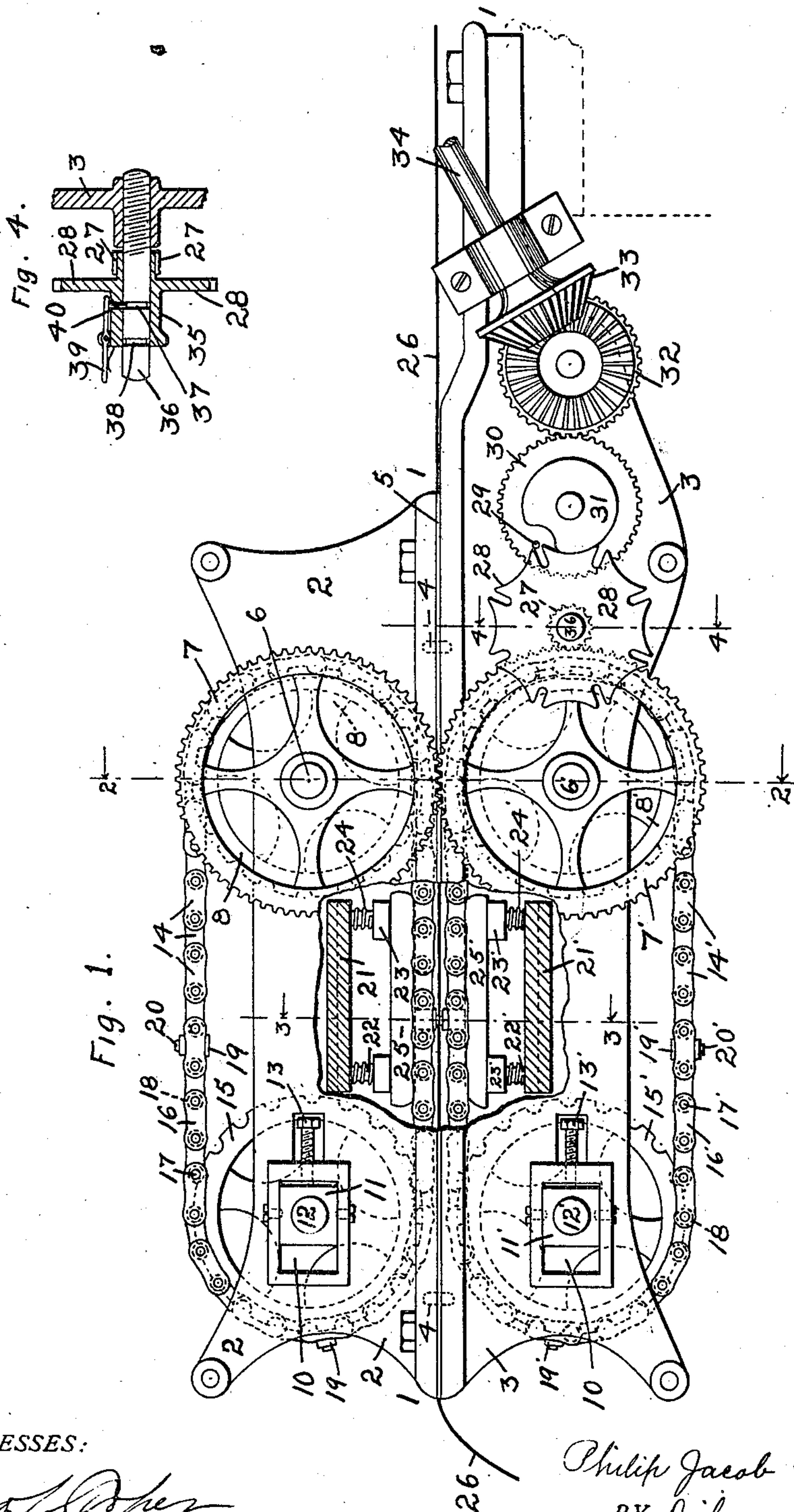


P. J. MEAHL.

PAPER FEED FOR PERFORATING MACHINES.

APPLICATION FILED MAY 24, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

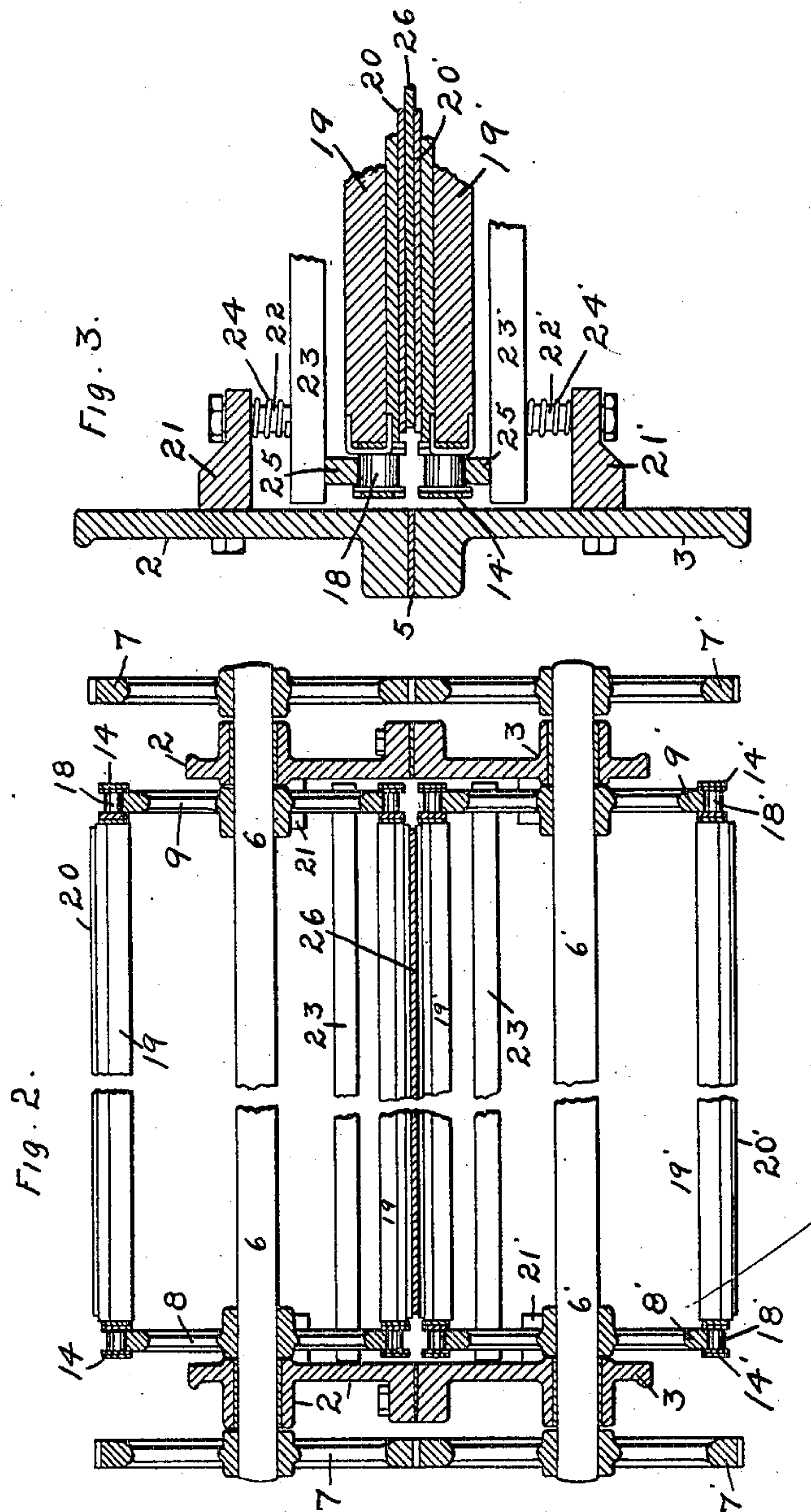
A. L. O'Brien

Philip Jacob Meahl INVENTOR.
BY Dickerson, Brown,
Raegener & Brinley
ATTORNEYS.

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2 SHEETS—SHEET 2.



WITNESSES:

Geo. L. Cooper
A. L. O'Brien

INVENTOR.

Philip Jacob Meahl
BY *Sickerson, Brown,*
Raegenor, Brinley
ATTORNEYS

UNITED STATES PATENT OFFICE.

PHILIP JACOB MEAHL, OF BAYONNE, NEW JERSEY.

PAPER-FEED FOR PERFORATING-MACHINES.

No. 837,319.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed May 24, 1906. Serial No. 318,521

To all whom it may concern:

Be it known that I, PHILIP JACOB MEAHL, a citizen of the United States, and a resident of Bayonne, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Paper-Feeds for Perforating-Machines, of which the following is a specification.

My invention relates to means for feeding forward paper in a perforating-machine.

It is especially adapted to machines for perforating music-sheets, such as are used in pianolas, pianola-pianos, and similar mechanical musical instruments or players. For economy of production it is advantageous that a large number of these sheets, say fifteen or more, should be perforated at once and that the machine should be operated at a high speed, say seven hundred and fifty revolutions per minute. As the sheets of paper are of considerable length, up to ninety feet, it is very important that they shall be fed forward very accurately step by step and that all the sheets shall be fed forward together without any "creeping" of any of the sheets.

The object of the present invention is to provide means for these results, as well as to provide means for stopping the machine very promptly at will whenever this becomes necessary.

Further objects of the invention will appear in the specification and be pointed out in the claims.

In the drawings, Figure 1 is a side elevation of so much of a paper-feed as is necessary to show my invention. Figs. 2, 3, and 4 are vertical transverse sections through the planes 2 2, 3 3, and 4 4 of Fig. 1, respectively.

1 designates the frame of the machine, which is suitably supported by means not shown, and consists of two superposed parts 2 and 3. These can be separated from each other to allow for variations in the thickness of paper or the number of sheets. As a means to this end I have shown dowel-pins 4 4, passing into registering apertures in the frames 2 and 3, the frames being separated by a strip of metal or the like 5, the thickness of which may be varied as desired. It is obvious that other means for adjusting the distance between the frame parts 2 and 3 may be substituted. Mounted on the upper frame part 1 and passing transversely there-across is a shaft 6, carrying a gear-wheel 7 at

one end, and sprocket-wheels 8 9, which are spaced apart from each other to a distance slightly greater than the width of the paper sheets to be fed. In a suitable aperture 10 in the frame part 2 is adjustably mounted a pair of journals 11, in which rotates a shaft 12. An adjusting-screw 13 is provided for securing the proper tension of sprocket-chains 14, which engage in the teeth of the sprocket-wheels 8 and 9, mounted on the shaft 6, and in the teeth of sprocket-wheels 15, mounted on the shaft 12. The sprocket-chains consist of the usual links 16, connected by pins 17, on which are mounted rollers 18. Passing between the two sprocket-chains 14 at frequent intervals are cross-bars 19, faced with rubber or similar strips 20. Secured to the frame portions 2 are inwardly-projecting brackets 21, through which freely pass headed pins 22, the lower ends of which are secured at opposite ends to a cross-bar 23, springs 24 being placed on the pins 22 to force the bar 23 downward. At each end of the bar 23 and beneath the same are secured presser-bars 25, which bear upon the rollers 18, between the links 16 of the sprocket-chain.

Mounted on the lower frame part 3 are parts precisely similar to those described and numbered from 6' to 25' inclusive, the gear-wheel 7' on the lower shaft 6' being in mesh with the gear-wheel 6 of the upper shaft 7. The effect of this is that when the shaft 6' is rotated the sprocket-chains 14 and 14' will be caused to travel with their adjacent faces in the same direction, so that the rubber strips 20 on both the upper and lower sides of cross-bars 19 will be pressed toward each other. Between the rubber faces 20 of the upper and lower sprocket-chains is passed a plurality of sheets of paper 26.

As a means of feeding forward the sprocket-chains 14 and 14', and thereby feeding the paper sheets 26 in the desired direction, I provide a train of gears consisting of a pinion 27, meshing with the teeth of the gear-wheel 7'. Mounted on the shaft with this pinion 27 is a Geneva wheel 28, shown as having eight teeth which engage with a pin 29, mounted on a pinion 30, the pinion 30 being provided with a crescent-shaped plate 31, bearing against the concave faces of the Geneva wheel 28 to prevent slipping of the same. As shown, the teeth of the pinion 30 mesh with teeth mounted on a bevel-gear 32, which meshes with a corresponding bevel-gear 33 on a shaft 34, to which continuous

motion is imparted by means not shown, but which may be connected with the perforating portion of the machine, the Geneva wheel 28 and the pinion 27, secured thereto, both being
 5 mounted on a hub 35 for sliding motion on a shaft 36, secured to the frame 3. In the shaft 36 are cut annular grooves 37 38. On the hub 35 is mounted a finger-piece or lever 39, having a pin 40, adapted to engage in
 10 either of the grooves 37 or 38, as clearly shown in Fig. 4. It is obvious that when the pin 40 is engaged in the inner annular groove 37 the Geneva wheel 28 will mesh with the pin 29 and the pinion 27 will mesh
 15 with the gear-wheel 7', and that when the operator slides the wheel 28 outwardly on the shaft 36, so that the finger 40 engages with the outer annular groove 38, the Geneva wheel 28 and the pinion 27 will be drawn
 20 from their respective engagements and the movement of the paper-feeding chains stopped.

The operation of the machine will be obvious from the foregoing description. It
 25 will be seen that the presser-bars 25, running on the rollers 18 of the sprocket-chains, will produce very little friction and will act efficiently to hold the rubber faces 20 of the bars 19 closely against the upper and under
 30 sides of the paper sheets, the pressure being equal from side to side, and thereby securing the even feed of all the sheets. It will also be seen that by providing the adjustable journals 11 at the same ends of all the
 35 sprocket-chains the adjustment of the chains to compensate for wear is made possible without in any way interfering with the registration of the cross-bars 19 on the opposite pairs of chains. It will also be understood
 40 that mechanical modifications may be made in the device without departing from the invention.

What I claim is—

1. In a paper-feed for perforating-machines, a frame in two parts, means for adjusting said frame parts toward and from
 45 each other, a pair of sprocket-chains mounted on each of said frame parts, a plurality of cross-bars connecting the chains of each pair,
 50 spring-pressed bars bearing on the rollers of the chains of at least one of said pairs for forcing them toward each other, and means for intermittently feeding said chains forward in unison with their adjacent faces traveling in
 55 the same direction.

2. In a paper-feed for perforating-machines, a frame in two parts, means for adjusting said frame parts toward and from
 60 on each of said frame parts, a plurality of cross-bars connecting the chains of each pair,

spring-actuated means for forcing the cooperating bars of each pair of chains toward each other, and means for intermittently feeding
 said chains forward in unison with their adjacent faces traveling in the same direction. 65

3. In a paper-feed for perforating-machines, two pairs of superposed sprocket-chains, the chains of each pair being spaced
 70 apart from each other to a distance slightly greater than the width of the paper to be fed, a plurality of cross-bars connecting the chains of each pair, spring-pressed bars bearing on the rollers of the chains of at least one of said
 75 pairs for forcing them toward the other pair, a train of gear-wheels for intermittently feeding said chains forward in unison with their adjacent faces traveling in the same direction, one of the wheels of said train being slidably
 80 mounted on its shaft, whereby it may be withdrawn from engagement with the remaining wheels of the train for stopping the movement of the chains at will.

4. In a paper-feed for perforating-machines, two pairs of superposed sprocket-chains, the chains of each pair being spaced
 85 apart from each other to a distance slightly greater than the width of the paper to be fed, a plurality of cross-bars connecting the chains of each pair, spring-pressed bars bearing on the rollers of the chains of at least one of said
 90 pairs for forcing them toward the other pair, a train of gear-wheels for intermittently feeding said chains forward in unison with their adjacent faces traveling in the same direction, said train including a wheel slidably mounted
 95 on a shaft, said shaft having annular grooves and said wheel having a finger-piece provided with a pin engageable in either of said grooves for retaining said wheel either
 100 in or out of engagement with the remaining wheels of the train.

5. In a paper-feed for perforating-machines, two pairs of superposed sprocket-chains, the chains of each pair being spaced
 105 apart from each other to a distance slightly greater than the width of the paper to be fed, a plurality of cross-bars connecting the chains of each pair, spring-pressed bars bearing on the rollers of the chains of at least one of said
 110 pairs for forcing them toward the other pair, and a train of gear-wheels including a Geneva wheel for intermittently feeding said chains forward in unison with their adjacent faces traveling in the same direction. 115

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

PHILIP JACOB MEAHL.

Witnesses:

GEORGE B. KELLY,
 AGNES I. WALSH.