

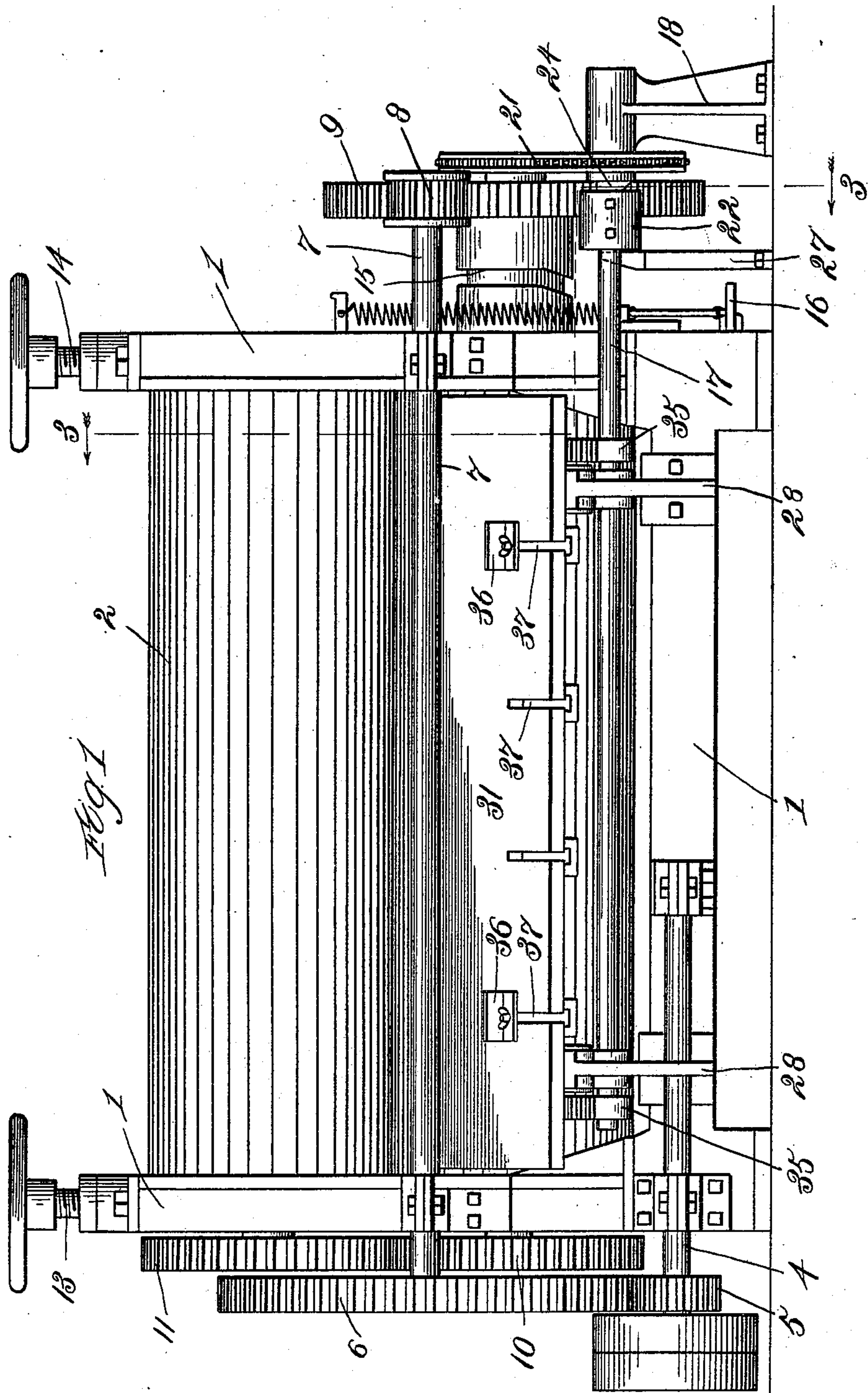
(No Model.)

2 Sheets—Sheet 1.

J. E. BRADLEY.  
MACHINE TABLE.

No. 522,004.

Patented June 26, 1894.



Witnesses:  
Wm. J. Fleming  
S. M. Rheim

Inventor:  
John E. Bradley  
by Brown & Derby Attys. S.

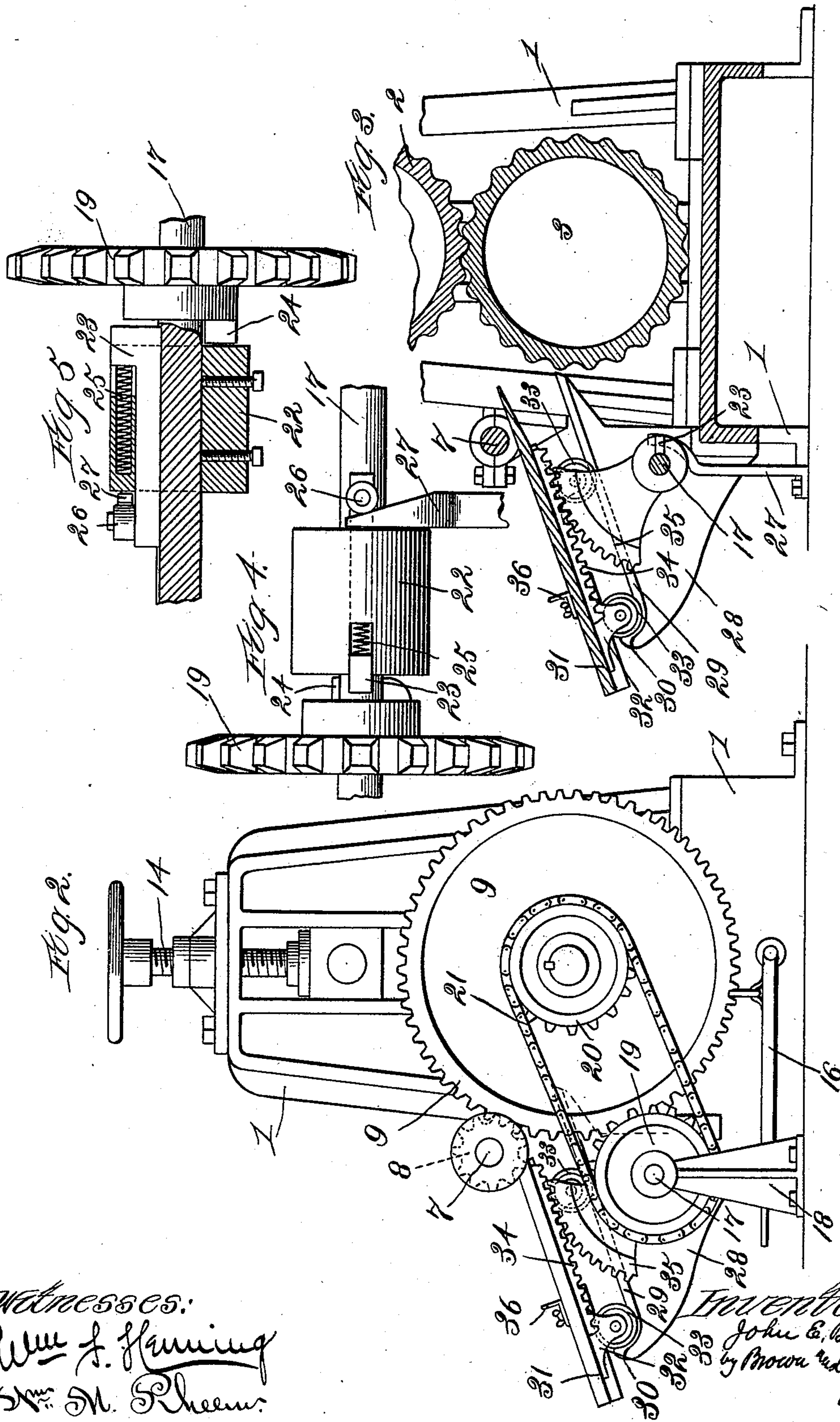
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Attys.



# UNITED STATES PATENT OFFICE.

JOHN E. BRADLEY, OF CHICAGO, ILLINOIS.

## MACHINE-TABLE.

SPECIFICATION forming part of Letters Patent No. 522,004, dated June 26, 1894.

Application filed March 23, 1894. Serial No. 504,817. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. BRADLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Machine-Table, of which the following is a specification.

This invention relates to sheet metal corrugating machines and its object is to provide an automatically operating feed table therefor.

With this object in view the invention consists in providing a feed table which is positively operated to feed the material to the corrugating rolls and which is gravity operated to drop back into position to receive thereon a fresh supply of material to be fed.

The invention further consists in the various constructions, combinations, locations and relative arrangement of parts, all as more fully hereinafter described, as illustrated in the accompanying drawings, and finally pointed out in the appended claims.

Figure 1 represents in front elevation a corrugating machine with my invention applied thereto. Fig. 2 is an end elevation of the same looking from the right of Fig. 1. Fig. 3 is a partial vertical transverse sectional view taken on the line 3, 3 Fig. 1. Fig. 4 is a detached view of the end of the table operating shaft, in rear elevation, showing the tripping clutch. Fig. 5 is a view in longitudinal section showing the construction of the tripping clutch.

Similar reference signs are employed throughout the several views to designate similar parts.

In any suitable framework 1 is mounted the corrugating rolls, 2, 3, the lower one 3, of which is adapted to be rotated from main shaft 4, through any suitable gearing, such as gears 5, 6, shaft 7, and gears 8, 9, and upper corrugating roll 2, may be driven from lower roll 3, by means of gears 10, 11 in the usual way. Any suitable adjusting screws 13, 14, may be employed to regulate the distances apart of the corrugating rolls, as will be readily understood.

Any suitable clutching mechanism as indicated at 15 may be provided for starting and stopping the rotation of the lower rolls and

such clutch may be operated in any suitable way, as by means of a foot treadle, 16.

In front of the machine and adjacent thereto, I mount a rock shaft 17, extending parallel with the rolls and I journal the same in suitable standards or brackets, 18, one at each end, only one being shown. Upon the shaft 17 I mount loosely a gear wheel 19 adapted to receive rotary motion from a gear wheel 20, mounted on the projecting end of the lower roll hub. In the form shown said gear wheels are illustrated as sprocket gears adapted to receive thereon a sprocket chain 21, whereby rotary motion is imparted to gear 19 from the shaft or hub of the lower corrugating roll. Mounted on shaft 17 to revolve therewith is a collar 22. A headed bolt, 23, seated to slide back and forth in a groove in shaft 17, and also in a groove in said collar serves as a spline to secure the collar to the shaft. This head of said bolt is acted upon by a spring 25 seated in a socket in said collar and serves to project said head beyond the end of said collar and into the path of rotation of a projection 24 on the hub of gear 19.

A wedge-shaped arm 27, is rigidly secured in a convenient position to the framework of the machine or to the floor and projects into position to engage a pin 26 on the rear end of bolt 23 between said pin and collar 22.

The operation of the mechanism for positively rocking shaft 17 is as follows: Continuous rotation is imparted to gear 19 from gear 20. The projection 24 on the hub of gear 19 engages the projecting end of bolt 23 and thus rotates collar 22 and with it shaft 17. As collar 22 carries pin 26, and as shaft 17 revolves, pin 26 engages the inclined surface of the stationary wedge shaped arm 27 and said bolt 23 is gradually drawn into its seat in sleeve 22 against the action of spring 25 until finally the projecting end of bolt 23 is drawn flush with the edge of collar 22. When this point is reached projection 24 rides over said bolt and at that moment further rotation of shaft 17 ceases until projection 24 again comes in contact with bolt 23. The moment this tripping is effected the table is free to return to its lowermost position at the lower extremity of its inclined tracks aided by gravity. The return of the table effects a rotation of



the shaft 17 through the gearing intermediate said shaft and table in a direction opposite to that in which it is moved positively to feed the table up its tracks. This movement of shaft 17 causes pin 26 to become disengaged from the projecting end of wedge-shaped arm 27 whereupon spring 25 serves to project the end of bolt 23 beyond the face of sleeve 22 into position to be again engaged by projection 24 on the hub of gear 19, as will be readily understood. The position of the wedge-shaped device 27 therefore regulates the point at which the tripping of shaft 17 is effected.

To the front part of the framework of the machine and preferably at each end thereof I bolt or otherwise secure brackets or castings 28, 28. The upper edge of each bracket or casting is inclined downwardly away from the machine and is formed into a track 29. At the extreme lower end of said track is formed a projection 30, for a purpose presently to be described.

Numerals 31 designates my table, which may be made of any suitable material and of any size and thickness. This table is adapted to extend the whole length of the machine.

Journalled in suitable plates or castings 32 bolted to the under side of the table are rollers 33, 33, adapted to ride on tracks 29, in brackets or castings 28. Rack teeth 34 are formed on the under surface of plates or castings 32 and are adapted to be engaged by segment racks 35 rigidly mounted on rock shaft 17, to rock therewith.

Gages 36 are provided and they are adjustable in slots 37 formed in the outer lower edge of the table.

The operation of this table is as follows:— A rocking motion is periodically imparted to the rock shaft 17 by the mechanism above described, thus causing segments 35 to rock and by their engagement with the rack teeth 34 they feed table 31 upwardly along tracks 29 to feed the material carried thereon to the corrugating rolls. When the shaft 17 has rocked through a sufficient arc to accomplish the feeding of the table 31 to the required point, the rotation of said rock shaft is arrested through the automatic action of the tripping clutch and by reason of the downward inclination of tracks 29 gravity acts upon table 31 to return it immediately to its lowermost position ready to receive a fresh supply of material to be fed to the corrugating rolls. The projections 30 on brackets or castings 28 arrest the downward movement of the table and prevents the same from running off the ends of the tracks.

In the operation of my machine rotary motion is imparted to the corrugating rolls and a periodic rocking motion to shaft 17, an attendant, or preferably two attendants, in case long sheets are intended to be corrugated, one at each end of the machine, place the sheets to be corrugated upon the table with the rear edges thereof gaged against stops 36.

The feeding of the table 31 by means of racks 34 and 35 presents the upper edges of the sheets of material to be corrugated in position between the corrugating rolls to be grasped thereby. The trip mechanism then acts to release shaft 17 and the table descends into position to again receive more sheets to be corrugated. Stops or gages 36 are made adjustable in order that different widths of sheets may be fed to the machine.

Heretofore in machines of this kind the sheets of material to be corrugated have been fed by hand thus depending upon the skill and expertness of the operators, and even with the most skilled and expert workmen it frequently happens that both ends are not presented simultaneously to the corrugating rolls, thus causing the sheet to be fed through the machine diagonally spoiling the sheet by producing what is technically called in the trade a "buster." This objection is entirely obviated by my machine as when the gages 36 are once set all the workman has to do is to place the sheet upon the table with its rear edge bearing against the gage. Consequently ordinary workmen may be employed thus avoiding the necessity of employing skilled and expert help to do this work. Moreover, by using my machine the rolls can be geared to rotate nearly twice as fast as is possible with hand fed machines, when, in connection with this, it is taken into consideration that delays and spoiled sheets or "busters" are entirely avoided it will be seen that the capacity of the machine is doubled by the use of my improvement. This has been demonstrated in actual use and enhances the importance of my invention.

I am aware that it has been essayed to provide sheet metal corrugating machines with feed tables, but heretofore such tables have been horizontally arranged and have been operated by means of links, cords, springs or weights. None of such constructions have ever been successful in actual practice not only on account of the unreliability of weights and springs but by reason of the fact that the edges of the sheets of metal to be corrugated are frequently bent either down or up and when they are fed in a horizontal line to the rolls the parts of the sheet which are not bent or else only the bent parts are caught simultaneously by the rolls and consequently the sheets become twisted during their passage through the machine thus producing a "buster." By arranging my table on an incline, as shown, this defect is entirely obviated for the upper edge of the material first comes in contact with the upper roller and is forced down thereby until it is grasped by the lower roller and thus fed through the machine.

I have shown shaft 7 located in front of the machine and directly above the path of travel of the inclined table. It will be readily understood that said shaft may be located at any other convenient place.

While I have shown segment racks for ef-



fecting the positive feed of table 31 it will be understood that any other suitable gearing may be employed.

Many other modifications and changes would readily suggest themselves to a skilled mechanic and still fall within the spirit and scope of my invention. I do not desire, therefore, to be limited to the exact details of construction, location and arrangement shown but

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a corrugating machine, a table provided with rollers, inclined tracks adapted to receive said rollers, mechanism for positively feeding said table up said inclined tracks, and means for automatically tripping said mechanism, as and for the purpose set forth.

2. In a corrugating machine a set of inclined tracks, a table carried thereon adapted to be moved toward the machine by positively operating mechanism and away from said machine by gravity, as and for the purpose set forth.

3. In a corrugating machine a feed table, inclined tracks supporting the same, a rock shaft and gearing intermediate said shaft and table, means for rocking said rock shaft positively in one direction and automatic tripping mechanism, as and for the purpose set forth.

4. In a corrugating machine, corrugating rolls, means for rotating the same, a rock

shaft, gearing intermediate one of said rolls and said shaft for imparting rotary motion to the latter, a tripping mechanism for automatically arresting the rotary motion of said shaft, an inclined gravity table and gearing between said table and rock shaft for positively feeding the table in one direction as and for the purpose set forth.

5. The combination with corrugating rolls and means for rotating the same, of a shaft, a gear wheel loosely mounted thereon, gears for driving said gear from one of said rolls, a table, inclined tracks supporting said table, gearing between said table and shaft to positively feed the table up said inclined track and tripping mechanism for throwing said first mentioned gear into and out of rotative engagement with said shaft as and for the purpose set forth.

6. In a corrugating machine inclined brackets or castings provided with tracks and also with projections at the lower extremity of said tracks in combination with a gravity table adapted to said tracks and means for positively feeding said table up said tracks and then automatically releasing the same, as and for the purpose set forth.

In testimony whereof I have set my hand this 19th day of March, 1894.

JOHN E. BRADLEY.

Witnesses:

THOMAS ALLEN,  
CHAS. MADER.