C. R. SEYMOUR.

SCORING MACHINE.

APPLICATION FILED JAN. 13, 1913.

1,098,689.

Patented June 2, 1914.

5 SHEETS—SHEET 1.

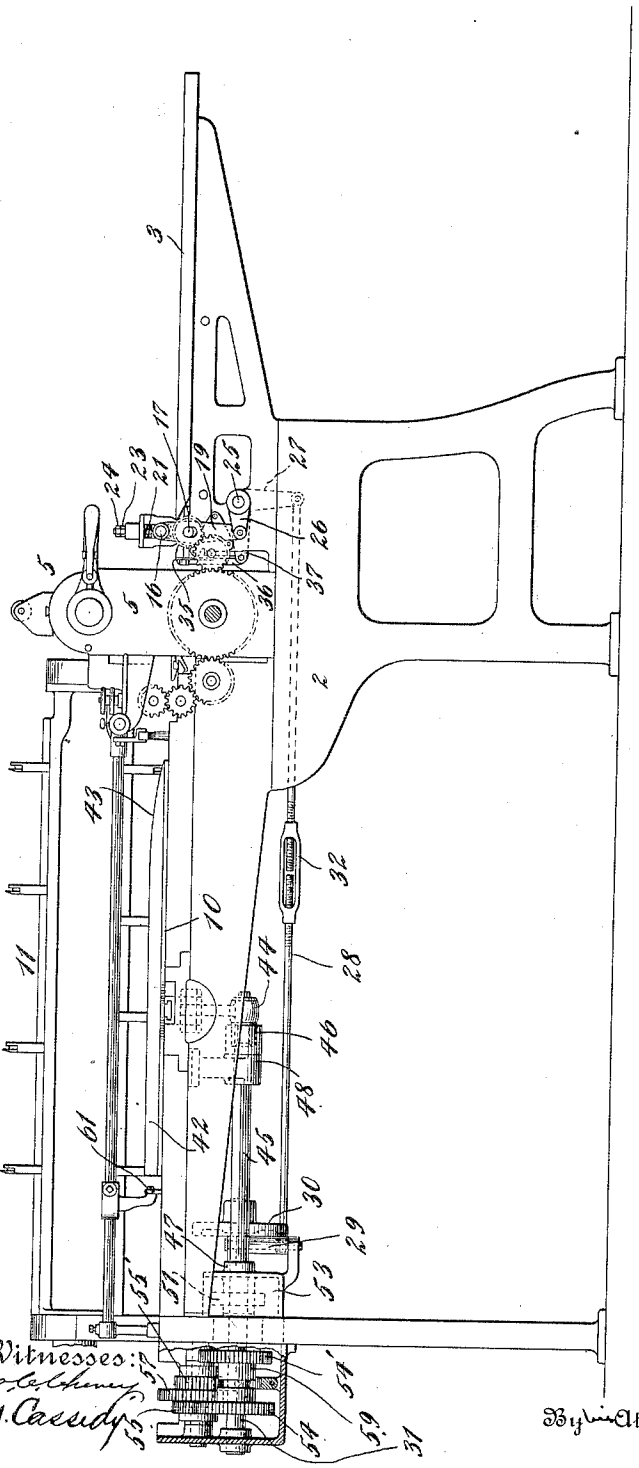


Fig. 1.

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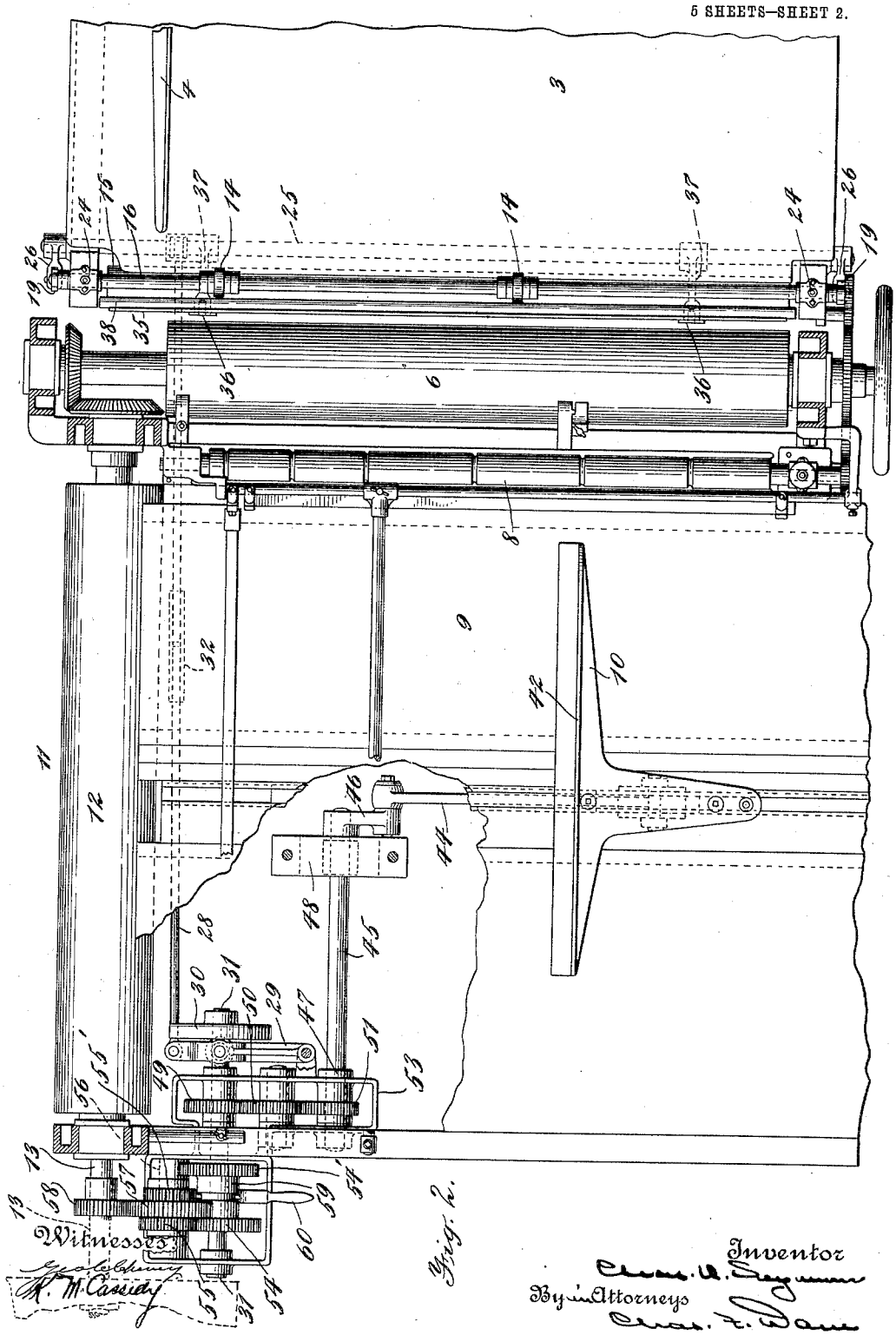
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5 SHEETS—SHEET 2.



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Fig. 2.

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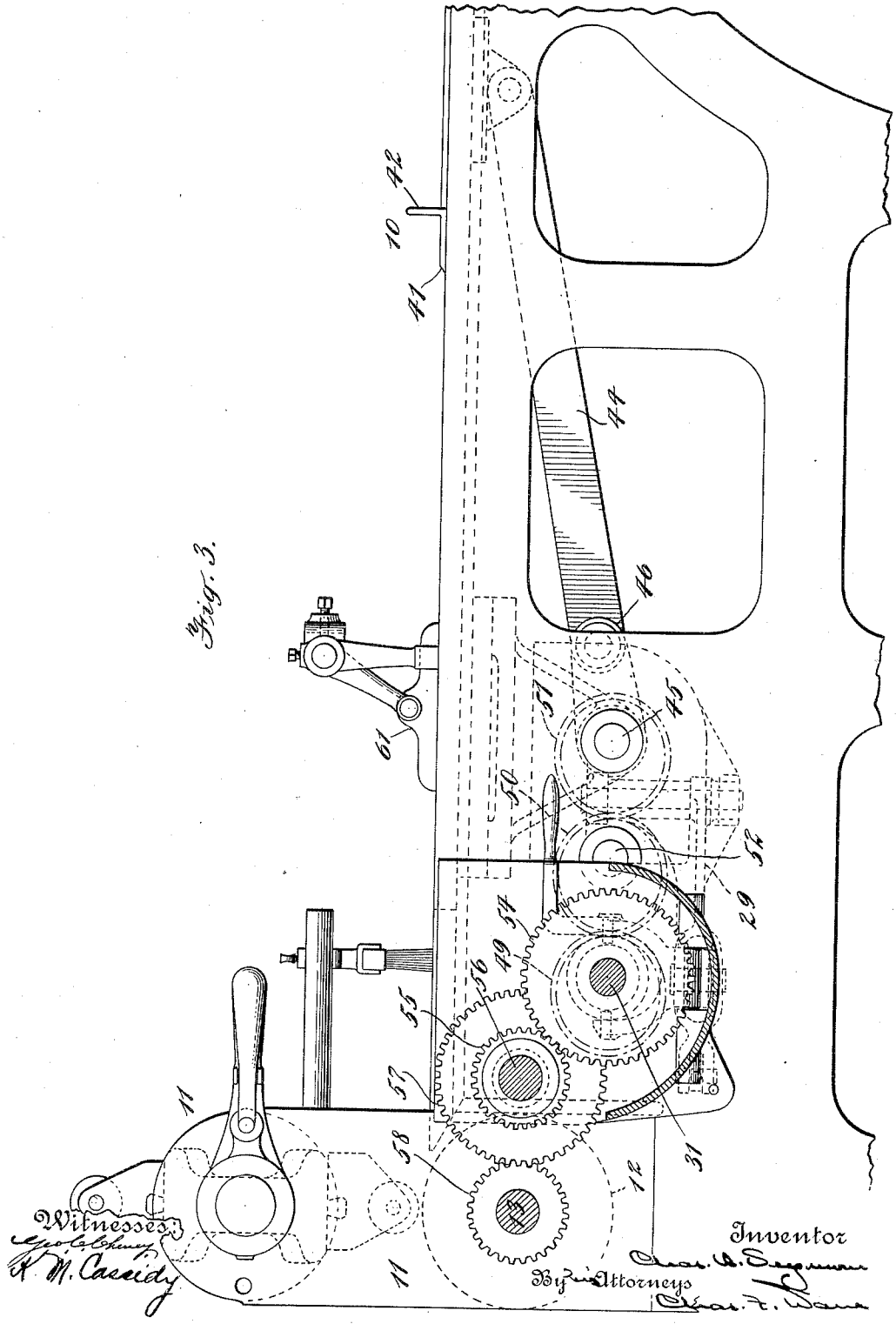


Fig. 3.

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5 SHEETS—SHEET 4.

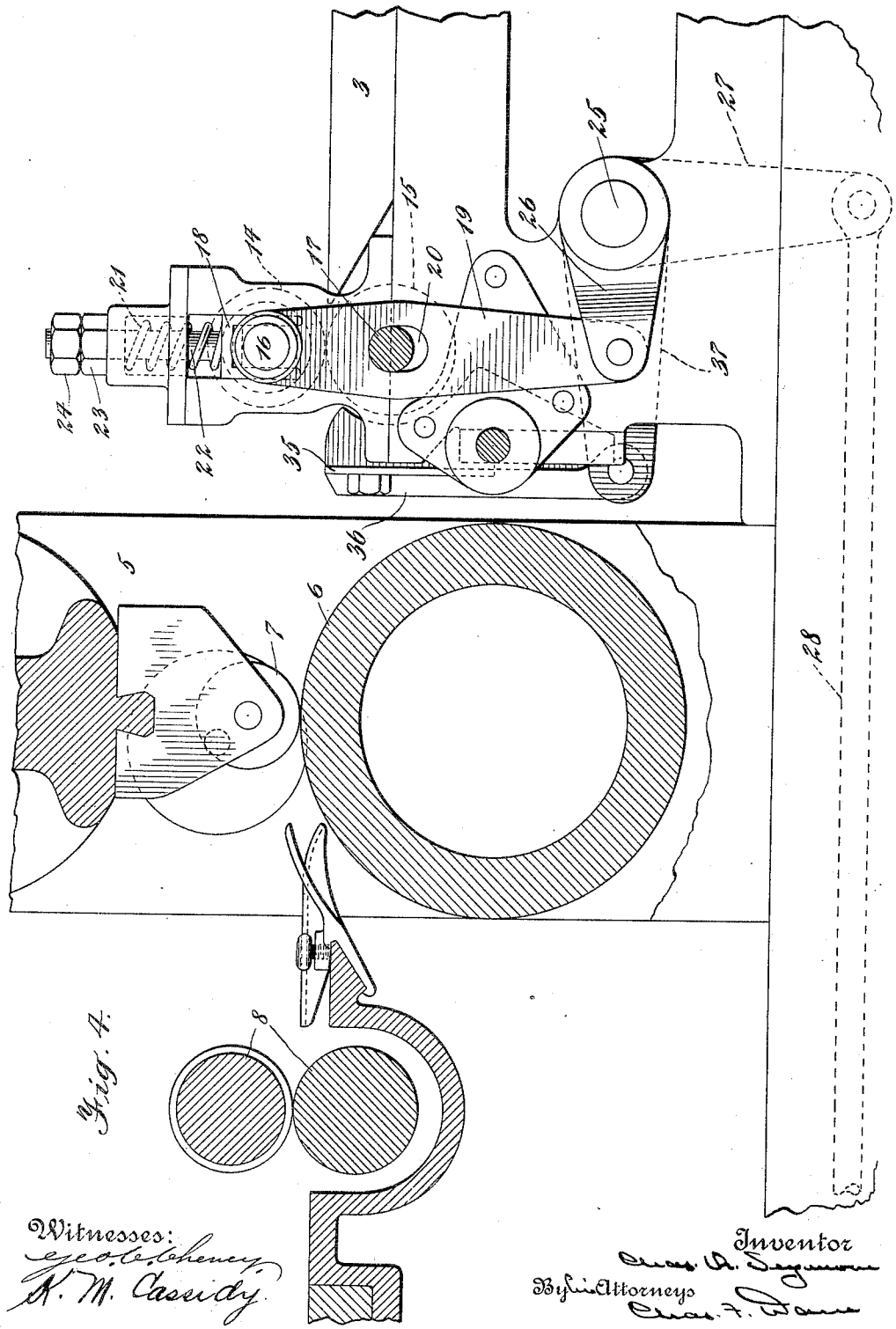


Fig. 4.

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5 SHEETS—SHEET 5.

Fig. 5.

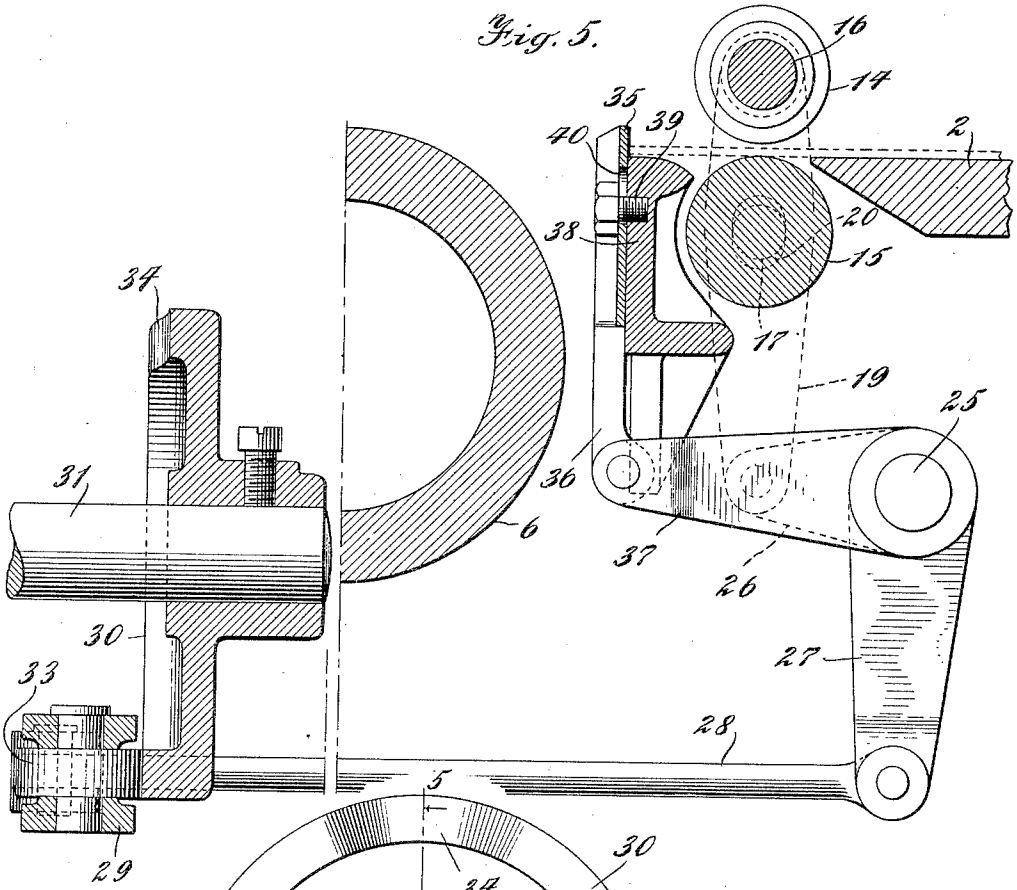
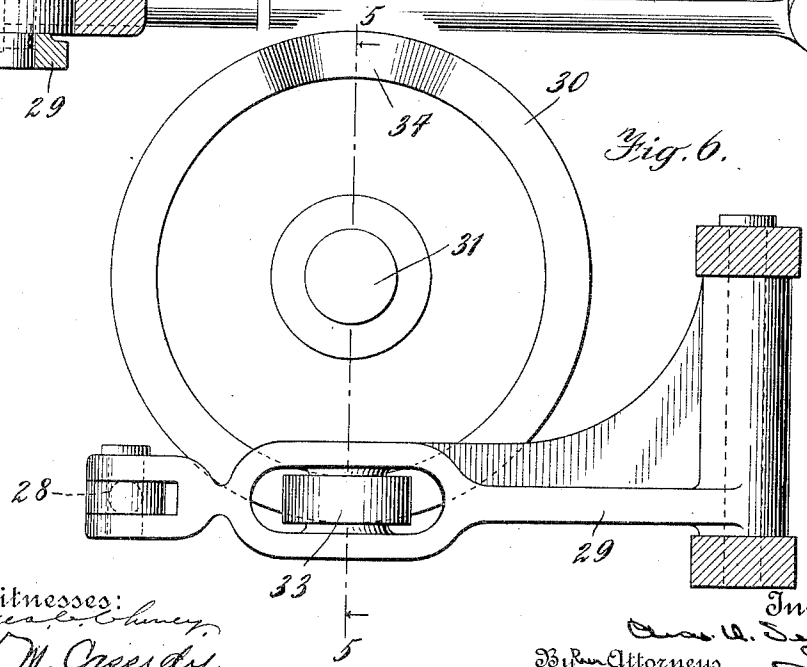


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES R. SEYMOUR, OF ROCHESTER, NEW YORK, ASSIGNOR TO M. D. KNOWLTON COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

SCORING-MACHINE.

1,098,689. Specification of Letters Patent. Patented June 2, 1914.

Application filed January 13, 1913. Serial No. 741,891.

To all whom it may concern:

Be it known that I, CHARLES R. SEYMOUR, citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Scoring-Machines, of which the following is a specification.

This invention relates to machines for scoring paper-board, and particularly to machines of that class known as double-scoring machines, in which separate sheets of paper-board are fed first through primary scoring mechanism in one path and then through secondary scoring mechanism in a path usually at a right angle to such first movement to score the sheet along lines perpendicular to each other.

The present invention has for its principal object to provide a machine of this class in which the movements of successive sheets into and through the machine are positively controlled, and also to provide a machine of this class capable of operation at high speed.

In carrying the invention into effect means are provided for presenting successive sheets to the machine in such manner as to assure a positive coöperation of all of the elements that operate upon said sheet during its passage through the machine, timing means being employed for preventing the delivery of a sheet from the first feed-table to the primary scoring mechanism except at a predetermined point in the cycle of operations of the machine, which point in the machine illustrated herein is always the same for each cycle of operations.

In general, an important object of the invention is to provide a double-scoring machine in which all of the parts are so organized as to move in a certain predetermined timing in coöperation with one another, and to present each sheet to the receiving end of the machine at such a time that in its travel through the machine said sheet will find the successive sub-mechanisms and elements ready to receive it and operate upon it without loss of time and without any interference of a sheet traveling in one path through one of the scoring mechanisms with a sheet traveling in another path through the other scoring mechanism.

Other features of the invention not hereinbefore referred to will be hereinafter described and claimed and are illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of the machine looking from the left-hand side thereof, parts being broken away to show the construction; Fig. 2 is an enlarged plan partly broken away and in section, showing part of the primary scoring mechanism and the timing means coöperative therewith, and also the reciprocatory feed device and the means by which it is operated; Fig. 3 is an enlarged sectional elevation of a portion of the machine looking from the rear thereof and showing the reciprocatory feed device and actuating means for imparting a variable movement to it; Fig. 4 is an enlarged elevation and vertical section looking from the left-hand end of the machine, of a portion of the mechanism illustrating the timing means and the primary scoring mechanism and the first pair of feed-rolls to which sheets are presented by said timing means, the parts being illustrated in the positions they occupy when the sheet is to be fed into the machine; Fig. 5 is an enlarged elevation and vertical section, also looking from the left-hand end of the machine, of portions of the mechanism at the front and rear of the machine respectively illustrating the connecting means (broken) through which movement is imparted to the timing means from a suitable driver, and Fig. 6 is a rear elevation and vertical section of that portion of the operating connections for the timing means illustrated at the left in Fig. 5.

Similar reference characters designate like parts in all the figures of the drawings.

The double-scoring machine shown herein is, or may be, in many respects the same or substantially the same as corresponding machines in general use. It embodies among other parts of well-known construction, a main frame 2; a feed-table 3, from which sheets are fed into the machine; a right-hand end gage 4, on said feed-table; primary scoring mechanism 5, comprising the usual bed-roll 6 and coöperative scoring knives 7; a pair of feed-rolls 8, by means of which successive sheets are fed from the primary scoring mechanism into position for delivery to the secondary scoring mechanism; a feed-table 9, onto which said sheets are fed from the primary scoring mechanism; a reciprocatory feed device, 10, for feeding the sheets from said table 9 to the secondary scoring

mechanism; and the secondary scoring mechanism 11, of similar construction and operation to that of the primary scoring mechanism. In connection with these parts suitable guides, stops, brushes, etc., are or may be employed as in the ordinary machine of this type.

All of the parts of the double-scoring machine shown herein may be operated from a suitable main driver, which in this case is the shaft, 13, carrying the bed-roll, 12, of the secondary scoring mechanism. From this shaft movement is intended to be transmitted through suitable driving connections both to the timing means for controlling the presentation of successive sheets to the primary scoring mechanism and also to means for feeding to the secondary scoring mechanism sheets delivered onto the table 9 from said primary scoring mechanism. The connections to the timing means and to said last mentioned feeding means, which in this case is the reciprocatory feed device, 10, may be any suitable for the purpose.

Considering first the timing means for presenting sheets to the primary scoring mechanism, this comprises a feed device and means for bringing it into feeding relation with successive sheets in a predetermined manner, the object being to cause each sheet to be delivered to the primary scoring mechanism and associated pair of feed-rolls 8—8 at the same point in each cycle of operations of the machine, in order that each sheet may always pass through the machine in an exact predetermined relation to all of the submechanisms and elements that coöperate with it and are intended to act upon it. Here the timing means for feeding successive sheets into the machine preferably comprises a pair of feed-rolls, such as 14 and 15, mounted so as to be capable of operating in such a manner as to open and close at the proper moments the pass between them to release or engage a sheet. In this construction the upper feed-roll is mounted on a long shaft, 16, extending transversely across the machine just above the delivery end of the feed-table 3, and the feed-roll 15 is mounted on another shaft, 17, parallel with the shaft 16 but located somewhat below the delivery end of said feed-table. The lower of these shafts is suitably mounted in bearings in such a manner that the top of the surface of the roll carried by it is always substantially in alinement with the upper surface of the feed-table 3. The upper shaft 16 and its roll are, however, mounted in a vertical reciprocatory frame formed in part by vertical slide-blocks, 18, and in part by vertical links, 19, operatively connected with the shaft 16, which shaft is mounted in suitable bearings in the aforesaid slide-blocks 18. The links 19 straddle the shaft 17 and have elongated slots 20, the length of which is sufficient to provide for the necessary up and down movement of the upper timing feed-roll 14 and its shaft 16. Said upper feed-roll is preferably normally held down in feeding relation with the lower one by some suitable means—such, for example, as coiled springs 21, surrounding the stems, 22, connected with the slide-blocks 18—in such a manner as to permit adjustment of the stem, slide-block and roll up and down as a whole, while also providing for an independent up and down movement of the roll and its shaft in said slide-block. The means for adjusting the up and down position of the feed-roll, etc., is preferably a pair of nuts, 23 and 24, at the upper end of the stem 22, one being an adjusting-nut and the other a check-nut, as usual. The up and down movement of the roll 14 resulting from the up and down movement of the levers or links 19 is a relatively short one, it being, however, sufficient to permit a sheet in the pass between the feed-rolls 14 and 15 to be out of feeding relation with the peripheries of said feed-rolls at the proper time. The means for imparting vertical movement through the links 19 to the upper of these timing feed-rolls is illustrated herein as embodying a rock-shaft, 25, having short rock-arms 26, connecting with the links 19 and a long rock-arm 27, connecting with operating means for the rock-shaft. The short arms 26 are substantially horizontal and the long arm 27 substantially vertical in the construction illustrated, in order that a substantially straight-line up and down movement may be imparted to the upper roll 14.

As shown in Figs. 2, 4, and 5, the devices just described are operated by a long connecting rod, 28, connected at one end with the arm 27 and at its opposite end extending to the rear of the machine and there connecting with a lever, 29, mounted to swing back and forth substantially in the direction of the length of the machine and controlled in its movements by a cam-wheel, 30, mounted on a shaft, 31, connected, as by gearing, with the main driver 13. The connecting rod 28, as shown, is made of two sections connected by a turn-buckle, 32, for the purpose of making the necessary adjustments in the length of said rod. The operating lever 29 to which said connecting rod is connected carries, preferably an antifriction roll, 33, which makes contact with the surface of the cam-wheel 30 and is intermittently swung back and forth at one point in the rotation of said cam-wheel by the cam surface 34 thereof. The same connections just described also serve in part as a means for operating an automatic stop-plate adjacent to and coöperative with the timing feed-rolls 14 and 15, for the purpose of preventing the presentation of a sheet to the primary scoring mechanism until the proper moment in

the cycle of operations. This stop-plate may also be of any suitable type and construction and may be operated in any proper manner. It is here shown as a plate, 35, secured to vertical arms, 36, pivoted at their lower ends to horizontal rock-arms, 37, on the shaft 25, corresponding to, but of greater length than, the short arms 26 on said shaft by means of which the upper timing feed-roll 14 is moved upward to release a sheet. When the shaft 25 is rocked it will be obvious that the up and down movement of the ends of the rock-arms 37 will be much greater than that of the arms 26, and the stop-plate is intended to have a correspondingly greater up and down movement than the timing feed-roll 14. The extent of this movement will be clear by comparing Figs. 4 and 5, in the former of which the stop-plate is down in position to permit the feeding of a sheet into the machine by the feed-rolls 14 and 15, then in feeding relation with such sheet, while in Fig. 5 said stop-plate is shown as up in the path of a sheet pushed forward on the feed-table and as out of feeding relation with the rolls 14 and 15, the upper of which at such time is raised. The stop-plate, as here illustrated, is intended to slide up and down in contact with the forward end of that portion of the frame of the machine on which the feed-table 3 is supported, this portion of the frame being indicated at 38, and the stop-plate and its carrier-arms 36 are shown as connected to the member 38 of the framework by suitable screws, 39, on the shanks of which the stop-plate is intended to slide, it being slotted at 40 to permit this. It will be noted that by means of the operating connections just described the stop-plate and the timing feed-rolls are brought into or out of position for the feeding of a sheet, or for preventing the feeding of a sheet, at substantially the same moment, and also that this operation is controlled from the main driver through suitably timed connections. These operating connections are also intended to coöperate in predetermined timing with the reciprocatory feed device 10, and indeed with all of the other operatively connected mechanisms and elements of the machine.

The reciprocatory feed device 10 is in many respects substantially the same as that disclosed in another application, Serial No. 741,892, filed January 13, 1913. It is preferably a light feed-plate having a short stroke to permit of operation at high speed and it is disposed and operative to engage a sheet delivered onto the feed table 9 at one edge of said sheet and push the sheet to the secondary scoring mechanism. It is also adjustable for travel back and forth in different zones corresponding to the width of sheets fed. As in said prior application, it is carried by and adjustable on a slide mounted to reciprocate in a suitable way disposed substantially centrally of the feed table 9, the construction of all of these being preferably the same as in said prior application. In several respects, however, this reciprocatory feed device or pusher 10 differs from that of said prior application and it is operated in a manner entirely different from that of the corresponding device of the aforesaid application. Here it is formed with a vertical rib, 42, for engaging the adjacent edge of a sheet, which rib is made relatively high to prevent possibility of the feed device passing under a warped or similarly distorted sheet and so failing to feed the same. The feed device here shown also has a foot or member, 41, projecting forwardly from the base of the rib 42 a sufficient distance to extend beneath the edge of a sheet being fed onto the feed table 9 when the feed-device has reached the limit of its backward stroke. With the feed device thus constructed all possibility of the sheets going either under or over the same in the operation of the machine is avoided.

An important feature of the present machine is that the feed device 10 is intended to be operated with a variable movement for the purpose of enabling it to start gradually on its working stroke without injury to the surface of said sheet and without tending to buckle it. As soon, however, as said sheet is started toward the secondary scoring mechanism it is desirable that the speed of travel of the feed device 10 be rapidly increased up to the point where it is moving at substantially the same rate of speed that the surfaces of the second pair of feed-rolls are traveling, this speed being reached, preferably, substantially at the moment that the edge of the advancing sheet enters the pass between the feed-rolls of the secondary scoring mechanism. The object of this is to assure the presentation of the whole edge of a sheet to the rolls of the secondary scoring mechanism at the same instant and the proper straight-line feed of the sheet through said mechanism and out of the machine. The desired variable movement for rapidly increasing the speed of its working stroke, and a long dwell at the rear end of its stroke, may be obtained by suitable connections to the main driver 13, as, for example, through a connecting rod and crank-shaft operated by a train of elliptical gears. Here the feed device 10 is operatively connected by a pitman, 44, with the crank, 46, of a crank-shaft, 45, mounted in suitable bearings at 47 and 48 near the rear end of the machine, said crank-shaft being in turn driven by a train of three elliptical gears, 49, 50 and 51, mounted respectively on shafts or studs, 31, 52, and 45, supported in an open frame 53, at the rear end of the machine. The shaft 31 which, as before pointed out, is the means

for imparting movement to the timing feed-rolls and the stop-plate, also carries in this case a spur-gear 54, which is driven by a spur-pinion, 55, secured to a short shaft, 56, having also in fixed relation therewith a spur-gear 57, meshing with a spur-pinion, 58, on the main driver 13. From this main driver through the spur gearing just described movement is imparted to the shaft 31 and hence to the elliptical gears and the reciprocatory feed device 10 operated thereby, and is also imparted in proper timing therewith to the upper timing feed-roll and stop-plate associated with it. Provision is also made, as will be clear by referring to Figs. 2 and 3, for changing the speed of the machine to suit different kinds of work, by changing the connections between the shaft 31 and the driving shaft 13, this being accomplished by shifting differential gears one of which is the gear 54. Said gear 54 is shown as carried by a sleeve, 59, having a substantially central circumferential groove for engagement in a well-known manner with the pins of a shifting lever, 60, by means of which said gear and a second differential gear 54′ on the same sleeve may be shifted back and forth into and out of driving connection with the shaft 13 by movement into and out of operative relation with the respective differential driving pinions 55 and 55′ in fixed relation with the spur-gear 57.

The primary and secondary scoring mechanisms, including the feed-rolls and various other operative parts associated therewith, are or may be driven in usual manner from the main driver 13, so that all of the working parts of the double-scoring machine shown in the present application are operatively connected for movement through a certain predetermined cycle of operations in which the travel of each sheet through the machine is mechanically predetermined and controlled, the feed of each sheet being positive and the mechanisms being so timed and coöperating in such a manner that every sheet is started into the machine at the same point in the cycle of operations. The speed of operation of the various main parts just described and the timing relation are such that there is just time enough for the first scoring and feed rolls to advance one sheet from a position of rest on the feed-table 3 back of the stop-plate, to a position against the usual stop-gage, 61, on the feed-table 9, while the feed-plate 10 is advancing a preceding sheet into the secondary scoring mechanism and is returning again to the end of its back stroke; said feed plate being sufficiently far advanced on its forward or feed stroke at the time the second sheet is being fed from the primary scoring mechanism to the second feed table 9 as not to catch said second sheet which is adapted to ride over the top of the feed plate without being acted on thereby. Thus in the operation of the machine the upper timing feed-roll 14 is lowered to feed a sheet in, the stop-plate 35 is also lowered below the level of the feed-table 3 to allow that sheet to be fed in, and the feed device 10 makes one complete stroke, all in the same cycle and in predetermined timing in such a manner that a single sheet is fed through the machine at each stroke of said feed-device and it is impossible for two sheets to interfere with each other in the machine or for a sheet to fail to travel steadily in a predetermined manner through both the first and second scoring mechanisms.

In a machine of this type the scoring rolls may be operated at higher speed than in machines as heretofore constructed and increased capacity thus obtained.

What I claim is:—

1. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, and automatic means for feeding successive sheets into the machine in predetermined timing said means including a feed element movable bodily into and out of feeding relation with each sheet.

2. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, and automatic means for feeding successive sheets into the machine in predetermined timing said means including a feed-roll movable bodily into and out of feeding relation with each sheet.

3. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, and automatic means for feeding successive sheets into the machine in predetermined timing said means including a pair of co-operative feed-rolls one of which is movable relatively to the other into and out of feeding relation with each other.

4. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, a pair of feed-rolls at the delivery side of the primary scoring mechanism and co-operative therewith, a timing feed device at the receiving side of the primary scoring mechanism, and means for moving said timing feed device bodily into and out of feeding relation with a sheet at predetermined points in each cycle of operations of the machine.

5. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, a pair of feed-rolls at the delivery side of the primary scoring mechanism and coöperative therewith, a pair of timing feed-rolls at the receiving side of the primary scoring mecha-

nism, and means for bringing said timing feed-rolls into and out of feeding relation with a sheet at predetermined points in each cycle of operations of the machine.

6. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, and automatic means for feeding successive sheets into the machine in predetermined timing said means including an automatic sheet-stop movable into and out of operative position.

7. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, and automatic means for feeding successive sheets into the machine in predetermined timing said means including an automatic sheet-stop movable into and out of engagement with the forward end of an advancing sheet.

8. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, and automatic means for feeding successive sheets into the machine in predetermined timing said means including an automatic sheet-stop movable into and out of engagement with the forward end of an advancing sheet at the same points in each cycle of operations of the machine.

9. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, and automatic means for feeding successive sheets to said primary scoring mechanism in predetermined timing with said feeding means and including an automatic sheet-stop movable into and out of engagement with the forward end of an advancing sheet at the same points in each cycle of operations of the machine.

10. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, a pair of feed-rolls at the delivery side of the primary scoring mechanism and cooperative therewith, a pair of timing feed-rolls at the receiving side of the primary scoring mechanism, a sheet-stop movable into and out of engagement with the forward end of an advancing sheet at a point between said timing feed-rolls and the primary scoring mechanism, and means for bringing said timing feed-rolls into feeding relation with an advancing sheet, and said sheet-stop out of position for engagement with the forward end of said sheet, each at a predetermined point in each cycle of operations of the machine.

11. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, a feed-table for guiding sheets to the primary scoring mechanism, and timing means at the delivery end of said feed-table for feeding successive sheets into the machine at the same point in each cycle of operations of the machine, said timing means including a pair of coöperative feed-rolls one of which is movable relatively to the other for opening and closing a pass in line with the delivery end of said feed-table.

12. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, and feeding means for feeding a sheet on said table to the secondary scoring mechanism with a speed that first gradually and then rapidly increases, until its speed on entering the secondary scoring mechanism is substantially equal to that at which the sheet is intended to pass through said scoring mechanism.

13. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, a reciprocatory feed device for feeding a sheet to the secondary scoring mechanism, and means for operating said reciprocatory feed device with increasing speed from the beginning to a point near the end of its working stroke.

14. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, a reciprocatory feed device for feeding a sheet to the secondary scoring mechanism, and means for operating said reciprocatory feed device first with gradually increasing speed and then with rapidly increasing speed up to a point near the end of its working stroke.

15. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, a reciprocatory feed device for feeding a sheet to the secondary scoring mechanism, and means for operating said reciprocatory feed device first with gradually increasing speed and then with rapidly increasing speed which speed when a sheet enters the secondary scoring mechanism is substantially equal to the speed at which said sheet is intended to pass through said mechanism.

16. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, a reciprocatory feed device for feeding a sheet to the secondary scoring mechanism, and means for operating said reciprocatory feed device at a variable speed at different points in its working stroke said means embodying elliptical gearing, a crank-shaft driven thereby, and a connection between said crank-shaft and the feed device.

17. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, timing means for feeding successive sheets into the machine through the primary scoring mechanism and onto said table in predetermined timing, and feeding means operative in predetermined timing with said timing means for feeding a sheet on said table to the secondary scoring mechanism with a speed that increases gradually from the beginning to the end of such feed movement.

18. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, timing means for feeding successive sheets into the machine through the primary scoring mechanism and onto said table in predetermined timing, and feeding means operative in predetermined timing with said timing means for feeding a sheet on said table to the secondary scoring mechanism with a speed that increases first gradually and then rapidly to the end of the feed movement.

19. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism with variable speed a sheet on said table, and automatic means for presenting successive sheets to said primary scoring mechanism in predetermined timing with said second feeding means.

20. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism with variable speed a sheet on said table, and automatic means operatively connected with said second feeding means for presenting successive sheets to said primary scoring mechanism in predetermined timing with the second feeding means.

21. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism with variable speed a sheet on said table, and automatic means operatively connected with said second feeding means for feeding successive sheets to said primary scoring mechanism at the same point in each cycle of operations of the machine.

22. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism a sheet on said table, and timing means operatively connected with said second feeding means for feeding successive sheets to said primary scoring mechanism at the same point in each cycle of operations of the machine said means including a feed element movable bodily into and out of operative relation with each sheet.

23. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism a sheet on said table, and timing means operatively connected with said second feeding means for feeding successive sheets to said primary scoring mechanism at the same point in each cycle of operations of the machine said means including a feed-roll movable bodily into and out of feeding relation with each sheet.

24. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism a sheet on said table, and timing means operatively connected with said second feeding means for feeding successive sheets to said primary scoring mechanism at the same point in each cycle of operations of the machine said means including a pair of coöperative feed-rolls having a movement into and out of feeding relation with each sheet.

25. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism a sheet on said table, and timing means operatively connected with said second feeding means for feeding successive sheets to said primary scoring mechanism at the same point in each cycle of operations of the machine said means including an automatic sheet-stop movable into and out of operative position.

26. In a machine of the class described, the combination of primary and secondary scoring mechanism, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism a sheet

on said table, and timing means operatively connected with said second feeding means for feeding successive sheets to said primary scoring mechanism at the same point in each cycle of operations of the machine said means including an automatic sheet-stop movable into and out of engagement with the forward end of the advancing sheet.

27. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism a sheet on said table, and timing means operatively connected with said second feeding means for feeding successive sheets to said primary scoring mechanism at the same point in each cycle of operations of the machine said means including a pair of timing feed-rolls having a movement into and out of feeding relation with each sheet and also including an automatic sheet-stop movable into and out of operative position.

28. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, feeding means for feeding a sheet through the primary scoring mechanism and onto said table, feeding means for feeding to the secondary scoring mechanism a sheet on said table, and timing means operatively connected with said second feeding means for feeding successive sheets to said primary scoring mechanism at the same point in each cycle of operations of the machine said means including a pair of timing feed-rolls having a movement into and out of feeding relation with each sheet and also including an automatic sheet-stop between said timing feed-rolls and the primary scoring mechanism and movable into and out of engagement with the forward end of an advancing sheet.

29. In a machine of the class described, the combination of primary and secondary scoring mechanisms, a table between the same, and automatic means located at the receiving side of the primary scoring mechanism for feeding successive sheets into the machine in predetermined timing said means including a feed element movable bodily into and out of feeding relation with each sheet.

Signed at New York, in the county of Monroe, and State of New York, this 4th day of January, A. D. 1913.

CHAS. R. SEYMOUR.

Witnesses:

THOS. D. PATTON,

R. E. WEEKS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."