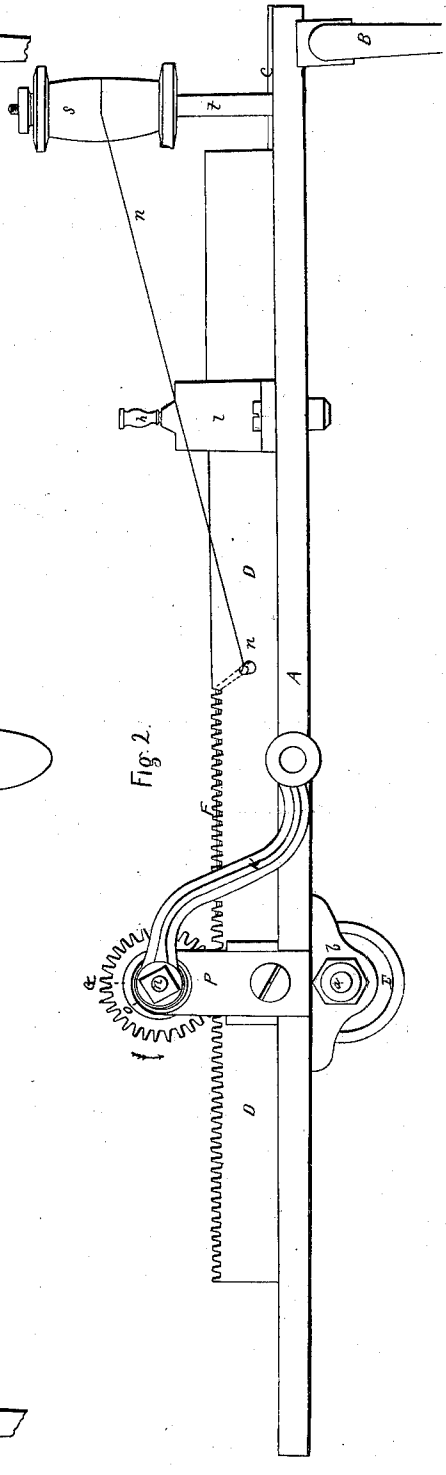

Fig. 2.

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Fig. 3.

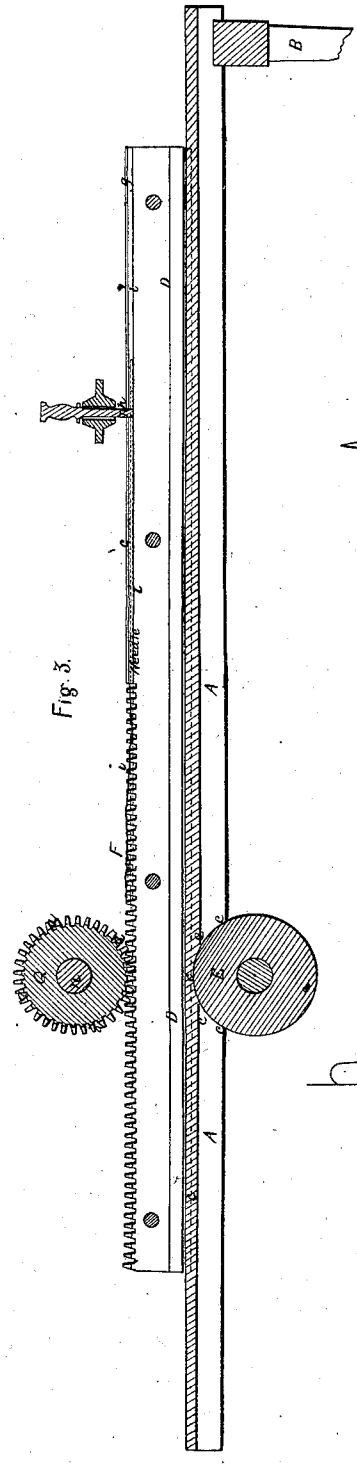


Fig. 5

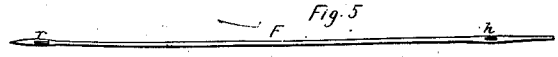
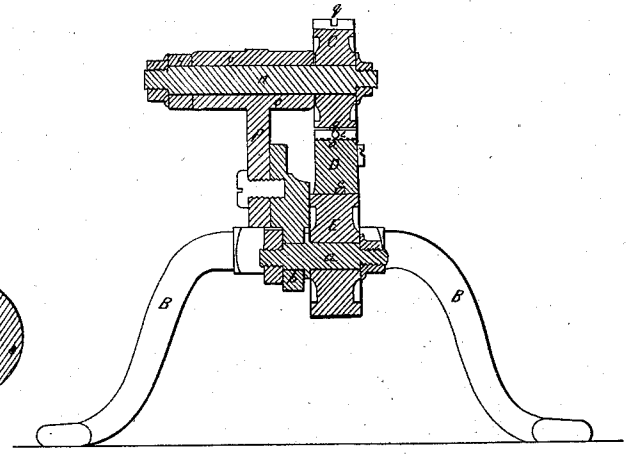


Fig. 4.



UNITED STATES PATENT OFFICE.

THOS. CHADBOURNE, ASSIGNEE OF D. M. SMITH, OF SPRINGFIELD, VERMONT.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **7,296**, dated April 16, 1850.

To all whom it may concern:

Be it known that I, DAVID M. SMITH, of Springfield, in the county of Windsor and State of Vermont, have invented a new and useful or Improved Sewing-Machine; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a top view of my said machine. Fig. 2 is a side elevation of it. Fig. 3 is a central, vertical, and longitudinal section of it. Fig. 4 is a transverse section of it, taken through the rack and pinion. Fig. 5 is a top view of the needle.

In the said figures, A represents a long horizotal bench or bar, supported on legs at its ends, as seen at B B. A tongue or guide rail, C, is made to extend from end to end of it, to project somewhat above its top surface, and to enter a corresponding groove formed lengthwise of a sliding rack-bar, D, the same serving to guide the said rack-bar and preserve its correct position during its movements. The said rack-bar rests and moves on a friction-roller, E, which is placed underneath the bench A, and has its axle *a* supported by a strut, *b*, extending down from the under side of the bench. A recess or space, *c*, is cut or formed through the bar A, the same being to enable the said friction-roller to pass up through the bar A, and so that the slide or rack D may rest on its periphery. The rack-bar is formed with teeth on its upper surface for about half of its length. Through the teeth and lengthwise of and throughout the bar a long passage or space, *i*, is made for the reception of the needle F. This passage is open at top, or, in other words, the bar has a narrow slot, *g*, extending down from the middle of its top surface into the above-mentioned passage, the said slot being intended not only to receive a flat or thin pin, *h*, which is passed down into it and through the rear eye, *k*, of the needle F, but to allow of the movements of the rack-bar while the said needle and its holdfast or pin are stationary. The said holdfast *h* is supported by an arm or strut, *l*, which extends upward from the bench A, and over the upper surface of the rack-bar, and has a set-screw, *m*, applied to it, so as to hold or fasten the pin *h* to it.

A small gear-wheel or pinion, G, operates in connection with the rack of teeth of the rack-bar. It is placed directly over the friction-roller E, and is fixed upon a horizontal axle, *n*, which passes through and revolves in a bearing-tube, *o*, supported by a standard, *p*, made to extend up from the bench A. The pinion and its shaft may be revolved by a person applying his hand to and turning a crank, H, which is fixed on one end of a shaft, *n*.

The periphery of the pinion G has a groove, *q*, cut down into it and entirely around it and centrally, so as to admit the teeth of the pinion to pass down by or embrace the needle on its sides. Besides an eye at the rear end of the needle, as above stated, the needle is provided with another eye, *r*, which passes through it very near to the point or front end of it, as seen in Fig. 5. It is through this latter eye that one end of the thread with which the cloth is to be sewed is passed, the said thread being wound upon a revoluble bobbin, *s*, placed upon a stationary stand or support, *t*.

When cloth to be sewed is placed upon the top surface of the teeth of the rack-bar, and the pinion is put in motion in the direction denoted by the arrow thereon in Fig. 2, the said cloth will be pinched between the teeth of the pinion and rack-bar and corrugated thereby. The point of the needle should stand in such close proximity with those teeth of the pinion and rack-bar which may be in action that the corrugations or doubles, as fast as they are formed, may be forced onto the needle; or, in other words, the point of the needle may be made to successively pass through them. The needle in thus passing through the cloth carries the thread with it, the thread being denoted in the drawings by a red line, as seen at *u*. As soon as the whole length of the cloth has passed upon the needle, we start the rack-bar a little, and so as to enable us to seize or take hold of the end of the thread, which was previously passed through the needle. By holding on to the end of the thread while we give a retrograde movement to the pinion and rack-bar, we cause the cloth to be drawn off the needle, and the thread to remain in the cloth and sewed therein with a running stitch. We next draw the thread a little farther through the eye of the needle and separate it, so as to leave the needle still threaded and ready for another operation.

By the above method of making the needle stationary and supporting it within a long re-

cess formed in the rack-bar, and threading it near its point, a needle of any desirable length, as well as a rack-bar of a length to correspond thereto, may be employed. Sewing may be accomplished by the same in a very expeditious manner, the machine so made being particularly adapted to the stitching or sewing of bags, the covers of umbrella-frames, as well as various other articles.

I am fully acquainted with the sewing-machine as patented by Benjamin W. Bean, by reissue on the 10th day of March, A. D. 1849. In such machine the thread-eye of the needle was placed at the rear end of it, and not in the vicinity of the point of it, as it is in the needle of my machine. Consequently in such machine of the said Bean the thread did not pass into the cloth simultaneously with the needle, as it does in my machine; but after the needle had entirely passed into the cloth, the corrugations of the latter had to be drawn over the thread by the hand of an operative. In my machine each corrugation or folding of the cloth is supported by a tooth of the rack-bar, and it is moved over or upon the needle and thread by it, and without any such above-mentioned assistance from the operative as is requisite when Bean's machine is employed.

What therefore I claim as my invention is—

The hereinbefore-described disposition of the thread-eye of the needle—that is to say, the said eye being placed near the point of the needle—in combination with the afore-described manner of supporting the needle, and applying it to the machinery which produces the corrugations or foldings of the cloth, not meaning to lay claim to the combination of a needle and gears, or other anologous contrivances for producing sewing, as the same have heretofore been applied and used, but meaning only to claim my improvement as constructed, and made to operate substantially as above specified.

In testimony whereof I have hereto set my signature this 1st day of December, A. D. 1849.

DAVID M. SMITH.

Witnesses:

SAML. W. PORTER,

HENRY F. CRAIN.