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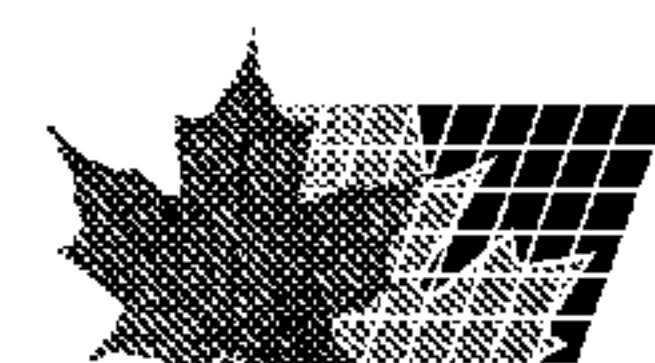
(54) Titre : METHODE D'ENSEIGNEMENT DE LA LECTURE ET D'ALPHABETISATION

(54) Title: METHOD FOR TEACHING READING AND LITERACY



(57) **Abrégé/Abstract:**

A method for teaching literary and reading to a student is disclosed. The method includes the step of providing an apparatus to said student. The apparatus includes: a keyboard having a plurality of keys each bearing a different letter of the alphabet; and sound production means for associating a different sound to each key of said plurality and adapted to produce in response to a keystroke the sound associated with such key. The method further includes the steps of: displaying a first word to said student; and causing the keys bearing the letters which form said first word to be stroked. Preferably, the student is directed to stroke the keys bearing the letters which form said first word.



ABSTRACT

A method for teaching literary and reading to a student is disclosed. The method includes the step of providing an apparatus to said student. The apparatus includes: a keyboard having a plurality of keys each bearing a different letter of the alphabet; and sound production means for associating a different sound to each key of said plurality and adapted to produce in response to a keystroke the sound associated with such key. The method further includes the steps of: displaying a first word to said student; and causing the keys bearing the letters which form said first word to be stroked. Preferably, the student is directed to stroke the keys bearing the letters which form said first word.

METHOD OF TEACHING READING AND LITERARY

FIELD OF THE INVENTION

The present invention relates to the field of teaching, and more particularly, to methods of teaching literacy.

BACKGROUND OF THE INVENTION

Literacy and learning to read is an essential element of a child's education. However, learning to read English is a difficult task for many children, and can be especially difficult for children suffering from Autism Spectrum Disorder.

SUMMARY OF THE INVENTION

A method for teaching literacy to a student forms one aspect of the invention. The method comprises the step of providing an apparatus to said student, said apparatus including: a keyboard having a plurality of keys each bearing a different letter of the alphabet; and sound production means for associating a different sound to each key of said plurality and adapted to produce in response to a keystroke the sound associated with such key. The method further comprises the steps of: displaying a first word to said student; and causing the keys bearing the letters which form said first word to be stroked.

A computer program product forms another aspect of the invention. The product comprises a memory having computer-readable code embodied therein for execution by a computer, said computer including a keyboard, viewing screen, speaker and processor, which code, when executed by the processor, causes the computer to: associate a different sound to each alphabetic key of the keyboard; display on the screen a first word; and, in response to the stroke of a key bearing a letter which forms said first word, produce the sound associated with such key.

A carrier wave forms another aspect of the invention. The wave embodies a computer data signal having computer-readable code embodied therein for execution by a computer, said computer including a keyboard, viewing screen, speaker and processor, which code, when executed by the processor, causes the computer to: associate a unique sound to each alphabetic key of the keyboard; display on the screen a first word; and in response to the stroke of a key bearing a letter which forms said first word, produce the sound associated with such key.

Advantages, features and characteristics of the present invention will become more apparent upon consideration of the following detailed description and the appended claims with reference to the accompanying drawings, said drawings being briefly described hereinbelow.

BRIEF DESCRIPTION OF THE DRAWINGS

- FIGURE 1 is a top plan view of the keyboard of a keyboard apparatus used according to one aspect of the invention;
- FIGURE 2 is a view of an exemplary exercise sheet used in the method of a first preferred embodiment of the invention
- FIGURE 3 is a view of an exemplary first exercise sheet used in the method of a second preferred embodiment of the invention
- FIGURE 4 is a view of an exemplary second exercise sheet used in the method of the second preferred embodiment of the invention
- FIGURE 5 is an exemplary screen shot produced by computer code according to a third preferred embodiment of the invention when in use by a computer, showing a noun;

FIGURE 6 is a view similar to FIGURE 4, showing a verb;

FIGURE 7A is a first frame of an animation;

FIGURE 7B is a second frame of an animation;

FIGURE 7C is a third frame of an animation;

FIGURE 7D is a fourth frame of an animation; and

FIGURE 8 is an exemplary work book page used according to another aspect of the invention.

DETAILED DESCRIPTION

A method for teaching literacy to a student according to a first preferred embodiment of the present invention is hereinafter described.

With reference to Figure 1, as a first step in the method, an apparatus (not shown) having a keyboard 20 is provided to the student. The apparatus is preferably a piano or an organ, wherein alphabetic characters 24 have been demarcated in a conventional manner on the keys 22. The letters 24 are demarcated on the keyboard 20 so that more commonly used letters 24 are grouped together in the centre of the keyboard 20, and more rarely used letters 24 are disposed on the periphery of the keyboard 20. Letters that are commonly used together, such as "t" and "h", are also grouped closely to one another. As shown, the letter placement is suitable for English language instruction.

With reference to Figure 2, as subsequent steps in the method, an instructor displays a word 26 and a pictorial representation 28 of the word 26 to the student, and preferably states and spells the word 26 aloud to the student. The word 26 and pictorial

representation 28 are preferably displayed to the student on an exercise sheet 30, as shown in Figure 2 in exemplary fashion. The letters forming the word 26 are preferably constructed out of felt or otherwise textured, to add tactile interest. The exercise sheet 30 also includes a representation 32 of the keyboard 20, in which the keys bearing the letters forming the word 26 are highlighted.

Preferably, the student is directed to spell the word 26 using the keyboard 20. Alternatively, the instructor may spell the word 26 using the keyboard 20. As the keys 22 are stroked, the sound or tone associated with each key 22 will be produced. Preferably, once the student has depressed the keys 22 bearing the letters forming the word 26, the instructor communicates to the student that he or she has completed the exercise, states the word aloud and causes a sound associated with the word to be created. For example, in the case of the word "APE", the instructor may play a recording of a howling ape.

A lesson will typically include a plurality of such exercises, and typically, a plurality of exercise sheets 30, each bearing a unique word and associated pictorial depiction, will be collected into book form for convenience. To reinforce this lesson, an audio recording may be provided, which the student can also listen to during free time. A preferred audio recording includes a complete lesson. For each exercise: the word is read aloud; the word is spelled out; the tones associated with the letters forming the word are played; the word is again read aloud; and a sound effect associated with the word is played. The instructor may also use this audio recording for the purpose of playing the sound effect as discussed earlier. A workbook may also be provided to the student, to reinforce the lesson. An exemplary worksheet is shown in Figure 8, which includes various images of the word to be traced and coloured by the student.

A variation of the foregoing method forms a second preferred embodiment of the invention. In this method, the exercise consists of two words, namely, a noun and a verb associated with the noun. The noun 32, a pictorial representation 34 of the noun and a keyboard image 36, in which the keys bearing the letters forming the noun are

highlighted, appear on a first sheet 38, as shown in Figure 3. The noun 32 is the word "FROG" and the pictorial representation 34 is a picture of a frog. On a second sheet 40, indicated by Figure 4, there is displayed a verb 42 associated with the noun 32, namely, the word "LEAP", a pictorial representation 44 of the verb 42 and noun 32, specifically, an image of a frog leaping, and a keyboard image 46 in which the keys bearing the letters forming the verb are highlighted. In this embodiment, the instructor initially shows the first sheet 38 to the student, preferably states and spells the word 32 aloud, and directs the student to spell the noun 32 using the keyboard 20. As the student strokes the keys 22, the sound or tone associated with each key 22 will be produced. Once the student has depressed the keys 22 bearing the letters forming the noun 32, the instructor preferably states the noun 32 aloud; presents the second sheet 40 to the student; states and spells aloud the verb 42 and directs the student to spell the verb 42 using the keyboard 20. As the student strokes the keys 22, the sound or tone associated with each key 22 will be produced. Once the student has depressed the keys 22 bearing the letters forming the verb 42, the instructor preferably states the word 42 aloud, whereupon the exercise is complete. A typical lesson includes a plurality of exercises of the aforescribed type, and typically, a plurality of pairs of exercise sheets 38,40 will be collected into book form for convenience.

A third preferred embodiment of the invention comprises computer-readable code embodied on a carrier wave or a computer memory product. The code is for execution by a computer (not shown) including a keyboard, a viewing screen, a speaker and a processor. When executed by the processor, the code causes the computer to associate a unique sound to each alphabetic key of the computer keyboard and to display on the computer screen 48 as shown as Figure 5, a word 32, specifically, a noun. The screen 48 also displays an image of a computer keyboard 46', wherein the keys which bear the letters forming the word are highlighted. The code causes the computer to, in response to the stroke of a key on the computer keyboard bearing a letter which forms said word, produce the sound associated with such key. No sound is produced when keys bearing letters that do not appear in the 32 word are stroked. Once the student has depressed the keys bearing the letters forming the word 32, the

student may press the space bar of the keyboard to cause the screen to display a pictorial image 34 of the word, as shown in the screen shot 50 of Figure 6. In addition to the pictorial image 34, the screen will also show a further word, specifically, a verb 42, which is related to the image, and an image 46' of a keyboard wherein the keys which bear the letters forming the verb 42 are highlighted. The code causes the computer to, in response to the stroke of a key bearing a letter which forms said verb 42, produce the sound associated with such key. No sound is produced when keys bearing letters that do not appear in the verb 42 are stroked. Once the student has depressed the keys bearing the letters forming the word 42, the student may select the image 34 on the screen with the mouse, which triggers a moving picture to be displayed on the screen that is illustrative of the verb and noun. In the case of the noun and verb combination of FROG and LEAP, the moving picture would be a leaping frog, as shown by the sequence 7A,7B,7C,7D. This completes the exercise. A typical lesson will include a number of exercises delivered in sequence.

Finally, it is to be understood that while but three embodiments of the present invention have been herein shown and described, it will be understood that various changes may be made. For example, whereas in the first and second preferred embodiments, a piano or organ is used by the child, it will be evident that a personal computer could readily be programmed to serve the function of the piano. Similarly, whereas the examples show English language instruction, the method and apparatus can be readily modified to provide instruction in other languages. Yet further, whereas the methods described are directed primarily to reading exercises, it will be understood that the methods relate in the larger context to literacy. It will be evident that these modifications, and others which may be apparent to persons of ordinary skill in the art, may be made without departing from the spirit or scope of the invention, which is accordingly limited only by the claims appended hereto, purposively construed.

What is claimed is:

1. A method for teaching literacy to a student, the method comprising the steps of:

providing an apparatus to said student, said apparatus including: a keyboard having a plurality of keys each bearing a different letter of the alphabet; and sound production means for associating a different sound to each key of said plurality and adapted to produce in response to a keystroke the sound associated with such key;

displaying a first word to said student; and

causing the keys bearing the letters which form said first word to be stroked.
2. A method according to claim 1, wherein the student is directed to stroke the keys bearing the letters forming said word.
3. A method according to claim 1, wherein a pictorial representation of the first word is displayed to the student contemporaneously with the first word.
4. A method according to claim 1, wherein the keyboard is a piano keyboard and the first word is displayed in a book.
5. A method according to claim 3, wherein the keyboard is a piano keyboard and the first word and the pictorial representation are displayed on a page in a book.
6. A method according to claim 4 or claim 5, wherein the letters forming the first word are textured to provide tactile interest to the student.
7. A method according to claim 1, wherein the keyboard is a computer keyboard and the first word is displayed on a computer screen.

8. A method according to claim 3, wherein the keyboard is a computer keyboard and the first word and the pictorial representation are displayed on a computer screen.
9. A method according to any one of claims 1 to 8, wherein the keyboard and the sound production means are defined by a computer and wherein the sound production means produces sounds only in response to the stroke of keys bearing a letter of the first word.
10. A method according to any one of claims 1 to 8, wherein the keyboard and sound production means are defined by a musical instrument selected from the group consisting of piano and organ.
11. A method according to any one of claims 1 to 10, wherein the first word is presented in spoken language and spelled aloud to the student before the keys bearing the letters which form said first word are caused to be struck.
12. A method according to claim 1, further comprising the steps of:

after the keys bearing the letters which form said first word have been struck, displaying a second word related to the first word, along with a pictorial representation of the second word, to the student;

directing the student to stroke the keys bearing the letter which form said second word.
13. A method according to claim 12, wherein the first word is a noun and the second word is a verb.

14. A computer program product comprising a memory having computer readable code embodied therein for execution by a computer, said computer including a keyboard, viewing screen, speaker and processor, which code, when executed by the processor, causes the computer to:

associate a different sound to each alphabetic key of the keyboard

display on the screen a first word;

in response to the stroke of a key bearing a letter which forms said first word, produce the sound associated with such key.

15. A product according to claim 14, wherein the code, when executed by the processor, further causes the computer to:

after the keys bearing the letters which form said first word have been struck, displaying on the screen a second word related to the first word;

in response to the stroke of a key bearing a letter which forms said second word, produce the sound associated with such key.

16. A carrier wave embodying a computer data signal having computer readable code embodied therein for execution by a computer, said computer including a keyboard, viewing screen, speaker and processor, which code, when executed by the processor, causes the computer to:

associate a unique sound to each alphabetic key of the keyboard

display on the screen a first word; and

in response to the stroke of a key bearing a letter which forms said first word, produce the sound associated with such key.

17. A wave according to claim 16, wherein the code, when executed by the processor, further causes the computer to:

after the keys bearing the letters which form said first word have been struck,
displaying on the screen a second word related to the first word;

in response to the stroke of a key bearing a letter which forms said second word,
produce the sound associated with such key.

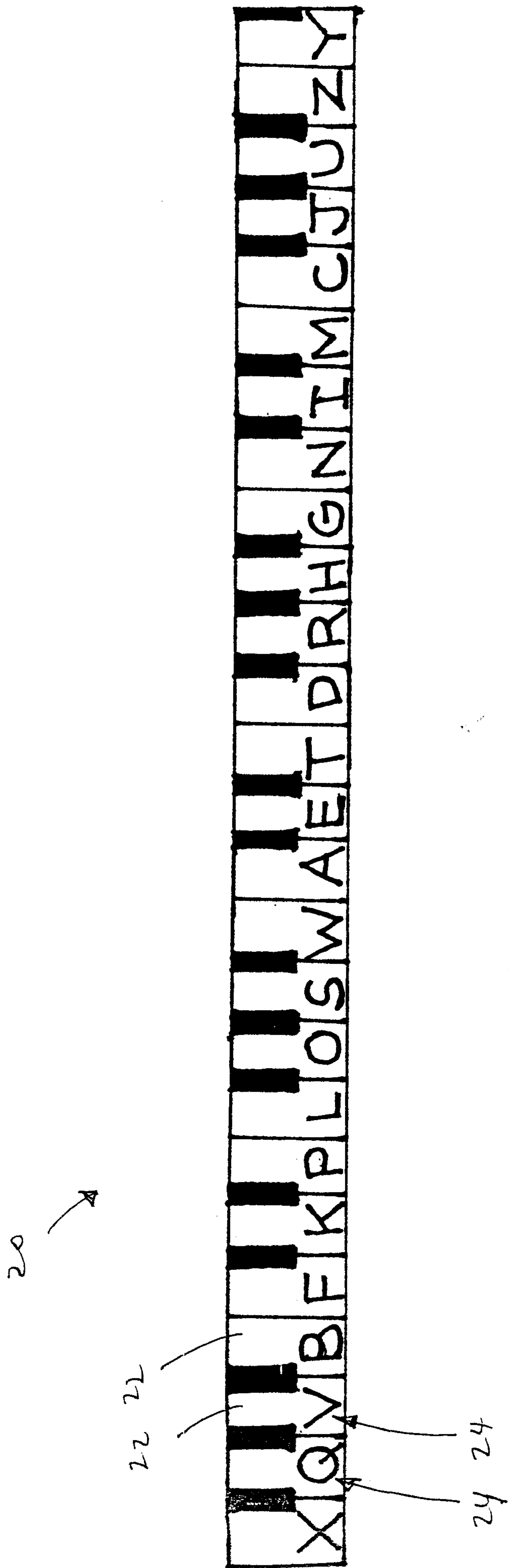
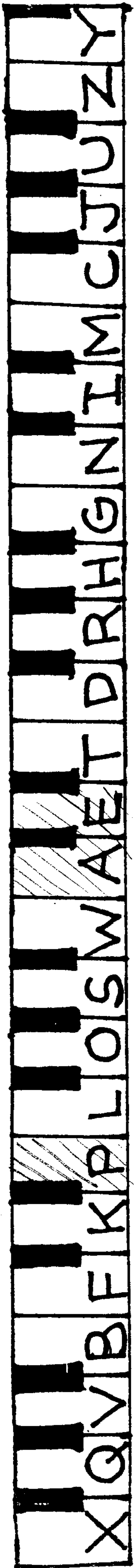


Figure 1



↑
211b
32



28 →

26 →

30

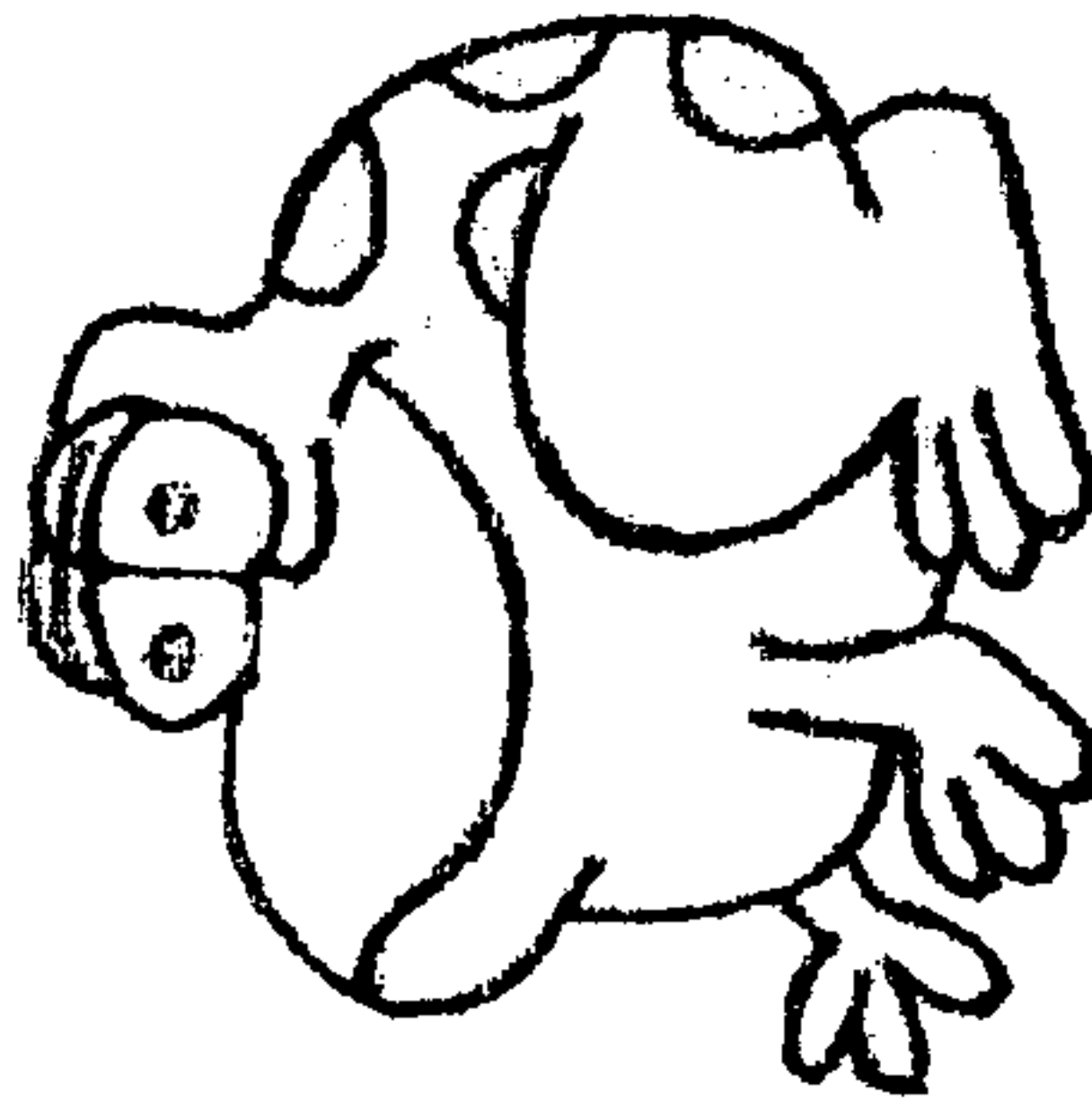
FIGURE 2.

FIGURE 3

FROG



32



34

36



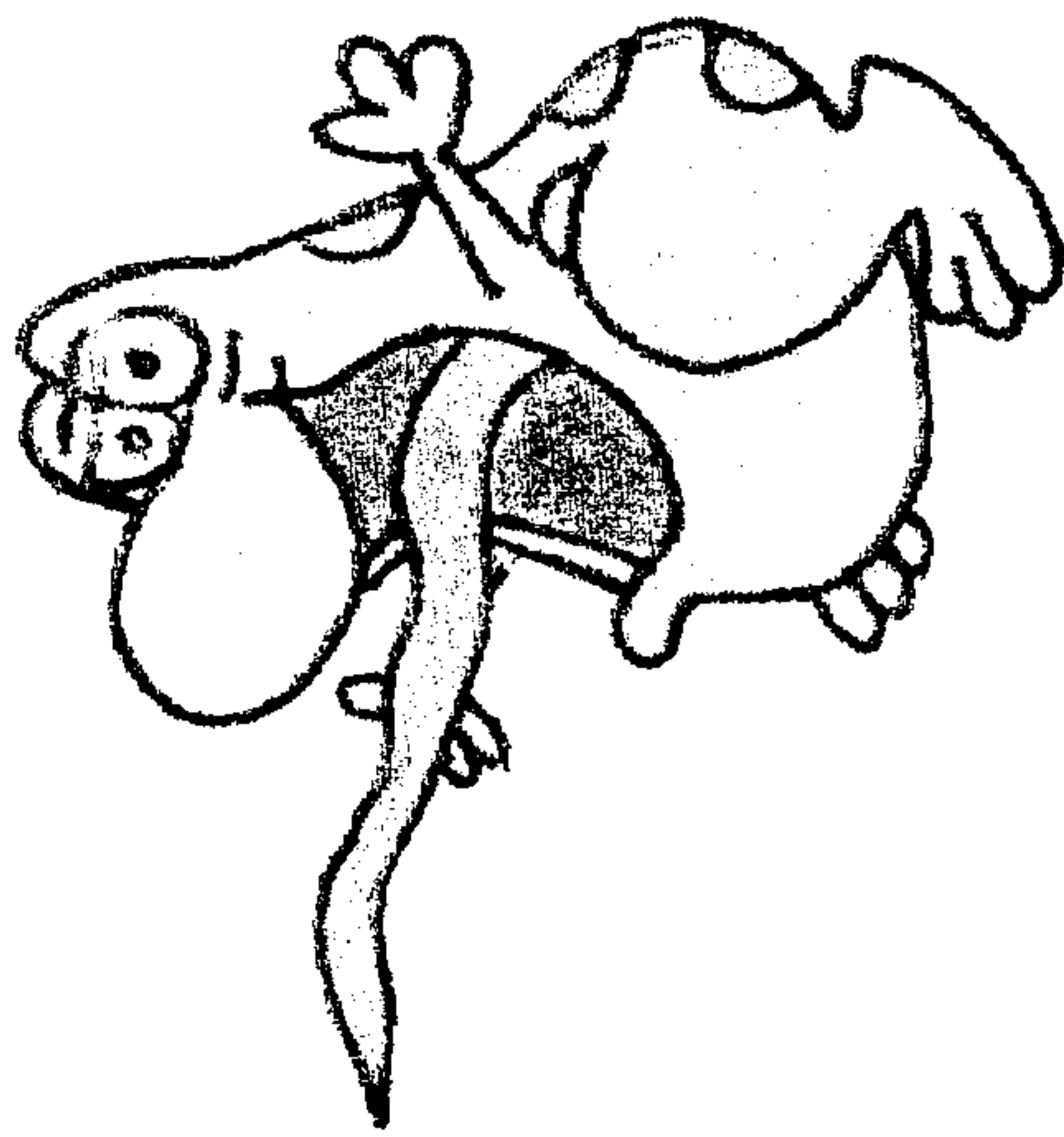
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---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

FIGURE 4

LEAP

42 →

40



40

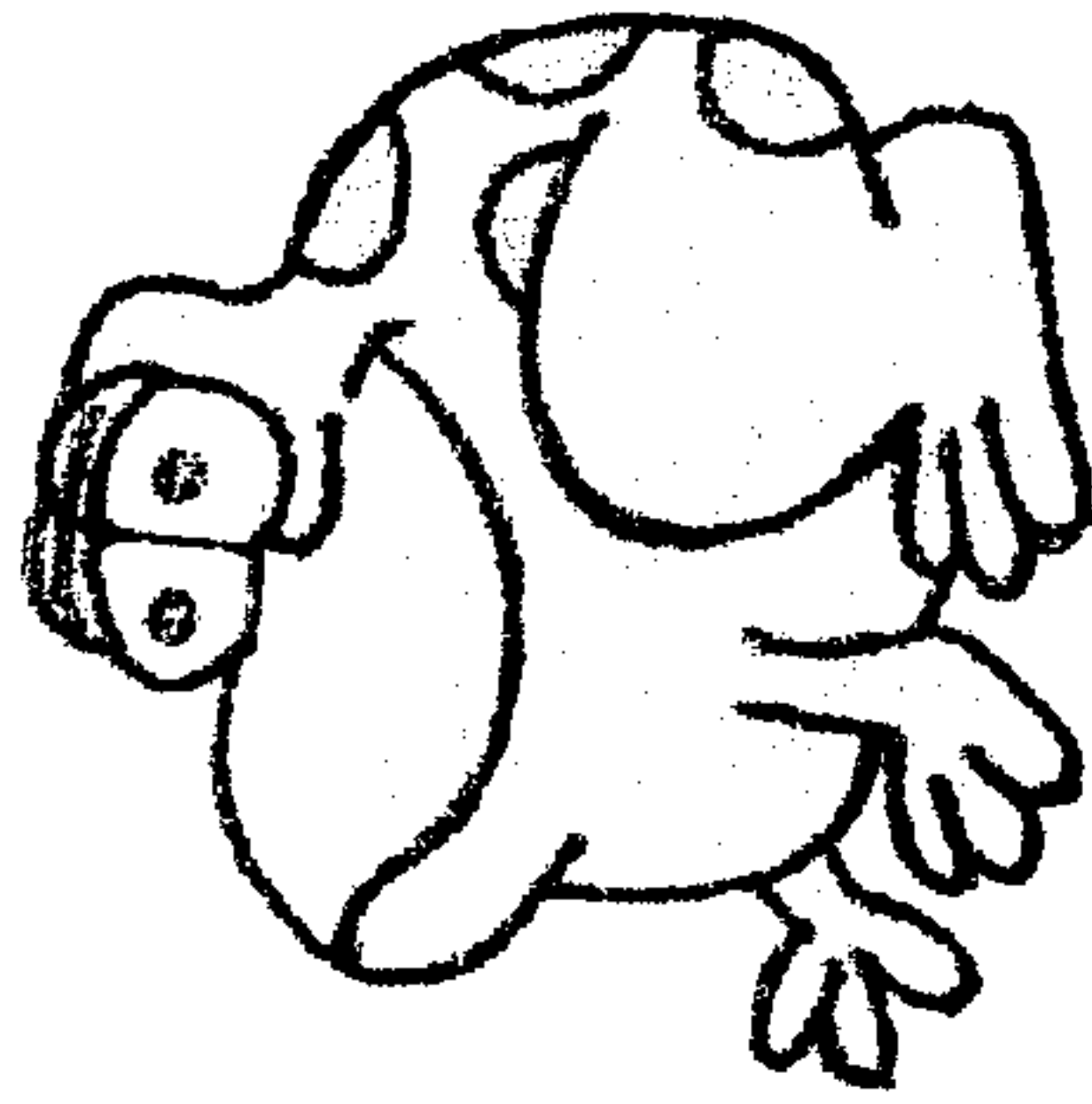
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44

46

↓



X	Q	V	B	F	K	P	L	O	S	W	A	E	T	D	R	H	G	N	I	M	C	J	U	Z	Y
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

FIGURE 5.

FIGURE 5

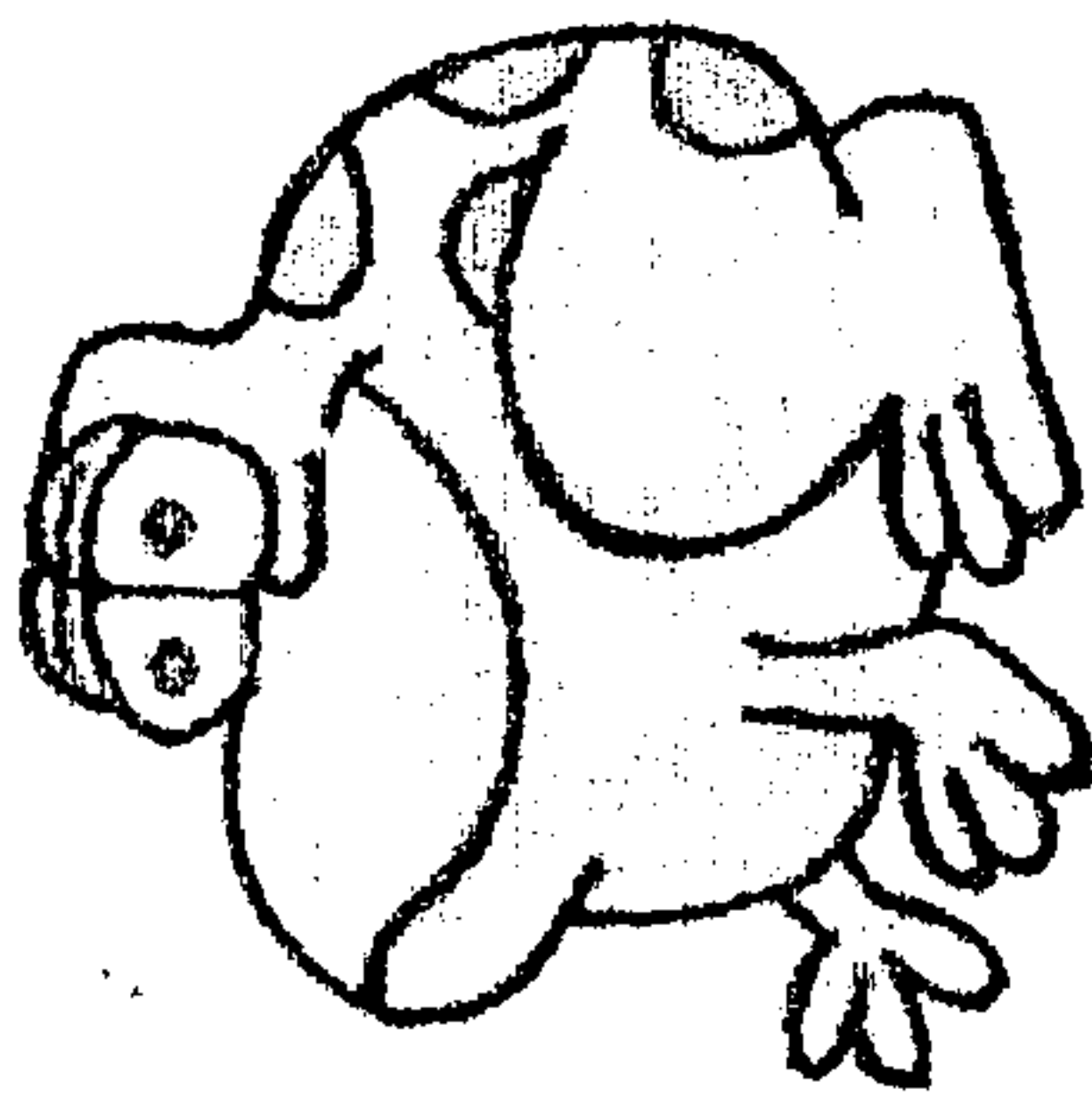
Esc	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	Ins	Del
~`	! 1	@ 2	# 3	\$ 4	% 5	^ 6	& 7	* 8	(9	) 0	_ -	+ =	< Bspc	PgUp
Tab->	Q	W	E	R	T	Y	U	I	O	P	{ [	}]	\	PgDn
Caps	A	S	D	F	G	H	J	K	L	:	" ' ;	" ' ;	Enter	Home
Shift	Z	X	C	V	B	N	M	<	>	? /	? /	Shift	Shift	End
Ctl	Wnd	Alt							←	↑	↓	→	WWW	

FIGURE 6.

The image contains four distinct abstract line drawings arranged vertically. The top drawing is a shape with a large, rounded upper portion and a small, semi-circular indentation on the left side. The second drawing is a large, irregular polygon with a small, triangular protrusion on its left side. The third drawing is a shape with a series of vertical, rectangular protrusions along its top edge. The bottom drawing is a simple, L-shaped polygon.

↑

42



34 →

46, 

Esc	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	Ins	Del
~、	! 1	@ 2	# 3	\$ 4	% 5	^ 6	& 7	* 8	(9	) 0	_ -	+ =	<Bspc	PgUp
Tab>	Q	W	E	R	T	Y	U	I	O	P	{ [	}]	\	PgDn
Caps	A	S	D	F	G	H	J	K	L	;	:"	'	Enter	Home
Shift	Z	X	C	V	B	N	M	<	>	,	? /	.	Shift	End
Ctrl	Wnd	Alt							←	↑	↓	→	www	

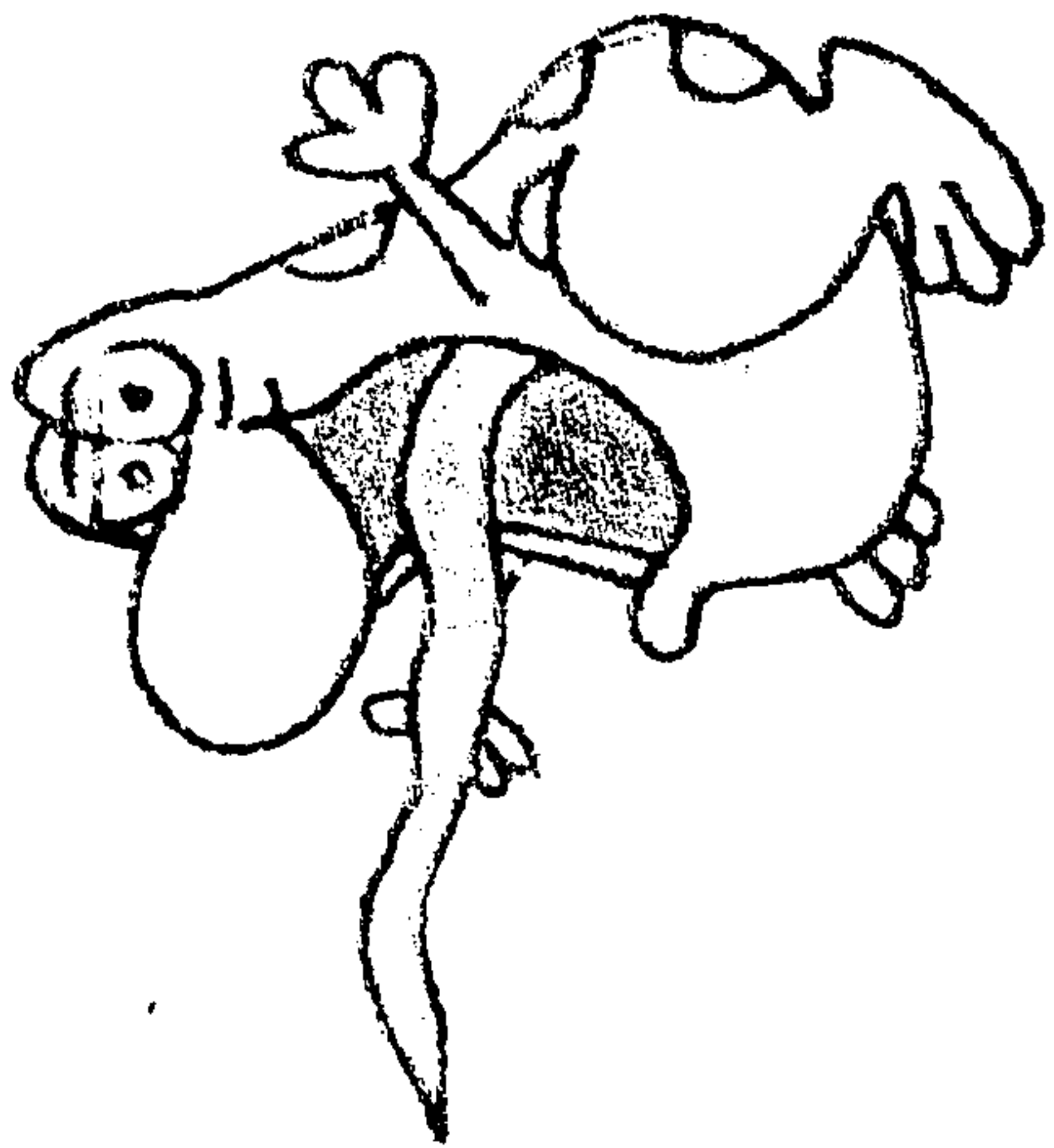


FIGURE 7d



FIGURE 7c

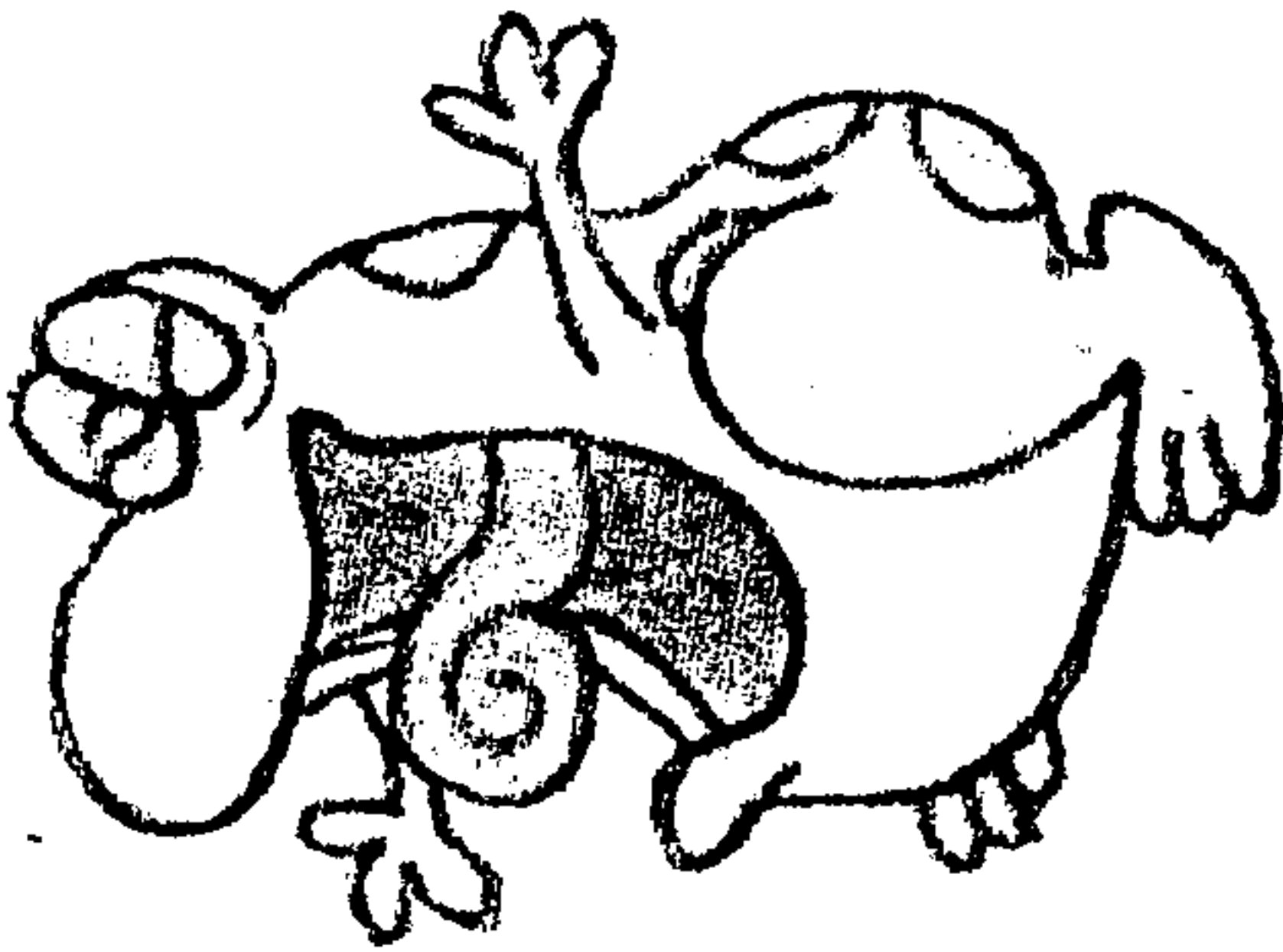


FIGURE 7b

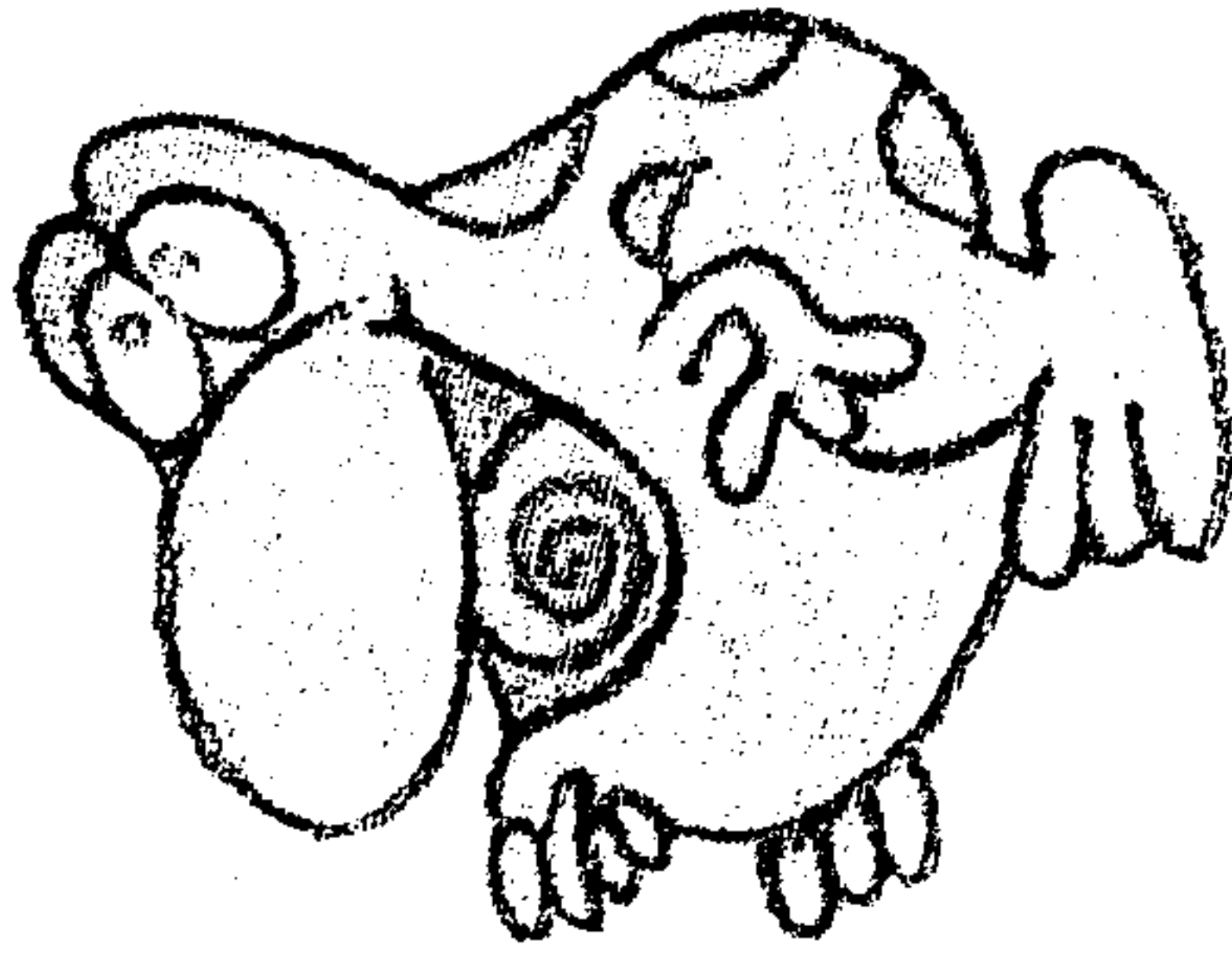


FIGURE 7a

FIGURE 7

APE

APE

ape

FIGURE 8

